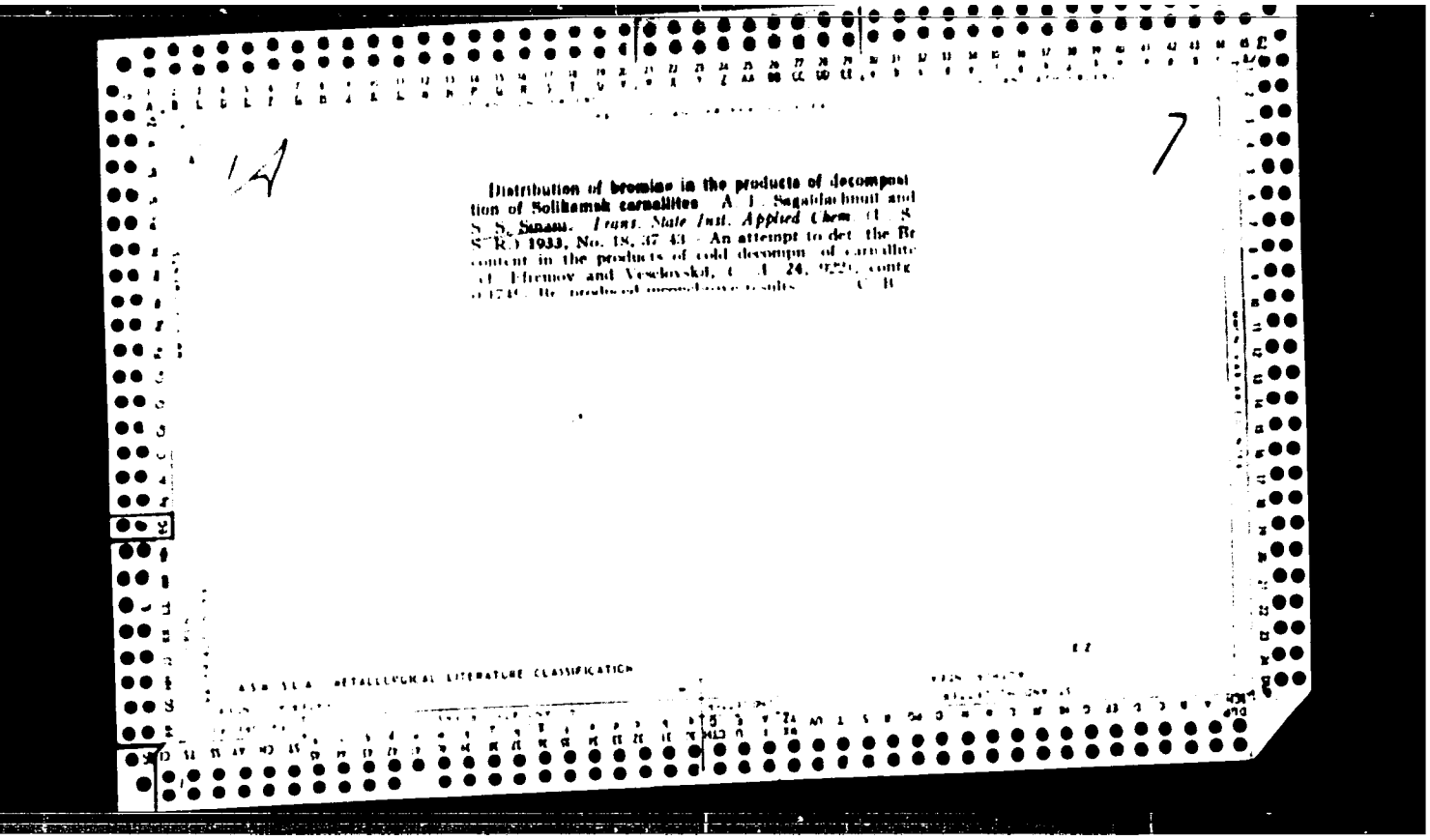

Distribution of bromine in the products of decomposition of Solikamsk carnallites A. I. Sagaidachnuĭ and S. S. Sanaev. *Trans. State Inst. Applied Chem.* (U.S.S.R.) 1933, No. 18, 37-43.—An attempt to det. the Br content in the products of cold decomposn. of carnallite (cf. Efremov and Veselovskiĭ, C. A. 24, 922), contg. [illegible] Br produced unsatisfactory results. C. B.

ASM-WLA METALLURGICAL LITERATURE CLASSIFICATION

USSR Physics - Heat conductivities

Card 1/1 Pub 153 - 25/29

Author : Ioffe, A. V.; Sinani, S. S.

Title : Brief communication. Heat conductivity of oxides of elements in the second group of the periodic system

Periodical : Zhur. tekh. fiz., 25, No 9 (September), 1955, 1659-1661

Abstract : In an earlier work (A. V. Ioffe, A. F. Ioffe, DAN SSR, X, No 5, 7, 821, 1954) it was shown for elements of the 4th group and for alkali-halide salts that their specific heat conductivity decreases with increase in atomic weight and that furthermore for identical atomic weight the heat conductivity of atomic lattices exceeds in order of magnitude the heat conductivity of ionic compounds. On the suggestion of A. F. Ioffe the present writers undertook the investigations described in this note with the purpose of verifying the applicability of the above conclusions to other substances, especially to clarify whether a comparatively weak difference in the character of the crystallochemical bonds is reflected along with the dependence upon atomic weight varying in the limits from 9 (Be) to 200(Hg). For study the authors choose the oxides BeO, MgO, CaO, ZnO, SrO, CdO, BaO, HgO. Their measurements confirm the systematic lowering of heat conductivity with increase in atomic weight for all the oxides except BeO and MgO (which have structure of porous powder). They thank G. N. Gordyakova for preparation of the specimens.

Submitted : June 14, 1955

SINANI, S.S.

USSR/Electricity - Semiconductors G-3

Abs Jour : Ref Zhur - Fizika, No 5, 1957, 12231

Author : Sinani, S.S., Gordyakova, G.N.

Inst :

Title : Solid Solutions Be_2Te_3-Bi_2Se_3 as a Material for Thermocouples

Orig Pub : Zh. tekhn. fiziki, 1956, 26, No 10, 2398-2399

Abstract : A brief discussion of the results of an investigation of the thermoelectric properties of solid solutions on the basis of two solutions of Bi_2Te_3 and Bi_2Se_3, similar in chemical and structural relationship, with addition of free metals, halides, and halogenides. A table of the thermoelectric properties of the investigated solutions is given.

A new semiconducting alloy is developed for thermocouples, having high $Z = \alpha^2\sigma/x$ and good mechanical properties. A thermocouple with a negative branch of this alloy gives a temperature drop of approximately 60°.

Card 1/1

SINANI S. S.

Distr: 4E2c

Composition for the negative branch of a thermoelement. S. S. Sinani, G. V. Kokosh, G. I. Gordyukova, and A. N. Shadrina. U.S.S.R. 107,420, Oct. 25, 1957. The neg. branch of a thermoelement is made of a solid soln. of Bi_2Te_3 and Bi_2Se_3 to which is added a halide of Cu or Ag.

M. Hoseh

57-1-1/30

AUTHORS: Gorbakova, G. N., Kokosh, G. V.
Sinani, S. S.

TITLE: The Investigation of Thermoelectrical Properties of Bi_2Te_3 - Bi_2Se_3 Solid Solutions (Izucheniye termoelektricheskikh svoystv tverdykh rastvorov Bi_2Te_3 - Bi_2Se_3).

PERIODICAL: Zhurnal Tekhnicheskoy Fiziki, 1958, Vol. 28, Nr 1, pp. 5-17 (USSR)

ABSTRACT: The purpose of this work was to find new semiconductor materials for thermocouples. As for the positive part of the thermoelement the alloy of Sb_2Te_3 and Bi_2Te_3 is known as the best at present, the authors tried to find a material for its negative part. In this respect Bi_2Te_3 is already of interest. First the electrical properties of alloys of the Bi_2Te_3 - Bi_2Se_3-system without additions were investigated. As basic material bismuth, tellurium and selenium were used. The content of basic substance in them was . 99,97 %. The predominant addition in bismuth was lead. The radiograms of the investigated Bi_2Te_3 - Bi_2Se_3 alloy showed the formation

Card 1/4

The Investigation of Thermoelectrical Properties of Bi_2Te_3 - Bi_2Se_3 Solid Solutions

solid solutions within the range of from 100 to 80% Mol Bi_2Te_3 and of from 70 to 100% Bi_2Se_3. The radiogram were taken by R. A. Zvinchuk in the A. M. Yelistratov laboratory. The investigations for the electric conductivity and for the thermo-e.m.f. (electromotive force) carried out according to the compensation method show that the former gradually decreases with its distance from the basic double compounds. With a ratio close to one of

$$\frac{Bi_2Te_3}{Bi_2Se_3}$$

it is minimal. The thermo-e.m.f. curve of change shows the course characteristic for solid solutions of substances with carriers of two signs: starting from Bi_2Te_3 the thermo e.m.f. is positive and increase to an alloy of 20% Bi_2Se_3, then it decreases and changes the sign at ~ 65 % Bi_2Te_3, and then stays negative to pure Bi_2Se_3. The authors stated that a small surplus of tellurium and selenium transform the Bi_2Te_3-rich alloys into electron-alloys.

97-1-1/30

The Investigation of Thermoelectrical Properties of Bi_2Te_3 - Bi_2Se_3 Solid Solutions

The further investigations concerned the effect of the additions of a 80 % Bi_2Te_3 and 20% Bi_2Se_3 containing solid solution. As additions served elements as well as compounds. The authors show that of the simple substances the elements of the 2nd, 3th, 4th, 5th and 6th group of the periodic system exercise an effect of acceptors, while halide, copper, silver, tellurium and selenium exercise that of donors. The alloys of the p-type are characterized by low movability values as well as by a^2c. The alloys of the n-type were obtained with sufficiently high indices for practical use. The best thermoelectrical properties were obtained with an addition of halides of the first group of the elementary system of with element-copper. The Z-values of the samples with optimal composition reached $2.5 \cdot 10^{-3}$ degree^{-1}. a = the thermo-e.m.f.; γ = the thermal conductivity, $Z = \frac{a^2\sigma}{\chi}$. The investigation of the effect of compensated additions showed that the increase to be expected of a did not occur. With samples the same concentration of carriers,

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The Investigation of Thermoelectrical Properties of Bi_2Te_3 - Bi_2Se_3 Solid Solutions 57-1-1/30

with or without compensation additions, the thermo-e.m.f. remained practically the same.
The authors were advised by L. S. Stilbans and A. V. Ioffe submitted the data on the thermal conductivity of the investigated solutions.
There are 3 figures, 1 table, and 14 references, 9 of which are Slavic.

