

PETRENKO, B.G., prof.; ANDREYEV, Ye.V., kand.veterin.nauk; ROTOV, V.I.,
kand.veterin.nauk; TOLSTYAK, I.Ye., kand.veterin.nauk;
KONOZENKO, P.A., mladshiy nauchnyy sotrudnik; OMELAYENKO, A.A.,
mladshiy nauchnyy sotrudnik; BAKUMENKO, M.D., mladshiy nauchnyy
sotrudnik; CHECHETKINA, N.P., starshiy laborant

Crystal violet blood vaccine against foot-and-mouth disease.
Veterinariia 40 no.7:9-10 J1 '63. (MIRA 16:8)

1. Ukrainskiy nauchno-issledovatel'skiy institut eksperimental'noy
veterinarii.

(Ukraine--Foot-and-mouth disease--Preventive inoculation)

VOLJK, A.G., inzh.; PETRENKO, I.P., inzh.

Anchoring pontoon with piling. Transp. stroi. 12 no.3:52 Mr
'62. (MIRA 16:11)

IL'INSKIY, B.D.; DUNAYEVSKIY, M.M.; SINEBRYUKHOV, N.V.; PETRENKO, L.I.;
ZORIN, S.V., red.; DOBUZHINSKAYA, L.V., tekhn.red.

[Safety regulation in the open-hearth process] Pravila bez-
opasnosti v martenovskom proizvodstve. Moskva, Gos.nauchno-tekhn.
izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1960. 127 p.
(MIRA 13:7)

1. Soyuz rabochikh metallurgicheskoy promyshlennosti SSSR.
TSentral'nyy komitet.
(Open-hearth furnaces--Safety measures)

TUV, Izrail' Aronovich; PETRENKO, A.F., red.; VOLCHOK, K.M., tekhn.
red.

[Firing water-cut fuel oil in marine steam boilers] Szhiganie
obvodnennykh mazutov v sudovykh parovykh kotlakh. Leningrad,
Izd-vo "Rechnoi transport," 1962. 63 p. (MIRA 15:7)
(Petroleum as fuel) (Boilers, Marine)

L 41620-65 EWT(m)/EWP(t)/EWP(b) IJF(c) JD/JG/GS

ACCESSION NR: AT5008402

S/0000/64/000/000/0023/0031

AUTHOR: Petrenko, A. G.; Kuznetsova, L. A.

16
B+1

TITLE: Xylenol orange as a complexometric indicator for ²⁷indium, ²⁷cerium and lan-
thanum ²⁷

SOURCE: AN SSSR. Sibirskoye otdeleniye. Khimiko-metallurgicheskiy institut.
Khimicheskiy analiz tsvetnykh i redkikh metallov. (Chemical analysis of non-
ferrous and rare metals). Novosibirsk, Redizdat Sib. otd. AN SSSR, 1964, 23-31

TOPIC TAGS: xylenol orange, indium, cerium, lanthanum chelate, phenol derivative,
acid base indicator, organic dye

ABSTRACT: Xylenol orange, 3,3'-bis[N,N-di(carboxymethyl)aminomethyl]-o-cresol-
sulfophthalein, displays both acid-base and metallochromic properties. The acid-
base sensitivity results from the mobility of the proton on the carboxyl group
of the phenol, while the metallochromic properties are due to interaction of the
hydroxyl on the phenol with the chelating dicarboxymethylaminomethyl group. To
investigate the possibility of using xylenol orange as a complexometric indicator,
the dye and its complexes with indium, cerium and lanthanum were spectrophoto-
metrically studied. The measurements were made in buffered solutions (pH = 1-10)

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at 330-1100 mμ on an SF-4 spectrophotometer in 1 cm quartz cells. It was found that complexometric determination of indium is possible in the presence of cerium, lanthanum and aluminum as well as titration of cerium and lanthanum using xylenol orange as an indicator. Orig. art. has: 2 tables and 5 figures.

ASSOCIATION: none

SUBMITTED: 01Sep64

ENCL: 00

SUB CODE: .CC;MM

NO REF SOV: 002

OTHER: 003

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S/129/60/000/05/005/023
E193/E283

AUTHORS: Teymer, D. A., Petrenko, A. G., and Kurtova, L. A.,
Engineers

TITLE: Protection Against Decarburization of High-Speed
Cutting Steels During Annealing

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov,
1960, Nr 5, pp 19-23 (USSR)

ABSTRACT: The object of the investigation, described in the present paper, was to develop a method of preventing decarburization of high-speed cutting steel during annealing which, at the same time, would give protection against oxidation, so as to eliminate the need for subsequent pickling, which, in the case of thin wire, may prove to be a difficult operation and may result in inferior surface finish and in considerable losses of the metal. The experimental work was carried on strip (1.5 to 3 mm thick) and wire (1 to 3 mm diameter) specimens, annealed in a salt bath, in vacuum and in various protective atmospheres (hydrogen, dissociated ammonia and the products of partial combustion of kerosene). Two steels were used in the experiments: steel P9 containing

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0.84% C, 3.98% Cr, 8.3% W, and 0.36% Mn, and steel P18 containing 0.76% C, 4.02% Cr, 15.89% W, 1.26% V, 0.40% Mn, and 0.13% Si. The degree of decarburization was determined by the method due to V. D. Sadovskiy. The experiments on the effect of dry and moist hydrogen, or dissociated ammonia atmospheres, were conducted in the apparatus illustrated in Fig 1, showing: 1 - gas flow meter; 2 - water; 3 - alumina gel; 4 - thermometer; 5 - three-way stopcock; 6 - annealed specimen; 7 - quartz tube. The gases were dried (to dew point of -50°C) by passing through regenerated alumina gel; oxygen was removed from hydrogen by passing it through a tube with titanium shavings heated to 900 to 1000°C . The annealing experiments (30 min duration) were carried out at various temperatures between 600 and 1000°C . The results are reproduced in Fig 2, where the depth of decarburization (mm) is plotted against the annealing temperature ($^{\circ}\text{C}$). The results of other experiments are reproduced in Fig 3, where the depth of decarburization (mm) at 900°C is plotted against the duration (h) of the annealing.

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treatment, the four curves relating to experiments carried out in 1 - dry hydrogen, 2 - moist hydrogen, 3 - dry, dissociated ammonia, and 4 - moist dissociated ammonia. It will be seen that at temperatures above 600°C, neither moist nor dry hydrogen (or dissociated ammonia) can be used as a protective atmosphere for heat-treating high-speed cutting steels. In the next series of experiments, the suitability of products of partial combustion of kerosene for this purpose was studied. The apparatus used for the production of the protective atmosphere is illustrated in Fig 4, showing: 1 - electric motor; 2 - kerosene pump; 3 - kerosene filter; 4 - pressure regulator; 5 - pressure gauge; 6 - burner jet; 7 - air blower; 8 - throttle; 9 - ceramic housing of the burner; 10 - hole for igniting kerosene; 11 - combustion chamber; 12 - inspection hole; 13 - air heater; 14 - tube filled with coke; 15 - gas consumption meter; 16 - fabric filter;

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17 - pressure gauge. The apparatus is operated in the following manner: with the aid of the pump, 2, kerosene is supplied to the burner 6 through filter 3 and pressure regulator 4. Air is supplied by the air blower 7 and is passed through the heater 13 before being mixed with kerosene in the burner where a highly combustible suspension of kerosene in air is formed. The mixture is burned in the combustion chamber 11, provided with fire-resisting lining and a horizontal partition which ensures good mixing of the combustion products. The products of partial combustion pass through a cooling column 14, filled with coke; in the upper part of this column, water is sprayed to cool and clean the combustion products which are later purified by passing through the fabric filter 16. The gas obtained in this apparatus contained 5 to 6% CO₂, 8 to 15% CO, 6 to 15% H₂ and up to 0.5% O₂. When an atmosphere with a low moisture content was required, the gas was dried with the aid of alumina gel; when necessary, CO₂ was removed by passing

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the gas through a vessel filled with 33% water solution of NaOH; the drying and purifying train is illustrated in Fig 5, showing a tube with cotton wool, flow meter, vessels with the NaOH solution and a tube with alumina gel. The CO₂ content in the purified gas did not exceed 0.5%. The heat-treatment experiments were carried out on specimens, measuring 20 x 25 mm, 0.6 to 1.5 mm thick, which were held at 900°C for 1 h and then cooled slowly to room temperature. The results are given in Table 1 under the following headings: preliminary treatment of the protective atmosphere (without drying and purifying treatment; ditto; ditto; ditto, drying; ditto; drying and removal of CO₂; ditto; ditto;); CO₂, CO, and H₂ content, %; dew point, °C; depth, mm of the decarburized layer. It will be seen that the products of partial combustion of kerosene require supplementary drying and purifying treatments to ensure full protection against decarburization of

