MANDROKHELIDZE, V. F.

PODGORICHANI, V.; CHAYSHVILI, T.; OGANEZOV, G.; NASARIDZE, D.; SHIPOV, A.; MANDROKHELIDZE, V. F.

Tea-plucking machine. Tekh.mol.22 no.4:33 Ap '54. (MLRA 7:4)
(Tea machinery)

SOV/19-58-6-483/685

AUTHORS: Kereselidze, Sh. Ya., Rollov, Ye. E., Oganezov, G. O., and Mandrokhlebov, V. F.

TITLE: A Machine for Sorting Tea Shoots
(Mashina dlya sortirovki chaynykh fleshey)

PERIODICAL: Byulleten' izobreteniy, 1958, Nr 6, p 106 (USSR)

ABSTRACT: Class 45e, 20_{09}. Nr 113308 (575595/775 of 7 Apr 1953)
Submitted to the Ministry of Agricultural Machinebuilding of the USSR. A machine for sorting tea shoots, with a hopper with a vibrating bottom, a net conveyer with a vacuum chamber inside the branches of the conveyer belt, and parallel guides moving backwards and forwards for placing the shoots lengthwise. In order to sort the shoots more accurately, and to blow away individual leaves, a rotating feed-drum with suction apertures and an inner partition is placed at the outlet of the hopper, while the vacuum chamber sucks the shoots into the upper branch of the conveyer and distributes them in groups on the lower branch.

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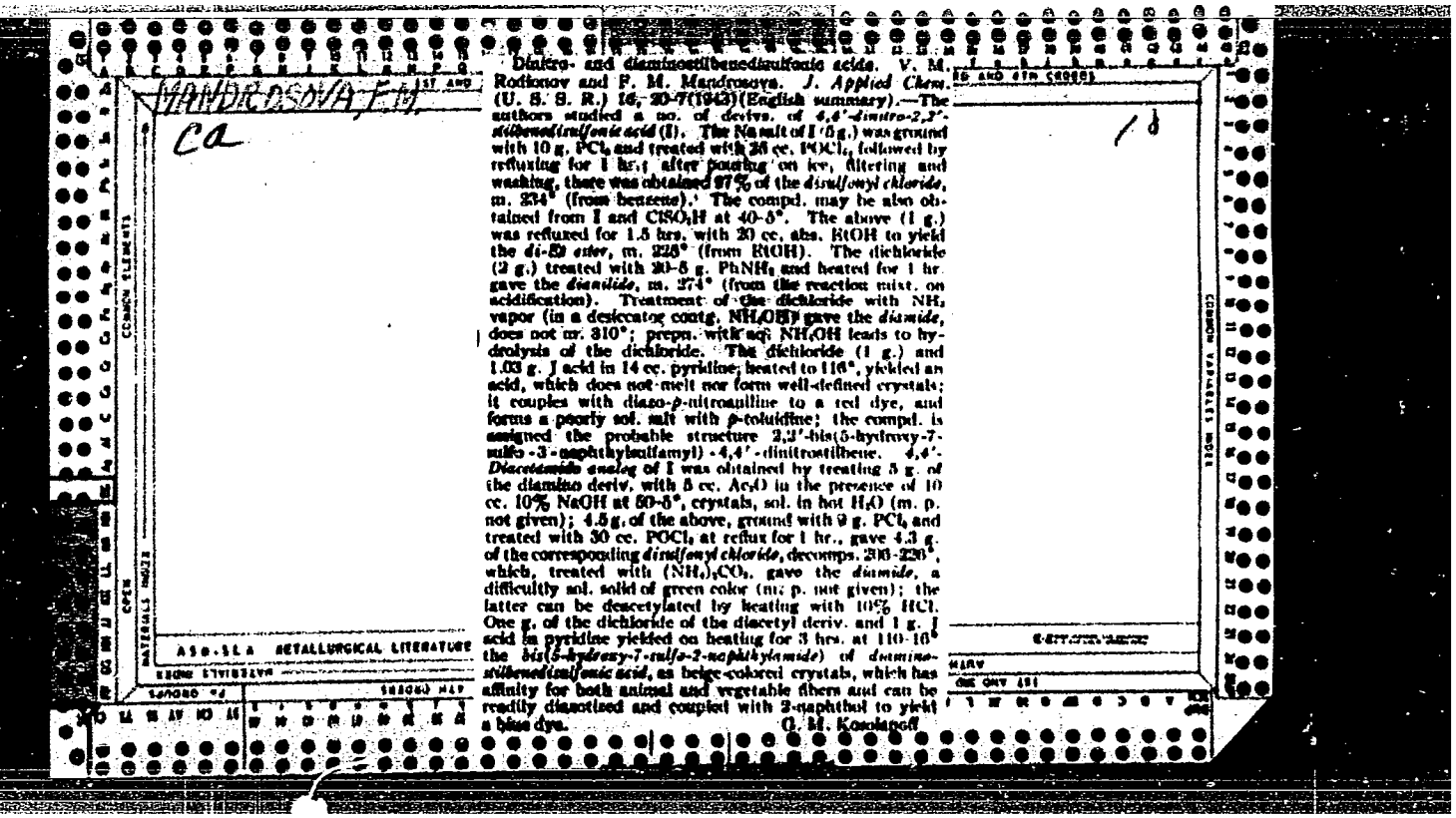

Dinitro- and diaminostilbenedisulfonic acids. V. M. Rodionov and F. M. Mandrosova. *J. Applied Chem. (U. S. S. R.)* 16, 20-7(1943)(English summary).—The authors studied a no. of derivs. of *4,4'-dinitro-2,2'-stilbenedisulfonic acid* (I). The Na salt of I (5 g.) was ground with 10 g. PCl_5 and treated with 30 cc. $POCl_3$, followed by refluxing for 1 hr.; after pouring on ice, filtering and washing, there was obtained 97% of the *disulfonyl chloride*, m. 234° (from benzene). The compd. may be also obtained from I and $ClSO_3H$ at 40-5°. The above (1 g.) was refluxed for 1.5 hrs. with 20 cc. abs. ROH to yield the *di-R ester*, m. 228° (from ROH). The dichloride (2 g.) treated with 20-5 g. $PhNH_2$ and heated for 1 hr. gave the *dianilide*, m. 274° (from the reaction mixt. on acidification). Treatment of the dichloride with NH_3 vapor (in a desiccator contg. NH_4OH) gave the *diamide*, does not m. 310°; prepn. with aq. NH_4OH leads to hydrolysis of the dichloride. The dichloride (1 g.) and 1.03 g. J acid in 14 cc. pyridine, heated to 116°, yielded an acid, which does not melt nor form well-defined crystals; it couples with diazo-*p*-nitroaniline to a red dye, and forms a poorly sol. salt with *p*-toluidine; the compd. is assigned the probable structure 2,2'-bis(5-hydroxy-7-sulfo-3-naphthylsulfamyl)-4,4'-dinitrostilbene. *4,4'-Diacetamido analog* of I was obtained by treating 5 g. of the diamino deriv. with 5 cc. Ac_2O in the presence of 10 cc. 10% NaOH at 50-5°, crystals, sol. in hot H_2O (m. p. not given); 4.5 g. of the above, ground with 9 g. PCl_5 and treated with 30 cc. $POCl_3$ at reflux for 1 hr., gave 4.3 g. of the corresponding *disulfonyl chloride*, decomps. 230-220°, which, treated with $(NH_4)_2CO_3$, gave the *diamide*, a difficultly sol. solid of green color (m. p. not given); the latter can be deacetylated by heating with 10% HCl. One g. of the dichloride of the diacetyl deriv. and 1 g. J acid in pyridine yielded on heating for 3 hrs. at 110-16° the *bis(5-hydroxy-7-sulfo-2-naphthylamide)* of *diamino-stilbenedisulfonic acid*, as beige-colored crystals, which has affinity for both animal and vegetable fibers and can be readily diazotized and coupled with 2-naphthol to yield a blue dye.