ASSOCIATION: Institute for Semiconductors AN USSR, Leningrad (Institut poluprovodnikov AN SSSR Leningrad)

SUBMITTED: [illegible]

AVAILABLE: Library of Congress

Card 4/4

AUTHORS: Gordyakova, G. N., Sinani, S. S. 57-28-5-10/36

TITLE: Thermoelectric Properties of Bismuth-Telluride With Alloying Admixtures
(Termoelektricheskiye svoystva tellurida vismuta s legiruyushchimi dobavkami)

PERIODICAL: Zhurnal Tekhnicheskoy Fiziki, 1958, Vol. 28, Nr 5, pp. 977-980 (USSR)

ABSTRACT: In recent years the interest of numerous scientists has been attracted by the thermoelectric properties of bismuth telluride (Reference 1). By the introduction of impurities these properties can be varied to a considerable degree, and can also change the sign of the current carriers. The present paper contains the results of the investigation of the influence on the electric conductivity and the thermo e. m. f. of Bi_2Te_3 as well as determinations of the temperature dependence of the conductivity and of the thermo e. m. f. of samples with a varying carrier concentration. The purity of the bismuth and tellurium used for the production of the alloy corresponded

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to the purity of the basic substance ~99, 97%. Figure 1 shows the values of the electric conductivity σ, of the thermo e. m. f. α and of $\alpha^2\sigma$, which were determined in the measurements of the alloyed samples of Bi_2Te_3. The addition of lead provided the bismuth telluride with a hole conductivity. The determined maximum values of σ amounted to 1300 $Ohm^{-1} \cdot cm^{-1}$. The concentrations of the carriers n (Figure 2) per cm^3 and the mobility u were computed according to the effect of Kholl for alloyed samples of Bi_2Te_3. Figure 3 shows the dependence of the mobility on the concentration for samples with additions of J, CuBr and Pb. The measurement results of α, σ and $\alpha^2\sigma$ are given in figure 4. The experiments showed, that 1) the temperature course of σ and α is independent of the addition of iodine or CuBr. 2) the temperature rise is accompanied by a reduction of electric conductivity, which is the more marked, the higher the initial σ is. 3) the thermo e. m. f. varies as follows: At initial

Thermoelectric Properties of Bismuth-Telluride With Alloying Additures 57-28-3-10/36

values of $\alpha \simeq -150$ microvolt/°C it decreased with mounting temperature, at initial values of $\alpha \simeq -100$ microvolt/°C it remained constant and at initial values of $\alpha \simeq -80$ microvolt/°C and below it increased with temperature. 4) the values $\alpha^2\sigma$ decrease in samples with a great initial thermo e. m. f. and small σ, at a temperature rise. In samples with an initial value of σ of about 3000 and of σ of the order of 100 microvolt/°C, $\alpha^2\sigma$ at 300°C was equal to that at room temperature. This is interesting for the practical application of Bi_2Te_3.

The authors are indebted to L. S. Stil'bans for valuable suggestions.
There are 4 figures and 2 Soviet references.

ASSOCIATION: Institut poluprovodnikov AN SSSR, Leningrad
(Institute for Semiconductors, AS USSR, Leningrad)
SUBMITTED: July 12, 1957

Card 3/3 1. Bismuth tellurides--Electrical properties 2. Bismuth tellurides--Thermal properties

81626
S/181/60/002/06/14/050
B122/B063

24.7600
AUTHORS: Kokosh, G. V., Sinani, S. S.

TITLE: Thermoelectric Properties of Alloys of the Pseudobinary System Sb_2Te_3 - Bi_2Te_3

PERIODICAL: Fizika tverdogo tela, 1960, Vol. 2, No. 6, pp. 1118 - 1124

TEXT: The present paper describes the effect of changes in concentration and various impurities of the system Sb_2Te_3 - Bi_2Te_3 upon its electrical conductivity σ and thermoelectromotive force α. The amount of the individual components of the specimens was systematically changed by a shift of the stoichiometry. A preliminary examination and a discussion of the Bi-Te and Sb-Te phase diagrams by means of data supplied by N. K. Abrikosov, L. V. Poretskaya, and I. V. Ivanova (Refs. 2 and 4) has shown that, besides Bi_2Te_3 also BiTe, Bi_2Te, and $Bi_{14}Te_6$ may be present in the system Bi-Te. The two systems have some features in common but also characteristic differences. The two compounds crystallize out in the lattice with stoichio-

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81626
S/181/60/002/06/14/050
B122/B063

Thermoelectric Properties of Alloys of the Pseudobinary System Sb_2Te_3 - Bi_2Te_3

metrically insufficient quantities of Te, but this is more distinctly marked in the case of Sb_2Te_3. Figs. 1 and 2 show the effect of annealing and pressing of the specimens on α and σ, depending on their concentration. Annealing for a long time (15 days) increased the p-type thermoelectromotive force of specimens enriched with Sb_2Te_3 and the n-type thermoelectromotive force of specimens enriched with Bi_2Te_3. The change in α at a ratio of $Bi_2Te_3 : Sb_2Te_3 = 2:1$ indicated the beginning of a reorientation in these specimens. Similar observations by S. V. Ayrapetyants and B. A. Yefimova (Ref. 5) are mentioned. The α-curves exhibited the mixed p- and n-type which is characteristic of solid solutions. In order to explain the considerable rise of α on long annealing, the authors examined the distribution curve of α at different compositions (Fig. 3) as well as the course of the α-curve with shifted stoichiometry as dependent on the admixtures of donors and acceptors (Fig. 4). It is assumed that tellurium penetrates into the lattice when the specimens are hot-pressed and especially when they are annealed. Though this also leads to a decrease in the hole concentration of the system enriched with Sb_2Te_3, the p-type thermoelectromotive force

Card 2/4

Thermoelectric Properties of Alloys of the Pseudobinary System Sb_2Te_3 - Bi_2Te_3

nevertheless rises since Sb_2Te_3 has p-type conductivity, whereas the thermoelectromotive force already existing in the specimens enriched with Bi_2Te_3 is increased by the addition of electron-emitting Te. The thermoelectric properties of the system are obtained from Figs. 3 and 4 for any concentration ratio. Next, the authors examine the effect of impurities on the said properties of the system with a change in its composition. The authors performed three series of experiments using pure Bi and 1) Sb of the type Cy-0 (Su-0) with Te No. 2; 2) Sb: Cy-0 (Su-0), Te No. 3; 3) Sb: Cy-100 (Su-100), Te No. 1. Analytical data on substances obtained by D. M. Shvarts are listed in Tables 1 and 2. The negativity of α of the alloys in the region of 50 - 100 % Bi_2Te_3 increases with increasing purity. The maximum of the positive α was shifted with increasing impurity concentration toward the side of higher Bi_2Te_3 content. The impurities increase their electrical conductivity. The maximum of the positive thermoelectromotive force could be increased when no impurities were added. As was shown by A. V. Ioffe, the parts with minimum heat conductivity and maximum α coincide (Fig. 8). There are 8 figures, 3 tables, and 5 references: 4 Soviet.

Card 3/4

81626

Thermoelectric Properties of Alloys of the Pseudobinary System Sb_2Te_3 - Bi_2Te_3

S/181/60/002/06/14/050
B122/B063

ASSOCIATION: Institut poluprovodnikov AN SSSR Leningrad
(Institute of Semiconductors of the AS USSR, Leningrad)

SUBMITTED: November 3, 1959

Card 1/1

L 4023-66 EWT(m)/ETC/EWG(m)/EWP(t)/EWP(b) IJP(c) RDW/JD
ACCESSION NR: AP5022259 UR/0363/65/001/007/1098/1103
546.87'241+546.87'861

53
49
D

AUTHOR: Gordyakova, G. N.; Sinani, S. S.

TITLE: Anisotropy of the properties of solid solutions of the system Bi sub 2 Te sub 3-Bi sub 2 Se sub 3 obtained by sintering

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 1, no. 7, 1965, 1098-1103

TOPIC TAGS: bismuth alloy, selenium alloy, electric conductivity, thermoelectromotive force, Hall effect, tellurium alloy, solid solution

ABSTRACT: Samples of variable composition $Bi_2Te_{3-x}Se_x$ (x ranging from 0 to 3) were synthesized from the elements, and $CdBr_2$ was added in amounts from 0.05 to 0.40 wt.%. The anisotropy of electrical conductivity σ, thermo-emf α, and Hall effect R_x was studied. In compositions ranging from Bi_2Te_3 to $Bi_2Te_{2.1}Se_{0.9}$, the anisotropy of electrical conductivity is approximately constant and equal to 2.0; it is approximately 3.0 in Bi_2Se_3. The samples may be regarded as being practically isotropic with respect to the thermo-emf. A relationship between the anisotropy of the Hall effect and the composition is established. As the Bi_2Se_3 content increases, the anisotropy of the Hall effect decreases from $R_x\| / R_x\perp = 1.5$

Card 1/2

L 4023-66
ACCESSION NR: AP5022259

4

in bismuth telluride samples to 0.9 in bismuth selenide, passing through a value equal to 1.0 in a composition close to Bi_2Te_2Se. The effect of various halogens on the electron mobility is established by adding $CdCl_2$, $CdBr_2$, and CdI_2 to the alloy with 80 mole% Bi_2Te_3. The mobility declines in the series Cl-Br-I, apparently as a result of the increasing ionic radius. "We thank B. A. Yefimova for helpful suggestions and for reviewing the results." Orig. art. has: 6 figures and 1 table.

ASSOCIATION: Institut poluprovodnikov Akademii nauk SSSR (Institute of Semiconductors, Academy of Sciences SSSR) 55

SUBMITTED: 18Mar65 ENCL: 00 SUB CODE: SS, MM

NO REF SOV: 008 OTHER: 014

Card 2/2

SIMANOVIC, STEVAN

Pet godina rade drzavnih poljoprivredno-masinskth stanica u FNRJ. Beograd, Polijoprivredno izdavacko preduzece, 1950. 68p. (Five years of operation of the state agricultural machine stations in the Federal People's Republic of Yugoslavia. Illus.)

So. EAST EUROPEAN ACCESSIONS LIST Vol. 5, No. 7 July 1956

SINANOVIC, S.

SINANOVIC, S.

Yugoslavia (430)

Agriculture - Plant and Animal Industry

Improvement of agricultural production. p. 30. SOCIALISTICKA POLJOPRIVREDA, Vol. 2, no. 2, February 1951.

East European Accessions List, Library of Congress, Vol 1, no. 14, Dec. 1952. UNCLASSIFIED.

KRBEKYAN, G. Ye.; SINANYAN, E.G.; AKOPYAN, A.N.

Chemistry of divinylacetyl[redacted] and its halo derivatives. Report No.15: Copolymerization of trans-2,3,4,5-tetrachloro-1,3,5-hexatriene with vinyl chloride and vinylidene chloride. Izv. AN Arm.SSR. Khim. nauki 16 no.2:145-150 '63 (MIRA 17:8)

1. Institut organicheskoy khimii AN ArmSSR.

S/171/62/015/006/003/006
E071/E492

AUTHORS: Krbekyan, G.Ye., Sinanyan, E.G., Akopyan, A.N.

TITLE: Investigations in the field of divinylacetylene and its halide derivatives. Communication 12. A study of copolymerisation of trans-2,3,4,5-tetrachlorohexatriene-1,3,5 with isoprene, chloroprene and methylvinylketone

PERIODICAL: Akademiya nauk Armyanskoy SSR. Izvestiya. Khimicheskiye nauki, v.15, no.6, 1962, 527-533

TEXT: Reactions of copolymerisation of 2,3,4,5-tetrachlorohexatriene-1,3,5 (TCHT) with isoprene (I), chloroprene (CP) and methylvinylketone (MVK) were investigated. The copolymerisation was carried out in the presence of 0.1% of benzoyl peroxide at 70°C by a previously described method (A.N.Akopyan, V.S.Aslamazyan, Izv. AN ArmSSR, KhN, v.13, 1960, 155). The copolymers obtained were separated by double precipitation with methanol from solutions in benzene, except for copolymers obtained at molar ratios of starting mixtures of monomers TCHT-MVK 0:10, 1:9 and 2:8 which were precipitated with petroleum ether, as well as copolymer of TCHT with CP (2:8) and

Card 1/2

Investigations in the field ...

polychloroprene which was precipitated with methanol from a mixture of benzene with toluene. All polymers were dried at 50 to 60°C in vacuo to a constant weight. The composition was determined from analysis for chlorine. The dependence of the velocity of copolymerisation and composition of copolymers on the starting ratio of monomers was determined and from this the relative activities of monomers were calculated by the Mayo-Lewis and Fineman-Ross methods. TCHT was found to be a more active monomer than I and MVK but less active than CP. There are 3 figures and 5 tables.