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high speed cutting steel. In the next series of experiments, the suitability of the products of partial combustion of kerosene for intermittent annealing of wires, made of steels P8,⁴ P9K5,⁴ and Mo-6⁴ (0.96% C, 0.44% Mn, 4.05% Cr, 5.65% Mo, 2.96% V), was studied. Coils of wire, 0.9 to 1.5 mm diameter, weighing 5 to 6 kg, were placed in a metal container which, after purging with the burnt gas, was inserted in a muffle furnace; the annealing operation consisted in heating the charge to 900°C, holding it at the temperature for 2 h, and cooling at the rate of 50°C/h. The same experiments were carried out in vacuum, in a salt bath, and in air, the heat treatment in the latter case consisting in heating the wire to 740°C, holding it at the temperature for 40 min, and cooling in water. It was found that the mechanical properties of steel are not significantly affected by the method of annealing, except when the heat-treatment is carried out in a salt bath, in which case a product, characterized by surface defects and non-uniformity of the mechanical properties, *IX*

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is obtained; in addition, a somewhat difficult washing operation is necessary when salt bath is used for heat-treating the wire. The degree of decarburization varied with the method of annealing employed, which also affected the drying characteristics of the annealed wire (i.e. the maximum total deformation between anneals). This is shown by the data given in Table 2 under the following headings: type of steel; σ_b , (UTS kg/mm²), δ (elongation, %), and maximum deformation between anneals for material annealed in (a) air, (b) burnt kerosene gas, (c) vacuum and (d) salt bath. Best results, in this respect, were obtained when dried and purified products of partial combustion of kerosene were used as the protective atmosphere. Wires, made of steels P18, Mo-6 and P9K5, annealed in this atmosphere, could be drawn to 66, 55, and 80% total deformation, respectively. It would appear that the improvement in the drawing characteristics of wires, annealed in the atmosphere of partially burnt kerosene gas, can, to some extent, be

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attributed to the formation of soot (graphite deposit) on the wire surface, which acts as a lubricant. Several conclusions were reached. (1) Annealing the high speed cutting steel in the atmosphere of partially burnt kerosene gas, from which both H₂O and CO₂ have been removed, ensures freedom from decarburization and scale formation. (2) This protective atmosphere is effective at temperatures up to 900°C. (3) The method of annealing, studied during the present investigation, is of particular importance in annealing wire and other products of small cross-section. Acknowledgments are made to Ye. S. Morozova, who participated in this work. There are 5 figures, 2 tables and 2 Soviet references.

ASSOCIATION: TsNIChERMET

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PETRENKO, A.G., inzh.

Properties of cold-rolled electrical steel. Sbor. trud. TSHIICHM
no.17:138-153 '60. (MIRA 13:10)
(Sheet steel--Cold working)
(Steel--Electric properties)

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12. 8300

SOV/81-59-9-31744

Translation from: Referativnyy zhurnal. Khimiya, 1959, Nr 9, pp 316 - 317 (USSR)

AUTHORS: Petrenko, A.T., Antropov, L.M.

TITLE: Combined Protection of Iron and Zinc in Acidic Media

PERIODICAL: Sb. kor-t po korrozii i zashchite metallov Vses. sov. nauchno-tekhn. o-v, 1957, Nr 2, pp 82 - 93

ABSTRACT: The effect of corrosion inhibitors of the adsorption type without and with application of cathode polarization on the corrosion rate (CR) of Fe and Zn in an acidic medium (1 n H₂SO₄ and 1 n HCl), has been studied. H₂SO₄, HCl (acid) and also surface-active additions of the "chemically pure" type were used. Based on preliminary experiments, the following additions were selected: n-tolythiourea, thiourea, tribenzylamine and sulfate of tetrabutylammonium and anthranilic acid. The electrocapillary curves obtained on mercury in 1 n H₂SO₄ without additions and with additions of surface-active substances show that anthranilic acid and n-tolythiourea in an acidic medium generate surface-active molecules; tribenzylamine and sulfate of tetrabutylammonium form surface-active cations, and thiourea is analogous to the surface-active anion. It has

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SOV/131-111-11

AUTHORS: Petrenko, A. G., Kurtova, L. A., Chub, G. F., Ilyin, M. M., Popov, B. N., Sterlin, R. I. (Engineers)

TITLE: Physical Metallurgy and Heat Treatment. The Effect of Intermediate Annealing in Hydrogen on Specific Losses of Cold-Rolled Transformer Steel

PERIODICAL: Stal', 1960, Nr 1, pp 71-73 (USSR)

ABSTRACT: This is a brief report concerning the experimental production that proposed to establish the possibility of decreasing carbon content in the transformer steel. The intermediate annealing in bell furnaces (with protective atmosphere of DKh-gas--a mixture of coke and blast furnace gas) was replaced by annealing in tunnel-type furnace and bell furnace with the protective atmosphere of dry hydrogen. M. I. Veklich, N. Ye. Spiridonov, G. G. Kuznetsov, and G. N. Novikova participated in the work. The investigated steel had following chemical composition: C, 0.02-0.04; Mn, 0.08-0.14; Si, 2.90-3.26; P, 0.004-0.007; S, 0.005; Cu, trace-

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The Effect of Intermediate Annealing in
Hydrogen on Specific Losses of Cold-Rolled
Transformer Steel

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SOV, 133-00-1-0000

0.08; NI, 0.03-0.15. The results of tests of steel under various conditions are given in Tables 1, 2, and 3. The authors arrived at the following conclusions: (1) The application of double decarburization annealing of the strip 0.85-0.70 and 0.50-0.35 mm thick in a tunnel-type furnace in hydrogen atmosphere facilitates the production of steel with lower carbon content and smaller specific losses than in the case of intermediate annealing of steel in bell furnaces in DKH-gas atmosphere. (2) The cold-rolled transformer steel of investigated melts, which passed the double intermediate annealing in the tunnel-type furnaces in the atmosphere of dry hydrogen (and after high-temperature annealing of sheets in the vacuum and additional annealing for elimination of work-hardening), has magnetic induction B_{25} from 18,700 to 19,300 gauss, and specific losses for sheets 0.50 mm thick P_{10} from 0.80 to 0.84 and P_{15} from 1.72 to 1.86 watt/kg, and for sheets 0.35 mm thick P_{10} from

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USSR, SOV/133-00-1-25/50

Table 1. Electric and magnetic properties of cold-rolled transformer steel, which passed through the intermediate annealing in bell furnace in DKh-gas atmosphere (A) and in tunnel furnace in hydrogen atmosphere (B).

THICKNESS OF STRIP (MM)	Nr OF MELTS	A								Nr OF MELTS	B							
		SPECIFIC LOSSES (WATT/KG)			MAGNETIC INDUCTION (GAUSS)						SPECIFIC LOSSES (WATT/KG)			MAGNETIC INDUCTION (GAUSS)				
		$P_{1.0}$	$P_{1.5}$	$P_{2.0}$	$B_{1.0}$	$B_{1.5}$	$B_{2.0}$	$B_{2.5}$	$P_{1.0}$		$P_{1.5}$	$P_{2.0}$	$B_{1.0}$	$B_{1.5}$	$B_{2.0}$	$B_{2.5}$		
0.50	26422	1.07	2.31	3.19	17000	18430	19300	19750	26422	0.97	2.05	2.77	17000	18900	19500	19900		
	26004	1.02	2.12	3.09	16990	18360	19050	19550	26004	0.91	2.00	2.76	17000	18950	19500	19850		
	25955	0.97	2.10	2.89	17350	18770	19350	19860	25955	0.89	1.95	2.70	18000	18800	19450	19850		
	AVERAGE	1.02	2.15	3.05	17110	18520	19230	19700	AVERAGE	0.92	2.00	2.74	17930	18850	19480	19670		
0.35	26488	0.80	1.72	2.35	18200	18800	19450	19850	26347	0.67	1.45	1.94	18000	18700	19350	19760		
	25010	0.78	1.68	2.26	18700	19100	19550	19950	26391	0.76	1.61	2.13	18300	19000	19500	19850		
	26847	0.82	1.85	2.57	17400	18100	18700	19300	26367	0.69	1.50	2.04	17300	18800	19450	19850		
	26965	0.73	1.48	1.95	19000	19300	19700	20100	26469	0.68	1.43	1.94	18300	19050	19600	19800		
	26106	0.79	1.80	2.47	17200	18300	18850	19450	25803	0.67	1.37	1.80	18200	19000	19400	19750		
	27142	0.81	1.72	2.35	17800	18700	19250	19750	25906	0.71	1.49	1.96	18600	19000	19500	19800		
	27040	0.76	1.68	2.32	18200	18600	19300	19600	26416	0.70	1.54	2.05	18600	19000	19550	19850		
	26847	0.70	1.49	2.00	18700	19300	19800	20150	25740	0.72	1.50	1.96	18200	18950	19450	19800		
	AVERAGE	0.77	1.68	2.26	18150	18770	19320	19750	AVERAGE	0.70	1.48	1.98	18180	18930	19470	19800		

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Table 2. Electric and magnetic properties of annealed (in tunnel furnace in hydrogen atmosphere) cold-rolled transformer steel after addition annealing.

