S/020/62/145/005/009/020
B106/B144

AUTHORS: Abramova, I. M., Yermolina, A. V., Igonin, L. A., and Kargin, V. A., Academician

TITLE: Morphology of the supermolecular structure of polyformaldehyde

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 145, no. 5, 1962, 1047-1048

TEXT: The types of secondary structures formed by cooling polyformaldehyde melts were studied with a metallographic microscope. To avoid thermal destruction, the melts were quickly cooled from 180°C to 160°C, kept at this temperature for 2 hrs, and then slowly cooled to room temperature. The secondary structures were examined in layers of various thicknesses (10^{-2} mm to a few mm). Molten polyformaldehyde readily crystallizes when cooled slowly, forming manifold types of supermolecular structures of varying perfection. This occurrence is associated with the high regularity and flexibility of the macromolecules. In very thin layers (10^{-2} mm), structures of the highest orders are formed, i. e., crystals with polyaxial symmetry recalling the shape of snow crystals. The growth mechanism

Card 1/2

of these crystals resembles that of low-molecular substances. With increasing thickness of the layers the geometrical forms become less regular and the sharp boundaries between crystals disappear. In thick layers, only single spherulites of fibrous structure without distinct boundaries have been observed. The same picture was obtained when etching the surface of polyformaldehyde blocks. The diameters of the crystalline bodies range between 50 and 200 μ. All forms show a distinctly voluminous structure and the growth is therefore three-dimensional. Polyformaldehyde samples having a different characteristic viscosity form some other structures besides those described. When polyformaldehyde has been stored for 3 - 4 months its melting point rises the secondary structure no longer appear in so great a variety of forms. There are 3 figures. The two most important English-language references are: M. L. Huggins, J. Chem. Phys., 13, 37 (1945); C. F. Hammer, T. A. Koch, J. F. Whitney, J. Appl. Polym. Sci., 1, 169 (1959).

ASSOCIATION: Gosudarstvennyy nauchno-issledovatel'skiy institut plasticheskikh mass (State Scientific Research Institute of Plastics)

SUBMITTED: April 18, 1962

DOBROKHOTOVA, M.L.; CHESNENKOV, G.M.; YERMOLINA, A.V.

Polyamide film PK-4 of longitudinal-transverse stretch forming.
Plast. massy no.6:15-18 '63. (MIRA 16:10)

IGONIN, L.A.; YERMOLINA, A.V.

Effect of the degree of molecular ordering of crystallizing polymers in melts on the viscoelastic properties of melts. Dokl. AN SSSR 153 no.4:863-864 D '63. (MIRA 17:1)

1. Nauchno-issledovatel'skiy institut plasticheskikh mass Gosudarstvennogo komiteta Soveta ministrov SSSR po khimii.

YERMOLINA, M.V.; BARSHTEYN, R.S.

Roentgenographic and microscopic analysis of some modified polyesters. Plast. massy no. 12:42-45 '65 (MIRA 19:1)

L 13815-66 EWT(m)/EWP(j) RM

ACC NR: AP6002485 SOURCE CODE: UR/0191/66/000/001/0057/0059

AUTHORS: Yermolina, A. V.; Abramova, I. M.; Yakovlev, V. P.; Frenkel', T. Y.

ORG: none

TITLE: Microscopic methods for investigation of supramolecular structures of polymers in bulk

SOURCE: Plasticheskiye massy, no. 1, 1966, 57-59

TOPIC TAGS: polymer, polymer structure, microscope, microphotography, metal etching / MIM-8m metallographic microscope

ABSTRACT: Methods for microscopic investigation of supramolecular structure of polymers in bulk were investigated. The one described can be used in determining dimensions, geometry, and type of structural formations in polymers, and was employed by the authors in correlating the structure of polymers with their properties (A. V. Yermolina, G. P. Andre, A. A. Pechenkin, L. A. Igonin, V. N. Kotrelev, and M. S. Akutin. Plast. massy, No. 3, 43 (1965)). The supramolecular structure of the polymer is best disclosed by etching, a technique borrowed from metallography and based on the differences in solubility of crystalline and amorphous portions of a polymer. The surface of the polymer is ground with micropowder, hand polished with felt, and then treated with dilute etching solution for ~ 10 min until a clear morphological picture is obtained. The sample surface is then washed with water

Card 1/2

UDC: 678.012.4:620.186

L 1815-66
ACC NR: AP6002485

for 2--3 min, and dried in high vacuum at room temperature. The investigation and registration of the morphological picture is performed with a metallographic microscope MIM-8m, in reflected light in the dark or light field, at a magnification of 300 to 1000. If the polymer is insoluble in the etching solvent at room temperature, etching may be performed in vapors of the solvent. In case of total insolubility, the surface for microscopic study is obtained by breaking an embrittled sample treated for an extended time with liquid nitrogen. Orig. art. has: 3 figures.

SUB CODE: 11,07/ SUBM DATE: none/ ORIG REF: 004/ OTH REF: 002

Card 2/2

L 40970-66 EWT(m)/EWP(j)/T IJP(c) WW/RM/DJ

ACC NR: AP6027768 SOURCE CODE: UR/0190/66/008/008/1346/1350

34
33

AUTHOR: Yermolina, A. V.; Kargin, V. A.; Abramova, I. M.

B

ORG: Scientific Research Institute of Plastics (Nauchno-issledovatel'skiy institut plasticheskikh mass)

15

TITLE: Modification of the structure of polyamides by a phenol-formaldehyde oligomer

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 8, no. 8, 1966, 1346-1350

TOPIC TAGS: nylon, phenol formaldehyde, solid mechanical property, polymer physical property

15

ABSTRACT: Addition of about 4% novolak-type phenol-formaldehyde resin to a polyamide has been shown to substantially improve its mechanical properties and to prevent their deterioration in service and storage (see Table 1). This was found in a study of 1) the effect of the presence of the novolak (1—15%) on the morphology and mechanical properties of poly(hexamethylene adipamide) and 2) the conditions which give rise to a morphology ensuring optimum properties. The study involved mechanical tests, IR spectroscopy, x-ray analysis, and optical and electron microscopy. The data indicated that the novolak did not

Card 1/2 UDC: 678.01:53+678.62+678.675

Table 1. Mechanical properties of poly(hexamethylene adipamide) with and without added novolak

Material	Tensile strength, kg/cm²		Impact strength, kg/cm²	
	after injection molding	after thermal aging	after synthesis	after 11-month storage
Poly(hexamethylene adipamide)	348	321	47	37
Same with 2% novolak	350	450	55	87
Same with 4% novolak	445	520	92	119
Same with 10% novolak	320	300	40	34

chemically react with the polyamide change its morphological form (spherulites). However, the novolak did affect the fine structures of the spherulites even at concentrations up to 2%, where the novolak was fully compatible with the polyamide. At above 2%, the novolak formed a separate phase consisting of amorphous particles which acted as nuclei for the formation of the spherulites. At about 4%, a stable, uniform, fine spherulite structure was formed which corresponded to optimum mechanical properties (see Table 1). [SM]

SUB CODE: 11/ SUBM DATE: 10Jun65/ ORIG REF: 003/ OTH REF: 007/ ATD PRESS: 5056
Card 2/2 mcf07/

S/191/60/000/011/014/016
B013/B054

AUTHORS: Yermolina, A. V., Rodivilova, L. A., Vlasova, K. N., Igonin, L. A.

TITLE: X-Ray Investigation of the Degree of Order of Methyl Polyamide Resins

PERIODICAL: Plasticheskiye massy, 1960, No. 11, pp. 58-59

TEXT: The authors studied the change of the degree of order of methyl polyamide materials depending on the concentration of methylol groups and of the side radical, as well as during the process of setting. They used products of joint condensation of ε-caprolactam and AG salts which, on treatment with paraformaldehyde in various alkaline media, form chains of the type $HN(CH_2)_n—\underset{\underset{CH_2OH}{|}}{N}—CO(CH_2)_mCO—...—...—\underset{\underset{CH_2OR}{|}}{N}—$. The X-ray structural analysis was made on a УРС-50-И (URS-50-I) apparatus. The intensity distribution curve for the initial polyamide (Fig. 1) is distinguished by three distinct maxima. One of them shows a strong, the two others a weak

Card 1/2

intensity. On introduction of methylol groups, the X-ray pattern of the polyamide resin changes considerably. On introduction of methylol and methoxyl side groups, the order of the polymeric system changes (Fig. 2). By an increase in the number of methylol groups introduced into the polymeric chain from 2.23 to 8.1%, the degree of order changes with maintenance of the mean intermolecular distances of 4.37 A. On an enlargement of the alkyl radical introduced, from the methoxy-ethyl to the methoxy-butyl radical, the intermolecular distances change from 4.37 A to 4.41 A. Further enlargement of the alkyl radical effects no great change of diffraction patterns (Fig. 3). By introduction of aromatic (methoxy benzyl) and cyclic (methoxy furyl) radicals, the degree of order of the corresponding methylol polyamides decreases considerably (Fig. 3, curves 6 and 7). Irrespective of the nature and size of side radicals, the intermolecular distances are shortened from 4.41 A to 4.2 A due to hardening. This suggests that in all cases methylene cross bonds are formed between the polyamide chains. There are 4 figures and 4 Soviet references.

YERMOLINA, L.M.

112-3-5159

Translation from: Referativnyy Zhurnal; Elektrotekhnika, 1957, Nr 3, p. 12 (USSR)

AUTHOR: Verbitskaya, T. N., Yermolina, L. M., Kil'tsep, V. P., Obukhov, A. A.

