L'vov, V.A.

~~L'vov, V.A.~~

"Measuring the Group Time of Distribution of Electromagnetic Waves in a Wire Band Communications Channel." Cand Tech Sci, Moscow Electrical Engineering Inst of Communications, Moscow, 1953. Dissertation (Referativnyy Zhurnal--Fizika Moscow, Feb 54)

SO: SUM 176, 19 Aug 1954

ASKINAZI, A.A., inzhener; DEM'YANCHENKO, G.V., inzhener; L'VOV, V.A., kand. tekhn.nauk.

Type VIZ-1 device for measuring frequency characteristics of cross-talk attenuation. Vest.sviazi 16 no.10:7-9 O '56. (MIRA 10:10)

1. Mladshiy nauchnyy sotrudnik TSentral'nogo nauchno-issledovatel'skogo instituta svyazi (for Askinazi). 2. Nachal'nik laboratorii TSentral'nogo nauchno-issledovatel'skogo instituta svyazi (for Dem'yanchenko). 3. Starshiy nauchnyy sotrudnik TSentral'nogo nauchno-issledovatel'skogo instituta svyazi (for L'vov).
(Frequency measurements) (Electric cables)

L'VOV, V. A.

Method of Visual Measurement of Frequency Characteristics of Imput Impedance. Patent, Class 21e, 36_{10}. No 103302. Elektrosvyaz' No 1, Jan 57.

SOV/106-58-12-5/13

AUTHOR: Lvov, V.A.

TITLE: Design of a Bridge Phase-Shifter (Raschet mostikovogo fazovrashchatelya)

PERIODICAL: Elektrosvyaz', 1958, Nr 12, pp 35 - 42 (USSR)

ABSTRACT: In existing literature the formulae for the values of the components of bridge phase-shifters are derived on the assumptions that the load impedance is infinite, the internal impedance of the driving source is zero and the transformer is ideal. In practical cases these conditions are not met, and substantial corrections have to be made either in the value of the phase change or in the values of the components. The object of this article is to produce design formulae which take account of the practical conditions. Initially, simple formulae are derived from an equivalent circuit where the transformer windings are replaced by an equivalent generator with negligible internal impedance and the phase angle and component values are calculated for a resistive load. To take account of the input impedance, the capacity of the load and other stray parasitic elements, the phase-shifter

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Design of a Bridge Phase-Shifter SOV/106-58-12-5/13

circuit is considered as a four-terminal network which is analysed by the matrix method. From the formulae obtained, the effects of the load impedance and stray capacities on the phase angle are determined and conclusions drawn concerning the most rational choice of parameter values. A numerical example is given to demonstrate the application of the formulae. The results obtained by use of the simple formulae were found to differ considerably from experimental data, but calculations using the full formulae gave good agreement.
There are 5 figures and 3 Soviet references.

SUBMITTED: May 30, 1958

Card 2/2

L'VOV, V.A.

106-58-3-7/19

AUTHOR: L'vov, V.A.

TITLE: Measurements Using a Wide-band Indicator in the Presence of Non-linear Distortions (Izmereniya shirokopolosnym indikatorom pri nalichii nelineynykh iskazheniy)

PERIODICAL: Elektrosvyaz', 1958, Nr 3, pp 54-57 (USSR)

ABSTRACT: The errors introduced by non-linear distortion when the transfer coefficient of a four-terminal network is measured using an input generator and a wide-band, output level metering device, are investigated. The errors may be due to harmonics in the generator signal or to harmonics generated in the four-terminal network itself. For simplicity, the detector transfer coefficient is considered as unity for all frequencies. Letting:

$$k = U_{\Gamma}/U \qquad (1)$$

where U_{Γ} is the harmonic voltage and U is the fundamental voltage at the indicator input, then the indicated voltage equals:

$$U_1 = U + U_{\Gamma} = U(1 + k) = U(1 + e^{-b_k}) \qquad (2)$$

where $b_k = \log 1/k$, the non-linear attenuation. If the distortion arises in the network, then the attenuation (or amplification) is found by comparing the input and output levels. The error in this case will be:

$$\Delta B = \ln(1 + e^{-b_k}) \qquad (3)$$

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Measurements Using a Wide-band Indicator in the Presence of Non-linear Distortions

and if k is small,

$$\Delta B \approx k .$$

If the distortion is due to the generator output containing an harmonic, and the attenuations B_1 and B_2 in the circuit are different for the fundamental and the harmonic respectively, then errors arise. The output voltage will be:

$$U_{out} = U(e^{-B1} + e^{-Bh} e^{-bk}) \qquad (4)$$

and the measured attenuation will be:

$$e^{-B_{meas.}} = e^{-(B_1 - \Delta B)} = \frac{U_{out}}{U_{in}} = \frac{e^{-B1} + e^{-B_h} e^{-bk}}{1 + e^{-bk}} \qquad (5)$$

giving an error

Measurements Using a Wide-band Indicator in the Presence of Non-linear Distortions

$$\Delta B = \ln \frac{1 + e^{B_l - B_h - b_k}}{1 + e^{-b_k}} \qquad (6)$$

Fig.1 shows errors for different non-linear distortion coefficients. To reduce the error, a low-frequency pass filter at the generator output is recommended. The results are applied to the measurement of the attenuation of a high-frequency pass filter. There are 2 figures.

SUBMITTED: March 4, 1957

AVAILABLE: Library of Congress

Card 3/3

1. Electrical networks-Distortion 2. Mathematics-Theory

NUDEL'MAN, L.G.; Prinimali uchastiye: VERESHCHAGIN, Yu.F.; L'VOV, V.A.; STELETSKIY, V.S.; KOVALENKO, A.D.; SIMAKOV, V.M.

Study of the strength and rigidity of a P313 sheet stamping press bed. Kuz.-shtam.proizv. 7 no.2:27-33 F '65.
(MIRA 18:4)

L 10004-67 EWP(k)/EWT(d)/EWT(l)/EWP(h)/EWP(l)/EWP(v) IJP(c) GG/BB/GD
ACC NR: AT6023306 (N) SOURCE CODE: UR/0000/65/000/000/0158/0163

AUTHOR: L'vov, V. A. (Novosibirsk)

ORG: none

TITLE: Instrument for recording measurements on magnetic tape

SOURCE: Vsesoyuznaya konferentsiya po avtomaticheskomu kontrolyu i metodam elektricheskikh izmereniy. 5th, Novosibirsk, 1963. Avtomaticheskiy kontrol' i metody elektricheskikh izmereniy; trudy konferentsii, t. I: Metody elektricneskikh izmereniy. Tsifrovyye izmeritel'nyye pribory. Elementy izmeritel'nykh sistem (Automatic control and electrical measuring techniques; transactions of the conference. v. 1: Electrical measuring techniques. Digital measuring instruments. Elements of measuring systems). Novosibirsk, Izd-vo Nauka, 1965, 158-163

TOPIC TAGS: magnetic recorder, tape recorder, multitrack recording, analog digital converter, data acquisition, data recording, data readout, data sampling, data storage, signal correlation

ABSTRACT: The author describes a tape recorder for converting analog signals into digital form, recording them on tape, and using the recorded data as a direct input to a computer for cross-checking purposes. The recorder has two input channels so that two separate processes can be monitored simultaneously. The input voltage in each channel

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L 10004-67

ACC NR: AT6023386

is amplified and converted into a five-bit binary code which corresponds to the 32 discrete levels of the input voltage. The A/D conversion uses a ramp generator, a level comparator and a 150 KHz gated pulse generator. The pulse train, containing a number of pulses corresponding to the sampled amplitude of the input signal (sampling rate of up to 200 per second), is encoded into five-bit words by means of a ring counter. The output is used to modulate the 7.2 KHz carrier driving the magnetic heads. In addition to the signal information, synchronizing pulses are included between each word. The system is described in detail, including a block diagram, waveforms, and performance information. Orig. art. has: 4 figures.

SUB CODE: 09/ SUBM DATE: 20Sep65/ ORIG REF: 004

Card 2/2

LOGUNOV, L.I.; L'VOV, V.B.

Production Combine "Zaria" (Moscow). Kozh.-obuv. prom. 6 no.8:12-13 Ag '64. (MIRA 17:10)

1. Glavnyy inzh. Moskovskogo obuvnogo ob"yedineniya "Zarya" (for Logunov). 2. Zamestitel' general'nogo direktora po ekonomicheskim voprosam Moskovskogo obuvnogo ob"yedineniya "Zarya" (for L'vov).

L'VOV, V.I.

SHUBOVICH, S.I.; L'VOV, V.I.; SHARAPOV, R.D.

