

SA KAPTSOV, N. *AS3*

PROCESSES AND PROPERTIES INDEX

4658. Growth of Electron Concentration and Calculation of Current Strength in Gas Discharge. N. Kapsov. *Phys. Zeits. d. Sowjetunion*, 6, 1-2, pp. 82-120, 1934. *In German.*—The theory of gas discharge proposed by Townsend is based on certain simplifying assumptions and suffers from several defects. These are briefly outlined and discussed. A new method, which overcomes certain of the defects of the former theory, is suggested for calculating the behaviour of electrons in gases at low pressure. The ionization probability and the loss in velocity by elastic and inelastic collisions is considered. Special solutions of the general problem are worked out for certain simple cases and the limits of validity are ascertained. A new significance is found for the factor of Townsend. The theory of G. Hertz on the increase in velocity of an electron in an electric field in a gas is completed by considering the loss in velocity by inelastic collisions.

H. J. H. S.

COMMON ELEMENTS

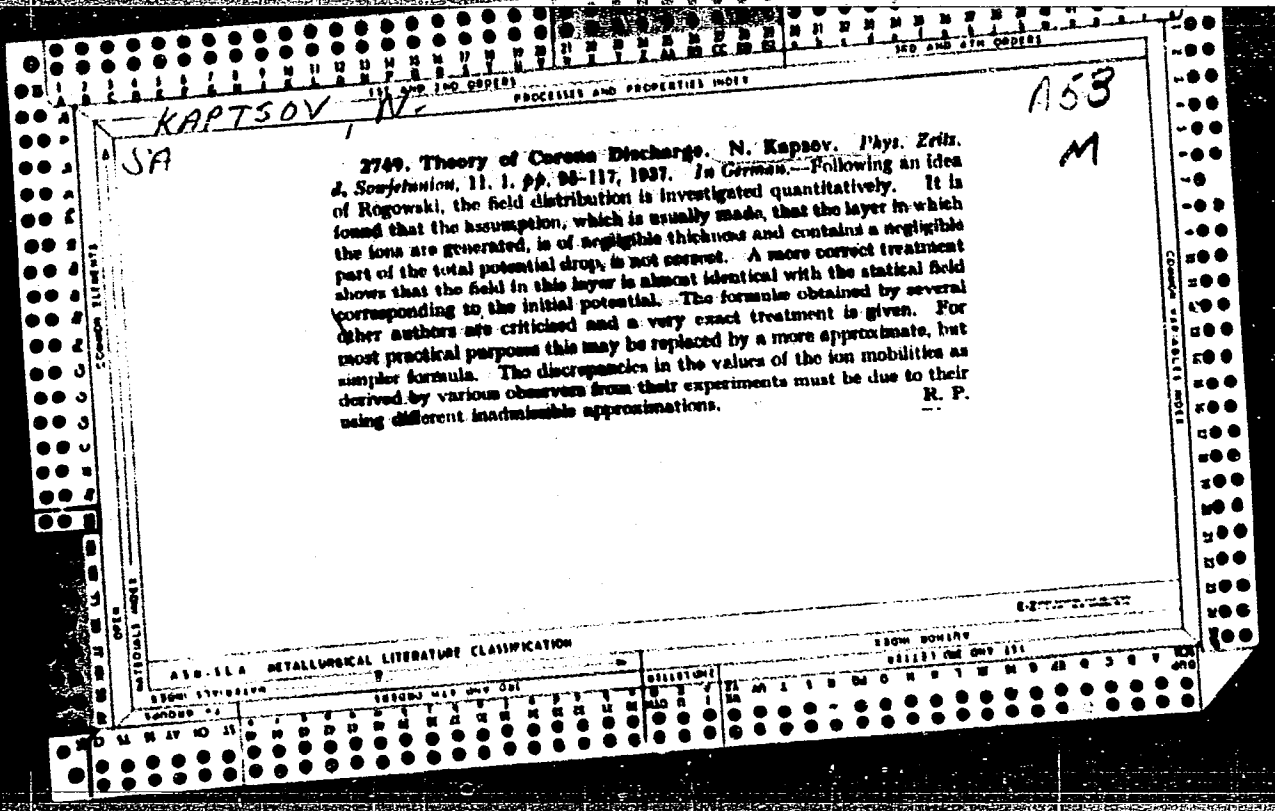
COMMON VARIABLES INDEX

ASM-A METALLURGICAL LITERATURE CLASSIFICATION

FROM SYMBOLS

ALPHABETIC INDEX

SA	AV	SO	AS	B	P	OP	IP	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT	BU	BV	BW	BX	BY	BZ	CA	CB	CC	CD	CE	CF	CG	CH	CI	CJ	CK	CL	CM	CN	CO	CP	CQ	CR	CS	CT	CU	CV	CW	CX	CY	CZ	DA	DB	DC	DD	DE	DF	DG	DH	DI	DJ	DK	DL	DM	DN	DO	DP	DQ	DR	DS	DT	DU	DV	DW	DX	DY	DZ	EA	EB	EC	ED	EE	EF	EG	EH	EI	EJ	EK	EL	EM	EN	EO	EP	EQ	ER	ES	ET	EU	EV	EW	EX	EY	EZ	FA	FB	FC	FD	FE	FF	FG	FH	FI	FJ	FK	FL	FM	FN	FO	FP	FQ	FR	FS	FT	FU	FV	FW	FX	FY	FZ	GA	GB	GC	GD	GE	GF	GG	GH	GI	GJ	GK	GL	GM	GN	GO	GP	GQ	GR	GS	GT	GU	GV	GW	GX	GY	GZ	HA	HB	HC	HD	HE	HF	HG	HH	HI	HJ	HK	HL	HM	HN	HO	HP	HQ	HR	HS	HT	HU	HV	HW	HX	HY	HZ	IA	IB	IC	ID	IE	IF	IG	IH	II	IJ	IK	IL	IM	IN	IO	IP	IQ	IR	IS	IT	IU	IV	IW	IX	IY	IZ	JA	JB	JC	JD	JE	JF	JG	JH	JI	JJ	JK	JL	JM	JN	JO	JP	JQ	JR	JS	JT	JU	JV	JW	JX	JY	JZ	KA	KB	KC	KD	KE	KF	KG	KH	KI	KJ	KK	KL	KM	KN	KO	KP	KQ	KR	KS	KT	KU	KV	KW	KX	KY	KZ	LA	LB	LC	LD	LE	LF	LG	LH	LI	LJ	LK	LL	LM	LN	LO	LP	LQ	LR	LS	LT	LU	LV	LW	LX	LY	LZ	MA	MB	MC	MD	ME	MF	MG	MH	MI	MJ	MK	ML	MM	MN	MO	MP	MQ	MR	MS	MT	MU	MV	MW	MX	MY	MZ	NA	NB	NC	ND	NE	NF	NG	NH	NI	NJ	NK	NL	NM	NN	NO	NP	NQ	NR	NS	NT	NU	NV	NW	NX	NY	NZ	OA	OB	OC	OD	OE	OF	OG	OH	OI	OJ	OK	OL	OM	ON	OO	OP	OQ	OR	OS	OT	OU	OV	OW	OX	OY	OZ	PA	PB	PC	PD	PE	PF	PG	PH	PI	PJ	PK	PL	PM	PN	PO	PP	PQ	PR	PS	PT	PU	PV	PW	PX	PY	PZ	QA	QB	QC	QD	QE	QF	QG	QH	QI	QJ	QK	QL	QM	QN	QO	QP	QQ	QR	QS	QT	QU	QV	QW	QX	QY	QZ	RA	RB	RC	RD	RE	RF	RG	RH	RI	RJ	RK	RL	RM	RN	RO	RP	RQ	RR	RS	RT	RU	RV	RW	RX	RY	RZ	SA	SB	SC	SD	SE	SF	SG	SH	SI	SJ	SK	SL	SM	SN	SO	SP	SQ	SR	SS	ST	SU	SV	SW	SX	SY	SZ	TA	TB	TC	TD	TE	TF	TG	TH	TI	TJ	TK	TL	TM	TN	TO	TP	TQ	TR	TS	TT	TU	TV	TW	TX	TY	TZ	UA	UB	UC	UD	UE	UF	UG	UH	UI	UJ	UK	UL	UM	UN	UO	UP	UQ	UR	US	UT	UU	UV	UW	UX	UY	UZ	VA	VB	VC	VD	VE	VF	VG	VH	VI	VJ	VK	VL	VM	VN	VO	VP	VQ	VR	VS	VT	VU	VV	VW	VX	VY	VZ	WA	WB	WC	WD	WE	WF	WG	WH	WI	WJ	WK	WL	WM	WN	WO	WP	WQ	WR	WS	WT	WU	WV	WW	WX	WY	WZ	XA	XB	XC	XD	XE	XF	XG	XH	XI	XJ	XK	XL	XM	XN	XO	XP	XQ	XR	XS	XT	XU	XV	XW	XX	XY	XZ	YA	YB	YC	YD	YE	YF	YG	YH	YI	YJ	YK	YL	YM	YN	YO	YP	YQ	YR	YS	YT	YU	YV	YW	YX	YZ	ZA	ZB	ZC	ZD	ZE	ZF	ZG	ZH	ZI	ZJ	ZK	ZL	ZM	ZN	ZO	ZP	ZQ	ZR	ZS	ZT	ZU	ZV	ZW	ZX	ZY	ZZ
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U A I O P N C G M K J H G F E D C B A	LET AND INDEXERS		IND AND AIN CIGERS
	RAPTISOV, N. A.		PROPERTIES INDEX
	BC		A-1
	Transition from coronal discharge to other forms of electrical discharge in gases. N. A. KAPISOV (Bull. Acad. Sci. U.R.S.S., Sér. Phys., 441-452).—Experiments in air at room temp. and 1 atm., which confirm the author's theory of the dependence of sparking potential between concentric cylinders on their dimensions, are described.		
	L. J. J.		
	ASIM-51A METALLURGICAL LITERATURE CLASSIFICATION		
	RECORD NUMBER		
	SUBJECT		
	AUTHOR		
	TITLE		