G. M. Kosolapoff

MANDROSOVA, F. M., Cand of Tech Sci -- (diss) "The Obtention of ξAmino-enanthylic Acid," (Moscow, 1959, 21 pp (MOscow Chemical-Engineering Institute im D. I. Mendeleyev) (KL, 2-60, 114)

MANDROSOVA, F.M.; STREPIKHEYEV, A.A. [deceased]

Preparation of ζ-aminoenanthic acid from furfurole. Khim. volok. no.4:6-10 '59. (MIRA 13:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna.
(Furaldehyde) (Heptanoic acid)

27569
S/190/61/003/009/004/016
B110/B101

15.8080

AUTHORS: Bogdanov, M. N., Kudryavtsev, G. I., Mandrosova, F. M., Spirina, I. A., Ostromogol'skiy, D. Ye.

TITLE: Synthesis of some polyamides on the basis of α,ω-aminocarboxylic acids with benzene or cyclohexane rings in methylene chains

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 3, no. 9, 1961, 1326-1331

TEXT: Polyamides from α,ω-aminocarboxylic acids with aromatic rings in the chain (p-aminomethyl-phenyl-alkane carboxylic (p-AMPA) and p-aminoethyl-phenyl-alkane carboxylic acids) are important for the production of thermostable fibers (400-500°C). The spinnability of polyamides (PA) and copolyamides (with ε-caprolactam (ε-CL)) based on p-aminomethylbenzoic acid (p-AMBA) and m-aminomethylbenzoic acid (m-AMBA) was tested. The following compounds were synthesized: 4-aminomethyl-cyclohexyl carboxylic acid (4-AMCA); 3-aminomethyl-cyclohexyl carboxylic acid (3-AMCA); 4-aminoethyl-cyclohexyl propionic acid (4-AECA); cis-4-aminocyclohexyl butyric acid

Synthesis of some polyamides ...

(cis-4-ACBA); trans-4-aminocyclohexyl butyric acid (trans-4-ACBA); and their polyamides. Pure p- and m-AMBA were prepared from the corresponding cyanobenzoic acids via the etnyl ester which can easily be purified by crystallization:
$p\text{-}CNC_6H_4COOH \rightarrow HCl \cdot NH_2CH_2CH_2C_6H_4COOC_2H_5 \rightarrow NH_2CH_2C_6H_4COOC_2H_5 \rightarrow$ p-AMBA.
4-AMCA, 3-AMCA, and 4-AECA were obtained by hydrogenation of the corresponding aromatic acids. Instead of Pt catalyst, rhodium black on Al_2O_3 which is more effective for the hydrogenation of aromatic was used according to A. A. Balandin, M. L. Khidekel' (Ref. 12: Dokl. AN SSSR, 123, 84, 1958). Cis- and trans-4-ACBA which were separated by means of hot acetone were synthesized as follows: $p\text{-}NH_2C_6H_4(CH_2)_3COOH \rightarrow p\text{-}CH_3CONHC_6H_4(CH_2)_3COOH \rightarrow$ (cis + trans)-4-$CH_3CONHC_6H_{10}(CH_2)_3COOH \rightarrow$ cis-4-ACBA + trans-4-ACBA. The following substances were synthesized for the first time: 4-AECA; cis- and trans-4-ACBA; the lactam of 3-AMCA; the hydrochlorides of the ethyl esters of p- and m-AMBA; cis- and trans-N-acetyl-4-ACBA and N-acetyl-p-aminophenyl butyric acid. The polymers of p- and m-AMBA are only slightly viscous, do not form fibers, and melt under decomposition above 300°C, as their "aromatic" carboxyl groups

Synthesis of some polyamides ...

undergo side reactions. p-AMPA and 4-AMCA in which benzene ring and COOH groups are separated by $-CH_2-$groups form polymers with higher molecular weight. The copolymers of p-AMBA with ε-CL, on the other hand, form strong fibers from the melt which can be cold-drawn. The p-AMBA carboxyl groups are assumed to form more heat-resistant amide groups with the amino groups of the ε-aminocaproic acid radicals. The copolycondensation products of m-AMBA with ε-CL and ω-aminoenanthic acid are little more viscous than m-AMBA homopolymers. Polycondensation is rendered difficult because of the instability of the carboxyl groups, and because of chain cleavage owing to cyclization of the end group as a result of a favorable mutual position of the amino groups and CO groups of the amide bonds. The high-molecular PA of 4-AMCA and trans-4-ACBA cannot be spun from the melt owing to decomposition. The PA of cis-4-ACBA was not pure, bubbly, colored and low-viscous. The high-molecular PA of 4-AECA which is stable even at 340°C forms strong fibers from the melt which can be cold-drawn. 3-AMCA forms, when heated, a non-polymerizable lactam. p-cyanobenzoic acid dissolved in 15% NH_3 was hydrogenated at room temperature and 15 atm pressure of H_2. The reaction product was dried, suspended in ethanol, and the

Synthesis of some polyamides ...

suspension was saturated with HCl. The hydrochloride of the ethyl ester of p-AMBA (melting point = 237-238°C) was obtained, which yielded p-AMBA after treatment with 28% NH_3. The hydrochloride of the ethyl ester of m-AMBA (melting point = 151-152.5°C) resulted from the hydrochloride of m-AMBA by treating it with ethanol and HCl. In the same way as with the p-compound, m-AMBA was obtained therefrom (melting point = 265-266°C). 4-AMCA was prepared from p-AMBA by means of hydrogenation in a sealed capillary (melting point = 239.5-240°C). The following data are given: 3-AMCA: melting point = 191.5-192.5°C; 4-AECA: melting point = 231-232°C; N-acetyl-p-aminophenyl butyric acid: melting point = 174-175°C; trans-N-acetyl-4-amino-cyclohexyl butyric acid: melting point = 198-199.5°C; cis-N-acetyl-4-amino-cyclohexyl butyric acid: melting point = 113-114°C. Trans-4-ACBA was obtained from the trans-N-acetyl-4-amino-cyclohexyl butyric acid by sulfuric acid hydrolysis at 150-155°C and separation in a column with ЭДЭ-10П (EDE-10P) anionite. Cis-4-AMBA (melting point = 226-228°C) was prepared from cis-N-acetyl-4-AMBA. The lactam (melting point = 152-153°C, well soluble in benzene and H_2O) was obtained from 3-AMCA by elimination of water. Polycondensation of the amino acids was

Synthesis of some polyamides ...

carried out in N_2 stream in test tubes. Copolymerization with ε-CL was first performed in a sealed ampul, then in N_2 stream. Fiber formation was examined on a special device according to M. B. Sigal et al. (Ref. 16: Khim. volokna, 1959, no. 5, 29). The authors thank B. V. Suvorov, Head of the laboratories of the Institut khimii AN KazSSR (Institute of Chemistry of the AS Kazakhskaya SSR) for providing p-cyanobenzoic acid. There are 2 tables and 16 references: 7 Soviet and 9 non-Soviet. The three most recent references to English-language publications read as follows: US Patent 2, 868, 769; M. Levine et al., J. Organ. Chem. 24, 115, 1959; US Patent 2, 910, 457.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennog volokna (All-Union Scientific Research Institute of Synthetic Fibers)

SUBMITTED: October 22, 1960

Card 5/5

MANDROSOVA, F.M.; KUDRYAVTSEV, G.I.

Reaction of acrylonitrile with biphenyl. Zhur.ob.khim. 31 no.7: 2246-2248 Jl '61. (MIRA 14:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna.

(Acrylonitrile) (Biphenyl)

ACCESSION NR: AT4033982 S/0000/63/000/000/0037/0041

AUTHOR: Bogdanov, M. N.; Kalmy*kova, V. D.; Mandrosova, F. M.; Zhmayeva, I. V.; Okromchedlidze, N. P.; Sedy*kh, N. V.