Results of testing the experimental pneumatic reversing two-stage turbine. Izv.TPI 85:93-100 '57. (MIRA 10:12)

1.Predstavleno prof. doktorom tekhn.nauk V.T. Yurinskim.
(Air turbines--Testing)

SOKOLOV, Yu.N.; L'VOV, V.I.; AYZENSHTEYN, A.R.

Methods for testing ventilation fans. Izv.TPI 137:53-63 '65. (MIRA 19:1)

PA 63/49T89

USSR/Medicine - Anaerobe Culture Mar 49
Medicine - Culture Media

"A Simplified Method for Cultivating Anaerobes," V. M. L'vov, 1 p

"Veterinariya" No 3

Poor and incomplete studies of a group of anaerobic infections are due to lack of proper equipment in laboratories. To develop an artificial anaerobiosis, L'vov used sodium hydrosulfite and sodium carbonate instead of the customary alkaline solution of Pyrogallol. Replacing the alkaline pyrogallol solution by sodium hydrosulfite eliminated use of the

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USSR/Medicine - Anaerobe Culture Mar 49
(Contd)

hard-to-get pyrogallol in prolonged cooling of the agar in the Petri dish, and eliminated inconveniences connected with the staining properties of pyrogallol.

63/49T89

L'VOV, V. M.

L'VOV V.M

L'VOV, V. M. : (Lecturer, Candidate of Veterinary Sciences)

Manifestation of local reaction to the intracutaneous introduction of corpuscular and lysated allergen in cattle sick with brucellosia.

Department of Epizootiology
K. A. Khlustsov, Professor - Head of the Department

SO: Collection of Scientific Works, Leningrad Inst. for Advancement of Veterinarians, Ministry of Agriculture USSR. State Agricultural Publishing House, 1950.

L'VOV, V. M.: (Lecturer, Candidate of Veterinary Sciences)

Evaluation of the readings of the agglutination reaction in ridding the farms of brucellosis.

Department of Epizootiology
K. A. Khlustsov, Professor - Head of the Department

SO: Collection of Scientific Works, Leningrad Inst. for Advancement of Veterinarians, Ministry of Agriculture USSR. State Agricultural Publishing House, 1950.

L'VOV, V. M.

"Laboratory diagnosis of anaerobic diseases of farm animals"
Moscow-Leningrad. Sel'khozgiz, 1951. 92 pages with illustrations.

SO: Vet., Jan. 1952, Unclassified.

In the booklet are presented basic methods of laboratory diagnosis of anaerobic infectious diseases of farm animals. The booklet is designed for Veterinary doctors-bacteriologists.

L'VOV, Valeriy Mikhaylovich, dotsent; GOL'DSHTEYN, S.A., red.; CHUNAYEVA, Z.V., tekhn.red.

[Laboratory diagnosis of anaerobic diseases of farm animals] Laboratornaia diagnostika anaerobnykh zabolevaniy sel'skokhoziaistvennykh zhivotnykh. Izd.2. Moskva, Gos.izd-vo sel'khoz. lit-ry, 1960. 131 p. (MIRA 13:6)
(Veterinary bacteriology)

TSION, Robert Adol'fovich, doktor veter. nauk, prof.; L'VOV, Valeriy Mikhaylovich, kand. veter. nauk, dots.; GOL'DSHTEYN, S.A., red.; BARANOVA, L.G., tekhn. red.

[Diseases of young farm animals] Bolezni molodniaka sel'skokhoziaistvennykh zhivotnykh. Moskva, Sel'khozizdat, 1963. 294 p. (MIRA 16:8)
(Veterinary medicine)

L'VOV, V.M., dotsent; NOVOKRESHCHENOV; TUROVSKIY; BALABASHIN; ZIMINA; VEBER; KONOSHENKO; BAKANOV, A.

Improving the qualifications of veterinarians. Veterinariia 41 no.8:96-99 Ag '64. (MIRA 18.4)

1. Leningradskiy veterinarnyy institut (for L'vov).

L'VOV, V. M.

Water - Pollution

Case of bacterial pollution of mineral water in the mineral water conduit. Gig. i san. No. 8, 1952.

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

VOLZHINSKIY, I.A.; L'VOV, V.N.[deceased]; REYKHSFEL'D, V.O.; SHUR, Ye.I., redaktor; EHLIKH, Ye.Ia., tekhnicheskiy redaktor.

[Synthetic rubber laboratory manual] Rukovodstvo k prakticheskim zaniatiam v laboratorii sinteticheskikh kauchukov. Leningrad, Gos. nauchno-tekhn.izd-vo khim.lit-ry 1955. 220 p. (MLRA 8:12)
(Rubber, Synthetic)

L'VOV, V.N.

ANDON'YEV, S.M.; ZHLOBINSKIY, Ye.I.; YUR'YEV, M.A.; STRUGATSKIY, L.F.; YELISEYEV, B.V.; TSELUYKO; Yu.I.; SUVOROV, A.I.; FILIP'YEV, O.V.; KALASHNIKOV, P.A.; L'VOV, V.N.; SULOYEV, V.A.

Evaporation cooling of rolling-mill heating furnaces in open-hearth-furnace plants and complex utilization of secondary power resources. Prom. energ. 14 no.1:37-39 Ja '59. (MIRA 12:1)
(Furnaces, Heating) (Boilers)

BLINOV, L.K., kandidat fiziko-matematicheskikh nauk; L'VOV, V.P.

Dust storm in the Red Sea. Priroda 45 no.3:116-118 Mr '56.
(MLRA 9:7)

1.Gosudarstvennyy okeanograficheskiy institut.
(Red Sea--Dust storms)

L'VOV, V.P.

Water level fluctuations in the Aral Sea during the past hundred years. Trudy GOIN no.46:80-114 '59. (MIRA 13:5)
(Aral Sea--Hydrography)

L'VOV, V.P.

Observations on water transparency in the Aral Sea at night.
Trudy GOIN \. 67:132-135 '62. (MIRA 15:7)
(Aral Sea--Seawater--Optical properties)

L'VOV, V.P.

Water exchange between the Aral Sea and the "subterranean seas" surrounding it. Okeanologiia 4 no.4:720-726 '64. (MIRA 17:10)

L'VOV, V.P.

Some data on the underground component of the water and salt balance of the Aral Sea. Trudy GOIN no.83:207-242 '65. (MIRA 18:9)

L'VOV, V.P.

Level of the Aral Sea and solar activity. Trudy GOIN no.85: 91-172 '65. (MIRA 19:1)

L 35988-66 EWT(1) GW

ACC NR: AT6016544 (N) SOURCE CODE: UR/2634/65/000/085/0091/0172

AUTHOR: L'vov, V. P.

32

B+1

ORG: None

TITLE: The level of the Aral Sea and solar activity

SOURCE: Moscow. Gosudarstvennyy okeanograficheskiy institut. Trudy, no. 85, 1965. Teoriya i metody raschetov techeniy i neperiodicheskikh kolebaniy urovnya i prilivov (Theory and methods of calculating currents and acyclic fluctuations of water level and tides), 91-172

TOPIC TAGS: ocean dynamics, solar activity, long range weather forecasting, climatic influence

ABSTRACT: On the basis of 100 references the author surveys the level of the Aral Sea as it varied over several years and centuries. Following the study of the change in water volume and level of the Aral Sea and the meaning of such changes, this comprehensive article analyzes the long range changes in the sea level, investigates the magnitudes of climatic and sea level changes over the centuries, studies the water balance of the Aral Sea, establishes the causal chain of events,

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ACC NR: AT6016544

and discusses the solar activity and the rhythmic character of the processes. Inasmuch as the variations seem to be caused by the influence of the sun, the author establishes a methodology for forecasting the long range variations of the average yearly variation of the Aral Sea for an experimental forecast of the 1963-1965 levels. Using the results of this trial period, the author establishes the long range Aral Sea level variation forecast to the end of this century. The article concludes with a brief discussion of some ways for the further improvement in forecasting by taking into account other factors such as the current conditions at river deltas and the effects due to planned irrigation projects. Orig. art. has: 10 formulas, 23 figures, and 15 tables.

SUB CODE: 04, 08/ SUBM DATE: 00/ ORIG REF: 099/ OTH REF: 001

Card 2/2

L'VOV, V. S.
Solid State Physics

Dissertation: "An Investigation of the Highly Coercive Condition of Iron-Nickel-Aluminum Alloys." Cand Tech Sci, Moscow Steel Inst, Moscow, 1953.
(Referativnyy Zhurnal -- Fizika Moscow, Mar 54)

SO: SUM 213, 20 Sep 1954

L'vov, V. S.

USSR/Solid State Physics - Phase Transformations in Solids, E-5

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 34732

Author: Livshits, B. G., L'vov, V. S.