PROCESSES AND PROPERTIES INDEX

1ST AND 2ND EDITIONS

3RD AND 4TH EDITIONS

3

Change of mobility of negative ions in strong electric fields and the role of this phenomenon in corona discharge. N. A. Kaplov. *Bull. acad. sci. U.R.S.S., Ser. phys.* 8, 280-8 (1944).—The discrepancy between the measured mobility of neg. ions of air and O and the nature of corona discharge between coaxial cylinders in practice is explained on the basis of formation of complex ions in the presence of moisture at field intensities of lower order than are met in cases of appearance of corona discharge. Curves of measured ion mobilities are presented. 7 references. G. M. Kosolapoff

ASME-ASLA METALLURGICAL LITERATURE CLASSIFICATION

COMMON ELEMENTS

COMMON PARAMETERS INDEX

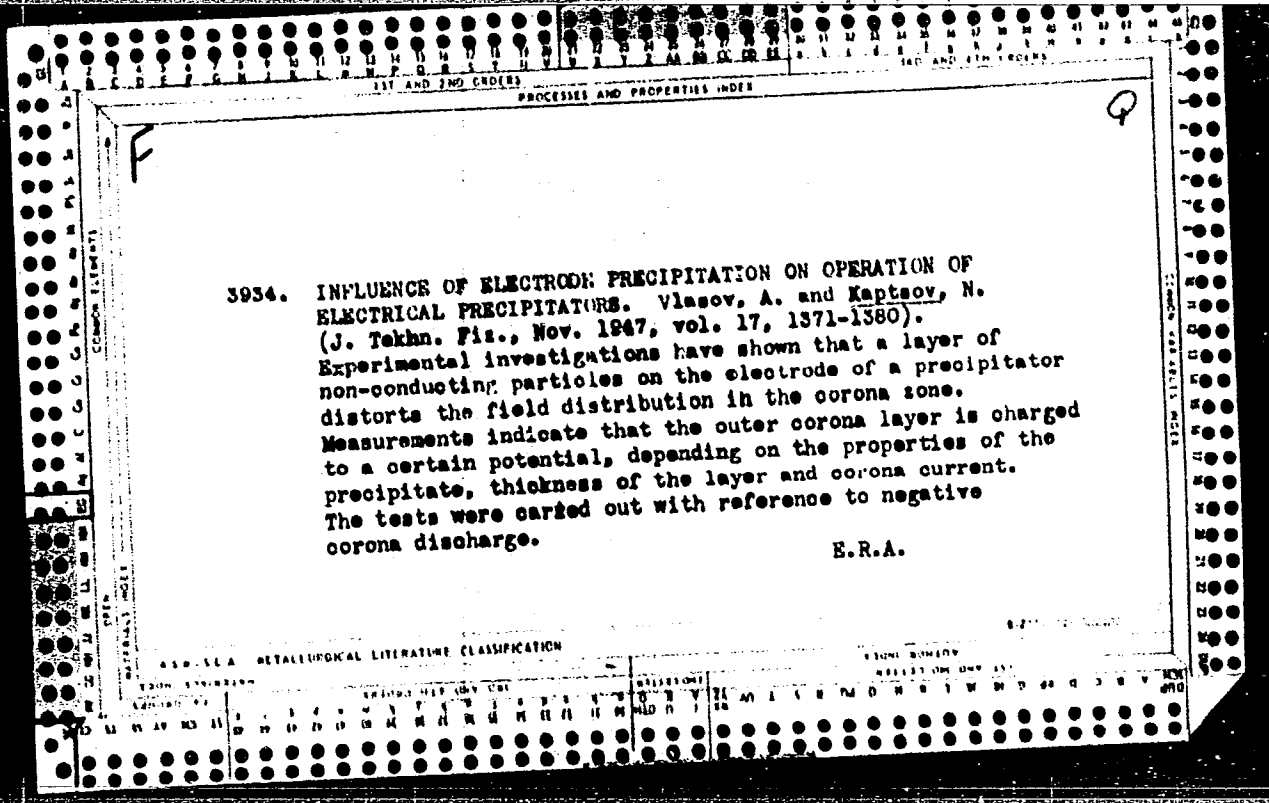
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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

CA

3

Kapsov, N. A.: Elektricheskie Yavleniya v Gazakh
i Vakuume (Electric Phenomena in Gases and in Vacuum)
Moscow: OGIZ, Gosudarst. Izdatel. Tekh.-Teoret. Lit.
1947. 808 pp. R20. Reviewed in *Lipkhi Fiz. Nauk*
34, 163(1948).



KAPTSOV, N. A.

"Electrical Discharges in Gases and Their Use in Technology" (Elektricheskiye razryady v gazakh i ikh primeneniye v tekhnike), "Pravda," 1949, 2¹/₂ pp.

KAPTSOV, N. A., Prof

USSR/Electricity
Corona Discharges
Electrons, Motion
Jan 49

"Physics of Electrical Discharges in Gases and in High Vacuum," Prof N. A. Kaptsov, Dr. Physicomath Sci, Moscow State U. Imeni Lomonosov, 16 pp

"Elektrichesvo" No 1 - p. 17-32

Extensively surveys contemporary physical representations of basic phenomena during discharge in gases and vacuums. Discusses current through gases, elementary discharge processes on electrode surfaces elementary processes in gaseous space, and movement

35/A9128

USSR/Electricity (Contd)

Jan 49

of electrons and ions in gaseous discharge. Submitted 11 Sep 48.

35/A9128

KAPTSOV, N. A.

"Petr Nikolayevich Lebedev (1866 - 1912)", 39 pp, 1950.

KAPTSOV, N. A.

Title: Electric Phenomena in Gases and Vacuum

Author: Kaptsov, N. A.

Mother Organization:

Issuing Agency: State Publishing House of Technical and Theoretical Literature

Location: Moscow-Leningrad

Date of Issue: 1950 ; 836 pp.

Holdings--DLC::

ATIC 26604-1

Holdings--Other Libraries

Contents: Thermionic and auto-electronic (cold) emissions
External photo-effect
Ionization and excitation of gas particles in non-expansive collisions of the first and second types.
Radiation of a gaseous discharge
Townsend discharge and the conversion of a discharge from dependent to independent character.

KAPTSOV, N. A. (editor); LEB, L.

"Basic Process of Electric Discharges in Gases" (Osnovnyye protsessy elektricheskikh razryadov v gazakh), Gosudarstvennoye Izdatel'stvo Tekhniko-teoreticheskoy Literatury, 672 pp, 1950.

Book W-22459, 22 Apr 52

KAPTSOV N. A.

181T39

USSR/Electricity - Gas Lamps, High-Pressure Apr 51

"High-Pressure Lamps," N. A. Kaptsov, D. A. Gouk-
berg

"Uspekhi Fiz Nauk" Vol XLIII, No 4, pp 620-662

Reviews high-pressure mercury vapor illuminating
lamps and describes constr, characteristics and ap-
plication of high-pressure inert gas-filled lamps.

181T39

1. KAPTSOV, N. A.
2. USSR (600)
4. Electronics
7. "Electronics." Reviewed by N. A. Kaptsov.
Sov.kniga. No. 9, 1952.

9. Monthly List of Russian Accessions, Library of Congress, January 1953. Unclassified.

KAPTSOV, N.A.

Physicists

Recollections of Petr Nikolayevich Lebedev. Usp. fiz. nauk 46 no. 3, 1952

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

KAPTSOV, N. A.

"Electronics", Gostekhizdat, Moscow, 1953 - 468 pp.

The name of the book is somewhat misleading as it does not appear to be a general textbook on the subject of electronics, but deals with, more particularly, the theory of electronic discharge phenomena in vacuum and gases. The book was intended for the specific purpose as a text for advanced students in radio physics.

Translation summary - XXII - 3

KAPTISOV, N.A.; PETROV, Vasily Vladimirovich.

150th anniversary of the appearance of V.V.Petrov's book "News of galvanovoltic experiments." Usp.fiz.nauk 50 no.2:303-307 Je '53. (MLBA 6:7)
(Petrov, Vasilii Vladimirovich, 1761-1834) (Electricity)

APPROVED FOR RELEASE: 06/13/2000

KAPTISOV, Nikolay Aleksandrovich, 1889-

CIA-RDP86-00513R000720510020-4"

[Electronics] Elektronika. M, Gostekhisdat, 1954. (MLRA 8:5)
(Electronics)

KAPTISOV, N. A.

FD-742

USSR/Physics - Electric gas discharge

Card 1/1 : Pub 146-12/22

Author : Kaptsov, N. A., and Popov, N. A.

Title : ~~Flash of electric discharge in gases on alternating current of audio frequency in tubes with external and internal electrodes.~~
Flash of electric discharge in gases on alternating current of audio frequency in tubes with external and internal electrodes.

Periodical : Zhur. eksp. i teor. fiz., 27, 97-102, Jul 1954

Abstract : Flash and discharge glow in tubes with external and internal electrodes is analyzed in relation to frequencies of applied voltage. Using external electrodes an unstable discharge was found at low voltages and a stable one at high voltages. At a frequency of 10 kc curves of flash voltage vs. frequency tend to overlap. 7 foreign references.

Institution : Moscow State University

Submitted : November 28, 1953

Kaptsov, N. A.

USSR/Physics - Vacuum technology

Card 1/1 : Pub. 86 - 4/40

Authors : Kaptsov, N. A., Prof.