TITLE: Basic Properties of "Varikonds" (Osnovnyye svoystva varikondov)

PERIODICAL: Inform.-teknich. sb. M-va radiotekn. prom-sti SSSR, 1955, Nr 9-10, pp. 3-29

ABSTRACT: In comparing the dependence of the specific inductive capacitance ε of four seignetto-electrics upon the intensity of the variable field, it is found that "Varikond" βK-1 has a greater dependence and higher maximum value of ε than barium titanate (according to the data of B.M. Vul) and the seignetto-ceramic T-7500 (developed under the supervision of N.P. Bogoroditskiy); in this connection, "Varikond" βK-1 is second only to Rochelle salt. The curve of reversible ε as a function of the intensity of the constant displacement field has the maximum slope at the value of the alternating voltage which corresponds to the maximum in the ε-variable field relationship; the re-

Card 1/2

Basic Properties of "Varikonds" (Cont.)

versible ε is decreased by 4-5 times when the intensity of the constant field is changed from zero to 3 kv/cm. With high variable field intensity, the specific inductive capacitance ε of "Varikond" changes by ± 20% with a temperature change within the limits of -60... + 80°. With an increase in the alternating voltage from 5 to 30 volts, the capacitance of a capacitor made of βK-1 changes by a factor of 2.5 to 3. The capacitors have the shape of disks; the capacitor with the least capacitance (200 μμ farads) is in the form of a bead. The authors consider that "Varikonds" have the following possible applications: frequency multiplication and division; obtaining pulses from a sinusoidal voltage source; voltage regulation; limiting and detection; current regulation; frequency modulation; phase inverters; and dielectric amplifiers.

Sixteen bibliographic entries. D.M.K.

ASSOCIATION: Ministry of Radio Engineering of the USSR (M-vo radiotekhn. prom-sti SSSR)

Card 2/2

ACC NR: AR6033791 SOURCE CODE: UR/0058/66/000/007/E103/E103

AUTHOR: Yermolina, L. Ye.

TITLE: Influence of thermal oscillations of atoms on the thermoelectromotive force of beryllium bronze

SOURCE: Ref. zh. Fizika, Abs. 7E772

REF SOURCE: Tr. Chelyab. in-ta mekhaniz. i elektrifik. s. kh., vyp. 22, 1965, 91-94

TOPIC TAGS: beryllium compound, beryllium bronze, thermoelectromotive force, bronze alloy, low temperature research, atom, thermal oscillation

ABSTRACT: The influence of low temperatures (-194 and -183C) on the thermoelectromotive force α of beryllium bronze was studied. It is found that the lower the temperature of soldered joints, the greater the α. It is established that thermal oscillations of atoms decrease α. [Translation of abstract] [GC]

SUB CODE: 08, 20, 11/

Card 1/1

YERMOLINA, N.M.; GORBANIN, V.P., starshiy gidrogeolog; BOYARSKIY, Ye.V.

Means of controlling underground waters in the Mirgalimsay deposit. Gor. zhur. no.3:9-12 Mr '62. (MIRA 15:7)

1. Rukovoditel' gidrogeologicheskogo byuro kombinata "Achpolimetall" (for Yermolina). 2. Mirgalimsayskiy rudnik (for Gorbanin).
(Mirgalimsay region—Mine water)

KAS'YANOV, M.V.; YERMOLINA, M.N.

Basic problems relative to the method of testing wells in the West Siberian Plain. Trudy SNIIGGIMS no.18:60-165 '61. (MIRA 16:7)
(West Siberian Plain--Oil wells--Testing)

BOKHOVKIN, I.M.; VITMAN, Ye.O.; YERMOLINA, N.N.; CHESNOKOV, V.F.

Physicochemical analysis of the ternary system carbamide-phenol - acetic acid. Zhur.ob.khim. 32 no.9:2755-2759 S '62. (MIRA 15:9)

1. Arkhangel'skiy lesotekhnicheskiy institut imeni V.V. Kuybysheva.

(Urea) (Phenols) (Acetic acid)

41574
S/020/62/146/004/006/015
B104/B102

24.2200

AUTHORS: Kotel'nikov, N. V., Korenev, N. A., Malinen, P. A., Yermolina, T. D.

TITLE: Magnetic properties and structure of nickel films produced by chemical methods

PERIODICAL: Akademiya nauk SSSR. Doklady, v.146, no. 4, 1962, 797 - 798

TEXT: The specimens (Table 1) were produced and studied by methods fully described in a previous paper (N. V. Kotel'nikov et al., DAN, 143, no. 4, 908 (1962)). A nickel wire was fastened to a copper backing and nickel was precipitated for 20 min at a bath temperature of 87°C, the bath being renewed every 5 minutes. The specimens 2, 3, 4, and 5 showed ferromagnetic properties (hysteresis loops) when the magnetic field had an amplitude of 84 oe and a frequency of 50 cps. With stronger fields, specimen 1 too showed ferromagnetic properties. Freshly produced specimens were amorphous or [illegible] crystalline. Amorphous specimens showed no ferromagnetic properties. X-ray pictures of specimens 1 and 4 show blurred lines of β-Ni. A fine dispersion of the precipitates is inferred from the blurred quality of the lines depending on the reflection angle. The x-ray picture of specimen 6

Card 1/2

Magnetic properties and structure ...

is typical of an "amorphous" body with diffuse lines corresponding to an interplanar spacing of d = 2.03 Å and somewhat shifted as compared with the (111) lines of the cubic nickel lattice. There are 3 figures and 1 table.

ASSOCIATION: Permskiy gosudarstvennyy universitet im.A. M. Gor'kogo (Perm' State University imeni A. M. Gor'kiy)

PRESENTED: May 10, 1962, by A. V. Shubnikov, Academician

SUBMITTED: May 9, 1962

Table 1.

(1)	(2a)	(2b)	(2c)	(3)	(4)	(5)
1	30	10	15	3,6	—	—
2	30	10	12	5,1	35,2	7,05
3	30	10	10	5,2	66,3	12,5
4	30	10	8	6,6	71,8	3,06
5	30	10	6,5	7,4	—	—
6	30	10	5	5,8	—	—

Table 1

Card 2/2

S/200/62/000/006/003/003
D214/D307

AUTHORS: Kotel'nikov, N.V., Lorenev, N.A., and Yermolina, T.D.

TITLE: The influence of the composition of a bath and its temperature on the magnetic properties of nickel films, obtained by a chemical method

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Sibirskoye otdeleniye, no. 6, 1962, 105 - 107

TEXT: The aim of this work was to see whether the composition and the temperature of an electrolytic bath influences the magnetic properties of electrolytic Ni films. The electrolyte ($NiSO_4$) was completely changed every 5 minutes to ensure a constant composition during electrolysis. Magnetic properties of the deposited films were measured by hysteresis curves on an 30-7 (E0-7) oscillograph at room temperature. Changes in the $NiSO_4$ concentration in the electrolyte produced changes in the shapes and sizes of the hysteresis curves for the corresponding Ni films. The saturation of these films increases with rising $NiSO_4$ content in the electrolyte, up to

Card 1/2

40 g $NiSO_4$/l, and remains constant at higher $NiSO_4$ concentrations. Additions of Na hypophosphate and CH_3COON_a to the electrolyte and changes in the temperature of the bath, both with constant $NiSO_4$ content, also alter the shapes and sizes of the hysteresis curves for the corresponding Ni films. By altering the composition and temperature of the bath, the magnetic properties of the deposited Ni film can be controlled. There are 4 figures and 2 tables.

ASSOCIATION: Permskiy gosudarstvennyy universitet (Perm State University)

SUBMITTED: November 1, 1961

24,2200

S/020/62/143/004/023/027
B101/B138

AUTHORS: Kotel'nikov, I. V., Korenev, N. A., and Yermolina, T. D.

TITLE: Temperature dependence of saturation magnetization, and the magnetic structure of nickel films obtained by the chemical method

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 143, no. 4, 1962, 908-910

TEXT: The magnetic behavior of chemically precipitated nickel films was investigated. (I) Ni was precipitated at 87°C from a bath of (g/l) 30 nickel sulfate, 10 sodium hypophosphite, and 10 sodium acetate. The same surface (12.5 cm^2) was treated with different bath volumes: 15-ml bath changed 24 times (1); 70-ml bath changed 18 times (2), and 500-ml bath changed 3 times (3). It was found that the coatings consisted of ferromagnetic and nonferromagnetic layers, and had different I_s temperature dependences. (Fig. 1). (II) 15 copper samples were successively coated for 10 min each in a 500-cm^3 solution. The last three samples were no

Card 1/3

longer ferromagnetic. H_c, I_r, and I_s diagrams were plotted for the first 12 samples by taking the hysteresis loops (50 cps, amplitude 34 oersteds, 20°C) (Fig. 2). Thus, nickel films can be produced chemically with different temperature dependences of their magnetic properties. Films with specified hysteresis loops can be produced by suitable choice of bath composition. The published data on H_c, I_s, I_r for nickel films only give average values. As the magnetic properties of the precipitates are highly sensitive to changes in bath composition, the latter should be corrected by magnetic control. There are 3 figures.

ASSOCIATION: Permskiy gosudarstvennyy universitet im. A. M. Gor'kogo (Perm' State University imeni A. M. Gor'kiy)

PRESENTED: October 20, 1961, by A. V. Shubnikov, Academician

SUBMITTED: October 18, 1961

ACCESSION NR: AP4009193 S/0288/63/000/003/0142/0146

AUTHOR: Kotel'nikov, N. V.; Korenev, N. A.; Malinen, P. A.; Yermolina, T. D.