ASSOCIATION: Institut organicheskoy khimii AN ArmSSR
(Institute of Organic Chemistry AS ArmSSR)

SUBMITTED: November 3, 1962

Card 2/2

L 13549-63 EPR/EWP(j)/EPF(c)/EWT(m)/BDS ASD Fs-4/Pc-4/Pr-4 RM/WW
ACCESSION NR: AP3000694 S/0190/63/005/005/0681/0686 72 71

AUTHOR: Akopyen, A. N.; Krbekyan, G. Ye.; Sinanyan, E. G.

TITLE: The chemistry of divinylacetylene and its halides. 9. Copolymerization of trans-2, 3, 4, 5-tetrachlorohexa-1, 3, 5-triene with methyl acrylate and methyl methacrylate

SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 5, no. 5, 1963, 681-686

TOPIC TAGS: divinylacetylene, copolymerization, methyl acrylate, methyl methacrylate, styrene

ABSTRACT: The synthesis of a new monomer, trans-2, 3, 4, 5-tetrachlorohexa-1, 3, 5-triene (TCHT) was reported in an earlier paper by the senior author, and the present work was undertaken to study further its properties and to find its proper place among the monomers. The copolymerization of TCHT with methyl acrylate and methyl methacrylate was conducted in pyrex glass ampules at 70C, in the presence of 0.1 Mol% benzoyl peroxide. The resultant product was isolated by extraction with benzene and precipitation with ethanol. The investigation of these copolymers, as well as of the ones studied in the earlier paper, provided data for the determination of their reactivity ratios and permitted the calculation of the specific reactivity (Q = 1.52) and polarity (e = +0.6) values of TCHT by means of Alfrey-

Card 1/2

L 13549-63

ACCESSION NR: AP3000694

Price's equation. On the basis of these figures, the behavior of TCHT in copolymerization reactions with various monomers is being predicted. Orig. art. has: 1 formula, 3 charts, and 7 figures.

ASSOCIATION: Institut organicheskoy khimii AN ArmSSR (Institute of Organic Chemistry, Academy of Sciences ArmSSR)

SUBMITTED: 16Oct61 DATE ACQ: 17Jun63 ENCL: 00

SUB CODE: CH NO REF SOV: 002 OTHER: 004

Card 2/2

L [illegible]-65 EPA(s)-2/EWT(m)/EPF(c)/EWP(v)/EPR/EWP(j)/T/EWP(t)/EWP(k)/EWP(b)/
[illegible](c) Pc-4/Pf-4/Pr-4/Ps-4 JD/WW/RM UR/0286/65/000/007/0086/0086

ACCESSION NR: AP5010898

AUTHOR: Akopyan, A. N.; Glagolev, V. A.; Il'in, N. S.; Krbelyan, G. Ye.; Kurdin, L. N.; Sinanyan, E. G.

TITLE: A method of cementing rubber to metal. Class 22, No. 169728

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 7, 1965, 86

TOPIC TAGS: rubber to metal bond, chlorinated polymer, cemented rubber

ABSTRACT: A solution of a chlorinated copolymer of tetrachlorohexatriene and styrene, or acrylonitrile in an organic solvent can be used in cementing rubber to metal in the course of vulcanization. This extends the assortment of bondable rubber types and may serve to improve bond strength. [VS]

ASSOCIATION: none

SUBMITTED: 21Dec62 ENCL: 00 SUB CODE: MT, OC

NO REF SOV: 000 OTHER: 000 ATD PRESS: 3231

Card 1/1

SINANYAN, G.A.

Genetic types and potentials of lead-zinc deposits in the Armenian S.S.R. Trudy Arm.geol.upr. no.1:41-49 '57. (MIRA 12:1)

(Armenia--Ore deposits)

AZIZBEKOV, Sh.A.; AMIRASLANOV, A.A.; ASLANYAN, A.G.; MUSTAFABEYLI, M.A.; SINANYAN, G.A.; TVALCHRELIDZE, G.A.; TSOY, V.; KITAYENKO, L.G., red. izd-va; SHMAKOVA, T.M., tekhn. red.

[Geology of lead and zinc deposits in the Caucasus and their distribution features] Geologiia svintsovotsinkovykh mestorozhdenii Kavkaza i zakonomernosti ikh razmeshcheniia. Otvet. red. A.A.Amiraslanov. Moskva, Gosgeoltekhizdat, 1962. 165 p. (MIRA 15:7)

(Caucasus--Lead ores)
(Caucasus—Zinc ores)

S/263/62/000/007/004/014
1007/1207

AUTHOR: Sinanyan, O.

TITLE: The use of the ИТУ-495 (ITU-495) radioactive measuring gage for the continuous measurement of aluminum-sheet thickness

PERIODICAL: Referativnyy zhurnal, otdel'nyy vypusk. Ismeritel'naya tekhnika, no. 7, 1962, 11, abstract 32.7.71. "Promyshlenost Armenii", no. 6, 1961, 30-32 (Russian)

TEXT: Description is given of the working principle and basic characteristics of the radioactive gage for measuring thin aluminum sheets having a thickness of 0.027 to 0.225 mm. The device used at the Erivan aluminum plant comprises two beta-radiation sources (Strontium 90 radioisotope) a radiation counter composed of a working and ionization chamber, a common collecting electrode, an electronic amplifier and an indicating device. The current intensity in the working counter varies with the thickness of the sheet to be measured. The difference between the current intensities in the working and ionization chambers, generates a d.c. voltage drop; the voltage is converted into a.c. voltage which, after amplification, is applied to an electric motor for shifting the curtain of the radiation compensating device until the levelling of the current intensities in both chambers. The rotation angle of the curtain, corresponding to the sheet thickness, is read on an indicating device. There are 4 figures.

[Abstracter's note: Complete translation.]

Card 1/1

SINANYAN, R., kand.tekhn.nauk; SHAPOSHNIKOV, S., gornyy inzh. marksheyder

Mine surveying in the mining enterprises of Armenia. Prom.Arm. 5 no.3:24-26 Mr '62. (MIRA 15:4)
(Armenia--Mine surveying)

SINANYAN, R. R.

Sinanyan, R. R. -- "Overground Stereophotogrammetric Survey of Open-Cut Mining Operations." Cand Tech Sci, Donets Industrial Inst, Stalino-Donbas 1953. (Referativnyy Zhurnal--Astronomiya, Jan 54)

SO: Sum 168, 22 July 1954

YEGIN, Iosif Yakovlevich, GINZBURG, Ruben Rubenovich, PAVLOV, F.F., professor, doktor, retsenzent; PROKOF'YEV, M.A., kandidat tekhnicheskikh nauk, retsenzent; GLUSKIN, D.U., redaktor; PARTSEVSKIY, V.N., redaktor; ATTOPOVICH, M.K., tekhnicheskiy redaktor.

[Stereophotogrammetric surveying of open-cut mines] Stereofotogrammetricheskaia s"emka kar'erov. Moskva, Gos. nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1956. 177 p. (MLRA 9:6)
(Photogrammetry) (Mine surveying)

SINANYAN, R.R., kand. tekhn. nauk

Introducing igdanite in strip mines of the Armenian S.S.R.
Vzryv. delo no.54/11:291-295 '64. (MIRA 17:9)

1. Nauchno-issledovatel'skiy gornometallurgicheskiy institut Soveta narodnogo khozyaystva Armyanskoy SSR.

SINANYAN, R.R., kand. tekhn. nauk

Introduction of "igdanit" in oper-pit mines of the Armenian S.S.R., mechanization of its preparation and blasthole charging. Gor. zhur. no.7:31-34 Jl '63. (MIRA 16:8)

1. Nauchno-issledovatel'skiy gornometallurgicheskiy institut, g. Yerevan.

SIMONYAN, A. T., zasluzhennyy deyatel' nauki, prof.; NANAGYULYAN, O. A., kand. med. nauk; GYULIKEKHVYAN, N. G.; SINANYAN, R. T.; GRIGORYAN, Ye. A.

Therapeutic effectiveness of a preparation of vanilon. Vrach. delo no.7 44-46 Jl '62. (MIRA 15:7)

1. Klinika gospital'noy terapii (zav. - zasluzhennyy deyatel' nauki, prof. A. T. Simonyan) Yerevanskogo meditsinskogo instituta.

(CYCLOHEXANONE)

85238

S/022/60/013/002/009/011 XX
C111/C222

16.3000 16.4100

AUTHOR: Sinanyan, S.O.

TITLE: Determination of an Analytic Function From its Asymptotic Series in the Domain Re $z^{1/\alpha} > a^{1/\alpha}$

PERIODICAL: Izvestiya Akademii nauk Armyanskoy SSR. Seriya fiziko-matematicheskikh nauk, 1960, Vol. 13, No. 2, pp. 17-30

TEXT: The sequence $\{m_n\}$ satisfies the condition C_α ($\alpha > 0$) of Carleman if $\sum_{k=0}^{\infty} \beta_k^{-\frac{1}{\alpha}} = +\infty$, $\beta_k = \inf_{n \geq k} \sqrt[n]{m_n}$. Let the function f(z) analytic in Re $z^{1/\alpha} > a^{1/\alpha}$ have there the asymptotic series $\sum_{k=0}^{\infty} \frac{a_k}{z^k}$, where

$$\left| f(z) - \sum_{k=0}^{n-1} \frac{a_k}{z^k} \right| \leq \frac{m_n}{|z|^n}, \quad \text{Re } z^{1/\alpha} > a^{1/\alpha}, \quad n = 0,1,2,..$$

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85238

Determination of an Analytic Function From its Asymptotic Series in the Domain $\operatorname{Re} z^{1/\alpha} > a^{1/\alpha}$

S/022/60/013/002/009/011 XX
C111/C222

The author investigates the question how f(z) can be determined from the a_k.

Theorem 1: If the function f(z) analytic in $\operatorname{Re} z^{1/\alpha} > a^{1/\alpha}$ ($a>0$), $0<\alpha\leq 1$:

a) in this domain has the asymptotic series $\sum_{k=0}^{\infty} \frac{a_k}{z^k}$ with the sequence $\{m_k\}$; b) $\{m_k\}$ satisfies the C_α -condition of Carleman, c) by the element $\phi^{(n)}(0) = \frac{a_n \cdot n!}{\Gamma(\alpha n + 1)}$, $n = 0,1,2, \ldots$ a function $\phi(t)$ quasi-analytic on $[0,\infty)$ is determined where $|\phi^{(n)}(t)| \leq \mu_n e^{\sigma t^{1/\alpha}}$ $t \geq 1$, $a^{1/\alpha} > \sigma$, d) the numbers

$m_n^* = \frac{\mu_n \Gamma(\alpha n + 1)}{n!}$ also satisfy the condition C_α - then it

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85238

Determination of an Analytic Function From its Asymptotic Series in the Domain

S/022/60/013/002/009/011 XX
C111/C222

$\operatorname{Re} z^{1/\alpha} > a^{1/\alpha}$

holds $f(z) = z^{1/\alpha} \int_0^\infty e^{-z^{1/\mu} \cdot t} \phi(t^\alpha) dt$, $\operatorname{Re} z^{1/\mu} > a^{1/\alpha}$.