Title : The technology of high vacuums

Periodical : Priroda 43/4, 33-44, Apr 1954

Abstract : The term high vacuum is explained as a rarefication of sufficiently high degree as to permit a molecule to traverse the length of a container without colliding with another molecule. The electrical uses of vacuums are enumerated. A description is given of an oil-filled rotary pump which will produce a vacuum of less than 0.001 mm of mercury atmospheric pressure. For higher vacuums this pump serves for the first stage of rarefication and a mercury pump, a description of which is also given, reduces the atmospheric pressure further. Methods for preserving a vacuum and measuring the degree of rarefication are explained. Illustrations; diagrams; drawings; graph.

Institution :

Submitted :

Translation M-3,053,44,

KAPTSOV, N. A. Prof.

"Nature of High-Frequency Discharge," a paper delivered at the Section of Radiophysics, Physics Faculty, Moscow University, Conference on Radiophysics, Moscow State University, Vest. Mosk. Universitet, Ser. Fiz-Mat. i Yest. Nauk, No.6, 1955

10-4 May 55

Sum. 900, 26 Apr 56

USSR/Physics - Spectrum of krypton
KAPTISOV, N. A.
Card 1/1 Pub. 129-4/20

FD-2164

Author : Devyatov, A. M., and Kaptsov, N. A.

Title : Investigation of the excitation functions of certain spectral lines of krypton

Periodical : Vest. Mosk. un., Ser. fizikomat. i yest. nauk, 10, No 2, 27-36, Mar 1955

Abstract : Up to the present time the excitation functions of the energy levels and spectral lines of a small number of elements have been investigated; namely H, He, Ne, Ar, Hg, Zn, Cd, Na, etc. (1927-1952). In the present work the authors determine the relative functions of excitation of certain spectral lines of krypton by an optical method. They describe the procedure of the experiment and experimental arrangement; the results obtained are shown in 17 graphs (excitation function for various Kr lines and wave lengths). Fifteen references; e.g. four by B. M. Yavorskiy (1944-1947); A. N. Zaydel', V. K. Prokof'yev, and S. N. Rayskiy, Tablitsy spektral'nykh liniy (Tables of spectral lines), GITL, Moscow-Leningrad, 1952.

Institution : -

Submitted : September 4, 1954

KAPTSOV, N.A., professor, (Moskva)

Ivan Filippovich Usagin. Fiz. v shkole 15 no.5:90-91 S-0 '55.
(Usagin, Ivan Filippovich, 1855-) (MIRA 9:1)

KAPTSOV, N.A.; professor, doktor fiziko-matematicheskikh nauk.

Electric discharges in gases. Nauka i shizn' 22 no.5:9-11
My '55 (MIRA 8:6)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova.
(Electric discharges through gases)

SIDOROV, Mikhail Alekseyevich; KAPTSOV, H.A., professor, redaktor;
MEZENTSHEV, V.A., redaktor; AKHLAMOV, S.N., tekhnicheskiy redaktor

[From shavings to electricity] Ot luchiny do elektrichestva. Pod
red. N.A.Kaptsova. Izd. 2-oe. Moskva, Gos. izd-vo tekhniko-teoret.
lit-ry, 1956. 61 p. (Nauchno-populiarnaya biblioteka, no.56)
(Lighting) (MIRA 9:9)

Kaptsov, Nikolay A.

Call Nr: AF 1119832

AUTHOR: Kaptsov, Nikolay A., Moscow State University

TITLE: Electronics (Elektronika)

PUB. DATA: State Publishing House of Technical and Theoretical Literature, Moscow, 1956, 2d ed., 459 pp., 20,000 copies

ORIG. AGENCY: None given.

EDITORS: Alekseyev, D.M. and Murashova, N.Ya., Reviewer: Spivak, G.V., Prof.

PURPOSE: Approved by the Ministry of Higher Education of the USSR as a textbook for students of State Universities. The present 2nd edition of the book is based on the author's earlier lectures at the Radio-Physics Department of Moscow University.

COVERAGE: See Table of Contents

~~Security~~

11

KAPTSOV, N.A.

50

V

Yeshuk Moskov Univ. Moscow, U.S.S.R.
V(striking)-V(incubation) increases for increase of separation
of the electrodes. Increase of gas pressure also causes increase
of the voltage difference. Shape of the electrodes affects the results.
of the potentials being greater when the ...
of the ...
of the ...

Investigation of Low Gas Pressure of an
Intermediate Frequency Discharge Occur-
ring Between High Frequency and
Low Audio Frequency Discharges. M.
A. Popov and N. A. Kaptelev. *Zhurnal
Inzhenerov i Fizikovskaya Akademiya
Sovetskogo Soyuza*. 1959. 16: 155-161.
JITF Sept. 1959. 16: 147-155. 16 refs.

VASIL'YEVA, M.Ya.; KAPTSOV, N.A.

Studying the difference between the igniting and extinguishing
voltage of glow discharge under various conditions. Vest.Mosk.un.
11 no.2:29-35 F '56. (MLRA 9:8)

1. Kafedra elektroniki.
(Electric discharges)

POPOV, N.A.; KAPISOV, N.A.

Investigation of an intermediate frequency discharge occurring between high frequency and low audio frequency discharges at low gas pressure. Zhur. eksp. i teor. fiz. 30 no. 1:68-76 Ja '56. (MIRA 9:7)

1. Moskovskiy gosudarstvennyy universitet.
(Electric discharges through gases)

KAPTSOV, Nikolay Aleksandrovich, prof.; PLONSKIY, A.F., red.; MURASHOVA, N.Ya.,
tekn.red.

[Pavel Nikolaevich IAblochkov; his life and work] Pavel Nikolaevich
IAblochkov; ego zhizn' i deiatel'nost'. Moskva, Gos.izd-vo
tekhniko-teoret. lit-ry, 1957. 95 p. (MIRA 10:12)
(IAblochkov, Pavel Nikolaevich, 1847-1894)

KAPTSOV, N. A.

"High Frequency and Ultra High Frequency Discharges in Gases."

~~paper~~

paper presented at Second All-Union Conference on Gaseous Electronics, Moscow,
2-6 October '58.

24(3)

AUTHORS:

Kuzovnikov, A.A., Kaptsov, N.A.

SOV/155-58-5-27/37

TITLE:

Discharge Power and the Character of the Discharge Current for Frequencies of 1.5 up to 9 mc

PERIODICAL:

Nauchnyye doklady vysshey shkoly. Fiziko-matematicheskoye nauki, 1958, Nr 5, pp 158-166 (USSR)

ABSTRACT:

With the aid of the experimental equipment described in [Ref 1] the discharge power as well as the magnitude and character of the discharge current were measured in the given frequency interval. The discharge arising in the air between a sphere and a plane under atmospheric or lower pressure was investigated. An approximative theory of the appearance is proposed. Among others it is stated: The power necessary for maintaining the discharge increases with increasing frequency of the external electric field. The transition from the corona discharge to the torch takes place under equality of the amplitudes of the active and reactive components of the electron current. An approximative investigation of the directed electron motion is possible, if it is based on the solution of the equation of motion of the averaged electron ✓

Card 1/2

Discharge Power and the Character of the
Discharge Current for Frequencies of 1.5 up to 9 mc

SOV/155-58-5-27/37

in the electric field under consideration of the coefficient of friction and of the frequency of the natural oscillations of the electrons. The properties of these solutions show good qualitative coincidence with experimental results. In the corona discharge the directed electron motion is stronger than the disordered motion caused by heat ; in the torch it is inverse. There are 5 figures, 1 table, and 16 references, 10 of which are Soviet, 4 American, and 2 German. Tsyun'Gao Yun, Candidate, and N.N. Bulatova are mentioned.

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

SUBMITTED: June 16, 1958

✓

Card 2/2

9(0)

SOV/30-59-8-2/56

AUTHOR: Kaptsov, N. A., Professor

TITLE: Gas Electronics - a Topical Field of Physics

PERIODICAL: Vestnik Akademii nauk SSSR, 1959, Nr 8, pp 12 - 17 (USSR)


ABSTRACT: The theoretical bases of gas electronics have not yet been worked out. No clear explanations are available concerning the formation of electric discharges in gases. There is no quantitative theory of the formation and propagation of streamers. The problems of the development of high-tension discharges are of special importance. The most powerful ones are produced and investigated under laboratory conditions at voltages of several million volt between the electrodes. The phenomena of ball lightning, electric arc and the discharge at high and superhigh frequency are still to be investigated. The investigation of the state of ionized gas, called gas plasma, is considered to be the most essential problem of gas electronics from the scientific point of view, existing in modern technics. A distinction is made between isothermal and non-isothermal plasma. The formation of electromagnetic oscillations is characteristic of plasma; in this connection

Card 1/2

Gas Electronics - a Topical Field of Physics

SOV/30-59-8-2/56

a distinction is made between electron and ion oscillations. Plasma has also magnetic properties. Gas in form of plasma is at present used for the solution of important technical problems. For the purpose of investigating the plasma properties it is necessary to find its parameters under various conditions. However, the solution of this task is possible only on the basis of the joint experimental and theoretical work of a number of physical and technical laboratories and institutes.



Card 2/2

KAPTSOV, N.A.

P.N. Lebedev and his school. Trudy Inst. ist. est. i tekhn. 28:
106-110 '59. (MIRA 13:5)
(Lebedev, Petr Nikolaevich, 1866-1912)

PHASE I BOOK EXPLOITATION

SOV/4705

Radiofizicheskaya elektronika (Radiophysical Electronics) [Moscow] Izd-vo Mosk. univ., 1960. 561 p. Errata slip inserted. 15,000 copies printed.

Ed.: N. A. Kaptsov, Professor; Tech. Ed.: M. S. Yermakov.

PURPOSE: This book has been approved by the Ministry of Higher and Secondary Special Education, USSR, as a textbook for schools of higher education. It can be also used by scientific personnel working in the fields of radio engineering and electronics.