THICKNESS OF STRIP (mm)	No. of tests	SPECIFIC LOSSES (WATT/KG)			MAGNETIC INDUCTION (GAUSS)			
		P_{10}	P_{15}	P_{20}	B_{10}	B_{15}	B_{20}	B_{100}
0.50	26422	0.84	1.86	2.52	17400	19150	19660	19950
	26004	0.40	1.72	2.42	18300	19000	19550	19900
	26955	0.83	1.80	2.53	18100	19000	19550	19900
	AVERAGE	0.82	1.79	2.49	18060	19050	19580	19915
0.35	26347	0.57	1.22	1.69	18300	19000	19600	19950
	26091	0.69	1.41	1.93	18200	19100	19700	20000
	26507	0.64	1.40	1.99	18400	18700	19500	19700
	26429	0.63	1.31	1.80	18600	19300	19750	19950
	26803	0.62	1.29	1.69	18300	19300	19600	19860
	26905	0.60	1.25	1.67	18600	19100	19400	19900
	26116	0.66	1.41	1.92	18500	19000	19400	19500
	26740	0.65	1.38	1.88	18700	19050	19500	19760
AVERAGE	0.63	1.33	1.82	18450	19060	19630	19870	

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Table 3. Electric and magnetic properties of cold-rolled strip of steel, which passed through the laboratory and then of 20-100 annealing in coils in bell furnace. In the atmosphere of dry air.

THICKNESS OF STRIP (MM)	MELTS	SPECIFIC LOSSES (WATT/KG)			MAXIMUM INDUCTION (GAUSS)			
		P_{10}	P_{20}	P_{30}	B_{10}	B_{20}	B_{30}	B_{100}
0.10	26422	1.01	2.14	2.92	17700	19800	19650	19950
	26404	0.96	2.06	2.82	18400	19200	19700	19900
	25955	0.96	2.14	2.95	17900	19050	19700	20000
	AVERAGE	0.97	2.11	2.89	18000	19650	19630	19970
0.15	21147	0.82	1.69	2.33	17900	18400	19600	19500
	26507	0.73	1.44	1.96	18500	19200	19700	20100
	25925	0.73	1.62	2.36	17600	18500	18900	19500
	24409	0.68	1.46	1.99	18000	19100	19650	19900
	23803	0.69	1.46	1.96	18000	18200	19200	19600
	25906	0.80	1.62	2.30	17600	18200	19200	19600
	24319	0.68	1.70	2.32	18800	19150	19650	19900
	25740	0.68	1.70	2.31	18700	19020	19650	19800
AVERAGE	0.71	1.55	2.16	18000	18540	19420	19510	

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Physical Metallurgy and Heat Treatment.
The Effect of Intermediate Annealing in
Hydrogen on Specific Losses of Cold-Reduced
Transformer Steel

77462

SOV/133-60-1-1-1-1

0.07 to 0.24 and P_h from 0.01 to 1.41 watt/cm². (1)
For manufacturing of higher grades of transformer steel
according to the All-Union State Standard 802-58 (GOST
802-58) it is advisable to build at the metallurgical
plants the tunnel-type furnaces, which assure the most
intensive decarburization (heating in dry hydrogen,
holding in humid, reaching the strip (counter to its
movement) on both sides by hydrogen). The intermediate
annealing in the tunnel-type furnace, with tension of
heated (to 750-800° C) strip, results also in the
diminishing of its waviness and warping. There is 1
figure; 3 tables; and 2 Soviet references.

ASSOCIATION: Central Scientific Research Institute of Ferrous Metallurgy and the "Zaporozhstal'" and "Elektrostal'" Plants (TSNIICM i zavody "Zaporozhstal'" i "Elektrostal'")

Card 6/6

BUSEV, A.I.; PETRENKO, A.G.

Complexon indicators; a survey. Zav. lab. 24 no.12:1449-1457 '58.
(MIRA 12:1)

(Indicators and test papers)

M-7

POTRENKO, A.

USSR/Cultivated Plants - Technical Oleaceae, Sugar Plants

Abs Jour : Ref Zhur - Biol., No 1, 1958, No 1699

Author : A.G. Potrenko, A.N. Korzhina

Inst : Not Given

Title : The Physiological-Biochemical Peculiarities of Ostrolist 2747 Variety Tobacco Raised in Different Planting Densities.

Orig Pub : Tobak, 1956, No 3, 15-17

Abstract : The work has been carried out in 1952 on the testing area of the institute in the Krasnodarskiy kray. The plants of tobacco were planted with a planting density of 42.83 and 167 thousand plants per 1 hectare. It was established that with dense planting, the leaves contain less dry matter, the moisture capacity and the water retaining capacity of the leaves during creases, and the velocity of water loss by the leaves during drying decreases. After fermentation, leaves contain more sugars and less of the total and albuminous nitrogen and also nicotine. Preference has to be given to the sparse planting of the variety Ostrolist 2747.

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SOV 32-24-12-14

Complexometric Indicators. Review

That there are relatively few redox complexometric indicators and methods is a result of the complicated working technique required to use them and the difficulty in synthesizing indicators of this type. It is shown that the lack of new indicators could be remedied by carrying out syntheses involving the introduction of new, analytically active radicals into the molecule. There are 163 references, 23 of which are Soviet.

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IGNATOV, D.V., starshiy nauchnyy sotrudnik; PETRENKO, A.G., nauchnyy sotrudnik

Morphological changes in the lymphatic nodes under the influence of a constant source of ionizing radiation (P-32) on the organism; a preliminary report. Trudy Ukr. nauch.-issl. inst. ortop. i travm. no.15:355-358 '59 (MIRA 16:12)

1. Iz Ukrain'skogo nauchno-issledovatel'skogo instituta ortopedii i travmatologii imeni prof. M.I.Sitenko (dir.- chlen korrespondent AMN SSSR, prof. N.P.Novachenko).

P. Ioffe, A. G. Petrenko, G. F. Chub
133-10-19/26

AUTHOR: Ioffe, M. M., Petrenko, A. G., and Chub, G. F. Engineers.

TITLE: The Influence of Technological Factors on the Electromagnetic Properties of Cold Rolled Transformer Steel.
(Vliyaniye Tekhnologicheskikh Faktorov Na Elektromagnitnye Svoystva Kholodnokatanoy Transformatornoy Stali).

PERIODICAL: Stal', 1957, No.10, pp. 936-940 (USSR).

ABSTRACT: During the mastering of the production of cold rolled transformer steel 0.35 and 0.50 mm thick, 750 x 750 mm., Zaporozhstal' Works together with TsNIIChM carried out an investigation of the influence of various technological factors on the magnetic properties of steel. The following factors were studied: the influence of silicon and carbon content, vacuum treatment of liquid steel, the influence of a preliminary annealing of hot rolled strip on properties of cold rolled steel and the influence of vacuum annealing. The dependence of specific losses of cold rolled transformer steel 0.5 mm thick on the content of silicon and carbon, Table 1. A comparison of electromagnetic properties of cold rolled transformer steel untreated and treated in vacuo, Table 2 and Figure 3. Mechanical and magnetic properties of transformer steel cold rolled with and without a preliminary annealing, Tables 3 and 4 respectively. The influence of the temperature of vacuum annealing on the electromagnetic

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133-10-19/26

The Influence of Technological Factors on the Electromagnetic Properties of Cold Rolled Transformer Steel.

properties of cold rolled transformer steel - Table 5. It is concluded that: the optimum silicon content in the transformer steel under operating conditions of the works is 2.9 - 3.3%, further increase in silicon content has no practical influence on the magnetic properties while it makes cold rolling more difficult. The content of carbon in finished sheets varied from 0.010 to 0.015%, a decrease in carbon content within those limits leads to only a small decrease in specific losses. Decarburisation takes place only during preliminary annealing. Vacuo treatment of the liquid steel produces a decrease in the contents of carbon and sulphur in the metal. A more accurate study of the influence of vacuum treatment on decreasing specific losses is necessary. Increasing the temperature of annealing in vacuo (20-40 mm Hg) above 1100°C does not lead to a further decrease in specific losses. The following participated in the work: I.L. Zlatkin, S.M. Popov, N.A. Troshchenkov and M.I. Veklich. There are 5 tables, 5 figures and 3 references, all are Slavic.

Card 2/3

The Influence of Technological Factors on the Electromagnetic
Properties of Cold Rolled Transformer Steel. 133-10-19/26

ASSOCIATION: Zaporozhstal' Works and TsNIICHM. (Zavod
Zaporozhstal' i TsNIICHM).

AVAILABLE: Library of Congress
Card 3/3

PETRENKO, A.G.

Investigating the use of elevated temperatures for the fermentation of tobacco. Izv.vys.ucheb.zav.; pishch.tech. no.6: 78-82 '58. (MIRA 12:5)

1. Vsesoyuznyy institut tabaka i makhorki, Otdel sushki i fermentatsii.

(Tobacco curing)

SOV/133-59-3-25/32

AUTHORS: Petrenko, A.G., Kurtova, L.A., Petlyakov, M.M. and Belyakov, A.I.