TITLE: The effect of annealing on the magnetic properties and structure of nickel obtained by a chemical method

SOURCE: AN SSSR. Sibirskoye otdeleniye. Izv. Seriya tekhnicheskikh nauk, no. 3, 1963, 142-146

TOPIC TAGS: nickel precipitates, chemical nickel precipitates, amorphous nickel structure, crystalline nickel structure, annealed nickel, beta-nickel crystal lattice, nickel ferromagnetic properties, ρ-Ni

ABSTRACT: Precipitates of nickel obtained by a chemical method have a complex structure, resulting from the presence of phosphor in them (K.M. Gorbunov and A.A. Nikiforova, Fiziko-khimicheskoye osnovy* protsessa khimicheskogo nikelirovaniya. Izd-vo AN SSSR, M., 1960). The magnetic and other properties of precipitates are determined by their internal structure. According to data from a series of investigations carried out by various methods (Gorbunov and Nikiforova; V.P. Moiseyev, Izv. AN SSSR, ser. fiz., t. 26, No. 3, 378, 384, 1962),

Card 1/3

ACCESSION NR: AP4009193

precipitates of chemically reduced hypophosphite of nickel in the initial state have an amorphous structure which changes to crystalline during heat processing. According to Kotel'nikov, Korenev and others (DAN SSSR, v pechati), who recently carried out structure studies using x-ray's, precipitates in the initial state may have not only an amorphous, but a crystalline structure besides; it was also observed that samples obtained with a crystalline structure have ferromagnetic properties, whereas amorphous-structured samples do not. In the present article, on the basis of the forementioned articles and others, samples with ferromagnetic properties have been produced, which, as x-ray studies show, have a crystal structure in agreement with previous data. The effect of annealing on the ferromagnetic properties and structure of precipitates of the samples produced has been studied, with the following conclusions: 1) precipitates of nickel obtained chemically have in the initial state not only an amorphous, but also a crystallins structure with a lattice, characteristic of β-Ni; 2) all samples having a crystalline structure in the initial state have ferromagnetic properties, while samples with an amorphous structure do not have these properties; 3) the annealing of amorphous precipitates results in the appearance of ferromagnetic properties; 4) the annealing of precipitates which have a crystalline structure in the initial state results in improving the

Card 2/3

ACCESSION NR: AP4009193

crystal lattice β -Ni and to the occurence of new phases, as indicated by the appearance of new lines not visible before annealing; 5) together with improvement of the crystal lattice, the annealing of samples implies a change of their ferromagnetic properties; 6) the greatest change in ferromagnetic properties at a temperature of 400°C occurs in the first 20 minutes; 7) several ferromagnetic phases may appear in precipitates as a result of annealing; these may be distinguished from one another, for example, by the percentage content of phosphor in similar crystalline structures of nickel; 8) improvement of the crystal structure β -Ni and the occurance of new phases results in an improvement of I_s and H_c for each sample as a whole, for which the latter is related to an appearance of microconnections of non-ferromagnetic phases which occur in the heat treatment process. Orig. art. has: 5 figures and 2 tables.

ASSOCIATION: Permskiy gosudarstvenny*y universitet (Perm'State University)

SUBMITTED: 23May62 DATE ACQ: 10Feb64 ENCL: 00

SUB CODE: CH, PH NO REF SOV: 005 OTHER: 001

Card 3/3

YERMOLINSKIY, Feodosiy Dmitriyevich; LARIN,V.T., redaktor; AGRANOVSKAYA, M.D., redaktor; KOLESNIKOVA,A.P., tekhnicheskiy redaktor

[Operating electrical equipment in lumbering] Ekspluatatsiia elektrooborudovaniia na lesozagotovkakh. Moskva, Goslesbumizdat, 1955. 130 p. (Biblioteka lesozagotvitelia, no.10) (MLRA 9:3)
(Electricity in lumbering)

YERMOLINSKIY, Feodosiy Dmitriyevich; ZHESTYANNIKOV, V.M., red.;
PROTANSKAYA, I.V., red.izd-va; SHIBKOVA, R.Ye., tekhn.red.

[Manual for electricians working in lumbering] Posobie dlia elektromekhanikov lesozagotok. Moskva, Goslesbumizdat, 1962. 288 p. (MIRA 16:4)
(Electricity in lumbering--Handbook, manuals, etc.)

ZHITKOV, Aleksey Vasil'yevich; [redacted] redaktor; ARNOL'DOVA, K.S., redaktor; KARASIK, M.P., tekhnicheskiy redaktor

[Equipment for lumberyards] Oborudovanie dlia skladov lesomaterialov. Moskva, Goslesbumizdat, 1954. 299 p. (MLRA 8:4)
(Lumberyards--Equipment and supplies)

YERMOLINSKIY, I.A.

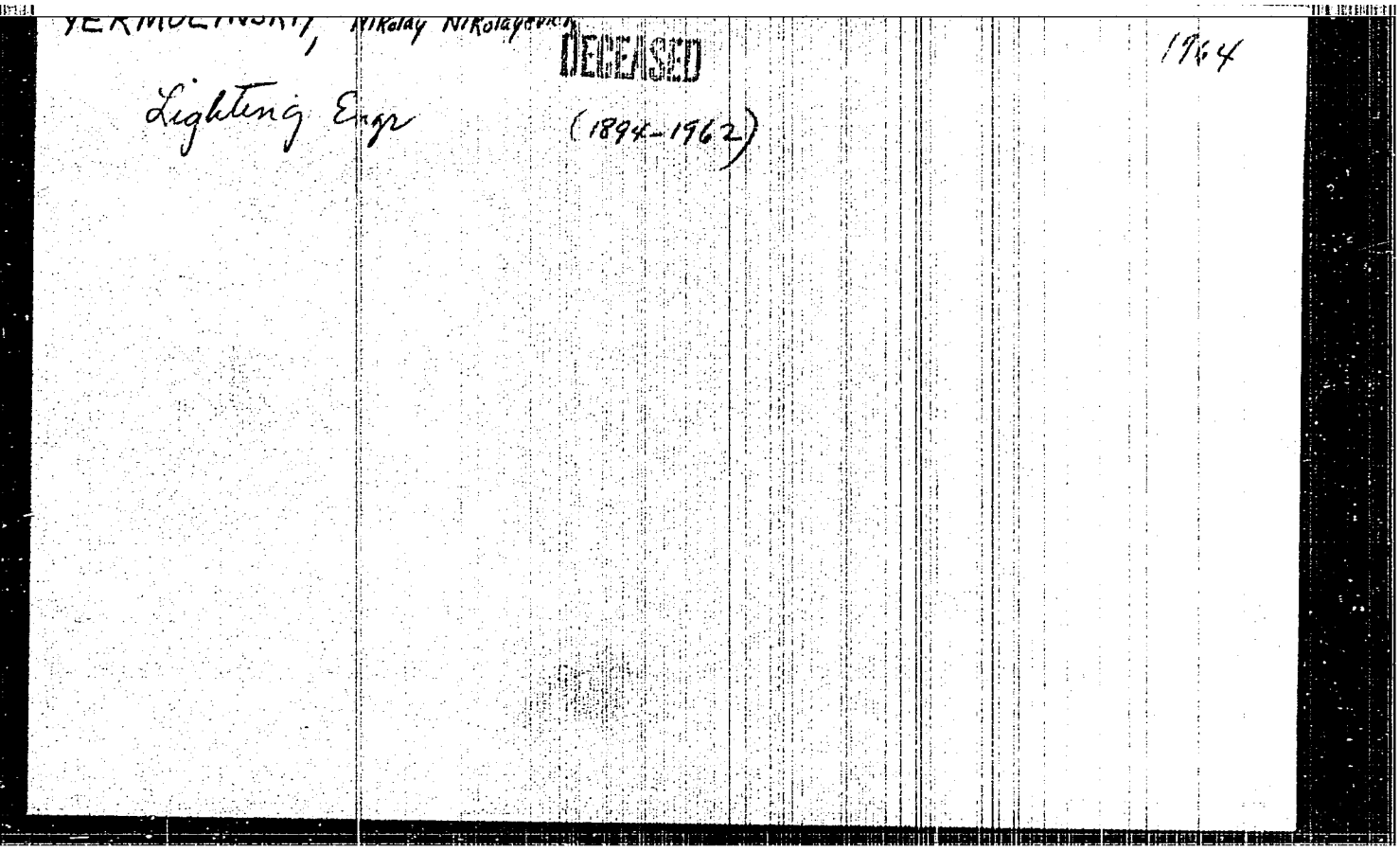
Disseminate local practices more widely (Journal "Sel'skoe khoziaistvo Povolzh'ia"). Zemledelie 7 no.9:92-94 S '59. (MIRA 12:11)
(Volga Valley--Agriculture--Periodicals)

KRASAVIN, Sergey Anatol'yevich; YERMOLINSKIY, Ivan Aleksandrovich; BASOV, M.I., red.; PLESKO, Ye.P., red.izd-va; SHIBKOVA, K.Ye., tekhn. red.

[Analysis of the administrative operations of a logging enterprise]Analiz khoziaistvennoi deiatel'nosti lespromkhoza. Moskva, Goslesbumizdat, 1962. 145 p. (MIRA 16:1)
(Lumbering--Accounting)

TATARINOV, Valentin Petrovich; LYSENKOV, Nikolay Il'ich;
YERMOLINSKIY, I.A., red.

[New technology of working cutovers in Udmurtia] Novaja tekhnologiia razrabotki lesosek v Udmurtii. Moskva, Lesnaia promyshlennost', 1964. 62 p. (MIRA 18:3)



YERMOLINSKIY, V.I.; FILKIN, P.A.

Effect of the ground upon the amount of hydrocarbons in a caisson. Gig.i san. no.4:45-46 Ap '54. (MLRA 7:4)

1. Iz sanitarno-epidemiologicheskoy stantsii Kuybyshevskoy zheleznoy dorogi. (Caissons) (Hydrocarbons)

ROSHCHUPKIN, V.I.; YERMOLINSKIY, V.I.