COVERAGE: The book presents problems of vacuum, cathode, semiconductor, and gas electronics, on which is based the operation of vacuum-tube and gas-filled devices, including microwave devices and also apparatus and instruments used in electron optics. It is assumed that the readers of this book have a preliminary preparation in the fundamentals of nuclear physics, quantum mechanics, statistical physics and electrodynamics. The book was written by a group of lecturers of the Physics Division of Moscow State University.

Card ~~1/10~~

Radiofizicheskaya elektronika SOV/4705
 Chapters I, II, and III were written by Professor N. A. Kaptsov; Ch. IV. by Professor S. D. Gvozdever and Docent V. M. Lopukhin; Ch. V. by Professor G. V. Spivak and Assistant Ye. M. Dubinina; Ch. VII. by Docent A. A. Zaytsev and Professor N. A. Kaptsov; Ch. VIII. by Professor N. A. Kaptsov and Assistant G. S. Solntsev. The authors thank Professor S. Yu. Luk'yanov and Docent M.D. Karasev, who reviewed the book. There are 76 references: 68 Soviet (including 14 translations), 6 English, and 2 German.

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Card ~~5~~/10.

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AVAILABLE: Library of Congress

JP/rsm/fal
1-25-61

Card 10/10

88045

26.2311
24,2120 (1049, 1160, 1482)

S/139/60/000/006/009/032
E073/E335

AUTHORS: Kuzovnikov, A.A. and Kaptsov, N.A.

TITLE: Investigation of a High-frequency Discharge in the
Range Between 1.5 and 15 Mc/s. III

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy,
Fizika, 1960, No. 6, pp. 64 - 70

TEXT: The mechanism of development of a high-frequency corona discharge and its change to a torch discharge cannot be studied solely on the basis of the theory of unbounded uniform plasma (Ref. 1). On the basis of experimental data, published earlier by the authors (Refs. 2, 6, 7), they suggest a mechanism of the development of such a discharge which is based on the conceptions of the avalanche-streamer theory. Application of the ideas of the avalanche-streamer theory to the high-frequency corona discharge at atmospheric and sub-atmospheric (300 - 400 mm Hg) pressures can be justified by the fact that both in the steady-state and in surge corona as well as in high-frequency corona individual localised discharge

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S/139/60/000/006/009/032
E073/E314

Investigation of a High-frequency Discharge in the Range
Between 1.5 and 15 Mc/s. III

canals can be observed. The characteristics of the high-frequency corona (Ref. 2) are analogous to those of the steady-state (Refs. 3, 4) and surge (Ref. 5) corona discharges. In the earlier work of the authors (Refs. 2, 6, 7) it is shown that on increasing the voltage the high-frequency corona passes successively through the following three main stages (Ref. 2): 1) in the initial stage the discharge is in the form of fine channels which are distributed fanlike on the corona producing electrode; 2) in the second stage a bright central canal and numerous clearly visible side canals form which penetrate deep into the discharge gap; 3) in the third stage a high-frequency arc forms. The mechanism of development of a high-frequency corona discharge was investigated for the frequencies 1.5, 2, 3.7, 4, 6.5 and 8.7 Mc/s. The authors conclude that the mechanism of development of high-frequency corona discharges can be

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88045

S/139/60/000/006/009/032
E073/E335

Investigation of a High-frequency Discharge in the Range
Between 1.5 and 15 Mc/s. III

elucidated on the basis of the avalanche-streamer theory. In the initial stage of the corona and the torch discharge individual, short-length, rectilinear discharge canals form as a result of successive superposition on each other of electron avalanches and also as a result of development of an avalanche canal during oscillatory movement of the electrons under the effect of the high-frequency field. If the voltage amplitude increases to a certain value the formation of streamers in the corona discharge becomes possible. The discharge canals, which can be seen with the naked eye during this stage of the corona, are formed as a result of reforming of the streamer canal, as a result of secondary processes on the temporary cathode or as a result of oscillatory movement of the electrons under the effect of the high-frequency field. Under the given conditions streamer formations and consequently also the formation of individual visible canals of the high-frequency corona occur in the discharge at

Card 3/4

88015

S/139/60/000/006/009/032
E073/E335

Investigation of a High-frequency Discharge in the Range
Between 1.5 and 15 Mc/s. III

atmospheric pressure if the active duration of the half-cycle
of the voltage is equal to or greater than 0.03 μ s. The
torch discharge is a high-frequency plasma which is formed
during numerous half-cycles of the high-frequency field and is
drawn out upwards by the convection currents of the air.
There are 1 table and 16 references: 11 Soviet and
5 non-Soviet. X

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

SUBMITTED: October 21, 1959

Card 4/4

KAPTSOV, N.A.

Petr Nikolaevich Lebedev's role in the training of young
scientists. Usp.fiz.nauk 77 no.4:582-588 Ag '62.

(MIRA 15:8)

(Physics—Study and teaching)

(Lebedev, Petr Nikolaevich, 1866-1912)

LEBEDEV, Petr Nikolayevich, akademik; KRAVTS, T.P., red. (1866-1912);
KARTSOV, N.A., prof., red.; YELISEYEV, A.A., dots., red.;
[REDACTED] BERNAGAU, V.G., red. izd-va; MAKUNI, Ye.V., tekhn. red.

[Collected works] Sobranie sochinenii. Moskva, Izd-vo AN
SSSR, 1963. 434 p. (MIRA 16:9)

1. Chlen-korrespondent AN SSSR (for Kravts).
(Lebedev, Petr Nikolaevich, 1866-1912) (Physics)

VVEDENSKIY, B.A., glav. red.; VUL, B.M., glav. red.; SHIYENMAN,
R.Ya., zam. glav. red.; BALDIN, A.M., red.; VONSOVSKIY,
S.V., red.; GALANIN, M.D., red.; ZERNOV, D.V., red.;
ISHLINSKIY, A.Yu., red.; KAPITSA, P.L., red.; KAPISOV,
N.A., red.; KOZODAYEV, M.S., red.; LEVICH, V.G., red.;
LOYTSYANSKIY, L.G., red.; LUK'YANOV, S.Yu., red.;
MALYSHEV, V.I., red.; MIGULIN, V.V., red.; REBINDER,
P.A., red.; SYRKIN, Ya.K., red.; TARG, S.M., red.;
TYABLIKOV, S.V., red.; FEYNBERG, Ye.L., red.; KHAYKIN,
S.E., red.; SHUBNIKOV, A.V., red.

[Encyclopedic physics dictionary] Fizicheskii entsiklope-
dicheskii slovar'. Moskva, Sovetskaia Entsiklopediia.
Vol.4. 1965. 592 p. (MIRA 18:1)

KAPTSOV, N.A.

Reminiscences of S.A. Boguslavskii, 1883-1923; on the 80th anniversary of his birth. Ist. i metod. est. nauk no.3:255-256 '65. (MIRA 18:12)

KAPTISOV, N.N.

USSR/Chemical Technology - Chemical Products and Their
Application. Industrial Organic Synthesis

I-1

Abs Jour : Ref Zhur - Khimiya, No 1, 1958, 2154

Author : Topchiyev, A.V., Kaptsov, N.N.

Inst : Academy of Sciences USSR

Title : Utilization of Nitrogen Oxide for the Nitration of Paraf-
finic Hydrocarbons.

Orig Pub : Sb.: Khim. pererabotka neft. uglevodorodov. M., AN SSSR,
1956, 333-336

Abstract : A study was made of the effect of temperature and space
velocity on the course of the reaction of concurrent inter-
action of NO, O₂ and n-pentane. In the investigation use
was made of a reactor with a reaction zone enclosed at the
same time by a cold and a hot wall. Temperature of the
preheater was varied in the range of 430-540°, that of the

Card 1/2

USSR/Chemical Technology - Chemical Products and Their
Application. Industrial Organic Synthesis.

I-1

Abs Jour : Ref Zhur - Khimiya, No 1, 1958, 2154

reaction zone within $290-338^{\circ}$, and space velocity was varied from 0.93 to 2.30 min^{-1} . The molar ratios $n\text{-C}_5\text{H}_{12}$: NO : O_2 were from $1 : 0.49 : 0.44$ to $1 : 0.97 : 0.6$. Extent of conversion of C_5H_{12} and NO and yield of nitroparaffins reach maximum values at a temperature of the preheater of 445° and a space velocity somewhat above 1.0 , and are of 17 , 20 and 22% , respectively. The authors assume that the reaction between NO , O_2 and C_5H_{12} takes place within a certain zone that is intermediate between the hot and the cold wall of the reactor. A diagram of a laboratory unit for the nitration of paraffins is included.

Card 2/2

KAPTSOV, N. N.

USSR/Organic Chemistry. Theoretical and General Questions of Organic Chemistry. E-1

Abs Jour : Ref Zhur - Khimiya, No. 8, 1957, 26659.

Author : Topchiyev, A.V.; Kaptsov, N.N.
Inst : Academy of Sciences of USSR. *Inst. Petroleum*
Title : Primary Radical Formation in Reaction of Vapor Phase Nitrating of Alkanes by Nitrogen Dioxide.

Orig Pub : Izv. AN SSSR, Otd. khim. n., 1956, No. 7, 863 - 868.