Institution: Moscow Institute of Steel USSR

Title: Investigation of the Mechanism of Aging of High-Coercivity Iron-Nickel-Aluminum Alloy

Original Periodical: Fiz. metallov i metallovedeniye, 1955, 1, No 3, 455-458

Abstract: An alloy containing 27% nickel, 15% aluminum, and the remainder iron was investigated. The method of 2-step working, imitating continuous cooling from a high temperature, was used: the homogeneous alloy was cooled from 1,250 to 800 or 850°, was soaked for a certain time (from one minute to 10 hours), and the resultant heterogeneous state was fixed by hardening. The coercivity and the temperature coefficient of the electric resistivity of monolithic specimens was measured at various stages of the heat treatment. The NiAl phase was separated chemically, and in it the contents of iron was determined and the coercivity, the saturation magnetic, and the temperature coefficient of electric resistivity were measured. The separated NiAl phase was furthermore subjected to heat treatment: slow heating to 100-700°,

USSR/Solid State Physics - Phase Transformations in Solids, E-5

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 34732

Author: Livshits, B. G., L'vov, V. S.

Institution: Moscow Institute of Steel USSR

Title: Investigation of the Mechanism of Aging of High-Coercivity Iron-Nickel-Aluminum Alloy

Original Periodical: Fiz. metallov i metallovedeniye, 1955, 1, No 3, 455-458

Abstract: after which the magnetic saturation and the coercivity were measured. It was found that the supercooled solid solution of iron, nickel and aluminum alloy breaks up at 800-850° into an iron phase and a nickel-aluminum phase, containing iron. At a lower temperature (700°), there is a further decomposition of the nickel-aluminum phase with a separation of iron from it.

LIVSHITS, B.G., professor, doktor; L'VOV, V.S., kandidat tekhnicheskikh nauk.

Investigating phases, magnetic properties, and the mechanism of age hardening in iron-nickel-aluminum alloys. Sbor.Inst.stali no.33:75-96 '55. (MLRA 9:6)

1.Kafedra metallografii.
(Iron-nickel-aluminum alloys--Metallography)

L'VOV, V. S., and LIVSHITS, B. G., (Moscow)

"The Constitution of the Alloys Fe_C Ni-Al intheir High Coercive State," a paper submitted at the International onference on Physics of Magnetic Phenomena, Sverdlovsk, 23-31 May 56.

L'vov, V. S

AUTHORS: Livshits, B. G., and L'vov, V. S. 48-9-4/26

TITLE: Note on the Structure of Fe-Ni-Al-Alloys in a Highly Coercitive State (Stroyeniye Fe-Ni-Al-Splavov v ikh vysokokoertsitivnom sostoyanii).

PERIODICAL: Izvestiya AN SSSR Seriya Fizicheskaya, 1957, Vol. 21, Nr 9, pp. 1232-1232 (USSR.).

ABSTRACT: The paper is a short abstract from the lecture, the basic contents of which have been published in FMM, 1, 455 (1955) and more detailed in Sbornik Trudov MIS, 33, page 75, 1955. The solid Fe-Ni-Al solution is decomposed into a Fe - phase and a Ni-Al - phase at high temperature (at annealing and at aging as well). This leads to a coherent combination between the components of the structure, independent of the degree of pulverization. An anomaleous process of aging is characteristic for these alloys. The anomaly consists in the fact, that the maximum coercitive force is not obtained from an ordinary hardening by means of annealing, but is the result from a continuous cooling starting from high temperatures (from a one phase state) with a critical velocity. The continuous cooling can be replaced with the same result by the keeping of a undercooled high-temperature solution,

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48-9-4/26

Note on the Structure of Fe-Ni-Al-Alloys in a Highly Coercitive State.

first at 800 - 850°C and then at 650 - 700°C. At these temperatures the decomposition takes place in two steps: Fe-phase and Ni-Al-phase. The first decomposition is proved with the help of a microscope, the additional one by a phase analysis (chemical and X-ray) of the isolated Ni-Al-phase, which is separated from the alloy electrochemically after different heat treatments. The decomposition is also proved by measurements of electrical, magnetical and other properties of the monolyt samples. It can be assumed, that the maximum increase of the coercitive force is caused by an increased isolation of particles of α- iron on the additional decomposition of the phases (which have been obtained at the first decomposition of the undercooled solid solution).

ASSOCIATION: Moscow Institute for Steel imeni I. V. Stalin (Moskovskiy institut stali imeni I. V. Stalina).

AVAILABLE: Library of Congress.

Card 2/2

L'vov, V.S.

PHASE I BOOK EXPLOITATION SOV/4248

Livshits, Boris Grigor'yevich, and Vladimir Sergeyevich L'vov

Vysokokoertsitivnyye splavy na zhelezonikel'alyuminiyevoy osnove (Highly Coercive Iron-Nickel-Aluminum Base Alloys), Moscow, Metallurgizdat, 1960. 157 p. Errata slip inserted. 3,200 copies printed.

Ed.: Yu. F. Avraamov; Ed. of Publishing House: A.L. Ozeretskaya; Tech. Ed.: L.V. Dobuzhinskaya.

PURPOSE: This book is intended for physicists specializing in magnetometry and physical metallurgists studying problems of structural transformations and physical properties of highly coercive alloys.

COVERAGE: The book deals with the present state of knowledge of highly coercive iron-nickel-aluminum-base alloys according to Soviet and non-Soviet data and the basic scientific problems involved in the achievement of high magnetic properties for these alloys. The topics discussed include the phase equilibrium of ternary and more complex systems based on iron-nickel-aluminum alloys,

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the kinetics of phase transformations and the fundamentals of heat treatment. Data on the effect of alloying elements on magnetic and other properties of iron-nickel-aluminum-base alloys are presented. Examples of the utilization of the alloys in manufacturing and the results of a statistical analysis of magnetic properties under conditions of mass production are given. No personalities are mentioned. There are 123 references: 68 Soviet, 38 English, 17 German.

TABLE OF CONTENTS:

Highly Coercive Iron-Nickel-Aluminum-Base Alloys SOV/4248

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Highly Coercive Iron-Nickel-Aluminum Base Alloys SOV/4248

AVAILABLE: Library of Congress

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VK/pw/mas
9-26-60

S/148/61/000/012/008/009
E193/E383

AUTHORS: Gossman, A.A. and L'vov, V.S.

TITLE: On the nature of the K-state in alloys

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Chernaya metallurgiya, no. 12, 1961, 126 - 129

TEXT: Some solid solutions containing metals of the transition group show an anomalous rise in electrical resistance when cooled slowly after annealing. This effect has been attributed to the onset of a structural condition to which Thomas (Ref. 1: Zeitschrift f. Physik., 129, 1951, 219) ascribed the term "K-state". According to one school of thought, the K-state is associated with the formation of atom aggregates (segregations or complexes) in the crystal lattice and this view has been indirectly supported by X-ray diffraction measurements (Ref. 5: I.Ya. Dekhtyar, S.M. Karal'nik - DAN SSSR, v.38, no.2, 1953, 227). In the opinion of other workers (e.g. Ref. 6 - R. Nordheim, N. Grant - J. Inst. Metals, v.82, 1953-54, 440) the K-state is a result of a disorder-order transformation. These conflicting views prompted the present authors to study the effect

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of plastic deformation of preliminarily quenched specimens on the kinetics and intensity of the formation of the K-state, since plastic deformation, which increases the dislocation density in the alloy, should (if the former of the views quoted above is correct) affect this process. The experimental work was carried out on Nichrome and Supermalloy wire specimens, the composition of these alloys being as follows:

	C	Si	Mn	Cr	Ni	Mo	Fe	S	P
Nichrome	0.06%	0.33	0.40	20.91	76.31		2.06	0.011	0.08
Supermalloy	-	0.43%	0.72	-	70.14	4.78	13.35	0.013	0.05.