TITLE: Synthesis and properties of fiber-forming polyalkyleneterephthalamides

SOURCE: Geterotsepny*ye vy*sokomolekulyarny*ye soyedineniya (Heterochain macromolecular compounds); sbornik statey. Moscow, Izd-vo "Nauka," 1963, 37-41

TOPIC TAGS: synthetic fiber, artificial silk, terephthalic acid, terephthalamide, polyalkylene terephthalamide, Alpha Omega diamine, Kapron

ABSTACT: A large number of polyamides based on terephthalic acid and unbranched α,ω-diamines with 8-16 methylene groups in the chain were synthesized and investigated with respect to their thermomechanical properties. The methods and conditions of synthesis are described. Effective additives were the aromatic hydroxy compounds, such as the isomers of hydroxyphenyl- and hydroxydiphenylmethane, which in an amount of 30-50% gave spinnable high-molecular-weight polyamides resistant to crystallization up to 320-340C. These are very suitable for spinning high-melting fibers. The limiting temperature of crystallization for polyamides from various terephthalates decreased to 280C or below. The synthesized polyamides were high-melting, strong, white substances, soluble only in concentrated

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ACCESSION NR: AT4033982

H_2SO_4. The thermal stability of the resulting fibers was tested by strength loss at 140C. A comparison of the thermodynamic curves of synthesized high-melting monofilaments and polycaproamide filaments showed that the differences in the relative variation of fiber length during heating are relatively small and the maximum difference in the temperature of incipient deformation does not exceed 40C. Fibers made from polyalkyleneterephthalamide, regardless of the much higher melting point, differ only slightly in thermal stability from Kapron fiber. The conditions of preparation and the properties (viscosity, melting points) of various polyalkyleneterephthalamides as well as the spinning conditions and fiber properties (strength, etc.) are tabulated. Orig. art. has: 1 figure and 3 tables.

ASSOCIATION: Vsesoyuzny*y nauchno-issledovatel'skiy institut iskusstvennogo volokna (All-Union Scientific Research Institute of Synthetic Fibers)

SUBMITTED: 15May62 DATE ACQ: 30Apr64 ENCL: 00

SUB CODE: OC, MT NO REF SOV: 005 OTHER: 014

Card 2/2

VOLOKHINA, A.V.; KUDRYAVTSEV, G.I.; RAYEVA, M.V.; BOGDANOV, M.N.; KALMYKOVA, V.D.; MANDROSOVA, F.M.; OKROMCHEDLIDZE, N.P.

Polycondensation of diamine salts of terephthalic and hexahydroterephthalic acids in the solid phase. Khim. volok. no.6:30-33 '64. (MIRA 18:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskustvennogo volokna.

L 10756-65 EWT(m)/EPF(c)/EWP(j)/T Pc-4/Pr-4/Pa-4 ESD(t)/ASD(m)-3 RM

ACCESSION NR: AP4047204 S/0190/64/006/010/1795/1798

AUTHOR: Bogdanov, M. N.; Kandrosova, F. M.

TITLE: Synthesis and properties of polyamides with aliphatic imino groups in the methylene chains

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 6, no. 10, 1964, 1795-1798

TOPIC TAGS: polyamide, imino substituted polyamide, thermoreactive polyamide, polycondensation, aminohexylamine, iminodienanthic acid, dicarboxylic acid, diamine, synthetic fiber

ABSTRACT: The authors investigated the polycondensation of bis-(ω-aminohexyl)-amine (I), N,N'-bis-(ω-aminohexyl)-1,2-ethylene diamine (II) and ω,ω'-iminodienanthic acid (III) with dicarboxylic acids and diamines, and determined the properties of the thermoreactive polyamides obtained. Mixtures of the starting components were heated in sealed ampules to bind the basic part of the diamine, with the formation of a "forepolycondensate," then heated in a stream of nitrogen until the necessary molecular weight was achieved. At the beginning of the polycondensation, because of the presence of an imino group, a branching polymer was obtained, followed by cross linkage. The rate of this conversion was found to depend on the conditions of polycondensation. Polymers obtained under mild conditions were

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L 10756-65
ACCESSION NR: AP4047204 3

brittle, soluble in aromatic and aliphatic alcohols and in dilute HCl. Increases in temperature and time of heating produced a stronger and more elastic polymer. At a sufficiently high degree of polymerization, the polymers became unmeltable and insoluble. Such polymers could again be made soluble and meltable by heating in ampules in the presence of primary amines such as hexamethylenediamine. To obtain high molecular weight polymers, a 10-20% deficiency of diamine (calculated from the theoretical value) was used in the starting mixture, thus decreasing the number of free imino groups. In copolymerization with polyamide-forming monomers such as ε-caprolactam and the salts of diamines and dicarboxylic acids, this decrease in imino groups increases the thermostability and permits the production of fibers from melted polymers. The polymers were used to produce films which could contain a considerable number of active groups and could therefore be subjected to chemical modification. Other compounds used besides hexamethylenediamine were trans-hexahydroterephthalic acid, terephthalic acid, and the hexamethylenediamine salt of adipic acid. Orig. art. has: 2 tables and 3 chemical formulas.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna (All-Union Scientific Research Institute for Artificial Fibers)

SUBMITTED: 02Dec63 ENCL: 00 SUB CODE: MT, OC

Card 2/2 NO REF SOV: 003 OTHER: 004

L 60264-65 EWP(j)/EWT(m)/T Pc-4 JAJ/RM

ACCESSION NR: AP5013061 UR/0190/65/007/005/0873/0877
678.01:53+678.675

AUTHORS: Bogdanov, M. N.; Mandrosova, F. M.; Kravchenko, T. V.

TITLE: Synthesis and properties of some fibrous polyamides with sulfamide groups

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 5, 1965, 873-877

TOPIC TAGS: polymer, resin, polyamide plastic, polycondensation, synthetic fiber

ABSTRACT: The work was undertaken in order to determine the effect of the introduction of sulfamide groups on the properties of fibrous polyamides. The following dicarboxylic acid have been synthesized: m-benzene-disulfamide - N,N'-di-(alkanecarbonic acids)

where n = 4(I), 5(II) and 6(III); the acid (IV)

and the acids (V) and (VI)

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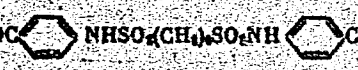
L 60264-65

ACCESSION NR: AP5013061

$$HOOC(CH_2)_5NHSO_2(CH_2)_6SO_2NH(CH_2)_5COOH. \qquad (V)$$



(VI)

The condensation of diamine acid salts of I, II, and III with ε-caprolactam yielded polyamides suitable for preparation of fibers capable o chemical modification. Polycondensation of salts of IV and VI with 1,6 hexamethylenediamine, trans- 1,4-diaminecyclohexane and p-xylenediamine proceeded with difficulty and did not yield polymers with properties suitable for fiber production. Physical properties of a number of polyamide-polysulfamides hav been studied and are tabulated. Orig. art. has: 4 tables and 6 formulas.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna (All-Union Research Institute of Synthetic Fibers)

SUBMITTED: 20Jul64 ENCL: 00 SUB CODE: OC

NO REF SOV: 001 OTHER: 003

Card 2/2

NIKONOV, A.G. [deceased]; GORIYENKO, I.I.; KARNITSKAYA, N.V.; GOL'DBERG, M.S.; MANDROVSKAYA, V.D.

Coli-Proteus bacteriophage in experimental conditions in vivo. Report No. 1. Zhur. mikrobiol., epid. i immun. 40 no. 8:82-85 Ag '63. (MIRA 17:9)

1. Iz Rostovskogo instituta epidemiologii, mikrobiogii i gigiyeny.

SOV/102-58-3-3/19

AUTHOR: Mandrovs'kyy-Sokolov, B.Yu. (Mandrovskiy-Sokolov, B.Yu.)

TITLE: Improving Servo Action with Nonlinear Correcting Links (Polipshennya roboty slidkuyuchoi systemy za dopomohoyu neliniynoho korektuyuchoho prystroyu).