TITLE: Heterogeneity of Magnetic Properties of Cold-rolled Transformer Steel (Neodnorodnost' magnitnykh svoystv kholodnokatanoy transformatornoy stali)

PERIODICAL: Stal', 1959, Nr 3, pp 267 - 268 (USSR)

ABSTRACT: During the production of cold-rolled transformer steel on the Novosibirsk Works, some lots of sheets possessed unsatisfactory magnetic properties. On inspection of the surface of rejected sheets, zones with a fine-grain structure were noticed. Metallographic investigations indicated that in the fine-grain zones the edge of the cube $[100]$ of nearly each individual grain formed an angle with the direction of rolling while in the remaining metal practically all grains were orientated along the rolling direction. The absence of the necessary texture was also confirmed by magnetic anisotropy (Figure 1). Re-annealing at 1200°C in hydrogen of faulty sheets did not improve their magnetic properties. The presence of the above fine-grain zones can be explained either by their higher carbon content (from traces of grease films from rolling which

Card 1/2

Heterogeneity of Magnetic Properties of Cold-rolled Transformer Steel

NOV/193-59-3-2 /58

carburised the affected spots) or small amounts of Mn, Cu, Ni or N or by the presence of non-metallic inclusions. It is concluded that in order to obtain good quality transformer steel without fine-grain zones, it is necessary to prevent the contamination of the metal and a more complete decarburisation of steel.

There are 2 figures, 1 table and 6 references, 5 of which are Soviet and 1 English.

ASSOCIATIONS: TsNIChM and Novosibirskiy metallurgicheskiy zavod (Novosibirsk Metallurgical Works)

Card 2/2

PETRENKO, I. G.

ICVTB, M.M., insh.; PETRENKO, A.G., insh.; CHUB, G.F., insh.

Effect of technological factors on the electromagnetic properties of cold-rolled electrical steel [with summary in English]. Stal' 17 no.10:936-940 O '57. (MIRA 10:11)

1. Zavod "Zaporozhstal'" i Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii.

(Steel--Electric properties) (Rolling (Metalwork))

PETRENKO, A.G.;D'YACHKIN, I.I.

Changes in the chemical composition and properties of Pomorskaya
makhorka during fermentation. Izv. vys. ucheb. zav.; pishch. tekhn.
no. 2:54-58 '58. (MIRA 11:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut tabaka i makhorki
imeni A.I.Mikoyana.

(Tobacco curing)

TEYMER, D.A., inzh.; PETRENKO, A.G., inzh.; KURTOVA, L.A., inzh.

Protection against carbon loss during the annealing of rapid
steel. Metalloved. i term. obr. met. no. 5:19-23 My '60.
(MIRA 13:12)

1. Tsentral'nyy nauchno-issledovatel'skiy institut chernoy
metallurgii.
(Annealing of metals) (Protective atmospheres)

EUSEV, A.I.; PETRENKO, A.G.; BYKHOVSKAYA, I.A.

Use of xylenol orange in the trilonometric determination of
aluminum. Zav.lab. 27 no.6:659-661 '61. (MIRA 14:6)

1. Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova.
(Aluminum--Analysis)

PETRENKO, A.G.

Review of the book by B.S. Khristoforov, E.D. Glotko "Mineral
phase analysis of the products of the lead industry." Zhur.
anal. khim. 18 no.11:1405-1406 N '63. (MIRA 17:1)

PIETRENO, A. G.

Tobacco Industry--Krasnodar Territory

Characteristics of post-harvest processing of tobacco variety "Astrakhan 204" in Krasnodar Territory. *Tekhn. 19 n. 4, 1955.*

Monthly List of Russian Accessions, Library of Congress, October 1952. *LC-10501-112.*

PEIRENKO, A.G.

Moscow. *Tehnicheskoye nauchnoissledovatel'skiy institut mashinostroyeniya*
 Metallurgii
 Spetsial'nyye stali i splavy (Special Steels and Alloys) Moscow,
 Metallurgizdat, 1966. 439 p. (Serials, 5 pts. Specials, 1 pt. 5
 v. 17) Errata slip inserted. 4,100 copies printed.

Sponsoring Agencies: Institut kachestvennykh staley; Gosudarstvennyy
 nauchnyy komitet SSSR; Ministerstvo SSSR; and Glavnyy upravleniye
 nauchno-issledovatel'skiy i proyektnykh organizatsiy.

Ed.: M.V. Prudantsev; Ed. of Publishing House: A.L. Gortchinskaya,
 Tech. Ed.: V.V. Michaylova.

PURPOSE: This book is intended for engineering and research per-
 sonnel in the metallurgical and machine-building industries.

COVERAGE: This book contains papers on the physical properties of
 special industrial steels and alloys. Individual papers treat
 the problem of flake formation in steels and preventive measures,
 the effect of alloying additions and heat treatment on the struc-
 ture and properties of steel, steel corrosion and preventive
 measures, and the properties of precipitation alloys. There
 are 120 references. By Soviet, 20 English, 9 German, and 2 French.

Prudantsev, M.V. and K.A. Lankova. New Steel without Molybdenum
 for Cracking Plants 86

Livshits, G.L. and G.A. Torjanova. [Candidates of Technical
 Sciences]. Effect of Molybdenum on the Properties of Construction
 Steel 99

Livshits, G.L. and G.A. Torjanova. New Types of Constructional
 Steel 103

Ivanov, A.O. [Candidate of Technical Sciences]. The Study of High
 Speed Cobalt Steels 107

Kharin, A.A. [Engineer]. Properties of Cold Transformed
 Electrical Steels 111

Mofedov, A.A. [Engineer]. Cold Rolled Dynamically Loaded
 Steels 114

Rabazov, A.A. [Candidate of Technical Sciences, A.S.T.A. Doctor
 (Engineer)]. Means of Increasing the Plasticity of Low-Alloy
 Steels 118

Rabazov, A.A. and D.G. Tufanov [Engineer]. Plastic Corrosion of
 Chromium Stainless Steels 124

Rabazov, A.A. and Ye.N. Farva. Stability of Steels and Its
 Effect on Corrosion Resistance of Industrial Steels 128

Rabazov, A.A., D.G. Tufanov, and A.A. Sabitov [Engineer]. Sea
 Water Corrosion of Steels 134

Telov, N.P. [Engineer]. Strong Austenitic High-Strength Steels
 147

Topov, Ye.V. [Engineer]. On the Problem of Corrosion-Resistant
 Polychloro-Organic Steels: Theoretical Investigation 151

Litovskiy, A.A. and D.G. Tufanov. Mechanical Properties of Steels
 in Industrial and Marine Environments 155

Prudantsev, M.V. and K.A. Lankova. New Steel without Molybdenum
 for Cracking Plants 86

KHRISTOFOROV, B.S.; KONDRAT'YEV, V.M., kand. khim. nauk, retsenzent;
MISHCHENKO, M.A., retsenzent; TIMERBULATOVA, M.I.,
retsenzent; NOVIK, I.V., retsenzent; PETRENKO, A.G.,
retsenzent; MAR'YEVA, N.N., retsenzent; LEVIN, I.S.,
retsenzent; BUSEV, A.I., prof., otv. red.; KRAVCHENKO, L.S.,
red.

[Selective ~~solvents~~ in mineral phase analysis] Izbiratel'-
nye rastvoriteli v veshchestvennom analize. Novosibirsk,
red.-izd. ot del Sibirskogo otd-nia AN SSSR, 1964. 95 p.
(MIRA 17:12)

1. Moskovskiy gosudarstvennyy universitet (for Busev).

PETRENKO A.I.

~~PETRENKO, A.I.~~

A timely topic. Zhivotnovodstvo 19 no.11:88-89 N '57. (MIRA 10:12)

1. Glavnyy zootekhnik Kalinovskoy mashinno-traktornoy stantsii,
Chernovitskoy oblasti.

(Stock and stockbreeding)

PETRENKO, A.I. sovetnik yustitsii

More attention to maintaining agricultural machinery. Mekh.sil'.
josp. 13 no.12:12-13 n '62. (MIRA 16:2)
(Ukraine--Agricultural machinery--Maintenance and repair)

ACCESSION NR: AP4024481

S/0142/64/007/001/0003/0011

AUTHOR: Petrenko, A. I.

TITLE: Cathode ray converters for functions of two variables

SOURCE: IVUZ. Radiotekhnika, v. 7, no. 1, 1964, 3-11

TOPIC TAGS: converter, function converter, two variable converter, cathod ray converter, functional generator, analog conversion, digital conversion, variable density mask, functional mask

ABSTRACT: Several versions of cathod-ray functional generators of two independent variables are described, intended for use in computers, simulators, and physical experiments. In all the devices a function of two variables is ultimately represented as either a sequence of functions of a single variable. The sequence can be continuous (analog method) or discrete (digital method). As applied to a cathode ray converter, the analog method employs a mask of variable optical thickness placed between the screen of the cathode ray tube and a photosensitive element, and the density of the mask varies from point to point in accordance with the values of the function of two variables. In the discrete methods the

Card 1/4

ACCESSION NR: APW024481

function is represented by curves, each representing a section through the two-variable surface at a fixed value of one other variable, with linear interpolation between the discrete values of the function. In all the methods, the main difficulty lies in the preparation of the functional mask, which involves a great deal of preliminary calculation. Orig. art. has: 7 figures and 6 formulas.

ASSOCIATION: None.

SUBMITTED: 05Oct62

DATE ACQ: 15Apr64

ENCL: 02

SUB CODE: MM, SD

NR REF SCV: 003

OTHER: 006

Card 2/4

CHERNENKO, V.I.; KOSTENKO, B.N.; LEVITIN, Zh.N.; PETRENKO, A.I.