Abstract : One of the surmised reactions at the vapor phase nitrating of alkanes by NO_2 is the formation of alkyl radicals according to the equation $\text{RH} + \text{NO}_2 \rightarrow \text{R} + \text{HNO}_3$ (1). The computations show that the change of the free energy Δz^0 at 25° is 26.6 kcal/mol at the reaction of CH_4 with NO_2 , Δz_{298}^0 is

Card 1/2

S/020/60/132/02/35/067
B011/B002

AUTHORS: Topchiyev, A. V., Academician, Kaptsov, N. N., Zaleskaya, L. N.
TITLE: Nitration of Paraoxydiphenyldimethylmethane Acetate in the Presence of Urea

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 132, No. 2, pp. 371-373

TEXT: The authors proved that during the nitration of paraoxydiphenyldimethylmethane acetate, one of the three nitro groups enters a non-phenolic cycle of the molecule (see scheme). For the purpose of purification p-oxydiphenyldimethylmethane (ODDM) (commercial by-product of the phenol acetone production) was first recrystallized from a mixture of benzene-petroleum ether. The ODDM crystals are white, needle-shaped and have their melting point at 73°-75°. Production of the acetate: ODDM was dissolved in an aqueous KOH solution with an addition of ethanol, and 180 g of acetic anhydride were quickly added. After it was cooled down for half an hour by adding lumps of ice, or when the mixture was put on ice, the solution separated in layers. It was extracted by means of ether. When the ether was distilled off, the remaining substance was a colorless, thick liquid which could be distilled almost without decomposition at 327° at

Card 1/3

Nitration of Paraoxydiphenyldimethylmethane Acetate
in the Presence of UreaS/O20/60/132/02/35/067
B011/B002

atmospheric pressure. The melting point of this acetate was 180° - 182° /1.5 mm. The molecular weight was determined to be 250 and calculated to be 254. The acetate easily dissolves in benzene, benzine, o-xylene, and other solvents. Nitration of the acetate by means of HNO_3 at 15° - 20° leads to the formation of picric acid. This can be prevented if the acetate is poured off at lower temperatures and if the reaction mass is left standing at a lower temperature. Thus low yields of a yellowish crystalline substance develop with a melting point of 127° . It was analyzed to be the trinitro derivative of p-ODDM. Its molecular weight was determined to be 356 and calculated to be 347. In order to avoid the oxidative action of HNO_3 , the authors nitrated ODDM acetate in the presence of urea. Table 1 shows that in this case, the trinitro compound develops with a considerably higher yield. Urea however, must be added after the acetate has been poured off, otherwise only picric acid would develop. The position of the nitro groups was proven by oxidation with chromic acid. A small amount (0.07 g) of a solid yellow substance was obtained with a melting point between 238° and 241° . The authors compared it with para-nitro-benzoic acid whose melting point is at 241° (Scheme). There are 1 table and 4 references, 1 of which is Soviet.

Card 2/3

35526

S/020/62/143/003/024/029
B101/B144

15.8050
11.2215

AUTHORS: Topchiyev, A. V., Academician, Kaptsov, N. N., Kalyuzhnaya, G. D., Mityayeva, A. I., and Balitskaya, I. Ye.

TITLE: Interaction of polymers and copolymers of 2-methyl-5-vinyl pyridine with aromatic nitro compounds

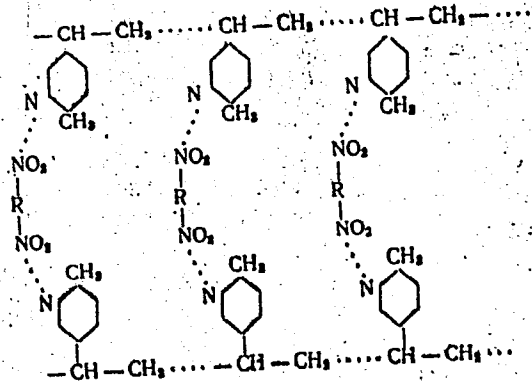
PERIODICAL: Akademiya nauk SSSR. Doklady, v. 143, no. 3, 1962, 621 - 624

TEXT: To test the activity of the pyridine-nitrogen atom in addition reactions, polymers (PI) of 2-methyl-5-vinyl pyridine (I) and its styrene copolymers (SI) were reacted with various polar compounds. A PI with softening point 186°C and three SI with I : styrene ratio of 5 : 1, 3 : 1, and 1 : 1 were used. To test the effect of basicity on the reaction with dinitro compounds, the SI with ratio 1 : 1 was nitrated by means of 73% HNO₃ and 24% H₂SO₄ at 20°C (decomposition of this nitro compound occurred above 200°C). 2.5%, 5%, and 10% solutions were prepared from PI and SI in a mixture 1 : 1 of dinitro toluene (DNT) and dinitro xylene (DNX); their viscosity was measured and was found to increase with length of heating. The same behavior was found in the case of nitrated SI. An Card • 1/3

S/020/62/143/003/024/029
B101/B144

Interaction of polymers...

extraction of PI dissolved in DNT + DNX by means of benzene was unsuccessful. The increasingly dark red and finally dark brown polymer became insoluble in benzene, and its melting point was higher than 250°C. From this, cross linking was concluded, and the structure



was proposed. As unpurified DNT + DNX mixture caused a considerable
Card 2/4

S/204/63/003/001/008/013
E075/E436

AUTHORS: Topchiyov, A.V. (deceased), Kusakov, M.M.,
Kalyuzhnaya, G.D., Kaptsov, N.N., Koshevnik, A.Yu.,
Razumovskaya, E.A.

TITLE: Characterization of the properties of homo- and
copolymers of 2-methyl-5-vinylpyridine by the methods
of light scattering and viscosimetry

PERIODICAL: Neftekhimiya, v.3, no.1, 1963, 90-93

TEXT: The authors determined the molecular weights and other
properties of polymerized 2-methyl-5-vinylpyridine and its
1:1 copolymer with styrene. The polymerizations were carried out
by heating 2-methyl-5-vinylpyridine at 80°C for 12 hours in glass
ampules with 0.1% benzoylperoxide. From the light scattering and
viscosimetry data the following relationship was obtained

$$[\eta] = 6.17 \times 10^{-4} M_w^{0.615}$$

where $[\eta]$ - intrinsic viscosity and M_w - mean molecular weight.
The mean molecular weights of the polymer fractions obtained by
Card 1/2

Characterization of ...

S/204/63/003/001/008/013
E075/E436

petroleum-ether precipitation, ranged from 1×10^6 to 3×10^4 .
The mean molecular weights of the copolymer were 4.3×10^5 and
 1.1×10^5 for the polymerization times of 12 and 6 hours
respectively. There is 1 table.

ASSOCIATION: Institut neftekhimicheskogo sinteza AN SSSR
(Institute of Petrochemical Synthesis AS USSR)

SUBMITTED: August 18, 1962

Card 2/2

KAPTSOV, N.P., dots.; KRYLOV, A.V., dots., otv. red.

[Complex movement of a point; methodological textbook on theoretical mechanics] Slozhnoe dvizhenie točki; uchebno-metodicheskoe posobie po teoreticheskoj mekhanike. Otv. red. A.V. Krylov, Moskva, Mosk. in-t neftekhim. i gazovoi promyshl. im. I.M.Gubkina, 1959. 17 p. (MIRA 15:2)
(Mechanics)

AUTHOR:

Kaptsova, I.N.

TITLE:

The Use of Gravimeters in Underground Mining Galleries, for the Study of Mineral Deposits (O primeneni gravimetrov v podzemnykh gornykh vyrabotkakh dlya izucheniya rudnykh mestorozhdeniy)

SOV/132-58-11-10/17

PERIODICAL:

Razvedka i okhrana neдр, 1958, Nr 11, pp 36 - 40 (USSR)

ABSTRACT:

The Kafedra gravimetrii i nebesnoy mekhaniki Gosudarstvennogo Astronomicheskogo instituta imeni P.K. Shternberga (the Chair of Gravimetry and of Celestial Mechanics of the State Astronomical Institute imeni P.K. Shternberg) organized an experimental gravimeter survey of copper ore deposit, both from the surface and from an underground gallery. The gravimeter GAK-3M was used. The experiment showed that the joint interpretation of both operations made the solution of the reversed problem of the gravimeter survey more accurate. The experiment and the solution of the problem are given in detail. There are 3 graphs, 1 table and 7 references, 4 of which are Soviet and 3 American.
(MGU. GAISH)

ASSOCIATION:

Card 1/1

MARENNIKOVA, S.S.; KAPTSOVA, T.I.

Age-dependence of susceptibility of white mice to variola virus.
Acta virol. (Praha) [Eng] 9 no.3:230-234 My'65.

1. The Moscow Scientific Research Institute of Viral Preparations,
Moscow, U.S.S.R.

RC 100, S.S. (Moscow) & KAPRIOVA, T.I. (Moscow)

Morphological changes in the central nervous system in experimental
aerial encephalitis infection. Arch. pat. 11:1150-55 '62.
(MOSKVA 1962)

L. Neokovskiy nauchno-issledovatel'skiy institut virusnykh
preparatov.

AUTHORS: Delimarskiy, Yu. K., Kaptsova, T. N. SOV/78-3-12-23/36

TITLE: Polarographic Investigation of a Solution of Titanium Dioxide in Molten Sodium Metaphosphate (Polyarograficheskoye issledovaniye rastvora dvoukisi titana v rasplavlennom metafosfate natriya)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1958, Vol 3, Nr 12, pp 2751-2756 (USSR)

ABSTRACT: In the present paper a solution of titanium dioxide in molten sodium metaphosphate was investigated polarographically using solid stationary electrodes. The linear dependence between N and i_d was expressed by means of the following equation:
 $i_d = kN$ (1). In the polarogram two waves appear, which indicate the step-wise reduction of the titanium (IV) ion. The reduction apparently occurs in the following steps:
$$\text{Ti}^{4+} + e \rightarrow \text{Ti}^{3+},$$
$$\text{Ti}^{3+} + 3e \rightarrow \text{Ti}.$$
The polarographic waves plotted for the system under investigation correspond to the equation of Geyrovskiy-Il'kovich. The half-wave potential $E_{1/2}$ is independent of the concentration.

Card 1/2

SOV/78-3-12-23/36

Polarographic Investigation of a Solution of Titanium Dioxide in Molten Sodium Metaphosphate

A linear dependence exists between E and $\lg \frac{i}{i_d - i}$. The energy of activation of the diffusion current for the first and second wave were determined. The activation energy of the first wave varies from 8.6 to 19.2 kcal/mol and the second from 20.5 to 21.4 kcal/mol. There are 5 figures, 3 tables, and 19 references, 10 of which are Soviet.