PERIODICAL: Avtomatika (Kyiv), 1958, Nr.3, pp.44-51 (USSR)

ABSTRACT: Fig.1 shows the structural diagram of a nonlinear correcting network, consisting of two units in parallel, which effects Eq.(1). A nonlinear RC circuit which effects Eq.(2) is then considered, i.e. that of Fig.2; this system is distinguished from other more complex ones, e.g. amplifiers of variable gain using variators, etc. The law followed is that of Eq.(3); the parameters are functions of input voltage, as Eqs.(4) and (5) state. Fig.3 represents Eq.(4). The stability of a servo incorporating this device is examined in the next section by the describing function method; Eqs.(6) - (9) represent the sensing element, RC circuit, amplifier and motor respectively. Eq.(10) is the stability condition. The function F is the complex gain of the nonlinear corrector, Fig.5 shows F. Fig.6 shows

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Improving Servo Action with Nonlinear Correcting Links.

the self-maintained oscillations in the system in two different conditions, a) no RC circuit, b) RC circuit inserted. The transient response is then examined, in terms of the overshoot and the transient duration in response to a stepwise change in the input. Figs.7 and 8 represent the transient responses and follow-up errors without and with the RC circuit. There are 8 figures and 7 references, of which 3 are Soviet and 4 English.

ASSOCIATION: Instytut elektrotekhniki AN URSR (Institute of Electrical Engineering, Academy of Sciences, Ukr.SSR).

SUBMITTED: March 20, 1958.

84889

6.9400

S/102/60/000/001/004/006
C111/C222

AUTHOR: Mandrovs'kyy-Sokolov, B.Yu. (Kyiv) 9

TITLE: Raising Noise Immunity of Optimalizing Control Systems in Steady State by Complicating the Modulating Signal

PERIODICAL: Avtomatika, 1960, No.1, pp.38-48

TEXT: The paper was written in the laboratory of automatic control of the instytut elektrotekhnyki AN USSR (Institute of Electrotechnics of the Academy of Sciences USSR).
The author investigates the influence of the form of modulating signals and the type of the multiplicator to the noise immunity of optimalizing control systems with an external modulating effect. If according to (Ref.5) the noise immunity is characterized by the probability P_i, then this characteristic property relates only to one frequency. Hence the author proposes to characterize the noise immunity by the integral

$$(8) \qquad D = \int_{\omega_{ni}}^{\omega_{nk}} P_i P_j d\omega_n ,$$

where P_j is the probability of an appearing of a deviation with the

Card 1/3 j

Raising Noise Immunity of Optimalizing Control Systems in Steady State by Complicating the Modulating Signal

frequency ω_{ni}. If the noise immunity is greater, then D must be smaller. Denoting by D a system with a sinusoidal modulating signal and a continuous multiplier by D_o then

(26) $$d = \frac{D_o}{D}$$

can serve as the relative measure of the noise stability. Then the results of the investigation are given in the following table:

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C111/C222

Raising Noise Immunity of Optimalizing Control Systems in Steady State by Complicating the Modulating Signal

No		method	d	
1		system with a continuous multiplier and a sinusoidal modulating signal	1	
2	a	system with a synchronous relay detector and a rectangular modulating signal	0.45-0.5	$\alpha = 0$
	b		0.8 ÷0.95	$\alpha = 30^0$
3	a	method of two frequencies	2.5 ÷1.5	with a continuous multiplier
	b		2 - 4	with a synchronous relay detector

IX

The author mentions V.M.Kuntsevich. There are 11 figures, 1 table and 5 Soviet references.

SUBMITTED: November 2, 1959

Card 3/3

MANDROVSKIY-SOKOLOV B. Yu

S/102/60/000/004/002/006
D251/D304

16.8000

AUTHORS: Kostyuk, V.I., Kuntsevych, V.M., and Mandrovs'kyy-Sokolov, B.Yu.

TITLE: On the work of S. Chang "Application of the z-transformation method for optimization of self-adjusting systems"

PERIODICAL: Avtomatyka, no. 4, 1960, 14 - 31

B

TEXT: An outline is given of the above-named work of S. Chang (Ref. 1: AIEE Conference Paper, NCP, 59-1296) in which two kinds of systems are considered: The derivative sensing system and the alternate biassing system. The authors consider Chang's work in relation to other investigators, in particular V.V. Kazakevich (Ref. 24: Sistemy ekstremal'nogo regulirovaniya i nekotoryye sposoby uluchsheniya ikh kachestva (Systems of Extremal Control and Some Methods of Improving Their Properties) sb. Avtomaticheskoye upravleniye i vychislitel'naya tekhnika, pod. red. V.V. Solodognikova, Mashgiz, 1958) and O.M. Kryzhanovs'kyy and V.Ya. Soltyk (Ref. 22: Av-

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On the work of S. Chang ...

tomatyka, no. 4, 1960). The author state that the results of Chang and Kryzhanovs'kyy and Soltyk, despite different methods of approach, are of the same form. Attention is drawn to the resemblance between block-diagrams of the two methods and the fact that both recommend the derivative sensing system with a weighted sum of all previously measured values of the figure of merit (cost function). It is shown that these systems give an advantage in noise stability only in the case of slowly-changing perturbances. The authors state that there is no practical difficulty in constructing Chang's schemes in practice, but that certain of his basic statements and assumptions need further clarification. There are 11 figures, 4 tables and 24 references: 7 Soviet-bloc and 17 non-Soviet-bloc. The 4 most recent references to the English-language publications read as follows: T.P. Goodman, R.H. Hillsley, Continuous self-measurement of characteristics of systems with random inputs. A step towards self-optimalizing control, ASME Paper, 58-IRD-5, 1958; G.W. Anderson, J.A. Aseftine, A.R. Mancini, C.W. Sature. A self adjusting system for optimum dynamic performance. IRE National Convention Record, Part 4, 1958; J.E. Bertram, Control by stochastic adjust

Card 2/3

S/102/60/000/004/002/004
On the work of S. Chang ... D251/D304

ment, AIEE Winter meeting, Conference Paper, Febr. 1959. R. Staf fin, Executive-Controlled adaptive systems, AIEE Winter Meeting. Conference Paper, Febr. 1959.

SUBMITTED: May 20, 1960

Card 3/3

KOZUBOVSKIY, S.F. [Kozubovs'kyi, S.F.]; MANDROVSKIY-SOKOLOV, B.Yu. [Mandrovs'kyi-Sokolov, B.IU.]

Abstract of Professor's O.Smith's lecture at the Seminar on Automatic Control in Kiev and his report to the first congress of the International Federation of Atuomatic Control in Moscow. Avtomatyka no. 5:72-77 '60. (MIRA 14:4)
(Automatic control) (Smith, O.)

FEL'DBAUM, O.A.; KUNTSEVICH, V.M.; KOSTYUK, V.I.;
MANDROVSKIY-SOKOLOV, B. Yu. [Mandrovs'kyi-Sokolov, B. IU.]
VAN-NAYS, R. [Van Nyce, R. I.] (SShA)

Concerning the optimum value of the trial steps of extremum systems.
Avtomatyka no.2:94-97 '61. (MIRA 14:6)
(Automatic control)

MANDROVSKIY-SOKOLOV, B. YU.