Study of the process of copper refining. Zhur. prikl. khim.
36 no.11:2491-2498 N '63. (MIRA 17:1)

ABAKUMOV, V.G.; PETRENKO, A.I., kand. tekhn. nauk; DENBNOVETSKIY, S.V.

Functional graph converter with a vidicon. Avtom. 1 pr. b.
no.4:47-51 O-D '63. (MIRA 16:12)

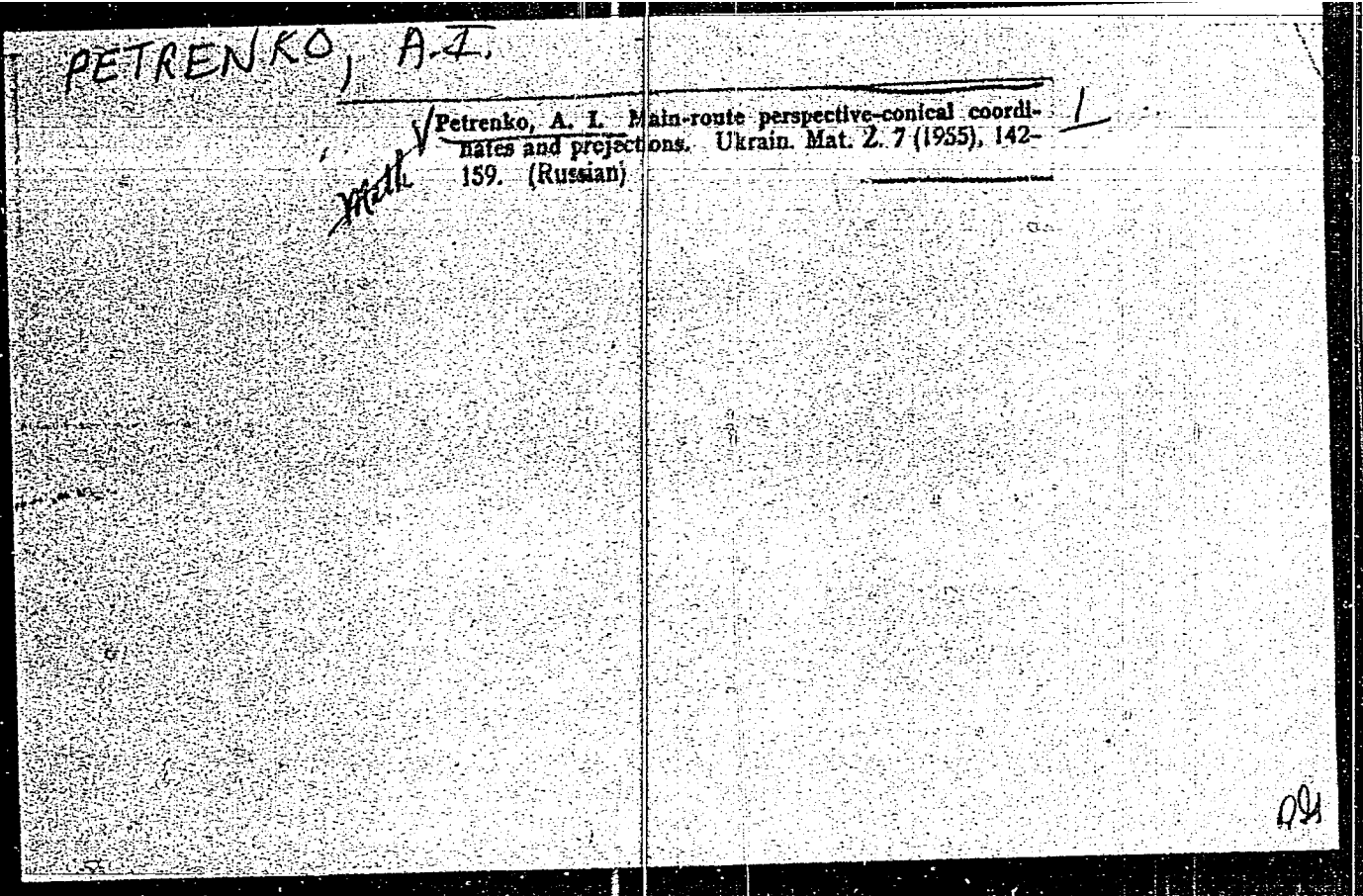
1. Kiyevskiy politekhnicheskij institut.

PETRENKO, A. I.

"Perspective Conical Coordinates and Projections"
Izv. AN Belorusskoy SSR, No 4, 1953, pp 155-160

General formulas of perspective conic coordinates and projections are derived. It is shown that perspective cylindrical and perspective coordinates are particular cases of the general formulas. For cartographic network, formulas for rectangular coordinates of conic projections are established. (RZhAstr, No 11, 1954)

SO: W-31187, 8 Mar 55



AUTHOR: PETRENKO, A.I.

41-1-7/15

TITLE: Interpretation of the Coordinates and Projections of Gauss, Mercator and Soldner on a Sphere as Perspective-conic Coordinates and Projections (Interpretatsiya koordinat i proyeksii Gaussa, Merkatora i Soldnera na share kak perspektivno-konicheskikh koordinat i proyeksii)

PERIODICAL: Ukrainskiy Matematicheskii Zhurnal, 1953, Vol 10, Nr 1, pp 73-92 (U.S.S.R.)

ABSTRACT: At the chair of geodesy of the Agricultural Institute Kharkov there were developed the relative perspective-conic coordinates for maps with high scale (see: Petrenko, Ukrainskii Matematicheskii Zhurnal, 1955, Vol.7, Nr 2, § 8). Their principal property is that they lie on the surface of the projecting cone and are determined by the spherical coordinates on the surface of the earth. In the present paper the author proves that the coordinates of Gauss, Mercator and Soldner can be interpreted as special cases of these coordinates.

AVAILABLE: Library of Congress

1. Cartography 2. Mathematics-Theory

Card 1/1

P...
PETRENKO, A. I.

Perspective-conical coordinates and projections in routing. Ukr.
mat zhur.7 no.2:142-159 (MIRA 8:11)
(Map-projection)

S/035/62/000/005/077/098
A055/A101

AUTHORS: Petrenko, A. I., Yurchenko, A. M.

TITLE: On the essence of tacheometry

PERIODICAL: Referativnyy zhurnal, Astronomiya i Geodeziya, no. 5, 1962, 16,
abstract 5G97 ("Tr. Khar'kovsk. s-kh. in-ta", 1961, 31, (68),
87-94)

TEXT: The various fields of application of tacheometrical surveying are examined. It is pointed out, in particular, that tacheometrical surveying can be used successfully for drawing up planning projects concerning the kolkhos and sovkhos economic centers and for determining drainage areas in the construction of reservoirs and ponds. An accurate tacheometrical formula is deduced, and the order of the observations in main tacheometrical traverses and in determining picket points is described. The requirements set on tacheometrical surveyor's poles are specified. ✓

I. M.

[Abstracter's note: Complete translation]

Card 1/1

L 38799-66 EWT(1) GD

ACC NR: AT6008570

SOURCE CODE: UR/0000/65/000/000/0200/0203

AUTHOR: Budnyak, A. A.; Petrenko, A. I.

ORG: none

TITLE: Methods of describing functions of two variables in cathode-ray tube machines

SOURCE: AN SSSR. Institut nauchnoy informatsii. Chitayushchiye ustroystva (Reading devices). Moscow, VINITI, 1965, 200-203

TOPIC TAGS: function generator, cathode ray tube, digital computer, analog computer

ABSTRACT: A description is given of A. Sinker's analog function generator (*Electronics*, 1956, 29, No. 10, 178), a major defect of which is the impossibility of obtaining the value of a function in the basence of an initial conditions input. A method is described which avoids this weakness and doubles the speed of operation of Sinker's machine. In the given system, a function is represented in binary code on a photo-optical mask. A further advantage of the system described is that inputs and outputs are universal (analog and digital). In addition, coordinates may be changed arbitrarily. Orig. art. has: 5 figures.

SUB CODE: 09/

SUBM DATE: 09Sep65/

OTH REF: 004

Card 1/1 *hb*

*46
B+1
25*

PETRENKO, Anatoliy Ivanovich, kand. tekhn. nauk, PETERCHENKIN,
Stanislav Vladimirovich, kand. tekhn. nauk, ANIKH, Val.
kand. tekhn. nauk, independent;

[Scale-time pulse signal converter. Mashtabno-remennyye
preobrazovatel'nyye impul'snyye signaly. Kiev, Tekhnich. Univ.
1955 p. U.S.S.R.

YELISEYEV, V.K.; PETRENKO, A.I.

Geometrical and lighting-engineering characteristics of photo-
electric converters. Izv.vys.ucheb.zav.; prib. 7 no.6:77-83
'64. (MIRA 18:2)

1. Kiyevskiy politekhnicheskiy institut. Rekomendovana kafedroy
promyshlennoy elektroniki.

PETRENKO, A.I.; YELISEYEV, V.K.