Theorem 2: If the first two conditions of theorem 1 are satisfied for $\alpha > 1$ and besides : c) the element $\phi^{(n)}(0) = \frac{a_n \cdot n!}{\Gamma(\alpha n+1)}$, $n = 0,1,2,\ldots$ determines a function $\phi(t)$ quasianalytic on $[0,\infty)$, where $|\phi^{(n)}(t)| \leq \mu_n e^{\sigma t^{1/\alpha}}$ for $0 \leq t \leq 1$ and $|\phi^{(n)}(t)| \cdot t^n \leq \mu_n e^{\sigma t^{1/\alpha}}$ for $t \geq 1$, $a^{1/\alpha} > \sigma$; d) the numbers $m_n^* = n^{\alpha n} \sum_{k=n}^{[\alpha(n-1)]} \frac{\mu_{k+1}}{n^k}$ satisfy the C_α -condition, then it holds again $f(z) = z^{1/\mu} \int_0^\infty e^{-z^{1/\mu} t} \phi(t^\alpha) dt$ for $\operatorname{Re} z^{1/\alpha} > a^{1/\alpha}$.

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85238

Determination of an Analytic Function From its Asymptotic Series in the Domain

S/022/60/013/002/009/011 XX
C111/C222

For the proof the author introduces the auxiliary function $f_1(z^{1/\alpha}) = z^{1/\alpha} \int_0^\infty e^{-z^{1/\alpha}\tau} \cdot \phi(\tau^\alpha)d\tau$ and proves that $f_1(z^{1/\alpha}) = f(z)$ in $\operatorname{Re} z^{1/\alpha} > a^{1/\alpha}$. A result of G.V. Badalyan (Ref. 2) is used.

There are 2 references: 1 Soviet and 1 Spanish.

ASSOCIATION: Institut matematiki i mekhaniki AN Armyanskoy SSR (Institute of Mathematics and Mechanics of the Academy of Sciences Armyanskaya SSR)

SUBMITTED: August 29, 1959

Card 4/4

SINANYAN, S.O.

Uniqueness of analytic functions on closed sets without interior points. Sib. mat. zhur. 6 no.6:1365-1381 N-D '65. (MIRA 18:12)

SINANYAN, S.O.

Approximation by analytic functions in the mean over an area.
Dokl. AN Arm. SSR 35 no.3:107-112 '62. (MIRA 16:6)

1. Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova.
Predstavleno akademikom AN Armyanskoy SSR S.N.Mergelyanom.
(Functions, Analytic)

L 19573-65 EWT(d) IJP(c)/AFWL/ASD(a)-5/ASD(s)

S/0042/63/018/002/0159/0161

ACCESSION NR: AP5002064

B

AUTHOR: Sinanyan, S. O.

TITLE: Extremal problem for polynomials

SOURCE: Uspekhi matematicheskikh nauk, v. 18, no. 2, 1963, 159-161

TOPIC TAGS: polynomial, interpolation, Chebyshev polynomial, complex variable

ABSTRACT: Let A_α^n $(0 < \alpha < \pi)$ be the class of algebraic polynomials $P_n(z)$ of degree not higher than n $(n = 1,2,3,\ldots)$, satisfying

$$|P_n(z)| < 1 \qquad (1)$$

on an arc $|\arg z| \leq \alpha$ of the circle $|z| = 1$. Theorem 1. For $|\vartheta| > \alpha$ for any polynomial $P_n(z) \in A_\alpha^n$,

$$|P_n(e^{i\vartheta})| < |M_n(e^{i\vartheta})|, \qquad (2)$$

where $M_n(z) \in A_\alpha^n$ and

$$M_n(e^{i\vartheta}) = e^{\frac{in\vartheta}{2}} \cos\left\{n \arccos \frac{\sin\frac{\vartheta}{2}}{\sin\frac{\alpha}{2}}\right\}. \qquad (3)$$

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L 19573-65
ACCESSION NR: AP5002064

Theorem 2. For polynomials P_n in A^n_∞

$$|P_n(z)| < \frac{1}{2}\left(\operatorname{tg}^n\frac{\alpha}{4} + \operatorname{ctg}^n\frac{\alpha}{4}\right) \quad (|z|<1), \qquad (4)$$

$$|P_n'(z)| < \frac{n}{2}\left(\operatorname{tg}^n\frac{\alpha}{4} + \operatorname{ctg}^n\frac{\alpha}{4}\right) \quad (|z|<1). \qquad (5)$$

"The author expresses his gratitude to S. B. Stechkin for the formulation of the problem and his attention to the work." Orig. art. has: 8 formulas.

ASSOCIATION: none

SUBMITTED: 27Feb61 ENCL: 00

SUB CODE: MA NR REF SOV: 002 OTHER: 001

Card 2/2

SINANYAN, S.O.

Some estimates for a class of polynomials and their derivatives bounded on a circular arc. Dokl. AN Arm. SSR 39 no. 3:133-139 '64. (MIRA 18:1)

1. Institut matematiki i mekhaniki AN ArmSSR.

SINANYAN, S.O.

Extremum problem for polynomials. Usp. mat. nauk 18 no.2:159-161 Mr-Ap '63. (MIRA 16:3)
(Polynomials)

SINANYAN, S.O.

Possibility of the uniqueness property of analytic functions being extended to cover closed sets nowhere dense. Dokl. AN SSSR 154 no.4:779-782 F '64. (MIRA 17:3)

1. Vychislitel'nyy tsentr AN Armyanskoy SSR i Yerevanskogo gosudarstvennogo universiteta. Predstavleno akademikom M.V. Keldyshem.

ARSENT'YEV, Aleksandr Ivanovich; VINOGRADOV, Vladimir Samoylovich; DZYUBENKO, Mikhail Grigor'yevich; YESHCHENKO, Alekney Andreyevich; KALYAKIN, Viktor Vasil'yevich; KARMAZIN, Vitaliy Ivanovich; KISELEV, Vyacheslav Mikhaylovich; KULIKOV Vladimir Vasil'yevich; MELESHKIN, Sergey Mikhaylovich; SINARENKO, Aleksandr Ivanovich; KHIVRENKO, Akim Foteyevich; SHKUTA, Eduard Ivanovich; SHOSTAK, Afonasiy Grigor'yevich; MOSKAL'KOV, Yevgeniy Fedorovich, retsenzent; SOSEDOV, Orest Orestovich, retsenzent; ROSSIT, Aleksandr Filippovich, otv. red.; SUROVA, V.A., red.izd-va; LAVRENT'YEVA, L.G., tekhn. red.

[Overall development of an iron-ore basin] Kompleksnoe razvitie zhelezorudnogo basseina. [By] A.I.Arsent'yev i dr.Moskva, Izd-vo "Nedra," 1964. 293 p. (MIRA 17:3)

[illegible], P. A.

SHAPTENKO, I. A.

MINING ENGINEERING

Efficient system of mining at the Komintern mine. Gor. zhur. 126 no. 6 (1952)

9. MONTHLY LIST OF RUSSIAN ACCESSIONS, Library of Congress, December 1952. Uncl.

GORDON, B.Ye., kandidat tekhnicheskikh nauk; ZHUKOV, M.N., gornyy inzhener; SINARENKO, I.A., gornyy inzhener; SHOSTAK, A.G., gornyy inzhener.

Present state and prospects for the development of Krivoy Rog Basin. (MLRA 10:8)
Gor. zhur. no.7:3-6 Jl '57.
(Krivoy Rog--Iron mines and mining)

SINARENKO, I. A., inzh.; KISELEV, V. M., inzh.

Result of remodeling iron mines of the Krivoy Rog Basin. Izv. vys. ucheb. zav.; gor. zhur. no.10:32-35 '61. (MIRA 15:10)

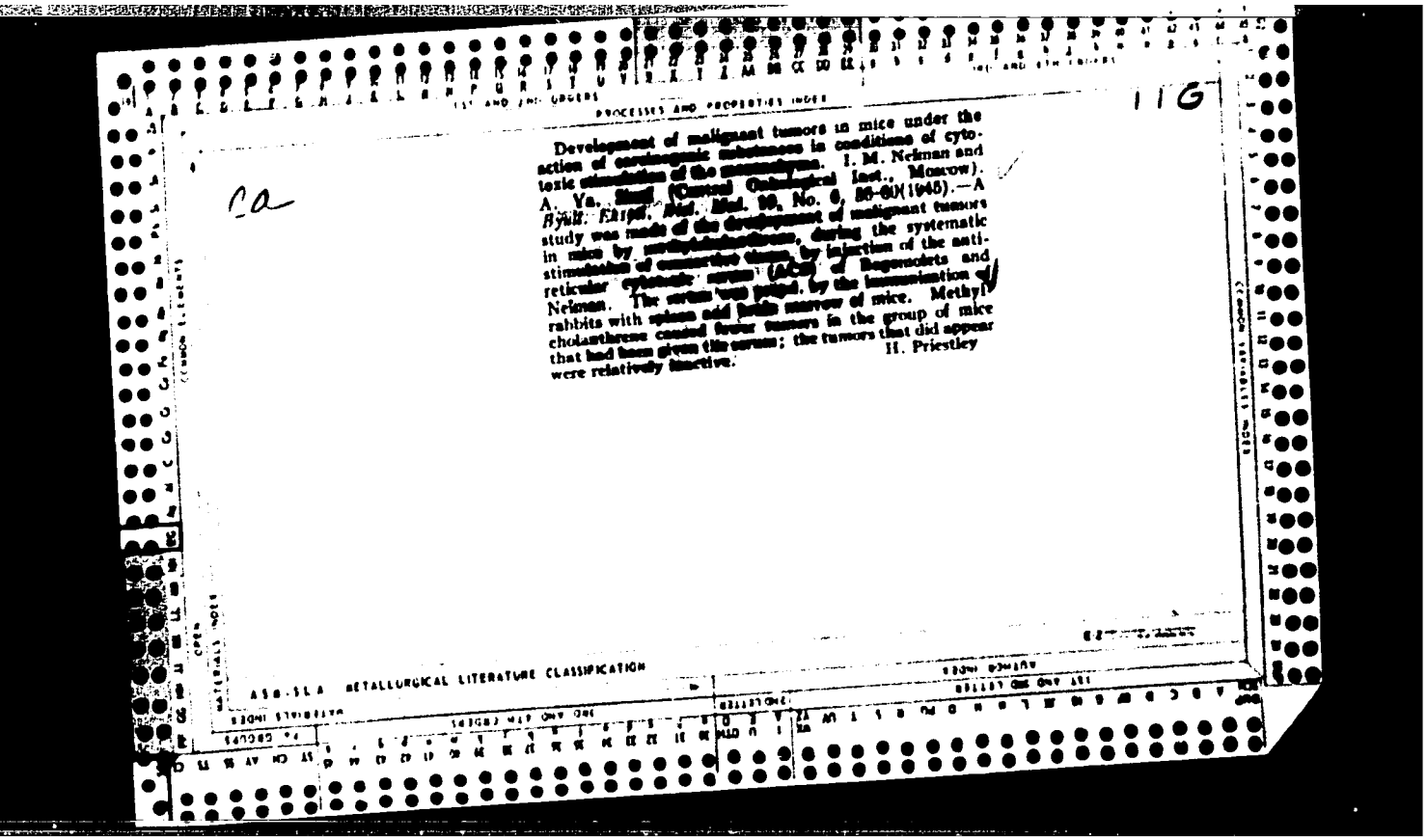
1. Institut Krivbassproyekt.