SUBMITTED: September 30, 1957

Card 2/2

KAFISOVA, T. M.

Report to be submitted for the IUPAC 21st Conference and 10th Intl. Congress of Pure and Applied Chemistry, Montreal, Canada, 2-12 August 1961

ALPAREZ, J. P., and ZELVINO, M. A., Institute of Geochemistry and Analytical Chemistry Imeni V. I. Vernadskiy, Academy of Sciences USSR - "Estimation of metal chelate compounds as affected by the nature of the solvent" (to be presented in Russian) (Section C.2 - 11 Aug 61, morning)

BAKALOV, Kh. S., and KUCHALOV, V. A., Scientific Research Physico-Chemical Institute Imeni L. N. Karlov, Moscow - "Some aspects of energy transfer in radiation chemistry" (Section A.1, Session I - 7 Aug 61, morning)

BELOUSOV, Yu. K., Institute of General and Inorganic Chemistry, Academy of Sciences USSR - "The kinetics of the electrode processes in the electrolysis of molten salts" (Section B.3, c, (2), Session I - 11 Aug 61, morning)

BELOUSOV, Yu. K., AMISIN, V. N., POLJA, K. M., and GIBBY, J. H., E. M., Institute of General and Inorganic Chemistry, Academy of Sciences USSR - "Electrochemical synthesis with molten borate and phosphate" (Section A.3, c, (2), Session I - 11 Aug 61, morning)

BELOUSOV, Yu. K., PACHENKO, I. D., and SHILINA, G. V., Institute of General and Inorganic Chemistry, Academy of Sciences USSR - "On the conversion of boron in molten salts" (Section B.3 - 9 Aug 61, afternoon)

OSBANY, M. S., Moscow State University Imeni M. V. Lomonosov, (Co-Chairman, Section A.3, c, (2)) - "Some aspects of energy transfer in radiation chemistry" (Section I(2), 11 Aug 61, afternoon)

OSBANY, M. S., MOSCOW STATE UNIVERSITY IMENI M. V. LOMONOSOV, F. A., and PIZHGIN, I. S., Moscow State University Imeni M. V. Lomonosov - "The thermodynamic properties of columbium and cerium oxides" (Section A.3, c, (3), Session II(A), 11 Aug 61, morning)

SOLJENSKY, V. I., Institute of Chemical Physics, Academy of Sciences USSR - "Two-proton radioactivity - a new kind of radioactive decay of nuclei" (Section A.3 - 7 Aug 61, morning)

L 17703-63

EWP(q)/EWT(m)/BDS AFFTC/ASD JD/WH

ACCESSION NR: AP3003994

S/OC73/63/029/007/0714/0722

AUTHORS: Kaptsova, T. N.; Delimarskiy, Yu. K.

TITLE: Polarographic analysis of vanadium, molybdenum, tungsten, and iron oxides fused with sodium metaphosphate

SOURCE: Ukrainskiy khimicheskij zhurnal, v. 29, no. 7, 1963, 714-722

TOPIC TAGS: germanium, vanadium, tungsten, molybdenum, polarography, iron, sodium

ABSTRACT: This study is a continuation of a previous polarographic study of metal oxides in a fused media of sodium metaphosphate. The present study is made of GeO₂, V₂O₅, MoO₃, WO₃, and Fe₂O₃ oxides in the same media. The reduction of germanium takes place in a stepwise procedure with subsequent formation of phosphides. At low concentrations of GeO₂, only one break is observed. It was established that the oxides of vanadium, tungsten and molybdenum are reduced only to their trivalent state during the electrolysis in the phosphate bath as established by polarographic analysis. The reduction of iron oxide takes place in two stages. Their half-wave potentials are close to each other. The obtained polarographic maximums are explained by the depolarizing action of the adsorbed products of electrolysis at the electrode. The activation energy of the diffusion current was calculated for all studied oxides. Orig. art. has: 3 tables, Card 1/2

L 17703-63

ACCESSION NR: AP3003994

8 figures, and 9 formulas.

ASSOCIATION: Institut obschey i neorganicheskoy khimii AN UkrSSR (Institute of general and inorganic chemistry, Academy of Sciences, UkrSSR)

SUBMITTED: 26Jul62

DATE ACQ: 15Aug63

ENCL: 00

SUB CODE: CH, EL

NO REF SOV: 009

OTHER: C02

Card 2/2

DELIMARSKIY, Yu.K.; ANDREYEVA, V.N.; KAPTOVA, T.N.

Reaction of metal oxides with fused sodium metaphosphate. Izv.
AN SSSR. Neorg. mat. 1 no.1:150-155 Ja '65. (MIRA 13:5)

1. Kiyevskiy tekhnologicheskii inatitut pishchevoy promyshlennosti.

CHKANIKOV, D.I., kand.sel'skokhozyaystvennykh nauk, KAPTSYNEL', Yu.M.

Herbicidal action of aliphatic chlorinated carboxylic acids. Izv.
TSKhA no.6:80-92 '60. (MIRA 13:12)

(Acids, Fatty)

(Herbicides)

KAPTURENKO, A.M.

Introducing the economic accountability in planning organizations.
Transp. stroi. 9 no.11:40-41 N '59 (MIRA 13:3)

1. Starshiy ekonomist Glavtransproyekta.
(Building research) (Construction industry--Accounting)

PHASE I BOOK EXPLOITATION SOV/3226

Mezhdunarodskaya nauchno-tekhnicheskaya konferentsiya na temu: "Sovremennyye dostizheniya prokhatnogo proizvodstva."
 Trans. (Transactions of the Intercollegiate Scientific and Technical Conference on Recent Achievements in the Rolling Industry) Leningrad, 1958. 251 p. 1,000 copies printed.

Sponsoring Agencies: Leningradskiy politekhnicheskiy institut im. M.I. Kalinina, Nauchno-tekhnicheskoye obshchestvo mashinostroyeniya, Leningradskoye otdeleniye, and Nauchno-tekhnicheskoye obshchestvo metallurgov, Leningradskoye otdeleniye.

Resp. Ed.: V.S. Saimov, Doctor of Technical Sciences, Professor; Ed.: M.M. Pavlov.

NOTE: These proceedings of the conference are intended for specialists in the rolling industry.

COVERAGE: The articles of this collection cover various theoretical and practical problems of rolling, such as: pressure, spread, efficiency of rolls, determination of deformation, forces required, pass design, optimum conditions for rolling, experiences of various plants, modernization of equipment, aluminum-clad steel, and rolling of nonferrous metals. No personalities are mentioned. References appear after each article.

Saimov, V.S. [Leningradskiy politekhnicheskiy institut im. M.I. Kalinina (Leningrad Polytechnical Institute im. M.I. Kalinin)] Recent Achievements in the Rolling Industry	5
Shvaym, V.L. [SOOZ im. Ordzhonikidze, Krasnodarskiy Old Krasnodarskiy Machine-Building Plant in the Drive for Technical Progress]	15
Chernov, A.E., I. Ya. Kastyurov, and P.L. Klisenko. [Dnepropetrovskiy metallurgicheskiy institut (Dnepropetrovsk Metallurgical Institute)] Experimental Investigation of Unit Pressure in Rolling on Flans and Grooved Rolls	20
Taromovskiy, I. Ya., and V.M. Trubin. [Ural'skiy politekhnicheskiy institut im. S.M. Kirova (Ural Polytechnical Institute im. S.M. Kirov), Sverdlovsk] Study of Spread in Rolling, Using Variational Principles	29
Taromovskiy, I. Ya., and V.M. Trubin. [Ural'skiy politekhnicheskiy institut im. S.M. Kirova (Ural Polytechnical Institute im. S.M. Kirov), Sverdlovsk] Zones of Sticking and Rolling on the Contact Surfaces of the Focus of Deformation in Rolling	43
Starshchuk, D.I. [Zhdanovskiy metallurgicheskiy institut (Zhdanov Metallurgical Institute)] Forward Slip, Retardation and Spread in Rolling With Normal and Extra High Drafts	48
Mot'yev, M.S. [Dnepropetrovskiy metallurgicheskiy institut (Dnepropetrovsk Metallurgical Institute)] Determining Spread During Rolling in Simple Passes	62
Artukhin, G.E. [Magnitogorskiy sornometallurgicheskiy institut im. G.I. Nosova (Magnitogorsk Mining and Metallurgical Institute im. G.I. Nosov)] Method of Surface Marks for Calculation of the Internal Nonuniformity of Deformation in Spitting	66
Vodko, V.M. [Chelyabinskiy politekhnicheskiy institut (Chelyabinsk Polytechnical Institute)] Rolling - Rolls of Uncoiled Metal	71
Orlov, T.M. [Kiyevskiy politekhnicheskiy institut (Kiyev Polytechnical Institute)] Rolling With Constant Pressure	78
Dimitik, A.A. [Dnepropetrovskiy metallurgicheskiy institut (Dnepropetrovsk Metallurgical Institute)] Calculation of Metal Pressure on Rolls in Hot Rolling of Steel	81
Pavlov, M.M. [Leningradskiy politekhnicheskiy institut im. M.I. Kalinina (Leningrad Polytechnical Institute im. M.I. Kalinin)] Calculating Forces in Shape Rolling by the Equivalent Strip Method	91
Klisenko, V.M. [Institut Chernoy Metallurgii AN USSR (Institute of Ferrous Metallurgy, AS Ukr SSR), Kiyev] Design of Passes with Flanking Effect (top and bottom of pass have small tapers) and the Experimental Determination of Side Pressure of Work in Rectangular Passes	95

КАРТУКОВ, Г. В.