The progress of formation of the K-state was traced by electrical-resistance measurements and by dilatometry. To obtain structures stable at low temperatures all the specimens were vacuum-annealed at 900 °C for 5 days and quenched. Part of these were plastically deformed at room temperature to 68% reduction. After measuring their electrical resistivity specimens of both series were annealed in vacuum at 475 °C for 43 hours. This treatment was interrupted after 30, 90, 210, 510, 1110 and 2610 minutes and

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the electrical resistance of the specimens at room temperature was measured. The Supermalloy specimens were also quenched from 900 °C, after which some of them were plastically deformed to 17 - 95% reduction. All the specimens were then annealed at 475 °C for 61 hours, the resistance measurements being taken after 30, 90, 270, 690, 1820 and 3660 minutes. The dilatometric heating curves were taken for nichrome specimens (a) quenched from 900 °C, (b) plastically deformed to 67% reduction and (c) annealed for 5 days. The results are reproduced graphically. In Fig. 2, the electrical resistivity ρ ($\Omega mm^2/m$) is plotted against duration (minutes) of annealing at 475 °C, Curves 1 and 2 relating to deformed and quenched nichrome specimens, respectively. In Fig. 3, the relative increase in the electrical resistance ($\frac{\Delta R}{R_0} \times 100\%$) is plotted against annealing time (minutes) at 475 °C, Curves 1 relating to quenched specimens, Curves 2 - 5 to specimens deformed to 1.2, 2.4, 9 and 17%, respectively. Finally, the dilatometric curves are reproduced in

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Fig. 4, Curves 1-4 relating to water-quenched, oil-quenched, deformed to 67% reduction and annealed nichrome specimens, respectively. The results obtained indicate that plastic deformation, particularly when preceded by quenching, markedly accelerates the process of formation of the K-state and confirm the view that the formation of the K-state is associated with segregation of atoms around dislocations.
There are 4 figures and 6 references: 3 Soviet-bloc and 3 non-Soviet-bloc. The English-language reference mentioned is: Ref. 6: R. Nordheim, N.Grant - J. Inst. Metals, v.82, 1953-54 440.

ASSOCIATION: Sibirskiy metallurgicheskiy institut
(Siberian Metallurgical Institute)

SUBMITTED: May 31, 1961

Card 4/4

ARTAMONOV, O.M.; BERLAGA, R.Ya. [deceased]; L'VOV, V.S.

Transverse photo-e.m.f. in polycrystalline CdTe films. Izv. vys. ucheb. zav.; fiz. no.5:18-20 '64.
(MIRA 17:11)

1. Leningradskiy gosudarstvennyy universitet imeni Zhdanova.

L 58375-65 FSS-2/EWT(1)/EEC(k)-2/SWG(m)/T/EWA(h) Pz-6/Peb IJP(c) TT/
WW/GS/AT
ACCESSION NR: AP5014564 UR/0181/65/007/006/1680/1686

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B

AUTHOR: L'vov, V. S.

TITLE: Fabrication of photoelectric energy converters by the method of ion bombardment

SOURCE: Fizika tverdogo tela, v. 7, no. 6, 1965, 1680-1686

TOPIC TAGS: energy converter, photoelectric converter, solar converter, p n junction, energy conversion, solar cell

ABSTRACT: Efficient p-n junctions have been produced in p-type silicon by the bombardment of the material with phosphorous ions in a series of experiments aiming at the improvement of materials for photoelectric energy conversion. The irradiation was carried out in high vacuum at room temperature (energy of the impingent ions, 30 kev). The samples were then annealed at 600C for 30 min. The best results were obtained after one-minute irradiation of the sample with ions with an energy of 30 kev at an ionic current density of 100 μamp cm^{-2}. An injection of 3×10^{16} phosphorous atoms into the silicon resulted. The depth of penetration of the ions was of the order of a few tenths of a micron. When compared to standard photoelements, those produced by ion bombardment possessed a much more favoreble

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L 58375-65
ACCESSION NR: AP5014564

separation of electron-hole pairs in the infrared region (0.6—0.95 μ), while in the shortwave region (0.4—0.6 μ) the efficiency of the cells was only somewhat reduced. The authors explain that one of the principal deficiencies of standard solar cells made by diffusing impurities into silicon wafers is the high rate of volume recombination of minority carriers, caused by the profusion of recombination centers created by the 1100C required for thermal treatment following the diffusion process. They reasoned that if the cells could be produced by ion bombardment, the elimination of excessive heat would sigaificantly prolong the lifetimes of minority carriers. The preliminary experiments seem to confirm the correctness of the above assumptions, though further studies are recommended (particularly studies of the radiative effects of ion bombardment in the surface n-layer and in the region of the space charge). [ZL]
Orig. art. has: 3 figures.

ASSOCIATION: none

SUBMITTED: 07Dec64	ENCL: 00	SUB CODE: SS, EM
NO REF SOV: 007	OTHER: 000	ATD PRESS: 4042

Card 2/2

L 46927-66 EWT(1)/EWT(m)/EWP(t)/ETI IJP(c) JD

ACC NR: AP6015450 (A) SOURCE CODE: UR/0181/66/008/005/1351/1364

42
41
B

AUTHOR: L'vov, V. S.

ORG: Leningrad State University im. A. A. Zhdanov (Leningradskiy gosudarstvennyy universitet)

TITLE: Galvanomagnetic and thermomagnetic effects in deformed *n*-Ge

SOURCE: Fizika tverdogo tela, v. 8, no. 5, 1966, 1351-1364

TOPIC TAGS: galvanomagnetic effect, thermomagnetic effect, weak magnetic field

ABSTRACT: The effect of deformation is investigated on the galvanometric and thermomagnetic properties of *n*-germanium for nonquantizing magnetic fields. Only the redistribution of a constant number of carriers between the extrema is considered. Calculations are made for the case of uniaxial deformation, when the pressure *P* on the crystal is directed along the current flow I (or ∇*T*). Results for three directions of the field ([111], [110], [100]) are reduced to a form convenient for comparison with experiment. This work is a follow-on to earlier work by the author on crystals with cubic symmetry in a weak magnetic field. This paper is an extensive mathematical treatment of the tensor effect in *n*-Ge in a nonquantizing magnetic field, the galvanomagnetic effects, and finally the thermomagnetic effects in deformed *n*-Ge with each of the field orientations. Tensor components are tabulated, as are the even and odd

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L 16927-66

ACC NR: AP6015450

coefficients in the equations. The author thanks G. Ye. Pikus for starting the problem and directing the work. Orig. art. has: 8 tables, 17 formulas.

SUB CODE: 20/ SUBM DATE: 30Jul65/ OTH REF: 004

Card 2/2

L 46926-66 EWT(l)/EWT(m)/EWP(t)/ETI IJP(c) JD

ACC NR: AP6015451 SOURCE CODE: UR/0181/66/008/005/1365/1373

51
48
B

AUTHOR: L'vov, V. S.; Smirnova, T. V.

ORG: Institute of Semiconductors, AN SSSR, Leningrad (Institut poluprovodnikov AN SSSR)

TITLE: Tensogalvanomagnetic effects in *n*-Ge

SOURCE: Fizika tverdogo tela, v. 8, no. 5, 1966, 1365-1373

TOPIC TAGS: galvanomagnetic effect, Hall effect, anisotropic medium

ABSTRACT: An experimental investigation is carried out to determine the dependence of the tensor effects on the magnetic field for *n*-Ge with an electron concentration of $\sim 10^{13}$ cm^{-3} at 77°K. The results are compared with the theory, which accounts for only the effect of electron redistribution between the extrema of the zones subjected to deformation. The influence of intervalley scattering on the tensogalvanomagnetic effect is analyzed. It is shown that with isotropic scattering the effect of intervalley scattering on the tensor effect is independent of the direction of the magnetic field and the current. It is also shown that $K_\tau = \tau_{\parallel}/\tau_{\perp}$ may depend greatly on the energy. Further, the Hall effect, which is even with respect to the magnetic field, is studied for the first time. This effect arises because the energy zone is not

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ACC NR: AP6015451

3

spherical. The experimental methodology is presented and the equipment is described. Results are plotted in a series of curves. The authors thank A. I. Ansel'm, I. V. Mochan, and G. Ye. Pikus for their interest in the work and for their discussion of the results. Orig. art. has: 5 figures.

SUB CODE: 20/ SUBM DATE: 30Jul65/ ORIG REF: 004/ OTH REF: 009

awm

Card 2/2

L 46937-66 EWT(l)/EWT(m)/EWP(t)/ETI IJP(c) JD

ACC NR: AP6015493 SOURCE CODE: UR/0181/66/008/005/1617/1620

38
37
B

AUTHOR: L'vov, V. S.; Smirnova, T. V.

ORG: Institute of Semiconductors, AN SSSR, Leningrad (Institut poluprovodnikov AN SSSR)

TITLE: Thermomagnetic effects in deformed *n*-germanium

SOURCE: Fizika tverdogo tela, v. 8, no. 5, 1966, 1617-1620

TOPIC TAGS: germanium semiconductor, Nernst effect, thermomagnetic effect, phonon drag, thermal emf

ABSTRACT: The effects of uniaxial deformation on thermal emf $\alpha(H)$ and upon the Nernst effect $E_{[H_y T]}$ in *n*-Ge was examined. The *n*-Ge specimens had a carrier concentration of $n \sim 10^{13}$ cm^{-3} cm; the relationships between the Peltier (phonon) coefficients and the energy were neglected. The measurements of $\alpha_H(T)$ were conducted in a magnetic field at $H = 9660$ oe, at pressures of 0, 90, 290, and 450 kg/cm^2. The obtained anisotropy value $M = 9.7 \pm 0.7$ in the 80 to 110°K range was confirmed in three separate experiments and was found to agree with results obtained by other authors. Obviously, the parameter $M = 9.7$ does not depend on the energy. The authors thank I. V. Mochan for

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L 46937-66

ACC NR: AP6015493

his assistance and G. E. Pikus for discussing the work. Orig. art. has: 2 figures, 2 formulas.