(Krivoy Rog Basin—Iron mines and mining)

SINA[redacted]SKIY, N.Ye.; POLOZOVA, I.G.

Increased toxin resistance of erythrocytes in rabbits immunized with perfrigens toxoid. Zhur.mikrobiol.epid.i immun. 31 no.8: 80-81 Ag '61. (MIRA 14:6)

1. Iz Urkutskogo instituta travmatologii i ortopedii.
(CLOSTRIDIUM PERFRIGENS)



PROCESSES AND PROPERTIES INDEX

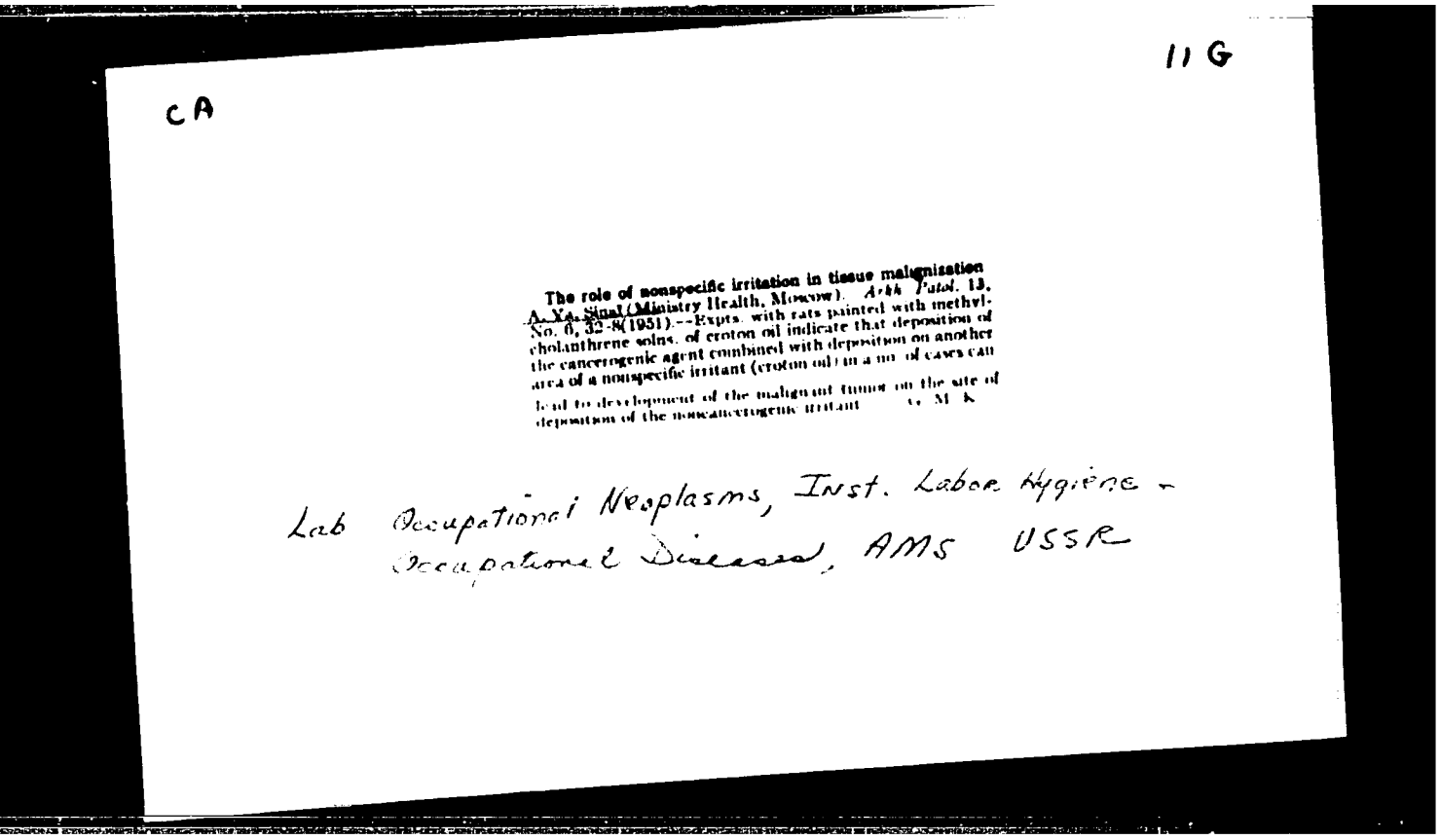
Ca

11G

Development of malignant tumors in mice under the action of carcinogenic substances in conditions of cytotoxic stimulation of the granulocytopoiesis. I. M. Nelman and A. Ya. [illegible] (Central Oncological Inst., Moscow). *Byull. Eksptl. Biol. Med.* 20, No. 6, 58-60(1945).—A study was made of the development of malignant tumors in mice by carcinogenic substances, during the systematic stimulation of connective tissue, by injection of the antireticular cytotoxic serum (ACS) of Bogomolets and Nelman. The serum was gained by the immunization of rabbits with spleen and bone marrow of mice. Methylcholanthrene caused fewer tumors in the group of mice that had been given the serum; the tumors that did appear were relatively inactive.

H. Priestley

A58-51A METALLURGICAL LITERATURE CLASSIFICATION



11 G

CA

The role of nonspecific irritation in tissue malignization. A. Ya. Sinal (Ministry Health, Moscow). *Arkh. Patol.* 13, No. 6, 32-8(1951).--Expts. with rats painted with methylcholanthrene solns. of croton oil indicate that deposition of the cancerogenic agent combined with deposition on another area of a nonspecific irritant (croton oil) in a no. of cases can lead to development of the malignant tumor on the site of deposition of the noncancerogenic irritant. tr. M. K.

Lab Occupational Neoplasms, Inst. Labor Hygiene & Occupational Diseases, AMS USSR

SINAY, A. Ya.

The cancerogenic properties of some fractions of the Estlandian shale oils. (An experimental study). A. Ya. Sinay. *Voprosy Onkologii* 1, No. 2, 40-2(1955).—Mice of both sexes and of 14-15 g. wt. were used. Five fractions were isolated from the shale oil. The methods of isolation and specific identification of the fractions are not given. The fractions were rubbed into the skin of the animals every other day until each mouse received 50 applications. All fractions produced papillomas and cancerous growths in a manner similar to a methylcholanthrene. H. S. L.

1

Lab Occupational Neoplasms, Inst. Labor Hygiene & Occupational Diseases, AMS USSR

SINAY, A-Ya.

The "sensitizing" effect of small doses of carcinogenic substances. I. M. Nelman and A. Ya. Sinai. *Voprosy Onkologii* 2, 77-83(1956).—Four sets of white mice (male and female) were used in the expts. Methylcholanthrene (I) (0.3%) in H$_2$O-free lanolin was rubbed into the skin between the shoulder blades 3 times a week for 4 weeks. After a rest for two weeks the mice were injected subcutaneously in the inguinal region with 1 mg. of I in 0.5 ml. sunflower seed oil (II), leaving some of the mice as controls. Another set of fresh mice receiving neither I nor II were also used as controls. Rubbing the skin of mice with I seldom resulted in the formation of tumors; it did, however, sensitize the organism to the formation of malignant processes when followed by injection with II. Such sensitization led to the simultaneous development of benign and malignant neoplasms and considerably shortened the time of development of sarcomas at the focus of the subcutaneous injection of the usual type of carcinogenic soln. In the sensitized organism papillomas and cancerous tumors were caused by considerably smaller doses of I. B. S. Levine

Exp. Occupational Neoplasma, Inst Labor Hygiene & Occupational Diseases, AMS USSR

DVIZHKOV, P.P., SINAY, A.Ya. (Moskva)

Methylcholanthrene sarcoma in guinea pigs after sensitization with small dose of cancerogen. Pat.fiziol. i eksp.terap. 2 no.4: 50-51 Jl-Ag '58 (MIRA 11:12)

1. Iz patologoantomicheskoy laboratorii (zav. - prof. P.P. Dvizhkov) i laboratorii professional'nykh novoobrazovaniy (zav. - prof. I.M. Neyman) Instituta gigiyeny truda i profzabolevaniy AMN SSSR (dir. deystvitel'nyy chlen AMN SSSR prof. A.A. Letavet).

(CHOLANTHRENE, eff.
induction of sarcoma in guinea pigs (Rus))

(SARCOMA, exper.
induction with methylcholanthrene in guinea pigs (Rus))

Sinay, A Ya.

17(2,6) SOV/16-60-3-32/37

AUTHORS: Yasrnina, N.A., Shatrov, I.I., Mordvinova, N.B., Kuznetsova, N.., Chargashnikova, R.P., Shul'man, Z.A., Katarnina, K.N., Perova, L.V., Salamandra, E.G., Sinay, A.Ya., Sherishevskaya, Ye.P., Shatsi, A.T., Golubeva, T.V.

TITLE: The Biological Properties of Shigella Dysenteriae, Isolated From Different Clinical Forms of Dysentery. Author's Summary.

PERIODICAL: Zhurnal mikrobiologii, epidemiologii i immunobiologii, 1960, Nr 3, pp 128 (USSR)

ABSTRACT: The authors made a study of various strains of Shig. dysenteriae isolated from patients with different clinical forms of dysentery, checking the strain's ability to cause experimental keratoconjunctivitis in guinea pigs, its virulence for mice and its sensitivity to antibiotics. No essential differences were found between the strains, which bears out the great part played by the state of the macroorganism in determining the nature of the clinical course in dysentery.

Card 1/2

ASSOCIATION: Institut epidemiologii i mikrobiologii imeni Gamalei AMN SSSR (Institute of Epidemiology and Microbiology imeni Gamaleya of the AMN, USSR); Moskovskaya gorodskaya i rayonnaya sanitarno-epidemiologicheskaya stantsiya (Moscow City and District Sanitary and Epidemiological Station).

SUBMITTED: December 24, 1958

Card 2/2

DVIZHKOV, P.P.; NEYMAN, I.M.; SINAY, A.Ya.; TEMKIN, I.S.

Tumors of the bladder in dogs induced by β-naphthylamine. (MIRA 13:12)
Arkh.pat. 22 no.2:18-26 '60.
(BLADDER—TUMORS) (NAPHTHYLAMINE)

YAKHNINA, N.A.; SHATROV, I.I.; MORDVINOVA, N.B.; KUZNETSOVA, N.S.; SHAPOSHNIKOVA, R.P.; SHOL'MAN, E.A.; KAZACHINA, K.N.; PEROVA, L.V.; SALAMANDRA, E.G.; SINAY, A.Ya.; SHERISHEVSKAYA, Ye.F.; SHABAD, A.T.; GOLUBEVA, T.V.

Biological properties of causative agents isolated in various clinical forms of dysentery. Zhur. mikrobiol. epid. i immun. 31 no.3:128 Mr '60. (MIRA 14:6)
(SHIGELLA PARADYSENTERIAE)

SKVORTSOV, V.V.; SYDIKOVA, G.G.; LUPINA, M.I.; YAKUBOVA, G.R.; SINAY, A.Ya.; GOLUBEVA, T.V.; MIKHAYLOVA, A.M.; KRASNOVA, F.M.; KOBETSOVA, A.D.

Epidemiology of intestinal infections in children's institutions. Zhur. mikrobiol. epid. i immun. 32 no.6:47-51 Je '61. (MIRA 15:5)

1. Iz II Moskovskogo meditsinskogo instituta imeni Pirogova i sanitarno-epidemiologicheskoy stantsii Leninskogo rayona Moskvy.
(INTESTINES—DISEASES)

SINAY G.