Prevention of hemorrhagic fever with the renal syndrome under conditions of a Pioneer camp. Zhur. mikrobiol., epid. i immun. 43 no. 1:134-138 Ja '66 (MIRA 19:1)

1. Kuybyshevskiy meditsinskiy institut i Vrachebno-sanitarnaya sluzhba Kuybyshevskoy zheleznoy dorogi. Submitted October 7, 1964.

TERNOVSKIY, V.I.

Comparative analysis of injuries with or without subsequent disability
Gig. i san. 21 no.9:73-74 S '56. (MLRA 9:10)

1. Iz vrachebno-sanitarnoy sluzhby Kuybyshevskoy zheleznoy dorogi.
(WOUNDS AND INJURIES
trauma with & without work capacity, comparison)
(WORK
capacity in trauma, comparison of trauma with & without loss of work capacity)

YERMOLKIN, V.I.

Regional mesozoic oil and gas-bearing complexes in Central Asia and the Near East and their comparative characteristics. Neftegaz. geol. i geof. no.5:49-52 '65. (MIRA 18:7)

1. Moskovskiy ordena Trudovogo Krasnogo Znameni institut neftekhimicheskoy i gazovoy promyshlennosti im. akademika Gubkina.

LEONT'YEV, M.N.; prinimali uchastiye: BAKINA, K.V.; KISELEVA, O.M.; KRAVETS, Ye.A.; KARLOVA, S.A.; DUBNOVA, S.S.; SEMENYAKO, A.G.; ZAMORINA, Z.T.; MILANINA, Ye.P.; KOZEL'SKAYA, O.P.; VASIL'KOVA, Z.I.; ZOTOV, S.N.; YERMOLOV, A.I.; BEZLYUDNAYA, V.V.; NAZAROV, B.A.; ASHIKHMINA, V.M.; ASYAKINA, A.N.; TROITSKAYA, B.I.; SKVORTSOV, A.V., red.; LESHAKOV, I.T., tekhn. red.

[The economy of Orlov Province; a statistical manual] Narodnoe khoziaistvo Orlovskoi oblasti; statisticheskii sbornik. Orel, Gosstatizdat, 1960. 281 p. (MIRA 14:5)

1. Orel(Province) Statisticheskoye upravleniye. 2. Zamestitel' nachal'nika statisticheskogo upravleniya Orlovskoy oblasti (for Leont'yev). 3. Statisticheskoye upravleniye Orlovskoy oblasti (for all except Leshakov) 4. Nachal'nik statisticheskogo upravleniya Orlovskoy oblasti (for Skvortsov)
(Orlov Province—Statistics)

BOMBCHINSKIY, V.P.; VTOROV, N.A.; DUNDUKOV, M.D.; YEGOROV, S.A., doktor tekhn.nauk, prof.; YERMOLOV, A.I.; ZAVORUYEV, V.P.; KALININ, V.V.; KACHKHOVSKIY, N.V.; KUZNETSOVA, A.K.; KUZ'MIN, I.A., kand.tekhn. nauk; MEDVEDEV, V.M., kand.tekhn.nauk; MIKULOVICH, B.F.; MIKHAYLOV, V.V., kand.tekhn.nauk; PETRASHEN', R.N.; REYZIN, Ye.S.; SINYAVSKAYA, V.M.; KHAITURIN, A.D.; SHCHERBINA, I.N., kand.tekhn.nauk; SEVAST'YANOV, V.I., red.; KARAULOV, B.F., retsenzent; LOVETSKIY, Ye.S., retsenzent; MIKHAYLOV, A.V., doktor tekhn.nauk, retsenzent; NATANSON, A.V., retsenzent; SOKOL'SKIY, M.M., retsenzent; STANKEVICH, V.I., retsenzent; FREYGOFER, Ye.F., retsenzent; GOTMAN, T.P., red.; VORONIN, K.P., tekhn.red.

[Work of the All-Union Scientific Research Institute for the Study and Design of Hydraulic Structures] Nauchno-issledovatel'skie raboty Gidroproekta. Pod obshchei red. V.I.Sevast'ianova. Moskva, Gos.energ.izd-vo, 1961. 214 p. (MIRA 15:2)

1. Moscow. Vsesoyuznyy proyektno-izyskatel'skiy i nauchno-issledovatel'skiy institut Gidroproyekt imeni S.Ya.Zhuk. Nauchno-issledovatel'skiy sektor.

(Hydraulic engineering--Research)

YERMOLOV, A. K.

119. THE CALCULATION OF LOOP AERIALS.—A. N. Plemyannikov & A. K. Ermolov. (Izvestiya Elektroprom. Slab. Toka, No. 11, 1940, pp. 20–23.)

The theory of lines with distributed constants is applied to the case of a single-turn loop aerial such as is used for radio beacons. The aerial can be regarded as a complex line consisting of several non-uniform sections and short-circuited at the end. Each half of the aerial up to the middle point then represents one of the conductors of the line. Methods are indicated for a complete design of the aerial, including formulae 3 & 5 for calculating the reactance of the tuning elements (formula 5 refers to the case when the loading condenser is mounted at the top of the aerial to reduce night error).

YERMOLOV, A.S.; BOCHAVER, O.S.

Surgical treatment in injuries of the main arteries. Khirurgiia 40 no.11 63-66 N '65. (MIRA 18:7)

1. Klinika obshchey khirurgii lechebnogo fakul'teta (zav. - prof. V.A.Ivanov) II Moskovskogo gosudarstvennogo meditsinskogo instituta imeni Pirogova.

YERMOLOV, A.S.; KREYNDLIN, Yu.Z.; YEGOROV, I.V.; BOCHAVER, O.S.; KAL'TER, I.S.

Use of indirect cardiac massage in clinical practice. Khirurgiia 40 no.7:36-40 Jl '64. (MIRA 18:2)

1. Kafedra obshchey khirurgii lechebnogo fakul'teta (zav. - prof. V.A. Ivanov) II Moskovskogo gosudarstvennogo meditsinskogo instituta imeni Pirogova.

YERMOLOV, A.S.

Some problems in surgical tactics in the treatment of terminal states. Khirurgiia 39 no.9:25 - 29 S'63 (MIRA 17:3)

1. Iz kafedry obshchey khirurgii lechebnogo fakul'teta (zav.- prof. V.A. Ivanov) II Moskovskogo gosudarstvennogo meditsinskogo instituta imeni N.I. Pirogova i laboratorii eksperimental'noy fiziologii (zav. - prof. V.A. Negovskiy) AMN SSSR.

YERMOLOV, B.N.

Effect of the thyrotropic hormone on milk productivity in goats. Fiziol.zhur. 47 no.8:1033-1040 Ag '61. (MIRA 14:8)

1. From the Laboratory of Physiology of Farm Animals, I.P.Pavlov Institute of Physiology, Leningrad.
(LACTATION) (PITUITARY BODY)

YERMOLOV, B.N.

Effect of iodinated casein on some indices of gas exchange in goats. Opyt izuch. reg. fiziol. funk. 6:162-165 '63.
(MIRA 17:3)

1. Laboratoriya fiziologii i biokhimii laktatsii (zav. - prof. I.A.Paryshnikov) Instituta fiziologii imeni I.P.Pavlova AN SSSR.

YERMOLOV, B.N.

Changes in the activity of the thyroid gland and milk production in goats under the influence of l-thyroxine. Fiziol. zhur. 49 no.1:111-114 Ja '63. (MIRA 17:2)

1. From the Laboratory for Physiology of Farm Animals, I.P. Pavlov Institute of Physiology, Leningrad.

3(4) PHASE I BOOK EXPLOITATION SOV/2881

Yermolov, Boris Pavlovich, and Mikhail Pavlovich Dement'yev

Osnovy geodezii dlya stroiteley (Principles of Geodesy for Builders) Moscow, Geodezizdat, 1958. 211 p. 20,000 copies printed.

Ed.: G.P. Levchuk; Tech. Ed.: V.V. Romanova; Ed. of Publishing House: A.I. Inozemtseva.

PURPOSE: This textbook is intended for students at tekhnikums studying civil and industrial construction techniques.

COVERAGE: This text presents a course in those aspects of surveying used in construction work. The first portion of the book is given over to a discussion of general questions in surveying, i.e., the figure of the Earth, determining position on a sphere and on a plane, measuring lines, the Earth's magnetism, angles, azimuths, and bearing. A discussion of the basic instruments used in surveying is also included. The second, and more specialized, part of the text treats topics of particular interest in construction work.

Card 1/ 9

These include: surveying built-up areas, leveling in construction work, curve layout, relief portrayal on plans, tacheometer surveys, etc. No personalities are mentioned. There are 24 Soviet references.

TABLE OF CONTENTS:

AVAILABLE: Library of Congress (TA545.E7)

MM/bg
12-21-59

Card 9/9

BULANOV, Aleksandr Ivanovich; DANILOV, Vladimir Vladimirovich; ZAKATOV, Petr Sergeyevich, prof.; YEREMEYEV, Boris Pavlovich [deceased]; PAVLOV, Vitaliy Fedorovich; TROITSKIY, Boris Vladimirovich; SLOBODCHIKOV, D.A., red.; VASIL'YEVA, V.I., red.izd-va; ROMANOVA, V.V., tekhn.red.

[Geodesy] Geodeziia. Moskva, Izd-vo geodezicheskoi lit-ry. Pt.1. 1962. 315 p. (MIRA 16:10)
(Geodesy)

YERMOLOV, F., inzhener-kapitan

More about technical training. Tekh. i vooruzh. no.1:67-69 Ja '64. (MIRA 17:6)

Yermolov, G H

KOPELEVICH, E.A., avtor konstruktsii; SHULESHKO, I.S., inzhener; YERMOLOV, G.A., kandidat tekhnicheskikh nauk; BELOUSOVA, S.M., inzhener.