SUB CODE: 20/ SUBM DATE: 30Nov65/ ORIG REF: 003/ OTH REF: 002

Card 2/2

KRISHTOFOVICH, A.N. [deceased]; L'VOV, V.Ya.; MARKOV, A.V., professor; KOROLEV, A.V.; GOLOSHITSKIY, L.P.; OGORODNIKOV, K.F., professor; EYGENSON, M.S., professor; LOZIN-LOZINSKIY, L.K., professor; VOROB'YEV, A.G., professor; KOZLOVA, K.I.; KAZHINOV, B.A.; SUSLOV, A.K.; GEL'FREYKH, G.B.; VASIL'YEV, O.B.; LICHKOV, B.L., professor; SYROMYATNIKOV; KUTYREVA, A.P.; KATTERFEL'D, G.N.; SYTINSKAYA, N.N.; SHARONOV, V.V.; SUVOROV, N.I.; KUCHEROV, N.I.; TIKHOV, G.A.; GORSHKOV, P.M.

Addresses by A.N.Krishtofovich and others. Trudy Sekt.astrobot.AN Kazakh.SSR 4:68-157 '55. (MLRA 9:12)
(Mars (Planet))

L'VOV, Vladimir Yevgen'yevich; KOROTKOV, Yu., red.; MIKHAYLOVSKAYA, M., tekhn.red.

[Life of Albert Einstein] Zhizn' Al'berta Einshteina. [Moskva] Izd-vo TsK VLKSM "Molodaia gvardiia," 1958. 318 p. (MIRA 11:7)
(Einstein, Albert, 1879-1955)

L'VOV, Vladimir Yevgen'yevich; KOROTKOV, Yu., red.; SHUVALOV, I., tekhn.red.

[The life of Albert Einstein] Zhizn' Al'berta Einshteina. Moskva, Izd-vo TsK VLKSM "Molodaia gvardiia," 1959. 378 p. (Zhizn' zamechatel'nykh liudei. Seriia biografii, no.8 [274]) (MIRA 12:8)

(Einstein, Albert, 1879-1955)

L'VOV, Vladimir Yevgen'yevich; FEDCHENKO, V., red.; BUGROVA, A., tekhn. red.

[Space era] Chas kosmosa. Moskva, Molodaia gvardiia, 1962. 206 p. (MIRA 15:6)
(Space flight)

GOSTEV, B.I., kandidat tekhnicheskikh nauk; USHAKOV, A.D., kandidat tekhnicheskikh nauk; KONONOVA, T.A., inzhener; AKOPYAN, S.I., kandidat tekhnicheskikh nauk, redaktor; VASIL'YEV, A.V., kandidat tekhnicheskikh nauk, redaktor; KRISTI, M.K., professor, redaktor; L'VOV, Ye.D., professor, redaktor; MALASHKIN, O.M., inzhener, redaktor; YUDUSHKIN, N.C., inzhener, redaktor; MODEL', B.I., tekhnicheskiy redaktor.

[Investigating cast iron with shereidal graphite inclusions and its use for tractor parts] Issledovanie chuguna so sfereidal'nei formei grafite i primenenie ego dlia traktornykh detalei. Moskva, Ges.nauchno-tekhn.izd-vo machinostroit.lit-ry, 1943.36 p. (Moscow. Gosudarstvennyi soiuznyi nauchno-issledovatel'skii traktornyi institut [Trudy], no.7) (MLRA 9:1)

1.Direktor nauchno-issledovatel'skogo tekhnologicheskogo instituta (for Akopyan).
(Cast iron) (Tractor industry)

L'VOV, Evgeniĭ Dmitrievich, 1868-

Theory of the tractor Izd. 3. ispr. i dop. Moskva, Gos. nauchnotekhn. izd-vo mashinostroit. lit-ry, 1946. 367 p. (52-37375)

TL233.L85 1946

1. Tractors

L'VOV, [illegible]

Theorie der Schleppers. Berlin, Technik, 1954.
386 p. diagrs., tables.
Translation from the Russian: "Teoriya traktora, 4. ed,
"Moscow, 1952.
Added T.-P. in Russian.
Bibliographical footnotes.

L'VOV, Ye. D.

L'vov, Ye. D.	"Theory of the Tractor"	Moscow Automotive Mechanics Institute

ARTAMONOV, M.D., kandidat tekhnicheskikh nauk; VELICHKIN, I.N., inzhener; AKOPYAN, S.I., kandidat tekhnicheskikh nauk, redaktor; GOSTEV, B.I., kandidat tekhnicheskikh nauk, redaktor; VASIL'YEV, A.V., kandidat tekhnicheskikh nauk, redaktor; KRISTI, M.K., professor, redaktor; L'VOV, Ye.D., professor, redaktor; MALASHKIN, O.M., inzhener, redaktor; YUDUSHKIN, N.G., inzhener, redaktor.

[Investigation of the G-58 gas engine] Issledovanie gazogeneratornogo dvigatelia G-58. Moskva, Gos.nauchno-tekh.izd-vo mashinostroit.lit-ry, 1954. 26 p. (Moscow.Gosudarstvennyi soiuznyi nauchno-issledovatel'skii traktornyi institut [Trudy], no.11). (MLRA 9:1)

1.Direktor nauchno-issledovatel'skogo avtotraktornogo instituta (for Akopyan). (Gas and oil engines)

L'VOV, Ye.D.

MALAKHOVSKIY,V.E., kandidat tekhnicheskikh nauk; AKOPYAN,S.I., kandidat tekhnicheskikh nauk, otvetstvennyy redaktor; GOSTEV,B.I., kandidat tekhnicheskikh nauk, zamestitel' direktora po nauchnoy rabote; VASIL'YEV,A.V., kandidat tekhnicheskikh nauk, redaktor; KRISTI,M.K professor, redaktor; L'VOV,Ye.D., professor, redaktor; MALASHKIN, O.M., inzhener, redaktor; YUDUSHKIN,N.G., inzhener, redaktor; PONOMAREVA,K.A., inzhener, redaktor; MATVEYEVA,Ye.N., tekhnicheskiy redaktor.

[Investigation of the efficiency of tractor transmission systems] Issledovanie koeffitsienta poleznogo deistviia traktornykh transmissii. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1954. 50 p. (Moscow, Gosudarstvennyi soiuznyi nauchno-issledovatel'skii traktornyi institut. Trudy, no.10) (MLRA 8:9)

1. Direktor NATI (for Akopyan). 2. Zam. direktora po nauchnoy rabote (for Gostev).
(Tractors--Transmission devices)

NISNEVICH, A.I., inzhener; AKOPYAN, S.I., kandidat tekhnicheskikh nauk, redaktor; GOSTEV, B.I., kandidat tekhnicheskikh nauk, redaktor; VASIL'YEV, A.V., kandidat tekhnicheskikh nauk, redaktor; KRISTI, M.K., professor, redaktor; LIVOV, Ye.D., professor, redaktor; MALASHKIN, O.M., kandidat tekhnicheskikh nauk, redaktor; YUDUSHKIN, N.G., inzhener, redaktor; POPOVA, S.M., tekhnicheskiy redaktor.

[New methods for determining the wear rate of tractor engine parts] Primenenie novykh metodov opredeleniia velichiny iznosa detalei traktornego dvigatelia. Moskva, Ges.nauchno-tekhn.izd-vo mashinostroit. lit-ry, 1956. [Trudy], no.14) (MLRA 9:10)

1. Direktor nauchno-issledovatel'skogo avtotraktornogo instituta (for Akopyan). (Tractors--Engines)

L'vov, Ye.D.

ZUBIYETOV, I.P., inzh.; AKOPYAN, S.I., kand. tekhn. nauk, otv. red.; GOSTEV, B.I., zam. otv. red.; VASIL'YEV, A.V., kand. tekhn. nauk, red.; KRISTI, M.K., prof. red.; L'VOV, Ye.D., prof., red.; MALASHKIN, B.M., kand. tekhn. nauk, red.; YUDUSHKIN, N.G., inzh., red.; UVAROVA, A.F., tekhn. red.