21

59. The application of lead intensifying screens for technical X-ray examinations. G. Sinay. *Mérés és Automatika*. Vol. 4, 1956, No. 1, pp. 15—21, 10 figs.

The author furnishes measurements which were intended to clear up the intensifying conditions of the lead screens. It was established in the course of the measurements that intensification is the result of the joint effect of the characteristic K_α radiation of the lead and the photoelectrons. It is assumed that direct electron absorption plays an important part in the development of blackening. Measurements conducted by the author proved that the amplification factor between 100—200 kv for normal X-ray films increased from 1.78 to 2.12 and for fine-grained films from 1.59 to 2.23. The graph contains the lighting data for steels of max. 50 mm wall thickness.

SINAY, G.

TECHNOLOGY

PERIODICA POLYTECHNICA. ENGINEERING. (Budapesti Muszaki Egyetem) Budapest.

SINAY, G. Some remarks on the question of the lasting strength of wire-rope couplings. In German. p. 99.

Vol. 2, no. 2, 1958.

Monthly List of East European Accession (EEAI) LC Vol. 8, No. 3
March 1959, Unclass.

[illegible] Y, .; [illegible] T. L.

Contraction work as a characteristic of materials. In German. p. 149.

[illegible]. (Magyar Tudomanyos Akademia. Budapest, Hungary, Vol. 22, No. 1/2, 1956.

Monthly List of East European Accessions (EEAI), LC, Vol. 8, No. 7, July 1959 Uncl.

85716

H/011/60/000/009/001/00
A054/A026

24.1800 1144, 22.09, 1160

AUTHORS: Egri, Imre, Doctor, Candidate of Technical Sciences, Sinay, Gábor, Engineer and Szames, Marianne, Physicist

TITLE: Slag Content Determination of Steel Sheets by Ultrasonic Methods and by the Definition of Contraction Work

PERIODICAL: Gép, 1960, Vol. 12, No. 9, pp. 369-373

TEXT: In the Central Research Laboratory of Measuring Techniques (Budapest), tests were carried out in order to determine the slag content of steel sheets by ultrasonic methods, in which the detection of inclusions is based on the phenomenon that ultrasonic vibrations are reflected from the faulty places or only penetrate them to a small extent. Two variations of this method were applied. In the "first signal" tests the amplitude of the transmitted vibrations, and in the "reflexion" tests the amplitude of reflected vibrations were registered. The transmitter generates pulse-modulated sound vibrations which penetrate the layer of water with which the sheet is covered as well as the sheet itself and hit the receiver crystal which transforms them into electric oscillations. These are amplified by the receiver and measured by a valve volt meter. The method is suitable to be included in the rolling mill process

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A054/A026

Slag Content Determination of Steel Sheets by Ultrasonic Methods and by the Definition of Contraction Work

and can easily be automated. The inclusions in the sheet can be measured by this method if their total surface is so large that

$$F_{fault} > F_{ray} \quad b$$

where: F_{fault} = the total surface of inclusions, measured in the plane normal to the beam of sonic rays, F_{ray} = the cross section of the beam, b = the relative uncertainty of measuring. (Abstracter's note: Subscripts fault and ray are translations of the original hiba and sugar) The "first signal" tests were completed by tests carried out with the "reflexion" method. In the ultrasonic tests vibrations of 3 Mc frequency and a beam of 100 mm^2 cross section were used. Following the suggestion by Professor F. Gillemot, the ultrasound tests were checked by defining the contraction work of the sheets examined. The value of the contraction work was calculated with the following equation:

$$A_c = \frac{\delta_e}{3}(\sigma_p + 2\sigma_B) + 4.6\sigma_p(1+\delta_e)\log\frac{1+\delta_e}{1+\delta_q} + \sigma_B(1+\delta_e)^2 \cdot \left[\frac{1}{1+\delta_c} - \frac{1}{1+\delta_e}\right], \quad (5)$$

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Slag Content Determination of Steel Sheets by Ultrasonic Methods and by the Definition of Contraction Work

where: σ_F = flow limit, σ_B - tensile strength, δ_e = elongation, (uniform, specific), δ_s = specific elongation which can be calculated from the following formula: $\delta_s = \frac{\psi^*}{1-\psi^*}$ (ψ^* = the maximum specific lateral contraction). Based on the tests on contraction work, the specimens were qualified according to the following rating: the sample was "good", when its contraction work was $A_c > 50 mkg/cm^2$, it was "dubious" when $A_c = 40-50$ mkg/cm^2 while it was "bad", when $A_c < 40$ mkg/cm^2. According to the ultrasonic tests the specimen was "good", if the decrease in the amplitude of the penetrating ultrasonic oscillations was < 10 %, "dubious", when the decrease in amplitude was = 10 % - 15 % and "bad", if the decrease in amplitude was > 15 %. By comparing the assessment of the samples according to the above qualifications, it was found that 72 % of the samples assessed "good" by the ultrasonic method, was also accepted as faultless by the contraction work tests. However, inclusions immediately below the surface are not indicated by the contraction tests and the ultrasonic tests only indicate about 50 % of these inclusions. The

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Slag Content Determination of Steel Sheets by Ultrasonic Methods and by the Definition of Contraction Work

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contraction work test is not suitable for testing sheets with a laminated structure in the cross section, whereas the ultrasonic tests indicate these defects with great accuracy. It may be concluded that the "first signal" ultrasonic test is suitable for continuous and non-destructive examinations, whereas the contraction work method is more adapted for random tests. There are 9 figures, 1 table and 5 references: 1 German, and 2 Hungarian (in German translation).

ASSOCIATION: Méréstechnikai Központi Kutató Laboratorium (Central Research Laboratory of Measuring Techniques), (Egri, Imre and Szemes, Marianne); Fémipari Kutató Intézet (Research Institute of the Metal Industry), (Sinlay, Gábor)

Card 4/4

H/011/62/000/004/001/002
D249/D301

AUTHORS: Sinay, Gábor, and Csokán, Pál, Doctor

TITLE: Strength properties of aluminum sheets with a cover of hard oxide layer

PERIODICAL: Gép, no. 4, 1962, 126 - 130

TEXT: The physical and mechanical properties of extra hard oxide coating were studied which was prepared by a technique developed in the author's laboratory. The effect of the coating on the substrate metal was investigated. 25 mm wide bending and tensile strength test pieces were prepared from sheets of commercial smelted aluminum and AlMgSi. The specimens were anodically oxidized in a bath of diluted H_2SO_4 at 0°C applying a potential of 50 V across the electrolytic cell. The bath was vigorously agitated. Part of the samples was anodized for 30 minutes, another part for 60 minutes. Hardness was determined on the polished cross-section of the samples by Hanemann's method. 100 G load was applied in these tests. Tensile strength and yield point were measured on a hydraulic testing machi-

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Strength properties of aluminum ...

ne. The elongation was determined afterwards. The same hydraulic test machine was used for the bending tests. An Amsler high-frequency pulsator was used to determine the homogeneity of oxide coated AlMgSi specimens. Based on average values the authors' process of anodic oxidation gives an oxide coating of 120 - 220 μ thickness with a Vickers hardness of 450 - 520 kg/mm^2, in 60 mins. The influence of the time of anodic treatment is due to the inhomogeneity of the oxide film. Comparing the measured strength properties of the untreated anodically oxidized sheets the following conclusions can be reached: 1) A coat of hard oxide reduces the tensile strength. The thinner and softer the sheets, the larger was the reduction. The largest decrease of tensile strength measured was 25 %. 2) In the case of soft sheets the yield point is not reduced. The decrease in case of hard sheets can reach 15 - 30 %. 3) The elongation of anodized thin and soft sheets can decrease by 15 - 30 %. The reduction will be less in case of hard and thick sheets. It will be nil above a certain thickness. 4) The effect of the hard oxide coat on the strength properties of the substrate metal increases with the thickness of the layer. 5) The load necessary to obtain the bending yield point increases with the thickness of the

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oxide film in case of thin and soft sheets. According to these experimental findings, in the case of drawing strains the hard oxide coating decreases the strength and deformation characteristics, while in the case of bending strain it has a favorable effect. Finally, considerations are given to the application of anodic treatment in the machine industry. There are 6 figures, 3 tables and 22 references: 11 Soviet-bloc and 11 non-Soviet-bloc. The 4 most recent references to the English-language publications read as follows: R. V. Vanden Berg, Met. and Meth., 42, 1956, July, 90; J.M. Kape, Metal Ind., 91, 1957, 8, 9, 10 pp.; S. Warwick and R. Pinner, The treatment and finishing of Al and its alloys, Teddington, 1959; Anon. Mechanical World and Engine Record, 1960, no. 6.

ASSOCIATION: Fémipari kutató intézet (Research Institute of the Metal Industry)

Card 3/3

SINAY, Gabor

Erichsen tests performed with balls of less than 20 mm in diameter. Gep 15 no.12:498-509 D '63.

1. Femipari Kutato Intezet, Budapest.

MIHALYI, Erika; MILOTAY, Gyorgy; SINAY, Gabor

Mathematical formulas for the determination of contraction work. Gep 16 no. 4:145-151 Ap '64.

1. Research Institute of the Metal Industry.

SINAY, Gabor

Fatigue as the most dangerous cause for machine breakages.
Musz elet 19 no. 6:11 12 Mr '64.

SINAY, Gabor

Most recent achievements in material testing and the possibilities of their application in the aluminum industry. Koh lap 97 no.3:137-141 Mr'64

1. Femipari Kutato Intezet, Budapest.

L 16498-66 EWP(t)/EWP(k) JD/HW
ACC NR: AP6008575 SOURCE CODE: HU/0014/65/090/006/0267/0274

AUTHOR: Sinay, Gabor 20 B

ORG: none

TITLE: Investigation of the cup-drawing test as to its suitability for the evaluation of deep-drawability 14

SOURCE: Kohaszati lapok, v. 98, no. 6, 1965, 267-274

TOPIC TAGS: metal drawing, metal test

ABSTRACT: To qualify as a reliable technique for the evaluation of a metal's deep-drawability, a test method must faithfully simulate the stresses of the deep-drawing operations and must also be related to the shape of the product involved. The following cup-drawing test techniques were evaluated to assess their suitability according to the foregoing criteria: the Erichsen test (Hungarian Standard MSZ 5704-50), the Siebel-Pomp hole-enlarging method, the Sachs wedge-drawing test, the AEG cup-drawing test, the Schmidt test for determining the critical disc diameter, the Engelhardt method, the Swift cup-drawing test. On the basis of the detailed considerations presented, it was concluded that the Erichsen method comes closest to meeting the criteria imposed. Orig. art. has: 12 figures, 4 formulas, and 4 tables. [JPRS]

SUB CODE: 13 / SUBM DATE: none / ORIG REF: 005 / OTH REF: 007 2

UDC: 620.16:621.983

Card 1/1 SM

L 34962-66 EWP(t)/ETI IJP(c) JH/JD/WB

ACC NR: AP6026663 SOURCE CODE: HU/0014/65/098/008/0353/0356

AUTHOR: Sinay, Gabor--Shinai, G.; Varkonyi, Sandor--Varkoni, Sh.