Classification of a device for converting graphical data into
electrical signals. Izv. vys. ucheb. zav.; radiotekh. 7 no. 3:
385-387 My-Je '64. (MIRA 17:9)

PETRENKO, A.I.

Electron-beam converter of the functions of two variables.
Izv. vys. ucheb. zav., radiotekh. 7 no.1:3-11 Jan'64.
(MIRA 17:5)

9(2)
AUTHOR: Svezhnikov, S.V., and Petrenko, A.I. SPV/142-2-1-10/'22

TITLE: Composite Cathode Followers (Slozhnyye katodnyye povtoriteli)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy - radiotekhnika, 1959, Vol 2, Nr 1, pp 80-85 (USSR)

ABSTRACT: Cathode-loaded amplifier circuits, as shown in figure 1, found a wide-spread application in modern electronic devices. High input resistances (10^6 - 10^8 ohms) at low output resistances (10^1 - 10^3) and a wide pass band (ranging from zero to some megacycles) require the application of cathode-loaded stages. The circuit, shown in figure 1, is not ideal, since its transmission factor is smaller than 1 (0.8-0.9). Therefore, the authors investigate two multi-tube, cathode-loaded amplifier circuits, shown in figures 2 and 6, having an amplification factor close to 1. They explain a method for calculating such circuits for high input (10^{11} ohms) and low output (several tenths of an ohm) resist-

Card 1/2

Composite

Cathode Followers

SOV/142-2-1-10/22

ances. In these amplifier networks, they use tubes 6N2P, 6N1P, and 6N3P. There are 6 circuit diagrams, 1 table and 8 references, 5 of which are English and 3 Soviet.

ASSOCIATION: Kafedra elektronnykh i ionnykh priborov Kiyevskogo ordena Lenina politekhnicheskogo instituta (Chair of Electronic and Ionic Devices at the **Kiyev Order of Lenin** Polytechnical Institute)

SUBMITTED: June 14, 1955

Card 2/2

DENBNOVETSKIY, S.V.; ABAKUMOV, V.C.; PETRENKO, A.I.

Device for converting single pulses to periodic ones. Izv. vys.
ucheb.zav.; radiotekh. 7 no.6:739-742 N-D '64.

(MIRA 18:4)

67849

007/142-2-2-1/10

~~9~~ 16.6800

AUTHOR: Petrenko, A.I.

TITLE: Differentiating and Integrating Devices With Positive Feedback

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiotekhnika, 1959, Vol 3, No 3, pp 872 - 880 (USSR)

ABSTRACT: The author generalizes differentiating and integrating devices with positive feedback used in digital and analog computers. Based on an actual circuit diagram, he suggests a general method of analyzing and calculating such devices. He reviews various positive feedback circuits used in computers, suggested by H. Wittke, W.E. Tolles, G.U. Schmitt, and T.G. Wiseman. The author shows the possibility of eliminating the influence of the finite value of the internal impedance of the input signal source on the accuracy of mathematical operations. Positive feedback circuits will perform the required mathematical operation with

Card 1/2

67849

SOV/100-4-3--10

Differentiating and Integrating Devices With Positive Feedback

the required accuracy without causing engineering difficulties. The publication of this article was recommended by the Kafedra elektronnykh i ionnykh priborov (Department of Electronic and Ionic Devices) of the Kiyevskiy ordena Lenina politekhnicheskii institut (Kiyev - Order of Lenin - Polytechnical Institute). There are 6 circuit diagrams, 2 sets of circuit diagrams and 11 references, of which 4 are Soviet, 4 English, and 3 German.

SUBMITTED: October 9, 1958 and after re-working, February 1959 ✓

Card 2/2

PETRENKO, A.I., inzh. (London)

Third International Instruments, Electronics, and automation
Exhibition. Izv. vys. ucheb. zav.; radiotekh. 3 no.4:524-529

Jl-ag '60.

(MIRA 13:10)

(London--Exhibitions) (Electronic apparatus and appliances--
Exhibitions)

PETRENKO, A.I., inzh. (g.London)

Third International Conference of Electronics in Medicine. Izv.
vys. ucheb. zav.; radiotekh. 4 no.1:122-123 Ja-F '61.

(MEDICAL ELECTRONICS--CONGRESSES)

(MIRA 14:4)

S/142/61/004/003/001/016
E140/E435

AUTHORS: Petrenko, A.I., Svechnikov, S.V.

TITLE: Basic directions in the development of reading machines

PERIODICAL: Izvestiya vysshykh uchebnykh zavedaniy, Radiotekhnika, 1961, Vol.4, No.3. pp.239-253

TEXT: The article constitutes an extensive survey of Western literature on character recognition machines. The authors' main attention is given to English language sources. Two particular machines are discussed in detail, ERA (Solartron Electronic Reading Automaton) and FRED (magnetic-inc character reader of EMI Electronics Limited). The authors classify reading machines in three categories: 1. the use of mask-matching techniques; 2. the use of coded markers; 3. the detection of the semantic characteristics defining the character. It is stated that a great quantity of work is being carried on in this field in the USSR under the leadership of Corresponding Member of the Academy of Sciences A.A.Kharkevich, partially known to the Soviet reader (Ref.1: Radiotekhnika, 1959, 14, No.5, 12; Ref.2: Radiotekhnika, Card 1/2 ✓

Basic directions in ...

S/142/61/004/003/001/016
E140/E435

1960, 15, No.2,3). Two further Soviet references which appear to concern concrete developments (Ref.53: Kovalevskiy, V.A. Semenovskiy A.G., Avtomatika i priborostroyeniye, Kiyev, 1960, No.1; Ref.55: Saplin M.S., Elektronnyye vychislitel'nyye mashiny, Mashgiz, 1960, 1) are not discussed in the article. V.S.Fayn is mentioned for his contribution in the field. There are 7 figures and 55 references: 5 Soviet and 50 non-Soviet. The four most recent English language references are as follows:
Young D.A., Electronic Engineering, 1960, 32, January;
Wada H., Takahashi S., Iijima T., Imoto K., UNESCO (NS) ICIP June, 1960, No.6;
The FRED Character Reader and Associated Equipment for Banking, EMI Electronics, 1960;
Direct Reading for Data Processing, Electronic Engineering, 1960, February, 95.

ASSOCIATION: Kafedra promyshlennoy elektroniki
Kiyevskogo ordena Lenina politekhnicheskogo instituta
(Department of Industrial Electronics, Kiyev Order
Lenin Polytechnical Institute)

SUBMITTED: November 4, 1960
Card 2/2

S/142/61/004/004/015/018
E192/E382

9,2580 (1159,1163)

AUTHORS: Petrenko, A.I. and Yermak V.D.
TITLE: A generator of electrical pulses of an arbitrary shape

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiotekhnika, v. 4, no. 4, 1961, 491 - 494

TEXT: The device described is based on an electron-optical servo system (Ref. 4 - Korn, G and Korn, T., Electronic analogue devices, Izd-vo in lit-ry, 1955, Ref. 5 - N.A. Hambey - Electronic Engng., February, 1958, 91). The generator is illustrated in the block schematic of Fig. 1. A non-transparent mask or screen 2 made of plastic, is placed in front of the screen of an electrostatically controlled cathode-ray tube; one edge (or profile) of the mask has the shape of the required non-linear function or pulse. A photomultiplier 3 is situated at a certain distance from the mask; the photomultiplier is coupled through the amplifier 4 with the vertical deflecting plates of the cathode-ray tube. The amplifier also receives a biasing voltage V_0 , which is used for setting the

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E192/E382

A generator of ...

initial position of the ray. The horizontal deflection plates of the tube receive a time-base voltage V_x through the amplifier 5. The closed-loop system consisting of the screen photomultiplier, amplifier, vertical deflection plates of the tube and the screen forms an electron-optical servo system. The operation of the generator is as follows. When the photomultiplier is switched off (open-loop system) the position of the spot on the screen of the tube is set by means of the voltage V_0 . When the photomultiplier is connected, the light emitted by the screen results in the photo-current flowing in the multiplier. The voltage drop produced by this current across the resistance load of the photomultiplier is amplified by the amplifier 4 and applied to the vertical deflection plates of the tube with such polarity that the ray moves downwards towards the mask. When the ray reaches the edge of the mask its further movement results in a reduction of the light emitted by the screen and so the current of the photomultiplier and its output voltage V_d are reduced. This reduction continues until

Card 2/4

31994
S/142/61/004/004/015/018
E192/E382

A generator of

the difference between the initial value of the voltage V_0 and the potential drop V produces such a voltage at the vertical deflection plates that the spot becomes stationary at the edge of the mask. If the time-base voltage V_x is changed linearly, the ray will follow the whole profile of the mask, i.e. the voltage at the vertical deflection plates will vary in accordance with the given nonlinear function. It is seen that the instrument of Fig. 1 has many circuits in common with a standard oscilloscope and the actual instrument built by the authors was in the form of an ancillary unit connected to a standard oscilloscope. The generator unit was fitted with a pair of cathode-followers which were connected to the deflection plates of the cathode-ray tube. The experiments conducted with the equipment showed that a given function could be reproduced with an error of 1 - 1.5%, this being primarily dependent on the speed of the time base and the focusing of the bright spot.