[Standardizing fuel pump plungers used in the D-35 and D-54 tractor diesel engines] Unifikatsiia plunzherov toplivnykh nasosov dlia traktornykh dizelei D-35 i D-54. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroitel'noi lit-ry 1956. 14 p. (Moscow. Gosudarstvennyi soiuznyi nauchno-issledovatel'skii traktornyi institut. [Trudy] no.15). (MLRA 10:9)

1. Direktor nauchno-issledovatel'skogo avtotraktornogo instituta (for Akopyan). 2. Zamestitel' direktora po nauchnoy rabote nauchno-issledovatel'skogo avtotraktornogo instituta (for Gostev).
(Tractors--Engines)

VELICHKIN, I.N., kand.tekhn. nauk; AKOPYAN, S.I., kand. tekhn.nauk, otv.red.; GOSTEV, B.I., kand.tekhn.nauk, zam.otv.red; VASIL'YEV, A.V., kand. tekhn.nauk, red.; KRISTI, M.K., prof., red.; L'VOV, Ye.D., prof., red; MALASHKIN, O.M., kand.tekhn.nauk; YUDUSHKIN, N.G., inzh.; UVAROVA, A.F., tekhn.red.

[Some characteristics of the performance of gas-producer engines] Nekotorye osobennosti rabochego protsessa gazogeneratornykh dvigatelei Moskva, Gos. nauchno-tekhn izd-vo mashinostroit. litry, 1958. 37 p. (Moscow. Gosudarstvennyi soiuznyi nauchno-issledovatel'skii traktornyi institut [Trudy], no.16) (MIRA 12:3)
(Gas and oil engines--Testing)

L'VOV, Yevgeniy Dmitriyevich, prof., doktor tekhn.nauk, zasluzhennyy deyatel' nauki i tekhniki RSFSR; EGORKINA, L.I., inzh., red.; SOKOLOVA, T.F., tekhn.red.

[Theory of tractors] Teoriia traktora. Izd.5., perer. i sokrashchennoe. Leningrad, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1960. 252 p. (MIRA 14:2)
(Tractors)

L'VOV, Ye.I.

Filtering device in a high-power linear modulator. Uskoriteli no.5:187-190 '63. (MIRA 17:4)

L'VOV, Ye.L.

L'VOV, Ye.L.

Vegetative propagation of tomatoes. Biol. v shkole no.1:85-86 Ja-F '58. (MIRA 11:1)

1. Chuvashsko-Sorminskaya semiletnyaya shkola Alikovskogo rayona Chuvashskoy ASSR.
(Alikovo District--Vegetable gardening--Study and teaching)
(Tomatoes)

GUSEV, S.A., inzh.; ZHUKHOVITSKIY, B.Ya., kand.tekhn.nauk; ZARIN, D.D., kand.tekhn.nauk; IVANOV-SMOLENSKIY, A.V., kand.tekhn.nauk; KNYAZEVSKIY, B.A., kand.tekhn.nauk; KUZNETSOV, A.I., inzh.; KOZIS, V.L., kand.tekhn.nauk; KORYTIN, A.A., inzh.; LASHKOV, F.P., inzh.; L'VOV, Ye.L., kand.tekhn.nauk; MELESHKINA, L.P., kand.tekhn.nauk; NEKRASOVA, N.M., kand.tekhn.nauk; NIKULIN, N.V., kand.tekhn.nauk; POLEVOY, V.A., kand.tekhnicheskikh nauk; RAZEVIG, D.V., kand.tekhn.nauk; ROZANOV, G.M., kand.tekhn. nauk; RUMSHISKIY, L.Z., kand.fiz.-matem.nauk; SVISTOV, N.K., kand.tekhn.nauk; SIROTINSKIY, Ye.L., kand.tekhn.nauk; SOKOLOV, M.M., kand.tekhn.nauk; TALITSKIY, A.V., prof.; TREMBACH, V.V., inzh.; FEDOROV, A.A., kand.tekhn.nauk; GRUDINSKIY, P.G., prof.; PRYTKOV, V.T., kand.tekhn.nauk; CHILIKIN, M.G., prof., glavnyy red.; GOLOVAN, A.T., prof.; red.; PETROV, G.N., prof., red.; FEDOSEYEV, A.M., prof., red.; ANTIK, I.V., red.; SKVORTSOV, I.M., tekhn.red.

[Handbook for electric engineering] Elektrotekhnicheskii spravochnik. Moskva, Gos.energ.izd-vo, 1952. 640 p. (MIRA 13:2)

1. Prepodavateli Moskovskogo energeticheskogo instituta imeni V.M. Molotova (for all except Antik, Skvortsov).
(Electric engineering)

L'VOV, Ye.L., kandidat tekhnicheskikh nauk

Tractive force in saturated electromagnets. Trudy MEI no.15:129-138 '55. (MLRA 8:11)

1. Kafedra elektricheskikh apparatov Moskovskogo ordena Lenina energeticheskogo instituta imeni V.M.Molotova
(Electromagnets)

L'VOV, Ye.L., kandidat tekhnicheskikh nauk

Calculation of magnetic circuits by the iteration. Trudy MEI no.15: 139-163 '55. (MIRA 8:11)

1. Kafedra elektricheskikh apparatov Moskovskogo ordena Lenina energeticheskogo instituta imeni V.M.Molotova
(Magnetic fields)

9(7) SOV/161-58-3-13/27

AUTHOR: L'vov, Ye. L., Candidate of Technical Sciences, Docent (Moscow)

TITLE: The Application of the Theory of Similarity for the Calculation of Magnetic Amplifiers (Primeneniye teorii podobiya dlya rascheta magnitnykh usiliteley)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Elektromekhanika i avtomatika, 1958, Nr 3, pp 119-134 (USSR)

ABSTRACT: The calculation of steady processes and transition processes in magnetic amplifiers presents considerable difficulties because the characteristic of magnetic conductivity is not linear. The methods employed in practice are considerably simplified. The difficulties arising in exact calculation in the case of the designing of magnetic amplifiers may be avoided by means of physical simulation. The principles of the theory of similarity are then discussed, and derivation of the conditions for the similarity are based on Maxwell equations. The criteria of similarity are developed, the scale coefficients are obtained, and their interrelations are determined. The scale-coefficients for current, voltage, resistance, and similar quantities are determined in form of integral analogues. The approximated

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The Application of the Theory of Similarity for the Calculation of Magnetic Amplifiers

similarity, in the case of which the conditions of exact similarity are partly not satisfied, is then dealt with in detail. Next, the application of the theory of approximated similarity in the designing of magnetic amplifiers is dealt with. Finally, two examples are calculated; two simple magnetic amplifiers are dealt with (Figs 1,2), the experimental characteristics of which (Fig 3) deviate from the calculated ones by about 10%. In a second example a magnetic amplifier with feedback is dealt with (Figs 4,5). There are 5 figures and 3 Soviet references.

This article was recommended for publication by the Kafedra elektricheskikh apparatov Moskovskogo energeticheskogo instituta(Chair for Electric Apparatus at the Moscow Institute of Power Engineering)

ASSOCIATION: Kafedra elektricheskikh apparatov Moskovskogo energeticheskogo instituta(Chair for Electric Apparatus at the Moscow Institute of Power Engineering)

SUBMITTED: April 7, 1958

L'VOV, Ye.L., kand. tekhn. nauk, dotsent

Using the Maxwell formula for the calculation of traction force developed by a tubular shell-type electromagnet equipped with a flat end of the core. Trudy MEI no.30:105-125 '58.
(MIRA 12:5)

1.Moskovskiy ordena Lenina energeticheskiy institut, Kafedra elektricheskikh apparatov.
(Electromagnets)

L'VOV, Ye.I.