ORG: Research Institute for the Metal Industry (Femipari Kutato Intezet)

TITLE: Surface defects observed on sheet aluminum after transportation

SOURCE: Kohaszati lapok, v. 98, no. 8, 1965, 353-356

TOPIC TAGS: aluminum, sheet metal, metal oxidation

ABSTRACT: Surface defects, not unlike mildew stains in appearance, are occasionally observed on sheet aluminum after shipping. Tests conducted to establish the causes of this defect indicated that it is caused by frictional oxidation. This phenomenon has been described by STELJES, H.A., (Aluminium, Vol 19, No 5, 1937, pp 291-292). In most instances the stains consist of small indentations less than 0.1 mm. deep, surrounded with a greyish halo. It was proven that the defect is not caused by inclusions or spark corrosion, and that it does not affect the mechanical characteristics of the sheet. The sheets do not corrode further after the cessation of the cause. Orig. art. has: 16 figures. [JPRS: 32,491]

SUB CODE: 11 / SUBM DATE: none / OTH REF: 003

Card 1/1 JS UDC: 669.71:621-413/.416:620.19

SINAJ, G. Ya. and KHATENEVER, L. M., LEVCHENKO, L.A.

"Prophylactic Vaccination against Tularaemia". Tez. Dokl. Vseross. Konf. Mikrobiol. i Epidemiol., Leningrad. 1934.

[illegible], A. Ya.

Dept. mil. - [illegible] Clinical Inst. Contagious Diseases. (-1944-).

"Lytic Action of the Bacteriophage of Typhus Abdominalis under Experiment's Conditions."

Zhur. Mikrobiol., Epidemiol., i Immunobiol., No. 4-5, 1944.

Sinai, G. Ia., ed.

Microbiological research methods in the study of communicable diseases. Pod red. G. IA. Sinaia i O. G. Birgera. 2. perer. izd. Moskva, Medgiz, 1949. 647 p.

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001550720014-6"

[illegible], [illegible] ed.

Vo[illegible] [illegible] [Problems of [illegible] galaxis and [illegible]]. Moskva, Izd-vo Akademii [illegible] nauk SSSR, 19[illegible] [illegible] p.

So: Monthly List of Russian Accessions, Vol. 7 No. 2 May 1954.

MARGORINA, L.M.; SINAY, G.Ya., professor, zaveduyushchiy; TIMAKOV, V.D., professor, direktor.

Yellow variants of Flexner's and Zonne's dysentery bacilli . Zhur.mikrobiol.epid.i immun. no.3:14-20 Mr '53. (MLRA 6:6)

1. Otdeleniye kishechnykh infektsiy Instituta epidemiologii i mikrobiologii imeni pochetnogo akademika N.F. Gamalei Akademii meditsinskikh nauk SSSR (for Sinay, Margorina). 2. Institut epidemiologii i mikrobiologii imeni pochetnogo akademika N.F. Gamalai Akademii meditsinskikh nauk SSSR (for Timakov). (Dysentery)

GERONIMUS, Ye.S.; LITINSKIY, Yu.I.; SINAY, G.Ya., professor, zaveduyushchiy; TIMAKOV, V.D., professor, direktor.

S- and R-forms of Sonne dysentery bacilli and their relationship. Zhur. mikrobiol.epid.i immun. no.8:68-76 Ag '53. (MLRA 6:11)

1. Otdel epidemiologii Instituta epidemiologii i mikrobiologii im. pochetnogo akademika N.F.Gamalei Akademii meditsinskikh nauk SSSR (for Sinay). 2. Institut epidemiologii i mikrobiologii im. pochetnogo akademika N.F.Gamalei Akademii meditsinskikh nauk SSSR (for Timakov). (Dysentery)

SINAY, G.Ya; KORTEV, A.I.

Review of "Problems of prevention and treatment of dysentery," edited by G.IA.Sinai. Sov.med. no.2:46-48 F '54. (MLRA 7:1)
(Dysentery)

SINAY, YA. G.

16(1) PHASE I BOOK EXPLOITATION SOV/2660

Vsesoyuznyy matematicheskiy s"yezd. 3rd, Moscow, 1956

Trudy. t. 4: Kratkoye soderzhaniye sektsionnykh dokladov. Doklady inostrannykh uchenykh (Transactions of the 3rd All-Union Mathematical Conference in Moscow. vol. 4: Summary of Sectional Reports. Reports of Foreign Scientists) Moscow, Izd-vo AN SSSR, 1959. 247 p. 2,200 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Matematicheskiy institut.

Tech. Ed.: G.N. Shevchenko; Editorial Board: A.A. Abramov, V.G. Boltyanskiy, A.M. Vasil'yev, B.V. Medvedev, A.D. Myshkis, S.M. Nikol'skiy (Resp. Ed.), A.G. Postnikov, Yu. V. Prokhorov, K.A. Rybnikov, P. L. Ul'yanov, V.A. Uspenskiy, N.G. Chetayev, G. Ye. Shilov, and A.I. Shirshov.

PURPOSE: This book is intended for mathematicians and physicists.

COVERAGE: The book is Volume IV of the Transactions of the Third All-Union Mathematical Conference, held in June and July 1956. The book is divided into two main parts. The first part contains summaries of the papers presented by Soviet scientists at the Conference that were not included in the first two volumes. The second part contains the text of reports submitted to the editor by non-Soviet scientists. In those cases when the non-Soviet scientist did not submit a copy of his paper to the editor, the title of the paper is cited and, if the paper was printed in a previous volume, reference is made to the appropriate volume. The papers, both Soviet and non-Soviet, cover various topics in number theory, algebra, differential and integral equations, function theory, functional analysis, probability theory, topology, mathematical problems of mechanics and physics, computational mathematics, mathematical logic and the foundations of mathematics, and the history of mathematics.

Card 14/34

SINAY, Ya.G. (Moskva)

Distribution of the first positive sum for the sequence of independent random variables [with summary in English]. Teor. veroiat.i ee prim. 2 no.1:126-135 '57. (MLRA 10:7)
(Distribution (Probability theory))

82859

S/112/60/000/008/008/012

6.9000

Translation from: Referativnyy zhurnal. Elektrotekhnika, 1960, No. 8, p. 39[illegible],
6.7011

AUTHOR: Sinay, Ya.G.

TITLE: The Least Error and the Best Transmission Method of Stationary Information During Linear Coding and Decoding in the Case of Gaussian-Channels Being Present in the Link

PERIODICAL: V sb.: Probl. peredachi informatsii, No. 2, Moscow, AS USSR, 1959, pp. 40-48

TEXT: The author investigates the general case of a stationary signal $\xi(t)$ being transmitted over the communication line with a pulse characteristic $L(\tau)$, distorting the transmitted information by the additive stationary noise $\zeta(t)$. In the case of Gaussian $\xi(t)$ and $\zeta(t)$, the best transmitting system is that one containing a pre-distortion line filter with a $K(\tau)$ pulse characteristic, placed at the start of the line, and a regeneration (decoding) line filter with a $M(\tau)$ characteristic, placed at the end of the line. The author describes the method of selecting $K(\tau)$ and $M(\tau)$, ensuring at the line output at a given information capacity a minimum of error dispersion $\sigma^2 = M\xi(t) - \xi(t)^2$,

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The Least Error and the Best Transmission Method of Stationary Information During Linear Coding and Decoding in the Case of Gaussian-Channels Being Present in the Link

where $\xi(t)$ is the signal at the output of the regenerating filter. It is shown that, if the regeneration of the signal is effected with an infinite delay, the optimum $K(t)$ and $M(\tau)$ are those, at which the spectral density of the signal $\eta(t)$ at the output of the pre-distortion filter can be determined by the formulae

$$f_{\eta\eta}(\lambda) = \left\{\Theta\sqrt{f_{\xi\xi}(\lambda)\, f_{\zeta\zeta}(\lambda)}\right. \cdot \frac{1}{|1(\lambda)|} - \frac{f_{\zeta\zeta}(\lambda)}{|1(\lambda)|^2} \cdot \tag{1}$$

for $f_{\eta\eta}(\lambda) \geqslant 0$. 0 - for the remaining λ .
[Editor's Note: The formula (1) is obviously incomplete.] The parameter of Θ is selected in such a way that

$$\int f_{\eta\eta}(\lambda)\, d\lambda = N \tag{2}$$

In formulae (1) and (2) N is the signal power $\eta(t)$. $f_{\eta\eta}(\lambda)$, $f_{\xi\xi}(\lambda)$, and $f_{\zeta\zeta}(\lambda)$ are the spectral densities of the signals $\eta(t)$, $\xi(t)$ and of the noise $\zeta(t)$; $1(\lambda)$ is the Fourier transformation from $L(\tau)$. Moreover, the modulus of frequency characteristic of the pre-distortion filter is determined

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by the formula

$$|k(\lambda)| = \sqrt{\frac{f_{\eta\eta}(\lambda)}{f_{\xi\xi}(\lambda)}}$$

while the frequency characteristic of the decoding filter is determined by the formula

$$m(\lambda) = \left(\frac{1(\lambda)\, k(\lambda)\, f_{\xi\xi}(\lambda)}{|1(\lambda)|^2 |k(\lambda)|^2 f_{\xi\xi}(\lambda) + f_{\zeta\zeta}(\lambda)}\right)$$

where the upper line marks a complex conjugate magnitude. The error dispersion, corresponding to filters with such parameters is equal to

$$\sigma^2 = \int_{-\infty}^{\infty} f_{\xi\xi}(\lambda)\, d(\lambda) - \frac{1}{\Theta}\int_{-\infty}^{\infty} |1(\lambda)| \times \sqrt{\frac{f_{\xi\xi}(\lambda)}{f_{\xi\xi}(\lambda)}}\, f_{\eta\eta}(\lambda)\, d\lambda$$

Yu.G.P.

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

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16(1)
AUTHOR: Sinay, Ya. SOV/20-124-4-10/67

TITLE: On th Concept of Entropy for a a Dynamical System (O ponyatii entropii dinamicheskoy sistemy)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 124, Nr 4, pp 768-771 (USSR)

ABSTRACT: Let M be a Lebesgue space with a -algebra of measurable sets S and measure , (M)=1; let T be an arbitrary automorphism of M (compare [Ref 2]). The representation $M = \bigcup_{i=1}^{n} A_i$ is denoted as the finite decomposition $A = A_1,\ldots,A_n$ of M. The decomposition $T^k A$ is a decomposition into sets $T^k A_i$, i=1,...,n. For the entropy of A it holds: $h(A) = -\sum_{i=1}^{n} (A_i)\log (A_i)$.

Definition: $h_T = \sup_A h_T(A)$ is denoted as the entropy of the automorphism T. Let $A = A_1,\ldots,A_n$ and $B = B_1,\ldots,B_l$, where the sets B_1 belong to a closed -algebra generated by the sets

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On the Concept of Entropy for a Dynamical System SOV/20-124-4-10/67

$T^n A_j$, 1 j k, - ∞ n ∞ . Then $h_T(B) \leq h_T(A)$. This property is used in order to calculate the entropy of the ergodic automorphism of a two-dimensional torus.

The author thanks A.N.Kolmogorov and V.A.Rokhlin for the valuable discussion of the problem.

There are 4 Soviet references.

PRESENTED: November 25, 1958, by A.N.Kolmogorov, Academician

SUBMITTED: December 23, 1958

Card 2/2

16(1)
AUTHOR: Sinay, Ya.