29211

S/102/61/000/005/003/005
D274/D302

16.8000 (1103, 1329, 1132)

AUTHOR: Mandrovs'kyy-Sokolov, B.Yu. (Kyyiv)

TITLE: Steady-state and dynamic operating conditions of an hydraulic control system

PERIODICAL: Avtomatyka, no 5, 1961, 32 - 40

TEXT: An automatic system for hydraulic coal mining is considered, the control being effected by means of an hydraulic system. The coal output depends on geological conditions, the parameters of the water current, the distance between the hydraulic system and the working face, the rate of water flow (M_1) and the distance M_2 between the edge of the face and the spot where the water current falls. The dependence of the output on M_1 and M_2 is shown in a figure; the underlying data were taken from the references (in particular the Institute for Hydrocoal). Maximum output is sought by optimum control. M_1 and M_2 are considered as the main factors influencing productivity. Hence M_1 and M_2 are subject to optimum control under variable external factors. The controlled object is conside-

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red as a system consisting of a linear inertial element (characterizing the inertial of the hydraulic system), a nonlinear element (the dependence of the output on M_1 and M_2), and an element with constant lag (the measuring devices). Steady-state operating conditions of a step system with one control variable; It is assumed that the extremum characteristic is approximated by a parabola. The control law is expressed by

$$\mu_n = \mu_{n-1} + Q\Sigma_{n-1}, \qquad (1)$$

where μ is the control variable and Q the step. Equations are set up for the three elements of the system; these equations, in conjunction with Eq. (1), form a system of difference equations, rather difficult to investigate in their general form. Therefore numerical-analytical and experimental methods are used for these equations. The step system oscillates about the extremum. A table shows the influence of the initial conditions on the period N of oscillations for Q = const. Thereupon, the effect of the various parameters on the losses by search $\bar{H}$ is considered. If the control-

Steady-state and dynamic ...

led object has constant lag, then the system is operational if

$$T > \tau_L, \tag{18}$$

where T is the stepping period and τ_L the lag constant. Extremum search in step systems: A system with constant rate of change of the disturbances

$$L' = \lambda' = \beta n, \; L'' = \lambda'' = \gamma n \tag{19}$$

is considered. The performance of such a system is measured by the so-called mean error of search

$$\overline{H}_c = \frac{\sum_{i}^{j} \varphi_n}{j - i}. \tag{20}$$

The condition is found, under which the system with constant step is kept near the extremum for any values of drift, viz.

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$$Q_s > Q_{cr}, \qquad (28)$$

(Q_{cr} denotes the critical value of the step). Expressions for the critical value are given. The drift of the extremum along the ordinate, calls forth conditions of forced oscillations different from the steady-state conditions. Conclusions: In choosing the parameters of an optimal system with one control variable, and constant step, one has to take into consideration the transfer coefficients of the object, its time constants and the possible rates of extremum drift ($\bar{H}_c$). The magnitude of the stepping period is determined by condition (18). The value of $D_1 = e^{-T/\tau_1}$, should be a minimum so as to reduce $\bar{H}$ and $\bar{H}_c$. T is determined from (18) and from the conditions which ensure the minimum of $\bar{H}$. If the extremum drift along the ordinate is considerable, it is necessary to correct the value of Q_s by additional computations, so as to reduce the value of $\bar{H}_c$. There are 7 figures, 1 table and 8 Soviet-bloc references.

SUBMITTED: February 7, 1961

Card 4/4

KUNTSEVICH, V.M. [Kuntsevych, V.M.] (Kiyev); MANDROVSKIY-SOKOLOV, B.Yu. [Mandrovs'kyi-Sokolov, B.IU.] (Kiyev); SVETAL'SKIY, B.K. [Svietal's'kyi, B.K.] (Kiyev)

Automatic control system of a hydraulic giant. Avtomatyka no.5:77-82 '61. (MIRA 14:10)
(Automatic control) (Hydraulic machinery)
(Mines and mineral resources—Equipment and supplies)

KUNTSEVICH, V.M.; MANDROVSKIY-SOKOLOV, B.Yu.; SVETAL'SKIY, B.K.

Self-tuning system of the programming control of the hydraulic mining giant. Ugol' Ukr. 5 no.12:35-37 D '61. (MIRA 14:12)

1. Institut elektrotekhniki AN USSR.
(Hydraulic mining)
(Programming (Electronic computers))

MANDROVSKIY-SOKOLOV, B.Yu. [Mandrovs'kyi-Sokolov, B.IU.] (Kiyev)

Steady-state and dynamic operating conditions of the optimalizing control system of a hydraulic monitor. Part 2. Avtomatyka no.2:13-25 '62. (MIRA 15:5)

(Automatic control)

S/280/63/000/001/010/016
E140/E435

AUTHOR: Mandrovskiy-Sokolov, B.Yu. (Kiyev)

TITLE: Investigation of oscillatory stepping extremal systems in the presence of noise

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye tekhnicheskikh nauk. Tekhnicheskaya kibernetika. no.1, 1963, 98-104

TEXT: Oscillatory stepping extremal control systems have "undeniable advantages" over systems with two test steps for $\sigma \leqslant Q$ (Q the step) in the steady state regime with λ = const. The author gives a method for obtaining the optimal parameters of the extremal system - the regulator sensitivity and the step, given the noise level and the permissible system error. Consideration of drift in the value of the extremum and lag in the process are beyond the scope of the present article. There are 5 figures.

SUBMITTED: July 5, 1962

Card 1/1

KLESHCHEV, V.V. [Kliashchov, V.V.]; MANDROVSKIY-SOKOLOV, B.Yu. [Mandrovs'kyi-Sokolov, B.IU.]

What is PERT? Avtomatyka 9 no.1:80-84 '64. (MIRA 17:3)

MANDROVSKIY- SOKOLOV, B. Yu. [Mandrovs'kyi- Sokolov, B. IU] (Kiyev)

Realization of extrapolating filters with exponential smoothening.
Avtomatyka 9 no.3:67-69 '64 (MIRA 17:7)

L 14029-66 EWP(k)/EWT(d)/EWP(h)/EWP(l)/EWP(v)

ACC NR: AP6003403 SOURCE CODE: UR/0102/65/000/005/0047/0056

AUTHOR: Mandrovs'kyy-Sokolov, B. Yu.— Mandrovskiy-Sokolov, B. Yu. (Kiev) 35 B

ORG: none

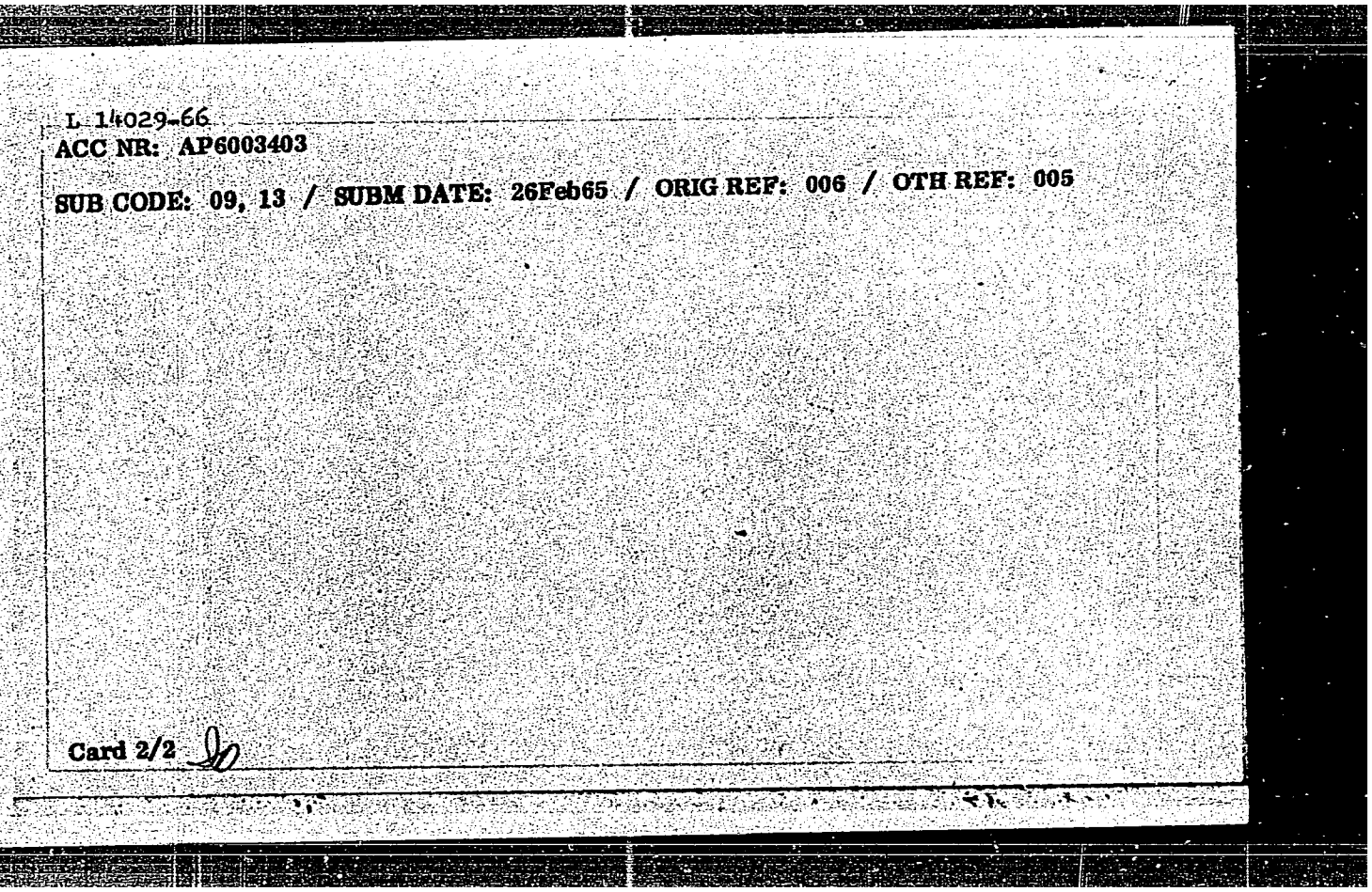
TITLE: Level quantization in control systems