13

PHASE I BOOK EXPLOITATION SOV/3611

Dnepropetrovsk. Metallurgicheskii institut

Obrabotka metallov davleniyem (Metal Forming) Khar'kov, Metallurgizdat, 1960. 326 p. (Series: Its: Nauchnyye trudy, vyp. 39) 2,100 copies printed.

Ed.: A. P. Chelmarov; Ed. of Publishing House: A. A. Zelins; Tech. Ed.: S. P. Andryev.

PURPOSE: This collection of articles is intended for technical and scientific personnel in metallurgy and in mechanical engineering. It will also be of interest to designers of rolling equipment.

COVERAGE: This collection of articles treats the theory of rolling. It discusses such factors as the total and the unit pressures of the work on rolls, moments of rolling, forward slip, spread, etc. It also includes results obtained from the study of the physical processes of rolling, and other problems. No personal files are mentioned. References follow each article.

Chelmarov, A. P. (Academy of the USSR), I. Ye. Kostyurov, and V. A. Kuznetsov. Experimental Investigation of the Distribution of Unit Pressures on a Contact Surface in Rolling in Plain Rolls 5

The investigation was carried out to develop a reliable method of measuring unit pressure on the contact surface, and to obtain, by measurement, data on distribution of unit pressure during rolling with various drafts of strips having various initial thicknesses and widths.

Chelmarov, A. P., and E. L. Kilmenko. Experimental Investigation of Distribution of Unit Pressures on the Contact Surface During Rolling in Grooved Rolls 30

Chelmarov, A. P., and Rudyi, V. J. (Candidate of Technical Sciences, Institut chernoy metallurgii AN UkrSSR, and Vsesoyuzny nauchno-issledovatel'skiy tsentr inzhiniringa - Institute of Ferrous Metallurgy of the Academy of Sciences of the Ukrainian SSR, and the All-Union Scientific-Research Institute for Pipelng, The Contact Surface, and Pressure on Rolls in Pilger (Rockite) Rolling 53

The authors present new methods for measuring pressure on rolls in a pilger mill. For rolling pipes of 275, 315, and 355 mm diameters, and for determining the instant area of contact.

Vatkin, Ya. L. (Candidate of Technical Sciences). Pressure on Rolls in Rotary Rolling of Tubes on a Short Mandrel 73

The author compares experimental data on the total and unit pressures with the results obtained through using formulas the author derived.

Chelmarov, A. P., V. M. Kilmenko, V. I. Meleshko, M. M. Saf'yanov, V. P. Chelmarov, and S. M. Radzivilovskiy (Engineer). Pressure on Rolls in Slabbing Mills: The Methods, Instruments, and Results of the Investigation Carried Out at the "Zaporozhstal" Mill on Horizontal and Vertical Rolls at Slab Rolling. 93

The author describes the methods, instruments, and results of the investigation carried out at the "Zaporozhstal" mill on horizontal and vertical rolls at slab rolling.

Saf'yanov, M. M. (Candidate of Technical Sciences). Experimental Investigation on the Lever-Arm of Moments in Cold Rolling 104

The author describes investigation on the above subject, and gives the total pressure on rolls in cold rolling of steel sheets 1, 2, 3, and 4 mm thick at various drafts.

Chelmarov, A. P., and M. M. Saf'yanov. (Candidate of Technical Sciences). Forward Slip in Shapes Rolling 127

The author describes the methods of designing shaped rolls in respect to forward slip. The method is based on experiments with right-angular, square, rhombic, oval, and circular grooves.

Mutikov, M. J. (Candidate of Technical Sciences). Derivation of a Formula for Spread of Rolling on Plain Rolls 152

The author presents a method of calculation of spread in rolling. It is based on theoretical determination of stresses in the contact area in transverse and longitudinal directions.

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PHASE I BOOK EXPLOITATION SOV/3611

Dnepropetrovsk. Metallurgicheskii Institut

Obrabotka metalloy davleniem (Metal Forming) Khar'kov, Metallurgicheskii Institut, 1960. 326 p. (Series: Iles: Nauchnyye trudy, vyp. 39) 2,100 copies printed.

Ed.: A.P. Chekmarov; Ed. of Publishing House: R.A. Belina; Tech. Ed.: S.P. Andreyev.

PURPOSE: This collection of articles is intended for technical and scientific personnel in metallurgy and in mechanical engineering. It will also be of interest to designers of rolling equipment.

COVERAGE: This collection of articles treats the theory of rolling. It discusses such factors as the effect of the unit pressures of the work on rolls, moments of rolls, stresses, strains, spread, etc. It also includes results obtained in investigations of rail quality, rolling of cast iron sheets, and other problems. No personalities are mentioned. References follow each article.

Chekmarov, A.P., and M.I. Chesnokov [Candidates of Technical Sciences]. Deformation of Metal in the Manufacturing of Helical Springs. The authors present a method for determination of local (layer) deformations for any element of pipe in the focus of deformation, at various manufacturing processes (rolling, drawing, rotary rolling) in order to determine the most suitable process for given conditions.

Chekmarov, A.P., Ya.S. Pankel'shteyn [Candidate of Technical Sciences], and I.M. Lukhinskiy [Engineer]. Kinematics of the Process of Helical Rolling 191

The authors try to explain in a new way a number of phenomena occurring during helical rolling: the kinematics of the process, magnitude and direction of forces in the contact area, slip of metal, and the ways of intensification of the process of helical rolling.

Golesin, M.F. [Candidate of Technical Sciences]. Effect of Size and Shape of Trapezoidal Roll Passes on the Quality of Rails 221
The article deals with experiments conducted by the author in order to determine the effect of the condition of deformation at rolling on elimination of defects in rails. The practical recommendations concerning the shape passes and magnitude of drafts are presented.

Chekmarov, A.P., A.E. Grudax [Candidates of Technical Sciences], and V.M. Zhukov [Engineer]. Cold Rolling of Annealed Cast Iron Sheets either by hot or by cold rolling 231

The authors describe process of removing defects on cast iron sheets either by hot or by cold rolling.
Mikolajczak, Ye.G. [Engineer], S.I. Vitzenko [Candidate of Technical Sciences], and L.D. Stepanova [Engineer]. Effect of Cold Deformation on Properties of Cast Iron Sheets 243
Effect of cold deformation on mechanical properties, number of passes, and amount of drafts on the ductility and strength of cast iron sheets is discussed.

Yabkin, Ya.L. [Candidate of Technical Sciences], I.D. Kronfel'd, S.V. Rozhnov, and I.A. Chekmarov [Engineers]. Investigation of Pressure on Rolls, and Power Consumption at Rolling Pipe in Continuous Rolling Mill With Long Mandrel 254

The authors discuss the distribution of pressure on rolls, the effect of roll thickness and amount of additional alloy in steel on the results of rolling of the rolls. They give formulas for determination of unit and total roll pressure, and for power consumption in continuous rolling.

Chekmarov, A.P., and L.Ye. Kapurov. Experimental Investigation of Unit Pressures in HOT ROLLING 278

The authors conducted a laboratory investigation in the Dnepropetrovsk Metallurgical Institute on determination of magnitude, area, and distribution pattern of the unit pressure in the contact area at rolling of teal and of various thicknesses and with various drafts.

S/137/61/000/006/026/092
A005/A101

AUTHORS: Chekmarev, A.P., Kapturov, L.Ye., Klimenko, P.L.

TITLE: Experimental investigation of the distribution of specific pressure over the contact surface during rolling on smooth rolls

PERIODICAL: Referativnyy zhurnal. Metallurgiya, no. 6, 1961, 1 abstract 6D4 ("Nauchn. tr. Dnepropetr. metallurg. in-t", 1960, no. 39, 5 - 29)

TEXT: The authors substantiate a method selected for investigating specific pressures with the aid of a dynamometer functioning with a glued-on wire resistance pickup of a surface subjected to stretching. The investigations were made on a laboratory two-high mill with rolls of 260 mm diameter and 350 mm length. The experimental methods are described in detail. Pb-strips of 22, 16, 10, 6, 4 and 2 mm thickness, 50, 35 and 20 mm width, and 350 mm length each, were rolled, and it was established that: 1) specific pressures are non-uniformly distributed across the deformation seat; over its length they are highest in the center and least at the edges; 2) the absolute magnitude of specific deformation decreases with a reduced width of the strip; 3) during rolling of thick strips with a reduction of $\leq 23\%$ tensile stresses arise which entail a decrease

Card 1/2

Experimental investigation ...

S/137/61/000/COE/026/092
A006/A101

of specific pressure on the contact surface. To investigate the distribution of specific pressure during non-uniform deformation, special concave and convex Pt-specimens were rolled. It was found that compressive stresses increased the specific pressure in strip sections subjected to stronger compression and that tensile stresses reduced the specific pressure in less compressed sections of the strip. /

V. Pospelkov

[Abstracter's note: Complete translation]

Card 2/2

CHEKMAREV, A.P., akademik; KAPTUROV, L.Ye., inzh.

Experimental investigation of specific pressures in hot rolling.
Nauch. trudy DMI no.39:278-292 '60. (MIRA 13:10)

1. AN USSR (for AN USSR).
(Rolling mills)

CHEKMAREV, A. P., akademik; KAPUROV, L. Ye., inzh.; RABINOVICH,
S. N., inzh.

Metal pressure on rolls and cogging conditions on a three-
high sheet rolling mill in the Novo-Kramatorsk machinery plant.
Nauch. trudy DMI no.48:239-249 '62. (MIRA 15:10)

1. Akademiya nauk Ukrainskoy SSR (for Chekmarev).

(Kramatorsk—Machinery industry)
(Rolling(Metalwork))

CHEKMAREV, A. P., akademik; RABINOVICH, S. N., inzh.; KAPUROV,
L. Ye., inzh.