SOV/20-125-6-6/61

TITLE: On Currents With Finite Entropy (O potokakh s konechnoy entropiyey)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 125, Nr 6, pp 1200 - 1202 (USSR)

ABSTRACT: The author considers the current $(M, \mathfrak{F}, S^t)$, where M is a Lebesgue space with measure μ, $\mathfrak{F}$ the σ-algebra of its measurable sets and S^t the group of transformations under which the measure is conserved. For the single automorphisms of this group the author introduces the entropy

$$h_s = \sup_{\Delta > 0} \frac{h_s(\Delta)}{\Delta}$$

according to Kolmogorov. For the calculation of the entropy the following theorem valid for arbitrary automorphisms T is recommended. Theorem: Let a sequence of decompositions $\{g_k\}$ be given so that it is

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On Currents With Finite Entropy SOV/20-125-6-6/6

$g_k \subset g_{k+1}$, $\bigcup_k \bigcap_{n=-\infty}^{\infty} T^n g^k = \xi$ where ξ denotes the decomposition into single points, and $h(g_k) < \infty$. Then it is $h_T = \lim_{k\to\infty} h_T(g_k)$.

Furthermore it is shown that there are transitive currents with a denumerably multiple Lebesgue spectrum and arbitrary finite $h_s \geq 0$. The author considers examples of Kolmogorov. He mentions Girsanov. - There are 2 Soviet references.

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

PRESENTED: January 16, 1959, by A.N. Kolmogorov, Academician
SUBMITTED: January 16, 1959

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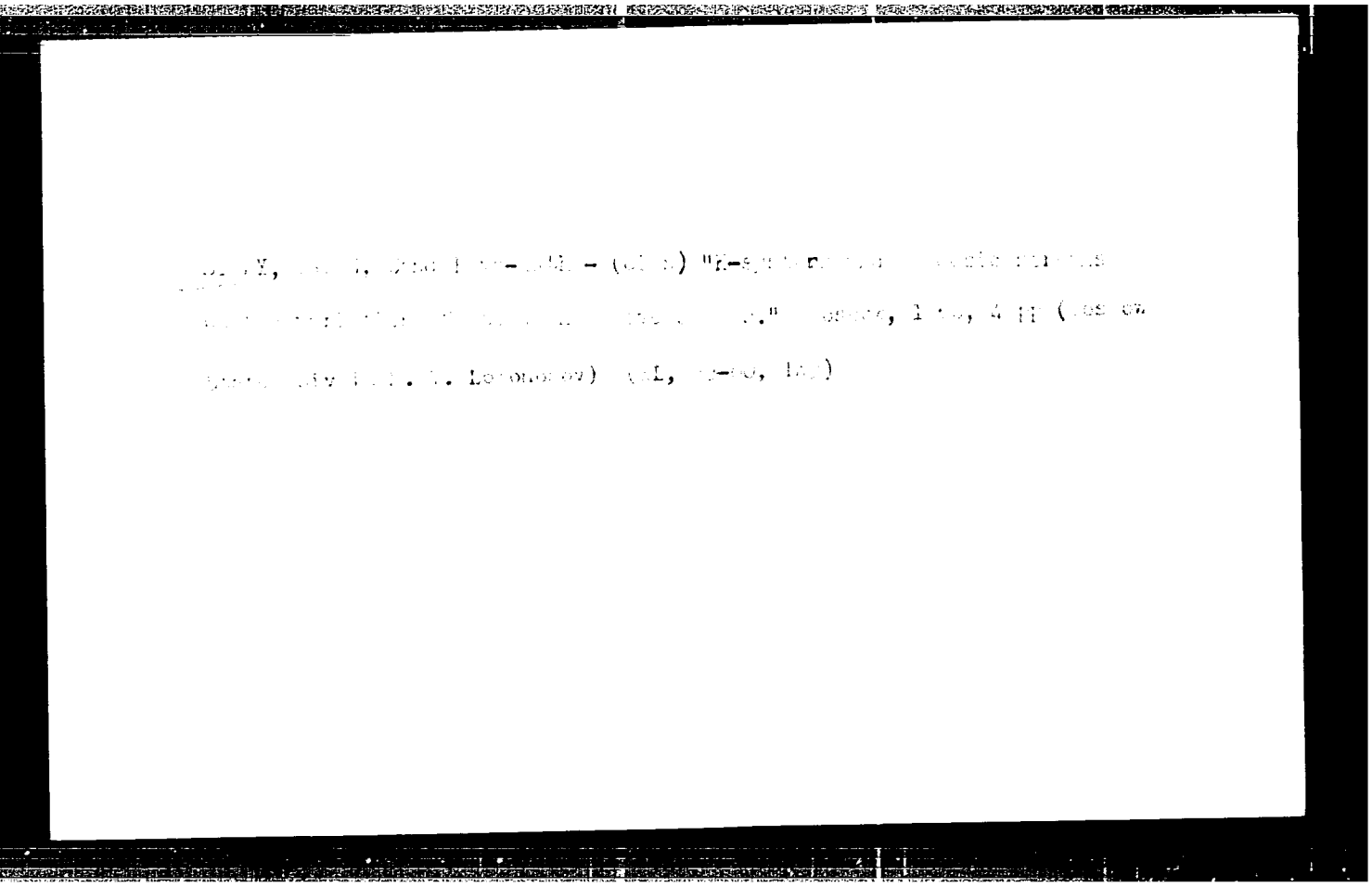

SINAY, Ya.G.

Dynamic ststems and stationary Markov processes. Teor. veroiat. i ee prim. 5 no.3:335-338 '60. (MIRA 13:9)
(Probabilities)

S/020/60/131/04/10/073

AUTHOR: Sinay, Ya.G.

TITLE: Geodesic Flows on Manifolds of Negative Constant Curvature

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol.131, No.4, pp.752-755.

TEXT: Theorem 1: Geodesic flows on two-dimensional manifolds of negative constant curvature and with a bounded area are Kolmogorov flows (compare (Ref.10)).
Theorem 2: Geodesic flows in the space of n-hedra of n-dimensional manifolds of constant negative curvature and finite area which can be represented as a fundamental domain with finitely many sides of the subgroup Γ (the group of all fractional linear transformations for which the unit circle is invariant) are Kolmogorov flows.
On a compact n-dimensional manifold of constant negative curvature $-k$ $(k>0)$ with the volume V the motion of the linear elements is joined (velocity w). With the aid of the results (Ref.6-9) the author calculates the entropy of the corresponding flow $\{S_t\}$:
Theorem 3: The entropy of the flow $\{S_t\}$ is:

$$h(\{S_t\}) = h(S^1) = \frac{w\sqrt{k}}{\sqrt[n]{V\omega_{n-1}}} \log e,$$

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Geodesic Flows on Manifolds of Negative Constant Curvature

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where ω_{n-1} is the area of the (n-1)-dimensional unit sphere and where 2 is the base of the log.
There are 12 references: 11 Soviet and 1 American.

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

PRESENTED: December 8, 1959, by A.N.Kolmogorov, Academician

SUBMITTED: December 8, 1959

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86376
S/020/60/133/006/025/031XX
C 111/ C 333

AUTHOR: Sinay, Ya. G.

TITLE: Central Limit Theorem for Geodetic Flows on Manifolds of Constant Negative Curvature

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 133, No. 6, pp. 1303-1306

TEXT: Definition: A measurable essentially bounded real function f which is defined on the Lebesque space M with the measure μ (see (Ref.6)) in which a measurable ergodic flow $\{S^t\}$ is acting, is said to satisfy the central limit theorem, if for every fixed α, $-\infty < \alpha < \infty$ it holds

$$\lim_{t\to\infty} \mu\left\{x : \frac{\int_0^t f(S^\tau x)\,d\tau - t\bar{f}}{\sqrt{D_t(f)}} < \alpha\right\} = \frac{1}{\sqrt{2\pi}} \int_{-\infty}^{\alpha} e^{-\frac{u^2}{2}}\,du,$$

where $\bar{f} = \int_M f(x)\,d\mu$

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Central Limit Theorem for Geodetic Flows on Manifolds of Constant Negative Curvature

and $D_t(f) = \int_M \left| \int_0^t f(S^\tau x)\, d\tau \right|^2 d\omega$.

Theorem 1: The essentially bounded real function f given on the space M of the line elements of a compact manifold of constant negative curvature is assumed to satisfy the conditions:

1. There exist $\alpha > 0$, $\varepsilon > 0$, $\varepsilon_1 > 0$, $c_1 > 0$, $c_2 \geq 0$

such for all

$$\mu\left\{ x : \text{l.u.b.}_{y:\, \rho(x,y) < \rho^*} \left| \int_0^\alpha f(G^\tau y)\, d\tau - \int_0^\alpha f(G^\tau x)\, d\tau \right| > \right.$$

$$\left. > \frac{c_1}{|\log^{1+\varepsilon} \rho|} \right\} \leq \frac{c_2}{|\log^{4+\varepsilon_1} \rho|}$$

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Central Limit Theorem for Geodetic Flows on Manifolds of Constant Negative Curvature

($\zeta(x,y)$ is the metric in the space of the line elements (Ref.8)).

2. $D_t(f) \to \infty$ for $t \to \infty$, where $\alpha > 0$.

3. To every [illegible] there exist $N(\ )$ and $T(\ )$ so that for all $t > T()$ it holds

$$\frac{1}{D_t(f)} \int_{x:} f(G_t x) d\mu - \int f(x) d\mu \Big| < \varepsilon_2(f)$$

Then [illegible] the central limit theorem. Continuous functions f, the modulus of continuity of which [illegible] the order

$$1/\log^{1+}$$

satisfy the condition 1 in any case. The examination of condition 3 is facilitated by theorem 2, by [illegible] the cycles H^- (see

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(Ref.8)) and the decompositions ξ^t (η^t) of the space M (see (Ref.7)). Let $f \in L_2(M)$. Let f_t (or $\tilde{f}_t$) denote the projection of f on the Hilbert space of the functions from $L^2(\xi^t)$ which are constant on the elements of the decomposition ξ^t (or η^t) mod 0.

Theorem 2: Let f be a measurable essentially bounded function on M; $\overline{f} = 0$. Assume that

1. $\beta_1 > 0$, $c_1 > 0$, $c_2 > 0$ exist so that for $t > 0$ it is
$\|f - f_t\| \leq c_1 e^{-\beta_1 t}$, $\|f - \tilde{f}_{-t}\| = c_1 e^{-\beta_1 t}$.

2) $\beta_2 > 0$, $D_1 > 0$, $D_2 > 0$ exist so that

$$\left| \int_M f(H^{-t} x)\, \varphi(x)\, d\mu \right| \leq D_1 \frac{D_2}{t}.$$

Then f satisfies the condition 3 of theorem 1.

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Central Limit Theorem for Geodetic Flows on Manifolds of Constant Negative Curvature

Let z be the coordinate describing the position of the carrier of the line element on the surface F; ϑ is assumed to determine the direction of the line element in every point.

Theorem 3: Functions $f(x) = f(z, \vartheta)$ which for every z possess a derivative with respect to ϑ satisfying uniformly in z a Hölder condition of the fixed order $\alpha > 0$, satisfy the condition 2 of theorem 2.

The author gives two examples. He mentions J. M. Gel'fand, J. J. Pyatetskiy-Shapiro and thanks A. N. Kolmogorov for the subject.

There are 9 references: 7 Soviet 1 German and 1 American.

[Abstracter's note: (Ref.6) is a paper of V. A. Rokhlin in Uspekhi matematicheskikh nauk, 1949, Vol. 4, No. 2; (Ref. 7) is a paper of the author in Doklady Akademii nauk SSSR, 1960, Vol. 131, No. 4; (Ref. 8) is a paper of E. Hopf in Uspekhi matematicheskikh nauk, 1949, Vol. 4, No. 2].

Card 5/6

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C 111/ C 333

Central Limit Theorem for Geodetic Flows on Manifolds of Constant Negative Curvature

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

PRESENTED: April 9, 1960, by A. N. Kolmogorov, Academician

SUBMITTED: April 6, 1960

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