Card 3/4

SVECHNIKOV, S.V.; PETRENKO, A.I.

Matching stages with low output impedance. Izv. vys. ucheb.
zuv.; radiotekh. 4 no.5:620-623 '61. (MIRA 14:12)

1. Rekomendovano kafedroy promyshlennoy elektroniki Kiyevskogo
ordena Lenina politekhnicheskogo instituta.
(Electric networks)
(Cathode followers)

S/142/61/004/006/011/017
E140/E535

AUTHOR: Petrenko, A.I.

TITLE: Function generator for reading graphical functions
from self-recording instrument tapes

PERIODICAL: Izvestiya vysshikh uchebnykh zavadeniy, Radiotekhnika,
v.4, no.6, 1961, 711-718

TEXT: The article describes an instrument suitable for
introducing electrocardiograph, electroencephalograph, seismo-
graph, and chromatograph records into computers (and, more
generally, "for reading maps and drawings, etc."), as well as the
introduction into analog computers of the static parameters of
controlled processes, etc. It is the author's opinion that such
a device has many circuits in common with character-recognition
systems with the exception of the logical circuits. The instru-
ment described here was developed at the Kiyevskiy politekhnicheskii
institut (Kiev Polytechnical Institute). It will track
and reproduce to within 1% (the line thickness) a red or black
trace against a background of blue metric markers on a 100 mm wide
record. The maximum slope of the graph may be 90°. Photographic
Card 1/2

Function generator for ...

S/142/61/004/006/011/017
E140/E535

films and circular inked records can also be read. The rate of horizontal displacement is determined by the tape drive itself, and is about 15 or 20 mm/sec. The scale is 1 V/mm. Any of the ordinates on the tape can be taken as the reference; the instrument stops automatically if the trace is "lost". The basic principle is to use a variable-inclination linear scan which is centred on the trace being tracked by a closed-loop regulator, using pulse techniques. The scanning frequency is 2.5 kcs and the length is 5 to 10 mm. Further work is being carried on to permit tracing of closed contours. There are 3 figures.

ASSOCIATION: Kafedra promyshlennoy elektroniki Kievskogo
ordena Lenina politekhnicheskogo instituta
(Department of Industrial Electronics of Kiev
Order Lenin Polytechnical Institute)

SUBMITTED: April 15, 1961

Card 2/2

PETRENKO, A.I. [Petrenko, O.I.] (Kiyov)

Theory of cathode-ray tube function generators. Avtomatyka
no.2:26-41 '62. (MIRA 15:5)
(Servomechanisms) (Electronic apparatus and appliances)

PETRENKO, A.I., kand.tekhn.nauk; ABAKUMOV, V.G.; BUDNYAK, A.A.

Generator of complex-shape pulses. Avtom.i prib. no.4:41-43
O-D '62. (MIRA 16:1)

1. Kiyevskiy politekhnicheskii institut.
(Pulse techniques (Electronics))

PETRENKO, A.I.; SVECHNIKOV, S.V.

Differentiating and integrating networks. Izv. vys. ucheb.
zav.; radiotekh. 5 no.4:431-439 J1-Ag '62. (MIRA 16:6)

1. Rekomendovana kafedroy promyshlennoy elektroniki Kiyevskogo
ordena Lenina politekhnicheskogo instituta.
(Pulse circuits)

PETRENKO, Anatoliy Ivanovich, kand.tekhn.nauk, assistant

Use of an electronic model in the formation of a problem. Izv.
vys. uch. zav.; elektromekh. 5 no.8:935-936 '62. (MIRA 15:8)

1. Kafedra promyshlennoy elektroniki Kiyevskogo politekhnicheskogo
instituta.

(Delay lines) (Electric network analyzers)
(Electronic calculating machines)

S/142/63/006/001/015/015
E192/E382

AUTHORS: Patrenko, A.I. and Shlezinger, M.I.

TITLE: Functional converter with digital output

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiotekhnika,
v. 6, no. 1, 1963, 96 - 97

TEXT: In an earlier paper (Izv. vuzov SSSR - Radiotekhnika, 1961, 4, no. 6, 711) the author described a functional converter which could read graphical functions recorded on tape or film. This converter had an analog output which could be connected to a digital voltmeter. It is possible, however, to obtain a digital code for the signal by introducing a digital comparison system into the servo system of the converter. The comparison system would consist of coincidence circuits with a controlled reversible counter. The remaining elements such as the time-base generator, photo-optical device, time-base radiating device and adding amplifier would be the same as in the earlier converter. The pulse of the photo-electron amplifier, produced at the instant of the ray crossing the graph, operates a trigger circuit (in the same manner as in the earlier converter) which is reset by a
Card 1/2

Functional converter

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E192/E382

synchronizing pulse related to the commencement of the time-base cycle. In the earlier converter the pulses from the trigger were applied to a single integrator whose output was connected to the plates of the oscilloscope. Here, two integrators are employed which are driven by the pulses from the anodes of the trigger circuit. A univibrator producing a rectangular pulse whose duration is equal to that of the time-base period is also triggered by the synchronizing pulses. If a positive signal appears at the output of one of the integrators, this actuates a coincidence circuit. The situation is similar as regards the second integrator. The pulses from the outputs of the coincidence circuits are applied to a reversible binary counter where they are counted either in the positive or negative sense, depending on their origin. The output of the counter is converted into a corresponding potential which is fed to the deflection plates via the adding amplifier. There is 1 figure.

ASSOCIATION: Kafedra promyshlennoy elektroniki Kiyevskogo
ordena Lenina politekhnicheskogo instituta
Card 2/2 (Department of Industrial Electronics of Kiyev
SUBMITTED: Order of Lenin Polytechnical Institute)
May 30, 1962

L 9989-63

ACCESSION NR: AP3000327

EWI(d)/FCC(w)/BDS-ASD/ESD-3/APGC-Pg-1/Pk-1/Po-1/Pq-1-GG/IJP(C)
S/0142/63/006/002/0127/0135

AUTHOR: Petrenko, A. I.

74
72

TITLE: Functional converters of two-dimensional graphic images

SOURCE: Izv. VUZ: Radiotekhnika, v. 6, no. 2, 1963, 127-135

TOPIC TAGS: functional converters, two-dimensional graphic images, continuous followup systems, circular scanning method, pulse-modulation method

ABSTRACT: Experience gathered in constructing functional converters of two-dimensional graphic images used for automatic reading of symbols, charts, and drawings, as well as in photoelectric automatic duplicating machines, is summarized. Devices with continuous followup systems are discussed. In these systems two methods are distinguished: 1) the circular scanning method and 2) the pulse-modulation method. In the first method, a cathode-ray tube spot scanner performs the search of boundary line, follows it continuously, and memorizes the coordinates of points lying on the curve. This method is used

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for calculating special characteristics of objects, such as straight line or curve sections, radius of curvature, etc. The pulse modulation method is widely used in automatic duplicating systems. It uses a light spot moving in a circle which crosses the boundary line of a figure or curve and produces signals in a sensitive photocell, which in turn controls followup systems of two channels (X, Y). The center of the circle moves in such a way that the reading spot always follows the line. The reflected-light beam has two sharply distinguished values, depending on whether the light spot strikes the figure or misses it. Consequently, the photo current of the photomultiplier varies sharply when the figure boundary is crossed by the reading spot. By means of a differentiator these variations are transformed into positive and negative pulses used for triggering a pulse generator. The output signals of the latter serve to trigger and synchronize X and Y coordinate channels. The study of followup scanning systems was carried out at the Institut sistem peredachi informatsii AN SSSR (Institute of Information Transmission Systems AN SSSR). Orig. art. has: 8 figures and 3 equations.

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ACCESSION NR: AP3000327

ASSOCIATION: Kafedra promyshlennoy elektroniki Kiyevskogo ordena Lenina
politekhnicheskogo instituta (Department of Industrial Electronics, Kiev
Polytechnic Institute)

SUBMITTED: 24 May 63 DATE ACQ: 13 Jun 63

ENCL: 00

SUB CODE: 00

NO REF SOV: 011

OTHER: 004

ja/aa

Cord

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L 36340-65 EWT(1)/EWA(h) Feb

ACCESSION NR: AP5006594

S/0142/64/007/006/0739/0742

AUTHOR: Denbnovetskiy, S. V.; Abakumov, V. G.; Petrenko, A. I.

24

TITLE: Converter of a single pulse to a periodic pulse

B

SOURCE: IVUZ. Radiotekhnika, v. 7, no. 6, 1964, 739-742

TOPIC TAGS: pulse converter, signal analysis, pulse generator, photoelectric converter, storage device

ABSTRACT: An automatic device for converting a single pulse to a periodic pulse for use in signal analysis is described. An electrostatic-storage tube is employed to store the input-pulse envelope. The tube is the basic component of the storage unit; it attaches to a standard oscilloscope. The image is projected onto a vidicon target, where a potential pattern corresponding to the shape of the pulse is formed. Readout of the stored input function is by raster scanning. The time interval between the beginning of the vertical sweep and the appearance of a marker pulse at the moment of intersection of the potential pattern with the electron beam is proportional to the ordinate of the input pulse. The analog output voltage varies in time according to the input signal envelope. The readout cycle of the input pulse ordinates is repeat-

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L 36340-65

ACCESSION NR: AP5006594

ed periodically, which results in the appearance of the periodic signal at the output.
Signal duration is determined by the duration of the horizontal (frame) scan of the
readout. Orig. art. has: 2 figures. [KM]

ASSOCIATION: none

SUBMITTED: 10Dec63

ENCL: 00

SUB CODE: EC

NO REF SOV: 006

OTHER: 003

ATD PRESS: 3219

Card 2/2

PETROVA, A.I.; YEMINOV, I.I.