Small ChMM-450 carding machine. Tekst. prom. 17 no.7:22-29 Jl '57. (MLRA 10:9)

1. TSentral'naya nauchno-issledovatel'skaya laboratoriya (for Shuleshko).

(Carding machines)

MATVEIEV, A.S.; [redacted], I.E.; KRAKOVYAK, M.F.

Contactless radioactive relays. Priborostroenie no.1:26-28 Ja '56. (MLRA 9:8)

(Radioactive substances--Industrial applications)
(Electric relays)

YERMOLOV, I.N.

USSR / Acoustics. Ultrasound J-4

Abs Jour : Ref Zhur - Fizika, No 5, 1957, No 12737

Author : Yermolov, I.N., Krakovyak, M.I.

Inst : Not given

Orig Pub : Priborostroyeniye, 1956, No 8, 13-15

Abstract : Brief description of a pulse thickness gauge UZT-3M and a detailed analysis of the apparatus and of the principle of operation of the resonant thickness gauge UZT-4M (both constructed by the Central Scientific Research Institute for Precision Machinery). The instruments make it possible to measure thicknesses of walls, access to which is only from one side. In addition, they can serve for defectoscopy. The UZT-3M thickness gauge determines the thickness d of the part from the time of passage of the ultrasonic pulse from one

Card : 1/3

USSR / Acoustics. Ultrasound

Abs Jour : Ref Zhur - Fizika, No 5, 1957, No 12737

: wall to the other and return, using the formula d = Ct/2, where C is the known velocity of ultrasound in the material of the article. The thickness can be measured over a range from 5 to 500 mm, but a satisfactory measurement accuracy (2%) is obtained when the thickness of the measured part exceeds 20 mm.

The ultrasonic resonant thickness gauge UZT-4M eliminates this shortcoming and makes it possible to measure thickness from 1 to 20 mm with an accuracy of ± 1.5%, and the measurements can be made over a cylindrical surface with a radius of curvature not less than 15 mm.

The resonant thickness gauge employs the standing waves formed in the article, and these can arise only at definite

Card : 2/3

USSR/ Acoustics, Ultrasound J-4

Abs Jour : Ref Zhur - Fizika, No 5, 1957, No 12737

: frequencies $f_n = nc/2d$, where n is an integer. The resonant frequencies of the article are read by means of a frequency-measuring apparatus, whose readings are converted by means of a calibration curve into thicknesses. The principal electrical diagram of the UZT-4M ultrasonic thickness gauge are given and its operation is described.

Card : 3/3

YERMOLOV, I. N.

USSR/Acoustics - Ultrasonics, J-4

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 35587

Author: Yermolov, I. N., Kobrin, M. M., Krakovyak, M. F.

Institution: None Central Sci.-Res. Inst.-Tech.-r Machine Construction

Title: Application of Ultrasonics to Study the Development of Fatigue Cracks in Shafts Under a Press-Fitted Part

Original Periodical: Zavod. laboratoriya, 1956, 22, No 6, 724-728

Abstract: None

Card 1/1

YERMOLOV, I. N.

"Investigation of Phenomena Accompanying the Propagation of Ultrasound and Methods to be used in Work in this Field: Some Problems pertaining to Defectoscopy."

report presented at the 6th Sci. Conference on the Application of Ultrasound in the investigation of Matter, 3-7 Feb 1958, organized by Min. of Education RSFSR and Moscow Oblast Pedagogic Inst. im. N. K. Krupskaya.

YERMOLOV, I.N.

25(6) p.2 PHASE I BOOK EXPLOITATION SOV/1498

Tsentral'nyy nauchno-issledovatel'skiy institut tekhnologii i mashinostroyeniya

Ul'trazvukovyye pribory TsNIITMASh (TsNIITMASh Ultrasonic Equipment) Moscow, Mashgiz, 1958. 85 p. (Series: Its: [Trudy] kn. 88) 3,000 copies printed.

Ed.: A.S. Matveyev, Candidate of Technical Sciences; Tech. Eds.: Ye.S. Gerasimova and A. F. Uvarova; Managing Ed. for Literature on Machine Building and Instrument Making (Mashgiz): N.V. Pokrovskiy, Engineer.

PURPOSE: This book is intended for engineering and technical personnel of plants and scientific research institutes engaged in the development of ultrasonic equipment and methods for inspecting metal products, and for those who use such equipment.

COVERAGE: This is a collection of articles describing work done by the Instrument-making Department of TsNIITMASh (Central Scientific Research Institute of Technology and Machinery) during the period 1954-1956 on the development of ultrasonic equipment for detection of flaws and measurement of thicknesses. Various ultrasonic flaw detectors and thickness gages developed during the period 1950-1956 are described.

Card 1/3

SOV/1498

TsNIITMASh Ultrasonic Equipment

An article by V.I. Ryzhov and M.F. Krakovyak presents a detailed description of a frequency deviator developed by the authors for tuning of wideband amplifiers. The device has two frequency ranges: 0.5 to 1.5 and 1.4 to 1.5 megacycles. It is stated that the use of this device facilitates the adjustment of ultrasonic flaw-detectors. The outlook for future application of ultrasonics in heavy machinery building is also discussed.

TABLE OF CONTENTS:

Card 2/3

AVAILABLE: Library of Congress

GO/fal
4-22-59

SOV-135-58-11-11/21

AUTHOR: Yermolov, I.N., Engineer

TITLE: The Ultrasonic Control of Weld Joints in Welded-Cast Structures (Ul'trazvukovoy kontrol' svarnykh shvov svarno-litykh konstruktsiy)

PERIODICAL: Svarochnoye proizvodstvo, 1958, Nr 11, pp 29-32 (USSR)

AESTRACT: TsNIITMASh together with the Novo-Kramatorskiy Plant developed special methods of controlling weld joints in thick-walled welded-cast structures. For this purpose a new special ultrasonic flaw-detector, "UDTs-11" type (Fig 1), was designed, which reveals defects of at least 10 x 10 mm at a depth up to 500 mm. The high sensitivity of the device is indispensable for the detection of dangerous defects within a distance of 500 mm from the detector. It is fitted with a time standard generating two standard pulses which reveal the areas of built-up metal. In order to discern defects of the joint and of the cast metal, a special method of layer control was developed, according to which the weld is divided into various layers of 20 to 50 mm thickness. Comparing the results obtained from the control of each layer, it is possible to reveal the general disposition of defects in the weld joint. The operation of the device is described

Card 1/2

The Ultrasonic Control of Weld Joints in Welded-Cast Structures

in detail. On the basis of the tests it was stated that for the control of seams in massive welded-cast structures, a flaw-detector with an inclination angle of 30° can be recommended, as it serves to determine defects situated both near the contacted surface or at a more remote distance. There are 3 photos, 3 diagrams and 6 Soviet references.

ASSOCIATION: TsNIITMASh

1. Welds—Inspection 2. Castings—Inspection
3. Ultrasonic projectors—Applications

Card 2/2

YERMOLOV, I.N., inzh.

Using the resonance method in measuring elastic moduli of materials at high temperatures. [Trudy] TSNIITMASH no.87:97-109 '58. (MIRA 11:11)

(Metals at high temperatures--Testing)
(Pulse techniques (Electronics))

MATVEYEV, A.S., kand. tekhn. nauk; YERMOLOV, I.N., insh.; KRAKOVYAK, M.F.

Ultrasonic instruments designed by the Central Scientific Research Institute of Technology and Machinery. [Trudy] TSNIITMASH 88:5-29 '58. (MIRA 12:3)
(Ultrasonic wave--Industrial applications)
(Pulse techniques (Electronics))

YERMOLOV, I. N.

PHASE I BOOK EXPLOITATION SOV/4342

Vserossiyskaya konferentsiya professorov i prepodavateley pedagogicheskikh institutov.

Primeneniye ul'traakustiki k issledovaniyu veshchestva; trudy konferentsii, vyp. 9 (Application of Ultrasonics in the Study of Substances, No. 9) Moscow, Izd. MOPI, 1959. 245 p. Errata slip inserted. 1,000 copies printed.

Eds.: V. F. Nozdrev, Professor, and B. B. Kudryavtsev, Professor.

PURPOSE: This collection of articles is intended for scientists specializing in ultrasonics, and for those interested in the application of ultrasonics to the study of the properties of materials, and to the quality control of machined parts and structural elements.

COVERAGE: The collection constitutes the transactions of the All-Russian Conference of Professors and Teachers of Pedagogical Institutes. The articles report on recent theoretical and experimental investigations in the field of ultrasonics and discuss the application of ultrasonics to the study of matter.

Application of Ultrasonics (Cont.) SOV/4342

Kudryavtsev, B. B. [Moscow Pedagogical Institute imeni Krupskaya]. Application of Ultrasonic Methods in the Investigation of Liquids 187

[illegible], Ludwig [GDR (German Democratic Republic)]. Dynamic Equation of the State of Viscous Liquids [illegible]

[illegible], A. A. Acoustic Dispersion in Liquids Having One of the Possible Types of Structural Nonhomogeneities 201

[illegible], E. I., and M. A. [illegible] [Moscow Oblast' Pedagogical Institute imeni Krupskaya]. Investigation of the Liquid - Solid System by the Ultrasonic Method 207

[illegible]'yants, A. A. [Odesskiy un-t imeni I. I. Mechnikova (Odessa University imeni I. I. Mechnikov)]. Propagation of Sound Waves in Van der Waals Gases and Liquids 209

Application of Ultrasonics (Cont.) SOV/4342

Yermolov, I. N. [TsNIITMASh (Central Scientific Research Institute of Technology and Machinery)]. Investigation of the Dependence of Amplitude of Echo-Signal of the Pulse Defectoscope on the Disposition and Dimensions of the Flat Reflector 217

[illegible], A. A. [Moscow Oblast' Pedagogical Institute imeni Krupskaya]. Ultrasonic Bulk Viscosity as Transport Effect 227

[No author] Lectures of Professor J. Lamb [Royal College, London]. This news item describes lectures delivered by Prof. J. Lamb at the Laboratoriya molekulyarnoy akustiki MOPI (Laboratory of Molecular Acoustics of the Moscow Oblast' Pedagogical Institute) April 6-14, 1959. 241

AVAILABLE: Library of Congress (QC244.V82)

Card 7/7

JA/mmh/ec
8/9/61

YERMOLOV, I. N.