SOURCE: Avtomatyka, no. 5, 1965, 47-56

TOPIC TAGS: automatic control theory, error reduction

ABSTRACT: Since level quantization in automatic control systems is closely related to the accuracy of machines and the needed size of memories, the author discusses theoretically a method for the determination of optimum quantization steps for a given distribution law of the signal which is being quantized. The method minimizes the error dispersion. An approximate formula is derived for the determination of the optimum step for normal distribution of the input signal in the case of a limited number of levels. The relationship between the number of quantum levels N and the spectral characteristics of the quantization errors is also established and analyzed. If N is small, the constant step quantization leads to worse results than the variable step approach. Orig. art. has: 18 formulas, 7 figures, and 2 tables.

Card 1/2



L 14029-66
ACC NR: AP6003403

SUB CODE: 09, 13 / SUBM DATE: 26Feb65 / ORIG REF: 006 / OTH REF: 005

Card 2/2

L 05281-67 EWT(d)/EWP(v)/EWP(k)/EWP(h)/EWP(l) GD
ACC NR: AT6022692 SOURCE CODE: UR/0000/66/000/000/0258/0265

AUTHOR: Mandrovskiy-Sokolov, B. Yu.

29
B+1
14

ORG: none

TITLE: Selection of optimal parameters of a step auto-oscillatory extremum control system

SOURCE: Moscow. Institut avtomatiki i telemekhaniki. Samoobuchayushchiyesya avtomaticheskiye sistemy (Self-instructing automatic systems). Moscow, Izd-vo Nauka, 1966, 258-265

TOPIC TAGS: optimal control, automatic control theory

ABSTRACT: This article examines a step auto-oscillatory extremum control system with one control action under the effect of random noise and uniform extremum drift. It is assumed that the transient period in the controlled plant is appreciably smaller than the value of the control period of the system, i.e., the controlled system is practically inertialess. The extremal control system performs search and operating steps which makes it preferable in the sense of speed of response in comparison with step systems with search steps. The purpose of the investigation was to derive relationships and recommendations for selecting the control step Q,

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L 05287-67

ACC NR: AT6022692

dead zone of the controller, and control interval as a function of the characteristics of the controlled system and character and magnitude of external disturbances and noises. The parameters of the step auto-oscillatory system were calculated from the parameters and the controlled system and the level of noises distorting the magnitude of the operating quality index of the system. By introducing time averaging of the value of the quality index it was possible to increase the noise resistance of the system. A comparison of the noise resistance of various step auto-oscillatory systems showed that such systems with an integrator are the most resistant to noises. Orig. art. has: 36 formulas, and six figures.

SUB CODE: 12/09/ SUBM DATE: 02Mar66/ ORIG REF: 006/ OTH REF: 003

Card 2/2

MANDROWSKA, Aniela; KONIECZNA, Wanda; KOWALSKI, Jerzy; SZCZYGIEL, Aleksander; KSIEZNY, Stefan; DIETL, Barbara.

Results of studies on the nutritional state and dietary patterns of children of one of the elementary schools in the Poznan Voivodeship. Roczn panstw zakl hig 14 no.2:133-144 '63

1. Department of Feeding Hygiene, State Institute of Hygiene, Warsaw, and Institute of Feeding Hygiene, School of Medicine, Warsaw.

MANDROWSKA, Aniela; KONIECZNA, Wanda

Results of studies on the nutritional status of the c
children of two elementary rural schools in the Zie.ona
Gora Voivodeship. Roczn panstw zakl hig 14 no.4:293-298
'63.

1. Institute of Feeding Hygiene, Warsaw.

MANDROWSKA, Aniela; KONIECZNA, Wanda

Evaluation of the state of nutrition and the methods of feeding children of an elementary school in one of the districts of the city of Warsaw. Pt. 2. Roczn panstw zakl high 14 no 6 485-492 '63.

1. Department of Nutrition, State Institute of Hygiene, Warsaw.

MANDRUGIN, A.; ANTIPINA, L., red.; KURLYKOVA, L., tekhn.red.

[Cities come off the production line] Goroda s konveiera. Moskva, Molodaia gvardiia, 1960. 16 p. (MIRA 14:1)

(Apartment houses) (Precast concrete construction)

MANDRUGIN, A.

Objective of Ivan Smirnov's life. Izobr. i rats. no.9:24-26,35 S '61. (MIRA 14:8)

(Cement)

KOZLOV, N. (Gor'kiy); MANDRUGIN, A. (Gor'kiy)

When work becomes creative activity. NTO 6 no.5:34-37 My '64.
(MIRA 17:8)

1. Spetsial'nyye korrespondenty zhurnala "Nauchno-tekhnicheskiye obshchestva SSSR".

MANDRUGIN, A.

Great achievements of a small plant. NTO 7 no.3:42-44 Mr '65.
(MIRA 18:5)

MANDRIK, P.

Anthocyanin pigments of higher plants and their antibacterial effect. Mikrobiol. zh., Kiev 15 no.1:66-69 1953. (CIML 25:5)

MANDRUKOVA, V.I., inzh.

Molding polyvinyl chloride building fittings. Stroi. mat. 9 no.8:27-28 Ag'63. (MIRA 17:5)

FADEYEVA, V.S., doktor tekhn. nauk; KOSHKIN, V.G., kand. tekhn. nauk; MANDRUKOVA, V.I., inzh.

Extrusion of building fittings. Sbor. trud. VNIIKSM no.8: 5-16 '63. (MIRA 17:9)

MANDRUS, B.

"Motorcycle cross-country racing" by G.Afremov and A.Vinogradov. Reviewed by B.Mandrus. Za rul. 20 no.9:32 S '62. (MIRA 15:9)
(Motorcycle racing) (Afremov, G.) (Vinogradov, A.)

GUBENKO, T.P.; DEVYATKOV, N.D.; DOMANSKIY, B.I.; DONSKOY, A.V.; YEFREMOV, I.S.; ZHEZHERIN, R.P.; KAGANOV, I.L.; MANDRUS, D.B.; NETUSHIL, A.V.; PODGURSKIY, Yé.L.; ROZENFEL'D, V.Ye.; SVENCHANSKIY, A.D.; CHUKAYEV, D.S.; SHLYAPOSHNIKOV, B.M.

Professor G.I. Babat; obituary. Elektrichestvo no.1:94 Ja '61. (MIRA 14:4)

(Babat, Georgii Il'ich, 1911-1961)

MANDRUS, TS.Ya., akusherka (Kiyev)

Prophylactic education for childbirth. Fel'd. i akush. 23 no.4:46-47 Ap '58. (MIRA 11:4)

(CHILDBIRTH--PSYCHOLOGY)

BODNARUK, T.M.; MANDRUS, V.I.; MARUKHNYAK, N.I.