Determination of a complex transmission function in a step-type automatic control system by means of modulated harmonics. Nauch.dokl.vys. shkoly; elektromekh. i avtom. no.1:107-119 '59. (MIRA 12:11)

1. Rekomendovana kafedroy elektricheskikh apparatov Moskovskogo energeticheskogo instituta.

(Automatic control)

20750
S/103/61/022/003/005/008
B116/B209

16.9500 (1031, 1121, 1132)

AUTHOR: L'vov, Ye. L. (Moscow)

TITLE: Transfer function of an automatic control system with a modulator and a half-wave demodulator

PERIODICAL: Avtomatika i telemekhanika, v. 22, no. 3, 1961, 338-349

TEXT: In the present paper, an automatic control system with a modulator and a half-wave demodulator is reduced to an equivalent linear continuous control system. The transfer functions are determined by the method of modulated harmonics. The author studies the effect of the transforming unit (modulator - half-wave demodulator) upon the dynamics of the servosystem with a cutoff frequency of 25 cps. The results of the experiments are given for checking the theoretical results. The automatic control system examined (Fig. 1) consists of the modulator 1, the half-wave demodulator 2, and the linear element 3. The disturbance x_{dist} (Fig. 1: 4)) acts upon the system. The harmonic signal ψ with the carrier frequency ω_0 forms at the modulator output and is modulated at the modulator input by the

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Transfer function of an automatic ...

signal θ: $\vartheta(t) = K_M \theta(t) \sin \omega_0 t$ (1). The demodulator rectifies the $\vartheta(t)$ considering the sign of $\theta(t)$. The output signal of the demodulator is expressed by the equation $\eta(t) = K_1 \theta(t) A(\omega_0 T)$ (2), where $A(\omega_0 t) = \sin \omega_0 t$ for $2n\pi < \omega_0 t < (2n + 1)\pi$, $(n = 0, 1, 2, 3)$; $A(\omega_0 t) = 0$ for $(2n + 1)\pi < \omega_0 t < (2n + 2)\pi$ (3). The system investigated is a nonsteady linear system with periodically varying parameter. The task of the present paper consists in finding the transfer function of the closed system, taking into account Eq. (2), and in finding the conditions on which the half-wave demodulator may be replaced by an ideal one. This problem is solved by way of the method of modulated harmonics. The input and output quantity of every unit in an automatic control system with a modulator and a half-wave demodulator may be represented in the form of a harmonic series with amplitudes of the harmonics varying with time. An equivalent closed circuit consisting of linear elements corresponds to the amplitude of each of the harmonics. The complex transfer function of the equivalent open circuit is expressed by the transfer function $Y(\omega)$ of the linear open system and by the transfer

Transfer function of an automatic ...

functions $Y_g(\omega + k\omega_0)$ of the linear closed system with side-frequencies of the harmonics. If the cutoff frequency of the open system is much lower than the carrier frequency, then $|Y_g(\omega_{\text{cut-off}} + k\omega_0)| \ll 1$ (for $k \neq 0$) and the transfer function $Y_{equ}(\omega)$ of the equivalent system becomes degenerate to the transfer function $Y(\omega)$ of the linear system. In this case, the pulsations of the demodulator have practically no influence upon the behavior of the system and the demodulator may be considered an ideal one. If, however, $|Y_g(\omega_{\text{cut-off}} + k\omega_0)|$ is commensurable with one (even when $k = -1$), the transfer function of the equivalent system will differ from $Y(\omega)$. The results were checked experimentally by means of the servo system (Fig. 4: Circuit; Fig. 5: Block diagram). Checking proved the theoretically predicted effect of the transforming unit upon the transfer function. In the present case, the system which was sufficiently stabilized for a carrier frequency of $f_0 = 400$ cps turned out to be unstable at $f_0 = 50$ cps. The criterion of Niquist-Mikhaylov is mentioned. There are 8 figures and 2 Soviet-bloc references.

Card 3/6

Transfer function of an automatic ...

SUBMITTED: October 24, 1960

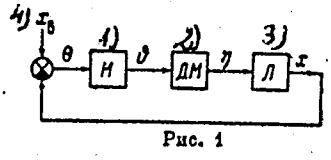

Рис. 1

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Transfer function of an automatic ...

Legend to Fig. 4:
1) d. c. motor
2) gears
3) tacho-generator
4) Selsyn transformer

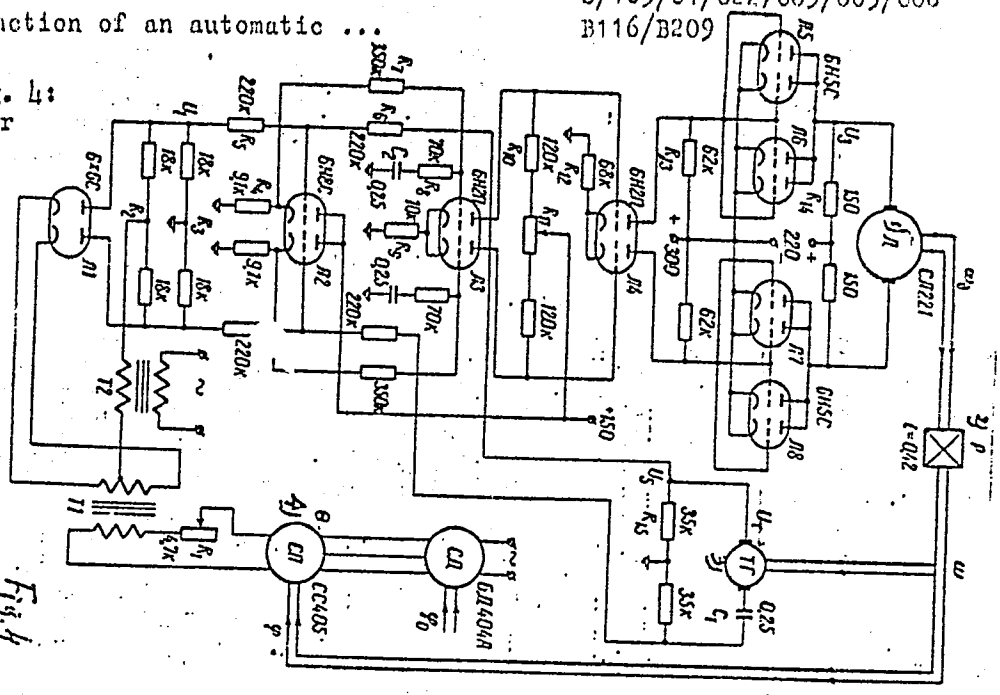

Fig. 4

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Transfer function of an automatic ...

Legend to Fig. 5:
1) Selsyn and demodulator,
2) electronic amplifier,
3) motor and gear,
4) integrating unit,
5) tachogenerator,
6) differentiating circuit.

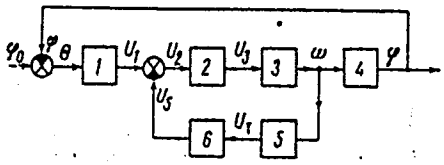

Рис. 5

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32255
S/103/61/022/012/012/016
D201/D305

9,2530

AUTHOR: L'vov, Ye. L. (Moscow)

TITLE: The transfer function of an impedance-coupled magnetic amplifier with an active-inductive d.c. load and a step input signal

PERIODICAL: Avtomatika i telemekhanika, v. 22, no. 12, 1961, 1656 - 1672

TEXT: The author derives an expression for the transfer function of an impedance-coupled magnetic amplifier in terms of its parameters. He considers also the case when the input and ouput signals are stepped, but may be considered in approximation as continuous. The transfer function is determined under the following conditions: 1) The magnetic cores have idealized magnetization characteristics; 2) the direct resistance of rectifiers is zero, their back resistance infinity; 3) there is no magnetic leakage; 4) the resistance of the working windings W_w of the amplifier is zero. From the basic equations of the magnetic amplifier circuit, a system of equations

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The transfer function of ...

is derived and simplified for the case when $\omega_o T_1 >> 1$ and $r/W_c^2 << R/W_w^2$, where T_1 is the loading time constant, r - the control circuit resistance, W_c - number of turns of the control winding, R - the resistance of the load; the transfer function of the amplifier is then derived as

$$Y(q) = K \frac{1 + \tau_a(e^q - 1) + \tau_b^2 (e^q - 1)^2}{1 + \tau_c(e^q - 1) + \tau_d^2(e^q - 1)^2} \qquad (55)$$

where

$$K = \frac{B_1 + B_2}{A - A_1 + A_2}, \quad \tau_a = \frac{B_1 + 2B_2}{B_1 + B_2}, \quad \tau_b^2 = \frac{B_2}{B_1 + B_2},$$

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The transfer function of ...

$$\tau_c = \frac{2A_2 - A_1}{A - A_1 + A_2}, \quad \tau_d^2 = \frac{A_2}{A - A_1 + A_2} \tag{56}$$

and B_1, B_2, A, A_1, A_2 are given by

$$A = (\omega_0 T_{\pi} - \beta)\left(\frac{\sin\beta - \alpha}{2} - \theta\right);$$

$$A_1 = (\omega_0 T_{\pi} - \beta)(\sin\beta - \theta) + \left(\frac{\sin\beta - \alpha}{2} - \theta\right)\pi - \frac{r'}{R'}(\pi - \beta)\sin\beta,$$

$$A_2 = (\omega_0 T_{\pi} + \pi - \beta)\frac{\sin\beta + \alpha}{2}, \quad B_1 = \frac{1}{R'}\left(\pi - \frac{\beta}{2}\right)\sin\beta, \quad B_2 = \frac{1}{R'}\frac{\beta}{2}\sin\beta. \tag{52}$$

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The transfer function of ...