Electrical engineering of the elements of a photo-1-1000
converter. 12. sp. 1000. in.; 1000. 1000. 1000.
31-Ag '64. MIRA 1000.

SVECHNIKOV, Sergey Vasil'yevich, kand. tekhn.nauk; PETRENKO, A.I.,
kand. tekhn. nauk, retsenzent; DEREVETS, S.K., red.izd-va;
STARODUB, T.A., tekhn. red.

[Principles of technical electronics] Osnovy tekhnicheskoi
elektroniki. Kiev, Gostekhnizdat USSR. Pt.2. [Amplifier and
generator circuits] Usilitel'nye i generatornye tsepi. 1963.
480 p. (MIRA 17:1)

(Electronic circuits)

L 25741-65 EEG(b)-2/EED-2/EWA(h)/ENT(d)/ENT(1)/ENP(1) Pg-4/Pk-4/Po-4/Pq-4/Pob APGC

ACCESSION NR: AP5002090 AFFTC/ESI-3/ 5/0146/64/007/006/0077/0083
RADC/IJP(c) CG/BB

42
39
8

AUTHOR: Yeliseyev, V. K.; Petrenko, A. I.

TITLE: Geometrical and luminous characteristics of photoelectric converters

25

SOURCE: IVUZ. Priborostroyeniye, v. 7, no. 6, 1964, 77-83

TOPIC TAGS: photoelectric converter, photoconverter

ABSTRACT: Characteristics are considered of photoelectric converters which are part of the various systems converting graphical information into electrical signals. The converter comprises a light source (a spot on a scope screen), an optical system, and a light-sensitive element (a multiplier phototube). A formula (5) describing photoconverter characteristics includes transfer coefficients whose errors are due to the vignetting effect of the objective and to the scanning arrangement. Techniques for minimizing the instability of these coefficients are indicated. The possibilities of using an integrating photometer are explored.

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I. 25741-65

ACCESSION NR: AP5002090

Conditions of independence of the output signal of the readout-beam position in the field of view are analyzed, as well as conditions ensuring the maximum possible signal-to-noise ratio at the output. Orig. art. has: 3 figures, 18 formulas, and 2 tables.

ASSOCIATION: Kiyevskiy politekhnicheskiy institut (Kiev Polytechnic Institute)

SUBMITTED: 18Jan64

ENCL: 00

SUB CODE: EC

NO REF SOV: 003

OTHER: 000

Card 2/2

L 31797-65 EWT(d)/EED-2/ENP(1) Po-4/Pq-4/Pg-4/Pk-4 IJP(c) BB/CG
 ACCESSION NR AM4043703 BOOK EXPLOITATION S/

Petrenko, Anatoliy Ivanovich (Candidate of Technical Sciences)

Conversion of diagrams into electric signals (Preobrazovaniye grafikov v elektricheskiye signaly), Kiev, [Gostekhnizdat USSR], 1964, 218 p. illus., biblio. 2,000 copies printed.

TOPIC TAGS: electronics, electric modeling, program control, functional generator, graphic data processing, computer pulse generation, radar.

PURPOSE AND COVERAGE: ^{16C} This book presents the principles of the theory, construction, and circuits of converters of graphs of functions of one or two variables into electrical signals with the same law of change overtime as the converted function. The equipment that is described is used to automate the input of graphic information into an electronic computer, for the generation of pulses of any shape, and as indicators of nonlinear relationships in electric modeling, in program control systems, and in physics experiments. The book is intended for engineers and researchers working in radio electronics and can also be used by students in electrical and radio engineering faculties.

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SUBMITTED: 24Jan64

SUB CODE: DP, DC

NO REF SOV: 049

OTHER: 031

Card 2/2

L 01985-67 EWT(1)

ACC NR: AM6004837

Monograph

UR/

47
BT

Petrenko, Anatoliy Ivanovich (Candidate of Technical Sciences); Denbnovetskiy, Stanislav Vladimirovich (Candidate of Technical Sciences)

Time scaling converters of pulse²⁵ signals (Mashtabno-vremennyye preobrazovatel'i impul'snykh signalov) Kiev, [Izd-vo] "Tekhnika", 65. 0155 p. illus., biblio. 3,300 copies printed.

TOPIC TAGS: electronic data processing, frequency conversion, storage tube, electron tube, electron tube grid, pulse signal

PURPOSE AND COVERAGE: This book describes the time scaling converters of pulse signals of electron ray memory tubes designed for matching parameters of the analyzed pulse processes with systems of their automatic processing (electronic digital computers, analyzers, recording devices, electronic models, linear transmission, etc). The method of time scaling conversion (alteration of duration) is presented, and the possibilities of various types of memory tubes in systems processing information are estimated. An analysis is made of the work of a storage tube with a grid barrier, and recommendations are given for the selection

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UDC: 621.397.331.24

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ACC NR: AM6004837

of its electrical regime. Functional and principle schemes are shown of the experimental models of time scaling converters. This book is recommended for engineers and scientists in the field of automation and applied cybernetics. It can be useful to students in electronics and radio technology departments.

TABLE OF CONTENTS (abridged):

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Ch. I. General nature of the methods of time scaling conversion of signals --5

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Ch. III. Aspects of the use of a storage tube with a grid barrier in time scaling conversion systems --74

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SUB CODE: 14 / SUBM DATE: 27Aug65/ ORIG REF: 029/ OTH REF: 016

CARD 2/2

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PETRENKO, Anatoliy Ivanovich, kand. tekhn. nauk; YELISEYEV, V.K.,
~~inzh. retsenzent~~

[Transformation of graphical data into electrical signals]
Preobrazovanie grafikov v elektricheskie signaly. Kiev, Gos-
tekhizdat USSR, 1964. 218 p. (MIRA 17:5)

PETRENKO, A.K., gornyy inzh.

Observing hardness criteria of similitude in modeling with
equivalent materials. Nauch. trudy MGI no.38:215-220 '61.
(MIRA 15:10)

(Rocks—Testing)

PETRENKO, A.M., inzhener

Effective method of cooling cement mills. TSement 21 no.4:25-26
Ag'55. (MIRA 8:11)

1. Amvrosiyevskiy tsementnyy kombinat
(Amvrosiyevka--Cement industries)

OGANDZHAILOVA, S.S., inzhener; PITRENKO, A.M., inzhener.

Apparatus for making cement paste. TSement 22 no.2:31 Mr-Ap '56.
(MIRA 9:9)

1. Amvrosiyevskiy tsementnyy kombinat.
(Cement--Testing)

SIDCHENKO, I. M., PETRENKO, A. M.

Cement Industries

New method of eliminating ring formation in rotating ovens. *TsSement* 18 No. 4, 1952.

Monthly List of Russian Accessions, Library of Congress, December 1952. Unclassified.

PEREYKO, A. P.

Vyrachivaniya teritoriy v vozhornom - serni polose SSSR [Territory of the
non-classified regions of the U.S.S.R.]. Moscow, Sel'khozgiz, 1964, 120 p.

SO: Monthly List of Russian Acquisitions, Vol. 7 No. 1 April 1964.

PETRENKO, A. P.

A. P. Petrenko, Vyrashchivaniye tomatov v necherno zemnoy zone SSSR (Tomato Cultivation in the Non-Black Soil Area of the USSR), Sel'-khozgiz, 6 sheets.

The booklet describes briefly the biological peculiarities and types of tomatoes, devoting a great deal of attention to agricultural techniques in the cultivation of tomato seedlings in the open, in hot beds, and in protected soil, and to the agricultural techniques of pure-strain, high yield tomato crops in seed beds and in open soil.

The booklet is intended as a handbook for leading vegetable growers for obtaining pure-strain, high-yield tomatoes.

SO: U-6472, 18 Nov 1954

PETRENKO, A. P.

Tomatoes

Close planting of tomatoes in seed beds; Sad. i og. no. 2, 1952.

9. Monthly List of Russian Accessions, Library of Congress, May 1952, Uncl.

PETRENKO, A.P.

Prospects for the development of the chemical industry in the
Voronezh Economic Region in 1959-1965. Kauch. i rez. 17
no.10:32-33 0 '58. (MIRA 11:10)

1. Voronezhskiy sovnarkhoz.
(Voronezh Province--Rubber industry)

PETRENKO, Aleksey Petrovich; DANILEVSKAYA, O.N., red.; POL'SKAYA, R.G.,
tekh. red.

[Tomatoes] Pomidory. Leningrad, Lenizdat, 1961. 46 p.
(MIRA 14:12)

(Tomatoes)