PHASE I BOOK EXPLOITATION SOV/3528

Moscow. Dom nauchno-tekhnicheskoy propagandy

Primeneniye ul'trazvuka v promyshlennosti; sbornik statey (Industrial Use of Ultrasound; Collection of Articles) Moscow, Mashgiz, 1959. 301 p. 8,000 copies printed.

Sponsoring Agency: Obshchestvo po rasprostraneniyu politicheskikh i nauchnykh znaniy RSFSR.

Ed. (Title page): V.F. Nozdrev, Doctor of Physical and Mathematical Sciences, Professor; Ed. (Inside book): G.F. Kochetova, Engineer; Tech. Ed.: V.D. El'kind; Managing Ed. for Literature on Machinery and Instrument Manufacturing (Mashgiz): N.V. Pokrovskiy, Engineer.

PURPOSE: This book is intended for engineers and technicians engaged in the application of ultrasonics in machinery manufacture and in other branches of industry.

COVERAGE: This is a collection of papers read at the first all-Union conference on the use of ultrasonics in industry. Attention is focused mainly on the description of ultrasonic equipment and on the use of ultrasound for the machining of hard materials and for flaw detection. The effect of ultrasound on metal-crystallization processes is also discussed. No personalities are mentioned. References accompany many of the papers.

SOV/115-59-2-4/38

9(6)
AUTHOR: Yermolov, I.N., Krakovyak, M.F.

TITLE: Ultra-Sonic Resonance of Measuring Apparatus URT-5 (Ul'trazvukovoy rezonansnyy tolshchinomer URT-5)

PERIODICAL: Izmeritel'naya tekhnika, 1959, Nr 2, pp 10-14 (USSR)

ABSTRACT: Ultra-sonic metrological equipment of various kinds is successfully used to measure the thickness of products, which are accessible on one side only. In the USSR, mass production has begun of resonance measuring equipment V4-8R. A test series of measuring instruments UZT-4M has also been produced. The main shortcoming of both these types is the difficulty of reading off results. Foreign concerns are manufacturing such equipment which indicate the test data directly. But these instruments are large and unweildy and require complicated pre-measurement adjustment. In 1957, TsNIITMASH developed an ultra-sonic measuring device that eliminates these difficulties. This is described here, to-

Card 1/2

Ultra-Sonic Resonance of Measuring Apparatus UHT-5

gether with its range of use and degree of error (2% where thickness is normal). The device is especially suitable for tube measurements, particularly where the tubes have small diameters (up to 10 mm). The measuring callipers are designed in a special way, according to the piezo-electrical principle. A.P.Sviridov recommended the use of turmalin - a piezo-element - in the production of callipers. This, in fact, resulted in them being 1.5-2 times more sensitive as well as more durable than quartz. Moreover, they did not emit false impulses, whereas 50% of the quartz tracers did. The dimensions of this measuring device are 220 x 360 x 425 mm. After successfully passing laboratory tests, the first example produced of this device was handed over as operative to a factory. There are 7 formulae, 1 circuit diagram, 1 photograph and 8 references, 6 of which are Soviet and 2 English.

SOV/46-5-2-23/34

AUTHOR: Yermolov, I.N.

TITLE: On the Possibility of Application of the Scalar Acoustic Field Theory to Calculations of the Acoustic Channel of the Ultrasonic Defectoscope (O vozmozhnosti primeneniya teorii skalyarnogo zvukovogo polya dlya rascheta akusticheskogo trakta ul'trazvukovogo defektoskopa)

PERIODICAL: Akusticheskiy zhurnal, 1959, Vol 5, Nr 2, pp 247-249 (USSR)

ABSTRACT: The author applies the scalar acoustic field theory to the following idealized ultrasonic defectoscope system. A piezo-plate A (Fig.1) of diameter 2a, emits π-shaped or exponentially-decaying pulses. This plate is also a receiver of waves reflected from a defect E. This defect is in the form of a hollow disk of diameter 2σ. The results of calculations are shown in Figs.2 and 3. Fig.2 gives the dependence of the reflected signal amplitude on the distance between the source and the defect. The continuous line represents calculated values and the circles and crosses show Morgan's experimental results (Ref.1). Good agreement between theory and experiment was obtained

Card 1/2

On the Possibility of Application of the Scalar Acoustic Field Theory to Calculations of the Acoustic Channel of the Ultrasonic Defectoscope

for angles $\theta_V \leq 15^\circ$ (θ_V is the angle supported by the source at the centre of the defect, cf Fig.1). Fig.3 gives the dependence of the reflected signal amplitude on the defect diameter. The continuous line represents calculated values and the circles show the author's results. Again good agreement between theory and experiment was obtained for angles $\theta_A \leq 10^\circ$ (θ_A is the angle supported by the defect at the centre of the source, cf Fig.1). The author concludes that the scalar theory can be used for polar angles θ up to 10-15°. There are 3 figures and 6 references, of which 1 is Soviet, 4 English and 1 translation from English into Russian.

ASSOCIATION: Tsentral'nyy n.-i. institut tekhnologii i mashinostroyeniya, Moskva (Central Scientific-Research Institute of Technology and Machine Building, Moscow)

SUBMITTED: January 11, 1959

TOKMAKOV, V.S.; YERMOLOV, I.N.

"Flaw detection" by V.S.Sokolov. Reviewed by V.S.Tokmakov, I.N.Ermolov. Zav.lab. 25 no.7:893-895 '59. (MIRA 12:10)

1. Rukovoditel' laboratorii TSentral'nogo nauchno-issledovatel'skogo instituta chernoy metallurgii (for Tokmakov). 2. Rukovoditel'-gruppy ul'trazvukovoy defektoskopii TSentral'nogo nauchno-issledovatel'skogo instituta tekhnologii i mashinostroyeniya (for Yermolov).

(Materials--Testing)
(Sokolov, V.S.)

25(6) SOV/32-25-7-48/50

AUTHOR: Yermolov, I. N., Director of the Section of Ultrasonic Materiology of the TsNIITMASh

TITLE: V. S. Sokolov. Materiology of Materials, Gosenergoizdat, 1957, 240 Pages, 7000 Copies, Price 15 Rubles 75 Kopecs (V. S. Sokolov Defektoskopiya materialov Gosenergoizdat, 1957, 240 str., tirazh 7000, tsena 15 r. 75 k.) II

PERIODICAL: Zavodskaya laboratoriya, 1959, Vol 25, Nr 7, pp 894-895 (USSR)

ABSTRACT: A book on the various methods of materiology should give a precise and sufficiently popular interpretation of the following problems: 1) An explanation of the physical principle of the method; 2) A description of the characteristic devices and plants of industrial quality control; 3) Reference to the most important objects and construction types to be controlled and the most interesting types of control. From this point of view the book mentioned in the title is not satisfactory at all. The author of the present article indicates some of the topics omitted in the book reviewed and mentions that e.g. a description of the resonance thickness gage for the material testing V4-8R (which had been mass-produced from 1955 to 1957) is missing, as well as the description of some other devices.

Card 1/2

V. S. Sokolov. Materiology of Materials, Gosenergoizdat, 1957, 240 Pages, 7000 Copies, Price 15 Rubles 75 Kopecs. II

On the other hand, the book gives a thorough explanation of out-dated devices worked out in the TsNIL Gosgortekhnadzor USSR under the direction of the author of the book mentioned in the title. In conclusion it is stated that a collective of expert authors should be engaged by the Gosenergoizdat to write a book on the various methods of material materiology control.

YERMOLOV, I. N., Cand Tech Sci (diss) -- "Investigation of the effect of dimensions and depth of defects in metal of the amplitude of an ultrasonic signal". Moscow, 1960. 21 pp (State Committee of the Council of Ministers USSR on Automatic and Machine Building, Central Sci Res Inst of Tech and Machine Building TsNIITMash), 150 copies (KL, No 10, 1960, 130)

YERMOLOV, I.N.

PHASE I BOOK EXPLOITATION SOV/4804

Moscow. Tsentral'nyy nauchno-issledovatel'skiy institut tekhnologii i mashinostroyeniya

Nekotoryye voprosy tekhnologii tyazhelogo mashinostroyeniya, chast' 2: Obrabotka metallov rezaniyem i kontrol' kachestva detaley (Some Problems in the Manufacturing Processes of Heavy Machinery, Pt. 2: Metal Cutting and Quality Control of Parts) Moscow, Mashgiz, 1960. 173 p. (Series: Its: [Trudy] kn. 99) 2,800 copies printed.

Sponsoring Agencies: Gosudarstvennyy komitet Soveta Ministrov SSSR po avtomatizatsii i mashinostroyeniyu; Tsentral'nyy nauchno-issledovatel'skiy institut tekhnologii i mashinostroyeniya.

Ed.: Ye.P. Unksov, Doctor of Technical Sciences, Professor; Managing Ed. for Literature on Heavy Machine Building: S.Ya. Golovin, Engineer; Ed. of Publishing House: G.E. Schmaleva; Tech. Ed.: Z.I. Chernova.

PURPOSE: This book is intended for technical personnel in heavy-machinery plants and for scientific workers in factory laboratories and research institutes.