Core sampling in areas of the Carpathian Mountain region. Burenie no.9:5-6 '64. (MIRA 18:5)

1. TSentral'naya nauchno-issledovatel'skaya laboratoriya L'vovskogo soveta narodnogo khozyaystva.

MANDRUSOV, S.N.

Better utilization of production capacities. Tekst.prom.15 no.3:8-9 Mr '55. (MLRA 8:4)
(Textile industry)

MANDRUSOV, S.N.

Extending the range of fabrics for children's wear. Tekst.prom. 16 no.9:9 S '56. (MLRA 9:12)
(Textile fabrics)

MANDRUSOV, T.F., inzh.

Transistor cable locating device. Avtom., telem.i sviaz' 7 no.3:29-31 Mr '63. (MIRA 16:2)
(Electric cables--Measurement)
(Railroads--Electric equipment)

MANDRUSOV, T.S., inzh.

A matching autotransformer for high-frequency apparatus. Avtom., telem. i sviaz' 6 no.7:35 Jl '62. (MIRA16:2)

1. Kishinevskaya distantsiya signalizatsii i svyazi Moldavskoy dorogi, vneshtatnyy korrespondent zhurnala "Avtomatika, telemekhanika i svyaz'".

(Electric transformers) (Telephone—Equipment and supplies)

PIKOVSKIY, Genrikh Iosifovich; MANDRUSOV, Zinoviy Naumovich; NOVIKOV, A., redaktor; IGNAT'YEVA, A., tekhnicheskiy redaktor.

[For the welfare of the Soviet man. U.S.S.R. industry is on the upgrade] Na blago sovetskogo cheloveka. Legkaia promyshlennost' SSSR na krutom pod"eme. Moskva, Izd-vo "Moskovskii rabochii," 1954. 60 p. (MIRA 8:5)
(Russia--Industries)

MANDRUSOV, Z.N.; OGOL'TSOVA, V.

Hidden potentialities for the increase of labor productivity in the textile industry. Biul. nauch. inform.: trud i zar. plata 3 no. 11:17-22 '60. (MIRA 14:1)
(Textile industry—Labor productivity)

MAMDHUSOV, Z.N.; DOBROMYSLOVA, L.L.

Outlook for the expansion of the textile industry in Siberia.
Tekst.prom. 20 no.2:4-7 F '60. (MIRA 13:6)
(Siberia--Textile industry)

MANDRUSOVA, E.S.

Role of experimental psychological study in the evaluation of disorders of thinking in children. Trudy Gos. nauch.-issl. inst. psikh. 43:260-268 '65. (MIRA 18:9)

1. Moskovskiy gorodskoy Psikhonevrologicheskiy dispanser dlya detey i podrostkov so statsionarom (glavnyy vrach - kand. med. nauk K.N.Nazarov).

MANDRYGIN, M.M., klinicheskiy ordinator

Early symptoms of neurosyphilis. Trudy Izhev.gos.med.inst. 13:431-437 '51. (MIRA 13:2)

1. Iz kafedry nervnykh bolezney Izhevskogo meditsinskogo instituta. Zaveduyushchiy kafedroy - prof. E.M. Vizen.
(NERVOUS SYSTEM--SYPHILIS)

MANDRYKA, A., kand. n. tech.; PSZCZOLKOWSKI, Andrzej [translator]

Physical fundamentals of gun recoil and rocket motion as seen by scientist of the 17th and 18th centuries. Kwart hist nauki i tech 7 no.4:447-460 '62.

ABALKIN, Leonid Ivanovich; VAL'TUKH, Konstantin Kurtovich; DOLOTENKOVA, Liliya Pavlovna; MANDRYGINA, Faina Aleksandrovna; PLYSHEVSKIY, B.P., red.; MATSUK, R.V., red. izd-va; GARINA, T.D., tekhn. red.

[Study of the production of the means of production under the conditions of the general crisis of capitalism; based on the U.S.A.]Ocherk vosproizvodstva v usloviiakh obshchego krizisa kapitalizma; na primere SShA [By] L.I.Abalkin i dr. Moskva, Vysshaia shkola, 1962. 118 p. (MIRA 15:8)
(United States--Economic conditions)

LAPSHIN, L., aspirant; LIPIN, V.; RIDER, V.; VORONOV, I.; BELEVANTSEV, I.; BUNIN, L.; MANDRYKA, A.

Experimental farm should serve as an example. Zashch. rast. ot vred. i bol. 10 no.12:19-21 '65. (MIRA 19:1)

1. Permskiy sel'skokhozyaystvennyy institut (for Lapshin). 2. Nachal'nik stantsii zashchity rasteniy, Perm' (for Lipin). 3. Nachal'nik Voronezhskoy oblastnoy stantsii zashchity rasteniy (for Rider). 4. Nachal'nik Petropavlovskogo otryada zashchity rasteniy, Voronezhskaya oblast' (for Voronov). 5. Direktor Pavlodarskoy stantsii zashchity rasteniy (for Bunin). 6. Glavnyy agronom kolkhoza imeni Kirova, Konotopskiy rayon, Sumskoy oblasti (for Mandryka).

MANDRYKA, A.P.; OKUNEV, B.N., professor; MARKUZON, I.A., redaktor; TOMARKINA, N.A., tekhnicheskiy redaktor.

Nikolai Vladimirovich Maievskii. Pod red. B.N.Okuneva. Moskva, Gos. izd-vo tekhniko-teoret. lit-ry, 1954. 244 p. (MLRA 7:11)
(Maievskii, Nikolai Vladimirovich, 1823-1892)

MANDRYKA, A.P.

N.V. Maievskii as originator of modern exterior ballistics.
Trudy Inst. ist. est, i tekh. no.1:146-192 '54. (MLRA 8:9)
(Maievskii, Nikolai Vladimirovich, 1823-1892) (Ballistics)

Mandryka, A.P.

MANDRYKA, A.P.

Using Euler's method for determining the mouth speed and his theory of gas tension. Vop. ist. est. i tekh. no.3:200-204 '57. (MIRA 11:1)
(Ballistics)

MANDRYKA, A. P.

MANDRYKA, A. P.

Basic problem of the exterior ballistics in Leonhard Euler's works. Vop. ist. est. i tekh. no.4:26-33 '57. (MIRA 11:1)
(Ballistics, Exterior)

SOV/124-58-11-12021

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 11, p 12 (USSR)

AUTHOR: Mandryka, A. P.

TITLE: Nikolay Aleksandrovich Zabudskiy (1853-1917). A Sketch of His Life and Work [Nikolay Aleksandrovich Zabudskiy (1853-1917) 'Ocherk zhizni i deyatel'nosti)]

PERIODICAL: Tr. In-ta istorii yestestvozn. i tekhn. AN SSSR, 1957, Vol 19 pp 603-618

ABSTRACT: N. A. Zabudskiy was an outstanding representative of the Russian school of ballistics, who has left a lasting mark both on the basic artillery sciences (external and internal ballistics and the theory of gunnery) and on the art of designing and constructing artillery hard ware. The most eminent writings of Zabudskiy are: "O reshenii zadach navesnoy strel'by i ob ugle naibol'shey dal'nosti" (On Solving the Problems of High-angle Fire and on Quadrant Elevation for Maximum Range Trajectory) published in 1888; "Ob uglovoy skorosti vrashcheniya prodolgovatogo snaryada" (On the Angular Speed of Rotation of an Elongated Projectile) published in 1891; the textbook "Vneshnyaya ballistika" (External Ballistics) Part I published in

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Nikolay Aleksandrovich Zabudskiy (cont.)