Investigating the grooving and the wear of rolls on a two-
high thin sheet rolling mill. Nauch. trudy DMI no.48:250-256
'62. (MIRA 15:10)

1. Akademiya nauk Ukrainskoy SSR (for Chekmarev).

(Rolls(Iron mills)) + (Mechanical wear)

CHEKMAREV, A. P., akademik; RABINGVICH, S. N., inzh.; KAPUROV,
L. Ye., inzh.; MASHKIN, L. F., inzh.

Automatic shape adjustment of sheet mill rolls by means of a
mechanical grinding device. Nauch. trudy DMI no.48:265-274
'62. (MIRA 15:10)

(Rolls(Iron mills)) (Grinding and polishing)
(Electronic control)

KAPTUROV, L. Ye., inzh.

Experimental investigation of the effect of rolling speed on
specific pressure. Nauch. trudy DMI no.48:311-315 '62.
(MIRA 15:10)

(Rolling(Metalwork))

KAPTUREVA, S. I.

✓ Kinetics of nitric acid formation in a rapidly revolving
mechanical absorber at high rotational speed. S. N. Ganz
and S. I. Kapturova. *J. Appl. Chem. U.S.S.R.* 28, 533-
54 (1955) (*English translation*).—See *C.A.* 50, 34i.
D. M. R.

CH

①

3

KAPTUROVA, S. I.

Subject : USSR/Chemistry AID P - 3489
Card 1/1 Pub. 152 - 4/21
Authors : Ganz, S. N. and S. I. Kapturova
Title : Kinetics of formation of nitric acid in mechanical absorbers with a large number of revolutions
Periodical : Zhur. prikl. khim., 28, 6, 585-596, 1955
Abstract : In mechanical absorbers with a large number of revolutions the gas is thoroughly mixed with the liquid, and the oxidation of NO to NO₂ proceeds at a higher rate. Two tables, 13 diagrams, 12 references, all Russian (1900-1953).
Institution : None
Submitted : N 4, 1953

DELIMARSKIY, Yu. K.; KAPTSOVA, T. N.; BOYKO, K. M.

Polarographic investigation with fused sodium metaphosphate as
the support. Ukr. khim. zhur. 28 no.5:595-599 '62.
(MIRA 15:10)

1. Institut obshchey i neorganicheskoy khimii AN Ukr-SSR.

(Polarography) (Sodium metaphosphate)

DELIMARSKIY, Yu.K.; KAPTSOVA, T.N.

Polarographic investigation with fused sodium metaphosphate as the support. Part 2: Polarography of copper, silver, cadmium, and lead oxides. Ukr. khim. zhur. 28 no.7:802-802 '62. (MIRA 15:12)

1. Institut obshchey i neorganicheskoy khimii AN UkrSSR.
(Metallic oxides) (Polarography)

CHERMAREV, A. P., akademik; KAPUROV, L. Ye., inzh.; RABINOVICH,
S. N., inzh.

Metal pressure on rolls and cogging conditions on a two-high
thin sheet rolling mill. Nauch. trudy DMI no.48:257-264 '62.
(MIRA 15:10)

1. Akademiya nauk Ukrainskoy SSR (for Chermarev).

(Rolling(Metalwork))

PROCESSES AND PROPERTIES INDEX

KAPTYUG, I. S. 9

Improvement in basic open-hearth process to approach the acid process. I. S. Kaptug, S. I. Smolenskii and S. I. Sakhin. *Metallurg* 11, No. 11, 37-40 (1930). Plant-scale expts. demonstrated the advantage of slower decarburization at the end of the heat. The first slag, which was strongly oxidizing, was skimmed and a 2nd slag with a CaO:SiO₂ ratio of 2.0-2.4 was introduced. The slag and metal were then deoxidized by various means. Mech. properties of the steel were superior to those obtained in ordinary operation. H. W. Rathmann

A S T M - S I A METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND LETTERS										3RD AND 4TH LETTERS										5TH AND 6TH LETTERS																															
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ

Koplyug, I. S.

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K207y49, J.S.

Краткое сообщение

137-58-1-1765

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 1, p 240 (USSR)

AUTHOR: Kaptyug, I. S.

TITLE: On Woody Fracture of Steel (O shifernom izlome stali)

PERIODICAL: V. sb.: Metallovedeniye. Leningrad, Sudpromgiz, 1957,
pp 253-263

ABSTRACT: A critical analysis is presented of the results of some researches on schistose woody fracture in steel, and a discussion is presented of the connection between the manifestation of schistosity and the state of the metal at the moment of fracture testing. It is shown that schistosity and exfoliation do not exist in schistose metal before fracture testing as defects characteristic of disruption of the integrity of the metal. They develop in the testing process, and only in that portion of the volume of the specimen which undergoes serious plastic deformation prior to the moment of fracture of the specimen. In steel predisposed to formation of schistosity or exfoliation, no heat treatment is capable of eliminating these defects from fibrous fracture. When fibrous or woody fracture is replaced by crystalline fracture, the appearance of schistosity is impaired or prevented, but this does not improve

Card 1/2

137-58-1-1765

On Woody Fracture of Steel

the quality of the steel. The formation of woody fracture of steel is intimately related to contamination thereof by non-metallic inclusions, while the formation of crystalline fracture does not depend upon their presence in the steel. It is recommended that an evaluation of the quality of steel for tendency to schistosity and exfoliation be made on transverse sections, and that the testing of notched specimens to fracture be done slowly under a press.

N. K.

1. Steel--Fracture--Analysis

Card 2/2

KAPTYUG, I.S., kand, tekhn.nauk; SYSHCHIKOV, V.I., inzh.

Some results of testing titanium and its alloys for friction and
wear. Sudostroenie 24 no.8:46-48 Ag '58. (MIRA 11:10)
(Titanium--Testing)

AUTHORS: Kaptyug, I.S. (Candidate of Technical Sciences) and SOV/129-59-4-5/17
Syshchikov, V.I. (Engineer)

TITLE: Influence of Alloying on the Friction Properties of Titanium (Vliyanie legirovaniya na friktsionnyye svoystva titana)

PERIODICAL: Metallovedeniye i Termicheskaya Obrabotka Metallov, 1959, Nr 4, pp 22-27 (USSR)

ABSTRACT: The authors investigated the friction properties of some titanium alloys produced in an induction furnace from a de-gassed sponge metal containing 0.01% C, 0.14% Si, 0.16% Fe, 0.08% Mg. The smelting and the alloying were effected in graphite crucibles in an argon atmosphere. The chemical compositions and the mechanical properties of the heats are entered in Table 1 (p 23), and it can be seen that 0.38 - 0.80% C passed from the crucibles into the alloy. Ingots of 70 - 90 mm diameter were forged into rods of 15 mm diameter which were then cooled in air. From the latter, specimens were produced for tensile tests and also for friction tests. In the experiments the coefficient of friction and the tendency to seizing were investigated (at specific pressures of 10, 100 and 300 kg/cm²; at each of these 30 sliding

Card 1/3

SOV/129-59-4-5/17

Influence of Alloying on the Friction Properties of Titanium
motions were made), as well as the wear resistance, the
hardness and the microstructure. The obtained results
are entered in tables and plotted in graphs. The authors
arrived at the following conclusions: 1) Alloying of
titanium brought about only a slight reduction in the
static friction coefficient (from 0.55 to 0.45 in a
rubbing pair with titanium and from 0.20 to 0.15 in a
rubbing pair with brass) and in the depth of penetration
of the damage in the case of dry sliding friction.
2) Titanium and the investigated titanium alloys proved
to have a very low wear resistance against sliding
friction; the wear was 15 - 30 times as high as that
of brass, bronze or stainless steel. 3) The investigated
titanium alloys as well as pure titanium are unsuitable
for components subjected to friction under high pressure.
However, they can be used in rubbing pairs with brass or

Card 2/3

SOV/129-59-4-5/17
Influence of Alloying on the Friction Properties of Titanium
bronze in the case of relatively low loads.
There are 5 figures and 4 tables.

Card 3/3

KAPTYURINA, Anna Dmitriyevna

[Lumbosacral radiculitis] Poyasnichno-kresttsovyi radikulit.
Moskva, Medgiz, 1960. 15 p. (MIRA 13:8)
(NERVES, SPINAL--DISEASES)

KAPTYUSHIN, I., prepodavatel'

Instruction maps in laboratory work. Prof.-tekh. obr. 17
no. 11:13 N '60. (MIRA 13:12)

1. Uchilishche mekhanizatsii sel'skogo khozyaystva No 32,
Saratovskaya oblast'.
(Farm mechanization--Study and teaching)

KAPTYUSHIN, I., prepodavatel'

Final lesson. Prof.-tekh.obr. 19 no.1:10 Ja '62. (MIRA 15:1)

1. Borskoye uchilishche mekhanizatsii sel'skogo khozyaystva
No.1, Kuybyshevskaya' oblast'.
(Farm mechanization--Study and teaching)

DARKANBAYEV, T.B.; KAPTYUSHINA, G.A.

Sugar and starch content of grain and flour of Kazakhstan. Izv.
AN Kazakh.SSR.Ser.biol.no.10:87-93 '55. (MIRA 9:4)

1.Institut botaniki AN KazSSR.
(KAZAKHSTAN--WHEAT)

Kazakhstan wheat grains contained reducing sugars 0.17-0.22, sucrose 2.43-3.3, and starch 50.5-66.0%; 72% yield flour contained reducing sugars 0.15-0.2, sucrose 1.76-2.25, and starch 70.41-75.63%. Generally the grain of hard wheat contained more sucrose than that of soft wheat.

KAPTYUSHINA, G.A., Cand Bio Sci--(dias/ "Biochemical indicators and breadbaking properties of certain new varieties of Kazakhstan wheat." Alma-Ata, 1958. 21 pp (Min of Higher Education USSR. Kazakh State U im S.L. Kirov), 150 copies (KL,30-58,125)

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