Card 1/4

COVERAGE: The book contains a summary of work conducted by the personnel of TsNIITMASh in the field of mechanical machining and quality control of parts. Included is a discussion on the correct combination of depth, feed, and speed in cutting with maximum capacity of the machine tool. Also considered are the development of machining methods in rough and semifinishing production, and the application of ultrasonic devices for flaw detection and measurement of wall thickness. No personalities are mentioned. References follow some of the chapters.

TABLE OF CONTENTS:

AVAILABLE: Library of Congress

89816

24.1900 1063, 1160, 1137

S/193/60/000/006/007/015
A004/A001

AUTHOR: Yermolov, I.N.

TITLE: The Ultrasonic URT-6 (URT-6) Thickness Gage

PERIODICAL: Byulleten' tekhniko-ekonomicheskoy informatsii, 1960, No. 6, pp. 33 - 34

TEXT: In 1959 the Tsentral'nyy nauchno-issledovatel'skiy institut tekhnologii i mashinostroyeniya (Central Scientific Research Institute of Technology and Machine Building) (TsNIITMASh) has developed the ultrasonic URT-6 resonance thickness gage, devised for the measuring of thin walls of components the inner side of which is inaccessable. The author reports that wall thicknesses of more than 20 mm are measured with ultrasonic pulse devices operating by the locator principle and manufactured by the "Elektrotochpribor" Plant at Kishinev. The operation principle of the URT-6 gage is based on the excitation of elastic ultrasonic oscillations of the component wall. The oscillation frequency is periodically varied in the range of 3 - 9 Mc. The device is equipped with an electron-ray tube the horizontal line on whose screen is taken as the frequency axis. At certain frequency values, oscillation resonance of the component walls is taking place, and vertical

Card 1/2

89816

S/193/60/000/006/007/015
A004/A001

The Ultrasonic UPT -6 (URT-6) Thickness Gage

splashes - pulses - are appearing in these spots on the frequency axis. Besides resonance pulses of the component, on the screen appears an auxiliary pulse which can be shifted along the frequency axis by turning the handle of the recording device. The thickness is measured by superposing the auxiliary pulse on the resonance pulses of the component, and the measuring result can be read immediately on the scale of the recording device without using graphs, nomograms etc. The URT-6 thickness gage is fitted with a special handle which makes it possible to set the device for measurements of metals which occur rather often, e.g. aluminum, steel, nickel, magnesium, titanium and copper. A 12 mm piezoelectric feeler serves as pickup. The device is supplied from the a-c mains of 110/127/220 v and 50 cps. The author points out that parts with heavily corroded reverse sides, the corrosion depth attaining 1 - 2 mm, cannot be measured. The following technical data are available: thickness measuring range - 0.35 - 50 mm; measuring errors - ±2%; minimum pipe diameter permitting measurement - 10 mm; mean time necessary for one measurement - 10-20 sec; power consumption - 40 w; overall dimensions (length x width x height) - 400 x 350 x 180 mm; weight - 12 kg. There is 1 figure.

Card 2/2

S/046/60/006/02/06/019
B014/B014

AUTHOR: Yermolov, I. L.

TITLE: Sound Diffraction in the Acoustic Path of a Pulsed Flow Detector

PERIODICAL: Akusticheskiy zhurnal, 1960, Vol. 6, No. 2, pp. 198-204

TEXT: In the article under review, the author studies the effect of diffraction upon the signal amplitude of an ultrasonic pulsed flow detector. He determines the limits within which the acoustic path of the flow detector in the solid body (metal) can be replaced by a liquid model. The principle of the flow detector is explained by means of Fig. 1, which represents its acoustic path. Proceeding from the wave equation (1) of the theory of elasticity the author derives formula (9) which describes the field of longitudinal waves. Kirchhoff's boundary conditions are used to study the field of elastic waves which indicate the defects of the object under consideration. Next, formulas (13) and (14) are derived, which describe the field of reflected waves. With the help of (9) and (14) the author derives equation (15) for the acoustic

Card 1/2

Sound Diffraction in the Acoustic Path of a Pulsed Flow Detector

S/046/60/006/02/06/019
B014/B014

path of the flow detector. In a simplified form, equation (15) takes the form of (16). (17) is used to calculate the acoustic path for liquids or gases. A comparison between (16) and (17) indicates that both these expressions are equal if relation (18) holds. The author states that this relation is satisfied in virtually all ultrasonic studies. There are 2 figures and 5 references: 3 Soviet, 1 British, and 1 American.

ASSOCIATION: Tsentral'nyy n.-i. institut tekhnologii i mashinostroyeniya Moskva (Central Scientific Research Institute of Technology and Machine Construction, Moscow)

SUBMITTED: June 6, 1959

√C

Card 2/2

S/032/60/026/04/14/046
B010/B006

AUTHOR: Yermolov, I. N.

TITLE: Measurement of the Size of Material Defects by Means of the Amplitude of an Ultrasonic Signal

PERIODICAL: Zavodskaya laboratoriya, 1960, Vol. 26, No. 4, pp. 446 - 451

TEXT: A method for determining the size of material defects from the amplitude of the signal of an ultrasonic apparatus is described. The maximum amplitude of the ultrasonic pulse reflected from the material defect is measured, the equivalent area of the defect then being determined with the aid of diagrams. Since apparatus produced in the USSR, of the types UZD-7N, V4-7I, UZD-12, and other generators do not provide for signal amplitude measurement, a corresponding calibrated attenuator (Fig. 1, scheme) was designed and connected with the UZD-7N standard apparatus. The pulses recorded by the crack detector are so attenuated by the attenuator, that all amplitudes are of equal height, i.e. that signals of equal hight appear on the light screen. The magnitude of pulse attenuation can be determined from the position of the switch step of the attenuator. The circuit arrangement of the latter corresponds to one recommended

Card 1/2

Measurement of the Size of Material Defects by Means of the Amplitude of an Ultrasonic Signal

S/032/60/026/04/14/046
B010/B006

in publications (Ref. 5). Its performance is checked by comparison measurements with an attenuator of the generator (with standard signals) of the type GSS-6.[29] The depth gauge of the UZD-7N[24] crack detector was substituted by an electronic depth gauge (usually applied in the UZD-7E apparatus). The procedure and the area calculation of the material defect from the values obtained are described. The apparatus described was tested in control measurements of steam turbine disks (made of steel of the types 40, 40Kh, 34KhM, 34KhN3M) at the Nevskiy mashinostroitel'nyy zavod im. Lenina (Neva Machine Construction Plant imeni Lenin). It was found that measurement results obtained by the method described and by the method using control samples are in agreement, but that higher precision is attained by the former method. There are 3 figures and 12 references, 10 of which are Soviet.

ASSOCIATION: Tsentral'nyy nauchno-issledovatel'skiy institut tekhnologii i mashinostroyeniya (Central Scientific Research Institute of Technology and Machine Construction)

Card 2/2

S/032/60/026/04/15/046
B010/B006

AUTHOR: Yermolov, I. N.

TITLE: Selection of Optimum Ultrasonic Frequency for Controlling Solid Welded Joints

PERIODICAL: Zavodskaya laboratoriya, 1960, Vol. 26, No. 4, pp. 452 - 454

TEXT: The selection of sound frequency is of greatest importance in ultrasonic control of welded joints of greater thickness, since ultrasound is strongly weakened by the thickness of the workpiece. An increase in sound frequency increases the echo pulse height. On the other hand, however, the attenuation coefficient and transmissivity of the lubricant (between the sound pickup and the specimen) for ultrasonic waves become less favorable, so that the echo received by the crack detector is weakened. A method for calculating the optimum sound frequency which allows for the path from the sound pickup to the most distant part of the welding seam is given. In the control of welded joints, longitudinal waves are sent into a plastic prism from the piezoelement of the tilted sound pickup. These longitudinal waves are transformed to transverse waves at the interface between the prism and the workpiece. To improve the

Card 1/2

Selection of Optimum Ultrasonic Frequency for Controlling Solid Welded Joints

3/032/60/026/04/15/046
B010/B006

acoustic contact a liquid lubricant is applied between the prism and the workpiece. Using an equation by D. B. Dianov (Ref. 2) for calculating the transmissivity coefficient of a plane sound wave, equation (6) for the determination of optimum sound frequencies is derived. It is seen from a diagram of the optimum frequency as a function of welding seam thickness (Fig. 2, plotted according to data by N. V. Khimchenko, M. R. Gubanova, and I. N. Yermolov) that the optimum frequency, as was to be expected, decreases with increasing welding seam thickness. Optimum frequencies for control of welding seams of 500 mm to 2000 mm thickness can be determined from the diagram. There are 2 figures and 6 Soviet references.

ASSOCIATION: Tsentral'nyy nauchno-issledovatel'skiy institut tekhnologii i mashinostroyeniya (Central Scientific Research Institute of Technology and Machine Construction)

Card 2/2

19600 also 1209

S/032/60/026/011/010/035
B015/B066

AUTHORS: Yermolov, I. N., Krakovyak, M. F., and Matveyev, A. S.