1895, Part II in 1898; "Teoriya veroyatnostey i premeneniye yeye k strel'be i pristrelke" (Probability Theory and its Application to Gunnery and Adjustment of Fire) published in 1898; "O davlenii gazov bezdymnogo porokha v kanale pushki" (On the Gas Pressure Generated by Smokeless Powder in the Bore of a Gun) published in 1894; "Issledovaniye o dvizhenii prodolgovatogo snaryada" (Investigation of the Motion of an Elongated Projectile), published in 1908; etc. Zabudskiy also played a leading role in the ballistic designing of gun barrels and conducted a great number of experiments on the ballistics of artillery pieces. In 1892 he replaced N. V. Maiyevskiy as active member of the Artillery Committee, and he directed the teaching of external ballistics at the Mikhaylov Artillery Academy Zabudskiy's many writings on external and internal ballistics have been held in high regard in Western Europe. The value of his theoretical research and of his practical contributions persists even to the present.

G. A. Lebedev

Card 2/2

2(3) PHASE I BOOK EXPLOITATION SOV/2893

Mandryka, A. P.

Ballisticheskiye issledovaniya Leonarda Eylera (Ballistic Studies of Leonhard Euler) Moscow, Izd-vo AN SSSR, 1958. 183 p. 2,500 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Institut istorii yestestvoznaniya i tekhniki.

Ed.: B. N. Okuneva, Professor; Tech. Ed.: A. V. Smirnova.

PURPOSE: This book is for scientists and students studying the science of ballistics formulated by Leonhard Euler.

COVERAGE: The author evaluates the ballistic studies of Leonhard Euler, the Swiss mathematician who lived from 1707 to 1783.

TM/mmh
2-15-60

Card 1/1

MANDRYKA, A.P.

V.A.Pashkevich's wind tunnel and his experiments in 1873-1874.
Trudy Inst.ist.est.i tekh. 28:259-275 '59.
(MIRA 13:5)

(Wind tunnels)
(Pashkevich, Vladimir Andreevich, 1844-1930)

MANDRYKA, A.P. (Leningrad)

Books from the library of IA.V.Brius. Vop.ist.est.i tekh. no.10:136-138 '60. (MIRA 14:3)
(Artillery)

MANDRYKA, A.P.

Two memoranda on ballistics by W.L. Krafft. Trudy Inst. ist. est. i tekh. 34:241-263 '60. (MIA 14:2)
(Ballistics)

(At head of title: Akademiya nauk SSSR. [illegible] tekhniki) Errata slip inserted. 1,100 copies printed.

TOPIC TAGS: ballistics, exterior ballistics, interior ballistics, motion mechanics, artillery weapon

PURPOSE AND COVERAGE: This book is mainly based upon a study of Western European sources on ballistics. Works on mathematics, mechanics, physics and chemistry are also used. The book does not go beyond the middle of the 19th century because this period represents a turning point in the development of artillery science: the change from smooth-bore to rifled artillery. The book gives a more complete account of the history of ballistics than previous Soviet works. It also sheds light upon the interconnection of ballistics and physics, mathematics, chemistry and artillery material. In its organization, the book

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Card 2/3

05194

SOV/142-2-3-2/27

9(2,3)

AUTHORS: Mandryka, N.A., Medvedev, K Ye.

TITLE: New Ceramic High-Voltage Capacitors

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiotekhnika, 1959, Vol 2, Nr 3, pp 278-282 (USSR)

ABSTRACT: The authors describe new types of ceramic high-voltage capacitors which are produced by the Soviet industry or which will be produced in the near future. The ceramic high-voltage capacitors (KVKB, KVKG, KVKT, KVDB and others) presently produced by the Soviet industry do not meet completely the requirements of modern radio engineering. Reactance power, capacitance and voltage ratings are inadequate and the dimensions are too great. The Soviet industry works systematically on the development of new, miniature ceramic high-voltage capacitors having higher reactance power, capacitance and operational voltage. Capacitors for pulse circuits are also being developed. New types of capacitors were created and the mass production of some of them has started. The capacitors described in this article are listed according to

New Ceramic High-Voltage Capacitors

current capacitors which are used as filters, KOB-1 (500 picofarads, 12 kv, 21 mm diameter, 18 mm long) and KOB-2 (500 picofarads, 20 kv, 33 mm diameter and 27 mm long). The capacitors are shown in fig.1. Then the authors describe capacitors designed for work in high-frequency generators. The KBE-1 (180 picofarads, 10 kv HF voltage, 25 kva reactance power), KBE-2 (56 picofarads, 10 kv, 15 kva), and KBE-3 (30 picofarads, 12 kv, 15 kva) capacitors are 30 mm long and have diameters of 52, 35 and 25 mm, respectively. At the end of 1957, the Soviet industry developed tubular and disk capacitors having considerable reactance power ratings. These are capacitors KVT (4300 picofarads, maximum operating voltage 8 kv, 100 kva maximum, frequency range 30-60 kc). The operating voltage may be increased to 25 kv in case dc is used. The overall dimensions are 90 mm length and 13 mm diameter. The data of the high-voltage, ceramic disk capacitors KVD-51, KVD-240, KVD-5600 (the numbers indicate the picofarads) are compiled in tablel. Fig.2 shows a photograph of capacitors KBE, KVT, KVD-51, KVD-240 and KVD-5600. Table 2 contains data of miniature capacitors for pulse circuits: KVS-1, KVS-2, KVS-3, KVS-4, KVS-5, KVB-1, LVB-2,

New Ceramic High-Voltage Capacitors

KVB-3, KVB-4 which are also shown in fig.3. Finally, the authors describe anode-separating cylindrical ceramic high-voltage capacitor KVTs (150 picofarads, 15 kv, 200 kva, outer diameter 134 mm, inner diameter 106 mm, height 53 mm) which was designed for the metalloceramic tube GI-14B. The ring-shaped, ceramic high-voltage blocking capacitor KVK (3000 picofarads, 3 kv, 50 kva, outer diameter 175 mm, inner diameter 115 mm, height 15 mm) was designed for the tube GU-4A. The KVTs and KVK capacitors are shown in fig. 4. In fig.5, these capacitors are shown with the respective tubes. The article was recommended for publication by the Kafedra dielektrikov poluprovodnikov Leningradskogo elektrotekhnicheskogo instituta imeni V.I. Ul'yanova (Lenina) (Leningrad Electrical Engineering Institute imeni V.I. Ul'yanov (Lenin)). There are 5 photographs and 2 tables.

SUBMITTED: August 26, 1958

AUTHORS: Mandrykc, N.V., Kalutskaya, N.F. 32-12-12/71

TITLE: The Determination of Iron in Used Lubricating Oil (Opredeleniye zheleza v otrabotannom smazochnom masle).

PERIODICAL: Zavodskaya Laboratoriya, 1957, Vol. 23, Nr 12, pp. 1430-1430 (USSR)

ABSTRACT: In the present paper a method for the determination of iron in used motor oil is suggested which, in contrast to the method officially licensed by the Soviet State (GOST 1955-47), is not based upon the ozonization process. The iron is extracted from the oil-gasoline solution by the hydrochloric acid (1:1). For the purpose of controlling the method several analyses are carried out both by the old and by the new method, and results are shown together in a table. As may be seen herefrom, the divergency is between 0.001-0.00% (mostly in favor of the old method). The analysis is described as follows: 5 g of the oil to be examined are dissolved in a 250 ml glass in 50 ml pure gasoline. Hereto 50 ml of chemically pure hydrochloric acid (1:1), which had previously been heated up to a temperature of 60 to 70°, are added. The mixture together with the glass is heated in a glass trough while being continually stirred (the degree of temperature is not mentioned); the mixture is then set aside for precipi-

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tation. Following this, the clear part of the solution is poured off and the precipitation in the 100 ml copper retort together with the gasoline used for rinsing out is stirred together with a small quantity of hydrochloric acid (1:3). The mixture is then diluted with distilled water up to a total volume of 100 ml, and in it iron is colorimetrically determined. There is 1 table.

ASSOCIATION: Khar'kov "Serp i Molot" Works ("Khar'kovskiy zavod "Serp i Molot").

AVAILABLE: Library of Congress

Card 2/2 1. Oil-Lubricating-Iron determination 2. Oil-Iron extraction-Hydrochloric acid processes

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