In Eq. (52) α and β are the phase angles corresponding to the limits, within which the diode bridge and the magnetic state of cores (saturation or non-saturation) remain constant. The transient response of the amplifier is analyzed next, under the assumption that the duration of the transient considerably exceeds the duration of the half-period of the supply voltage and it is proved that oscillating state is possible. Experiments performed with a toroidal core magnetic amplifier have shown good agreement between theoretical and experimental data. The experimental amplifier was as follows: Core material 65 НП (65 NP), single core cross-section 0.4 cm^2, saturation induction - winding space factor product $B_s K_w$ = 10.8×10^3 gauss. Rectifiers type Д7Б (D7B), working winding turns W_w = 1000, control winding turns W_c = 2000, resistance of the windings of two cores connected in series r_{W_w} = 10.2 ohms, r_{w_c} = 101 ohms. Comparison is made of results and formulae obtained with those of other authors and values of the parameters, for which the formula may give considerable discrepancies with experi-

Card 4/5

The transfer function of ...

ment, are discussed. There are 8 figures, 1 table and 7 references: 5 Soviet-bloc and 2 non-Soviet-bloc. The reference to the English-language publication reads as follows: H. F. Storm, Saturable reactors with Inductive D-C Load. Part II. Transient Response. Trans AIEE, vol. 72, p. I, May 1953.

SUBMITTED: March 9, 1961

Card 5/5

L'VOV, Ye.L., kand.tekhn.nauk, dotsent

Design of magnetic power amplifiers. Elektrichestvo no.9:58-60 S '62. (MIRA 15:9)

1. Moskovskiy energeticheskiy institut.
(Magnetic amplifiers)

L'VOV, Ye.L. (Moskva)

Transfer function of a d.c. choke-type magnetic amplifier with active-reactive load. Avtom. i telem. 24 no.7:997-1009 Jl '63. (MIRA 16:7)

(Magnetic amplifiers)

L'VOV, Ye.L. (Moskva)

Transfer functions of a magnetic amplifier with self-saturation and d.c. inductive resistance load. Avtom. i telem. 25 no.1:96-111 Ja '64. (MIRA 17:2)

L 24935-65 EWT(1)/EWA(h) Peb

ACCESSION NR: AP4045349 S/0103/64/025/009/1358/1374

AUTHOR: L'vov, Ye. L. (Moscow)

TITLE: Frequency response of self-magnetized operational magnetic amplifiers

SOURCE: Avtomatika i telemekhanika, v. 25, no. 9, 1964, 1358-1374

TOPIC TAGS: operational amplifier, frequency response, analog computer

ABSTRACT: Formulas are developed for the transfer functions of magnetic amplifiers with direct and transient feedbacks when the input and output signals are represented by harmonic functions. The stability of an amplifier-feedback system is analyzed, and the frequency response is calculated. Frequency bands are determined within which the direct-feedback amplifier can be regarded as an inertialess unit and the transient-feedback amplifier, as an integrating unit. Some experimental data obtained from a magnetic amplifier operated within 0.5--300 kc band corroborates the formulas. It is found that: (1) For slow-

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ACCESSION NR: AP4045349

varying signals, the direct-feedback amplifier is a first-order inertial unit having a time constant T lower than that of the control circuit; for frequency band $\omega < 1/T$, the amplifier can be roughly regarded as an inertialess unit; (2) For slow-varying signals, the transient-feedback amplifier is a series-connected combination of two inertial first-order units having time constants T_a and T_b as given by formulas 83 and 84; for frequency band $1/T_b < 1/T_a$, the amplifier behaves as an integrating unit; (3) The stability of a closed loop may be upset and self-oscillations arise when a feedback is introduced; stability conditions are described by inequalities 41 and 79. Orig. art. has: 9 figures and 85 formulas.

ASSOCIATION: none

SUBMITTED: 06Apr63 ENCL: 00

SUB CODE: EC, DP NO REF SOV: 004 OTHER: 000

Card 2/2

L'VOV, Ye.L.

Reviews. Izv. AN SSSR. Energ. i transp. no.4:146-148 Jl-Ag '65.
(MIRA 18:10)

L 47371-66 EWT(m)/EWP(k)/T/EWP(w)/EWA(d)/EWP(t)/ETI IJP(c) JD/WW

ACC NR: AP6031409 (N) SOURCE CODE: UR/0135/66/000/009/0015/0018

AUTHOR: Lyubavskiy, K. V. (Doctor of technical sciences); L'vova, Ye. P. (Engineer); German, S. I. (Candidate of technical sciences)

ORG: [Lyubavskiy, L'vova] TsNIITMASh; [German] ChTGZ im. S. M. Kirova

TITLE: Welding gas-turbine housings built of heat-resistant fully austenitic steel

SOURCE: Svarochnoye proizvodstvo, no. 9, 1966, 15-18

TOPIC TAGS: ~~steel~~ metal welding, austenitic steel, ~~welding~~ heat resistant steel, ~~welding~~ weld property/EI725 austenitic steel

ABSTRACT: The weldability of electroslag-melted EI725 fully austenitic steel intended for housings of gas-turbines operating at 750—780C has been investigated. Steel specimens 15—25 mm thick were welded with TsT-22 electrodes, austenitized at 1120C, and stabilized at 800C for 12 hr. After this treatment the welds had a tensile strength of 28.6—31.9 kg/mm^2, a yield strength of 22.6—26.2 kg/mm^2, an elongation of 28.0—29.0%, a reduction of area of 60.0—64.0%, and a notch toughness of 8.1—8.6%. Aging at 800C for 100 hr increased the tensile and yield strength to 33.2—39.7 kg/mm^2 and 29.4—33.7 kg/mm^2, respectively, with a significant effect on elongation and reduction of area, but lowered the notch toughness to 4.5—5.0 mkg/cm^2. Aging for 1000 hr did not produce significant additional changes in mechanical prop-

Card 1/2 UDC: 621.791.753.042.4:669.14.018.44:621.438

L 45571-66

ACC NR: AP6031409 4

erties. The rupture strength of welds at a short rupture life (100—1000 hr) was lower than that of the base metal. However, at a rupture life of 5000 hr, both the weld and the parent metal had the same rupture strength: 6—7 kg/mm^2. The structure of the weld after aging consisted of austenite, as $Fe_3(Mo, W)_2$ and $Fe_2(Mo, W)$. Prolonged aging has little or no additional effect on phase composition. Relaxation tests showed that residual stresses can be relieved by austenitizing at 950—1100C followed by stabilization annealing at 750C. TsT-22 electrodes were used for welding the housing of the GTU-500 gas turbine. Orig. art. has: 9 figures and 2 tables. [ND]

SUB CODE: 13, 11/ SUBM DATE: none/ ORIG REF: 007/ ATD PRESS: 5082

Card 2/2 hs

BIRYUKOVA, I.; L'vov, Yu.

Library of a palace of culture. Sov. profsoiuzy 18 no.15: 19-21 Ag '62. (MIRA 15:7)

(Kharkov--Trade unions)
(Kharkov--Machinary industry workers--Education and training)

L 33511-65 EWT(m)/EPF(c)/EWP(j)/T Pc-4/Pr-4 RM

ACCESSION NR: AP5003839 S/0190/65/007/001/0163/0168

AUTHORS: Lobkov, V. D.; Kiebanskiy, A. L.; Kogan, E. V.; L'vov, Yu. A.

TITLE: Effect of oxygen compounds of phosphorus on siloxane polymers

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 1, 1965, 163-168

TOPIC TAGS: phosphorus compound, polymer

ABSTRACT: The effects of oxygen compounds of phosphorus on siloxane polymers were experimentally investigated. The addition of 0.5% of orthophosphoric acid (P:Si = 1:300) to α,ω-dihydroxydimethylsiloxanes (DHDS) in an argon atmosphere at room temperature produced a very viscous rubberlike polymer (after 1 day M = 260 000; after 3 days-330 000; after 20 days-400 000). Adding 2% of triphenylphosphate (P:Si = 1:230) at room temperature in argon produced a rubberlike polymer (after 1 day M = 149 000; after 2 days 395 000; after 30 days 400 000). Reaction with triphenylphosphite or trinonylphosphite did not produce a viscosity increase. The molecular weight growth of a phosphorosiloxane polymer obtained by polymerizing octamethylcyclotetrasiloxane with methylphosphonic acid (0.6% by weight) in the presence of HCl at 150C is shown in Fig. 1 on the Enclosure. It was established that reaction of DHDS with derivatives of 5-valent phosphorus produces coordinated

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