TITLE: Control of Small-diameter Tubings by Means of Ultrasound Reflection and Thickness Gage

PERIODICAL: Zavodskaya laboratoriya, 1960, Vol. 26, No. 11, pp. 1232-1235

TEXT: The thickness gages using ultrasound reflection are particularly suitable for testing thin parts (less than 5-10 mm) in all cases where the ultrasonic pulse generators are inadequate. In tube inspection the intensity of the echo signal may be increased by the use of radiation heads with concave contact surface. The authors already described (Ref. 1) a radiation head with two piezoelectric crystal plates forming an angle. The disadvantage of this design is that the thickness is measured in fact on two points. When using the easily deformable barium titanate, the disadvantage lies in the poor quality of the piezo element. In discussing the interference reduction of the device the authors describe in the

Card 1/2

Control of Small-diameter Tubings by Means of Ultrasound Reflection and Thickness Gage

S/032/60/026/011/010/035
B015/B066

present case the operation of a thickness gage which utilizes ultrasound reflection, and point out the following: one of the main causes of interference is the frequency modulator, i.e., its core which is made of magnetoelectric materials. To avoid resonant vibrations, the core was made of cermets (Ref. 2), as, for instance, in the frequency modulator of the UPT-6 (URT-6) device made of "oksifer 400". As the second cause of interference the authors mention the excitation of elastic vibrations in the piezoelectric crystal plate of the radiation head. The authors showed that this excitation can be reduced by the application of wedge-shaped plates. An attenuation of the surface waves may also be achieved by extending the radiation head, so that also thicknesses in tubes with a diameter of more than 10 mm may be controlled. By means of the URT-6 gage the interference level was lowered and it was thus made possible to measure thicknesses in the range of 0.35 - 50 mm with a maximum error of ±2%. There are 5 figures and 4 references: 3 Soviet and 1 British.

ASSOCIATION: Tsentral'nyy nauchno-issledovatel'skiy institut tekhnologii i mashinostroyeniya (Central Scientific Research Institute of Technology and Machine Building)

Card 2/2

85528

S/032/60/026/011/013/035
B015/B066

1.9600 also 2209

AUTHORS: Yermolov, I. N., Ivanov, O. V., and Krakovyak, M. F.

TITLE: Luminescence and Ultrasound in Flaw Detection

PERIODICAL: Zavodskaya laboratoriya, 1960, Vol. 26, No. 11, pp. 1239-1241

TEXT: The method described has been registered by the Komitet po delam izobreteniy i otkrytiy pri Sovete Ministrov SSSR (Committee of Inventions and Discoveries at the Council of Ministers of the USSR), effective as of March 22, 1960. The novelty of this method is that the part is submerged in phosphor and irradiated with an intense ultrasonic wave. The wetting of the part with the phosphor is thus considerably improved, defects are purified from inclusions, oxide films are destroyed, and a preparation of the part is avoided in this way. The subsequent operations are carried out as usually with the luminescence method. A schematic representation of the device for ultrasonic treatment of parts in phosphor shows that the ultrasonic waves are emitted from a piezoelectric crystal plate and are

Card 1/3

Luminescence and Ultrasound in Flaw Detection

S/032/60/026/011/013/035
B015/B066

focussed by means of a lens, spread in the phosphor solution and are incident upon the part through a screen. The piezoelectric crystal plate is made of quartz or barium titanate and silvered on both sides. The distance of the focus of the lens which warrants the focussing of the ultrasound upon the site of the part to be inspected is calculated from an equation. The generator has a double circuit with self-excitation on two ГУ-50 (GU-50) tubes. The rectifier which feeds the generator has a combined voltage circuit with two 5Ц3С (5TsZS) kenotrons, in a way that the total anode potential will be 900 v. When comparing the figures of making visible cracks due to polishing of a part, it may be seen that the formation of cracks is far better confirmed by the method described than by means of the conventional luminescence method. The authors point out that also the flaw detection by means of dyes could be appreciably improved by using ultrasound. The device described above and designed in the laboratoriya defektoskopii TsNIITMASh (Laboratory for Quality Control of the TsNIITMASh) works at a frequency of up to 800 kc/sec. There are 2 figures.

Card 2/3

85528

Luminescence and Ultrasound in Flaw Detection

S/032/60/026/011/013/035
B015/B066

ASSOCIATION: Tsentral'nyy nauchno-issledovatel'skiy institut tekhnologii i mashinostroyeniya (TsNIITMASh) (Central Scientific Research Institute of Technology and Machine Building (TsNIITMASh))

Card 3/3

ZOREV, N.N., doktor tekhn.nauk; TASHLITSKIY, N.I., kand.tekhn.nauk; KUCHMA, L.K., kand.tekhn.nauk; VERSHINSKAYA, A.D., inzh.; OVUMYAN, G.G., inzh.; ISAYEV, A.I., doktor tekhn.nauk; KIRILLOVA, O.M., kand.tekhn.nauk; KATSNEL'SON, V.Yu., inzh.; LAPIN, N.A., kand.tekhn.nauk; FEDOROV, N.M., inzh.; CHERNYY, A.P., inzh.; MOROZOV, N.A., inzh.; DOGAK, N.S.; ANDREYEV, G.S., kand.tekhn.nauk; MIKHAYLENOK, Ye.I., kand.tekhn.nauk; MAKAREVICH, B.K., kand.tekhn. nauk; YEREMIN, N.I., kand.tekhn.nauk; YERMOLOV, I.N., inzh.; UMNSOV, Ye.P., doktor tekhn.nauk, prof., red.; SOBOLEVA, G.N., red.izd-va; CHERNOVA, Z.I., tekhn.red.

[Engineering problems in the manufacture of heavy machinery] Nekotorye voprosy tekhnologii tiazhelogo mashinostroeniia. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroitel'noi lit-ry. Pt. 2 [Metal cutting and quality control of parts] Obrabotka metallov rezaniem in kontrol' kachestva detalei. 1960. 173 p. (Moscow. TSentral'nyi nauchno-issledovatel'skii institut tekhnologii i mashinostroeniia. [Trudy], vol.99). (MIRA 13:8)

(Machinery industry)
(Metal cutting)
(Quality control)

S/032/61/027/004/028/028
B103/B201

AUTHORS: Gubanova, M. R., Yeremin, N. I., Yermolov, I. N., and Matveyev, A. S.

TITLE: New methods and instruments for the nondestructive material control, developed at TsNIITMASh

PERIODICAL: Zavodskaya laboratoriya, v. 27, no. 4, 1961, 499-501

TEXT: This is a report on the results of the principal studies on defectoscopy, conducted at the laboratoriya defektoskopii (Laboratory for defectoscopy) of the authors' institute (see Association) in the past 2-3 years. Immersion - ultrasonic method. Full immersion. It opens ample possibilities for automation in defectoscopy. The following methods and instruments belong here: A. Laboratory model of ИДЦ-1 (IDTs-1) defectoscope for the detection of faults in turbine disks. The device may be used also for other workpieces by allowing the tank, in which they are to be dipped, to be modified conformingly. B. Apparatus and methods of automatic control of thin-walled tubes by Lamb's waves. The ИДЦ-2 (IDTs-2) defectoscope used for this purpose is able to detect

Card 1/4

New methods and instruments for ...

both the faults inside the metal and on the inner and outer tube surface. C. Immersion - ultrasonic thickness gauge ИТЦ-3 (ITTs-3). It operates without contact with the workpiece (tube) basing on the n-times reflected pulse. Partial immersion. D. The acoustic contact between radiator and workpiece is brought about by a jet of water. This method is suited for large-sized products (large-size sheets and tubes). Penetrating acoustic irradiation. E. Ultrasonic defectoscope ШД-1 (ShD-1) for the automatic control of tires. The types under A - E are intended for control in series production, and thus have a closely specialized range of application. Ultrasonic pulse-contact method. F. Control of thick welded joints (up to 350 mm) (electric slag method) is performed by means of a УДЦ-10 (UDTs-10) defectoscope operating with four frequencies. A neon lamp (12 kg weight) serves as an automatic signal lamp for it. Thicker welded joints caused the laboratory to examine the basic laws governing the propagation of ultrasonics. The result of these studies has been the УДЦ-11 (UDTs-11) defectoscope which is able to control welded joints up to 500 mm thick, and detects defects of 3-5 mm. G. Original methods of controlling welded products by layers have been developed. H. A method of determining the magnitude of defects in

forgings on the basis of the amplitude of the reflected signal has been worked out. I. Resonance - ultrasonic method. The respective control systems have been improved. The resonance-defectoscope thickness gauges УРТ-5 (URT-5) and УРТ-6 (URT-6) permit thickness to be read off a scale without diagrams nor computation devices. This is achieved by an additional measuring circuit with a straight-line frequency adjustable condenser. J. Various disturbances have been eliminated. K. Radioscopy with X- and gamma rays. Optimum conditions have been worked out for this process, and models of scintillation recorders of radiation have been developed. L. Both advantages and drawbacks of the gamma scintillation method have been examined. M. A special magnetic defectoscope ДКН-1 (DKN-1) has been developed for the control of drive shafts and other large workpieces with the greatest possible mechanization of the process. Test models are used for controlling the cold-rolling process and pipes at the Novo-Kramatorskiy mashinostroitel'nyy zavod (Novo-Kramatorskiy Machine-building Works), and axles at the Novocherkasskiy elektrovoznyy zavod (Novocherkassk Electric Locomotive Works). N. A special magnetic transportable defectoscope ДМП-2 (DMP-2) which operates with magnetic powder defectoscopy and serves for layer examination of defects deep

New methods and instruments for ...

inside welded joints, has been developed. The device is produced in series at the Kishinevskiy zavod "Elektrotochpribor" (Kishinev Works "Elektrotochpribor"). O. A demagnetization apparatus has been developed, which removes the remanence of magnetism better than all systems used hitherto. P. A device has been worked out on the basis of the resonance method, which determines the tendency to intercrystallite corrosion in austenite steels using electromagnetic high-frequency methods ("vortex" methods). Q. Studies have been conducted concerning the use of high-frequency defectoscopy in the automatic quality control of non-ferromagnetic products, especially of tubes. R. The physical and technological bases of capillary methods of defectoscopy have been examined, and a capillary ultrasonic control method has been devised. It bases upon the action of intensive ultrasonic waves on a product dipped into a wetting liquid.

ASSOCIATION: (TsNIITMASh) Tsentral'nyy nauchno-issledovatel'skiy institut tekhnologii i mashinostroyeniya (Central Scientific Research Institute of Technology and Machine Building)

Card 4/4