

KAZINIK, Mikhail Lazarevich; LIVSHITS, N.S., nauchn. red.;
CHERNYAK-BYKHOMAYAYA, S.A., red.

[Laboratory work in radio engineering] Labo atornye ra-
boty po radiotekhnike. Moskva, Vysshaya shkola, 1964. 93 p.
(MIRA 17:8)

S/050/63/000/001/001/007
D218/D307

AUTHORS: Khvostikov, I. A., Izakov, M. N., Kokin, G. A., Kuri-
lova, Yu. V. and Livshits, N. S.

TITLE: Studies of the stratosphere with the aid of meteorological rockets in the USSR

PERIODICAL: Meteorologiya i gidrologiya, no. 1, 1963, 3-8

TEXT: This review paper was first read to the symposium on meteorological rockets and satellites which was held in Washington on April 23-25, 1962. The following topics are reviewed: (1) seasonal, latitudinal and longitudinal temperature variations, (2) sudden increases in the temperatures of the stratosphere over the Arctic, (3) temperature stratification of the stratosphere, (4) thermal conditions in the upper stratosphere during the polar night, and (5) data on winds in the stratosphere. There are 1 figure, 1 table and 14 references (6 Soviet-bloc references).

ASSOCIATION: Tsentralnaya aerologicheskoyaya observatoriya (Central Aerological Observatory)

Card 1/1

Livshits, N.S.

10

S/169/63/000/003/006/042
D263/D307

AUTHORS: Alekseyev, P.P., Besyadovskiy, Ye.A., Biryukova, L.A., Golyshchikov, G.I., Ivanovskiy, A.I., Izakov, M.N., Kokin, G.A., Kurilova, Yu.V., Livshits, N.S., Petrov, A.A., Rozhdestvenskiy, B.G., Solov'yev, N.V., Speranskiy, K.Ye., Khvostikov, I.A., Shvidkovskiy, Ye.G. and Shcherba, I.A.

TITLE: Study of the upper layers of the atmosphere with the aid of meteorological rockets

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 3, 1963, 28, abstract 3A166 (Tr. Vses. nauchn. Meteorol. soveshchaniya. T.I.L., Gidrometeoizdat, 1962, 91-103)

TEXT: In the present review-type article the authors give the results of studies carried out at Tsentralnaya aerologicheskaya observatoriya (Central Aerological Observatory) on atmospheric sounding with meteorological rockets. Measuring methods are described and the main points are given for obtaining such atmospheric character-

Card 1/2

S/169/63/000/003/006/042
D263/D307

Study of the upper layers ...

istics as pressure, temperature, and wind. Certain results are given: data of seasonal temperature variations at heights up to 50 km in the middle latitudes of the USSR and in polar regions, cases of sudden warming up, characterization of temperature distribution curves, a table characterizing the temperature inversion below the stratopause under the conditions of polar night, and data regarding the circulation in the upper atmospheric layers. Information is given on the constructed meridional sections of temperature fields and on the zonal component of the gradient wind. (25 references).

Abstracter's note: Complete translation

Card 2/2

DAYNEKO, Z.N.; LUK'YANOV, M.A.; LIVSHITS, N.Ya.

Return valves made from seamless steel pipes for steam lines.
Gidroliz. i lesokhim. prom. 9 no.7:24 '56. (MIRA 12:3)

1. Bobruyskiy godroliznyy zavod.
(Valves)

LAPUSHKIN, Andrey Dmitriyevich; LIVSHITS, Natan Yevlevich; KONDRASHOV,
A.V., red.; VERINA, G.P., tekhn.red.

[Supplying transportation construction with materials and
equipment] Material'no-tekhnicheskoe snabzhenie transportnogo
stroitel'stva. Moskva, Gos.transp.zhel-dor.isd-vo, 1959.
157 p. (MIRA 12:6)

(Transportation)

SHUBNIKOV, A.K., doktor tekhn.nauk.prof.; LIVSHITS, N.Ye., inzh.

"Economical use of materials in construction for the transportation industry" by A.V. Kondrashov. Reviewed by A.K. Shubnikov, N.E.
Livshits. Transp. stroi. 12 no.2:59-60 F '62. (MIRA 15:7)
(Building materials) (Construction industry—Costs)
(Kondrashov, A.V.)

LIVSHITS, P.S.

USSR/Physics - Oscillating Bodies

Jun 52

"Problem of Forced Oscillations of Systems Striking a limiter," P. S. Livshits

"Zhur Tekh Fiz" Vol XXII, No 6, pp 921-931

Analyzes theoretical fundamentals necessary for design of any striking mechanisms with the operating part performing oscillatory motion limited by impact. Refers to work by I. G. Rusakov and A. A. Kharkevich in "Zhur Tekh Fiz" Vol XII, No 11, 12, 1942, and presents formulas detg velocity of impact and best conditions of construction. Exptl test of formulas was satisfactory. Received 11 Jan 51.

219T80

LIVSHITS, P. S.

LIVSHITS, P. S. - "Classification and evaluation of the aspects of production of the electric-brush industry". Kudino, 1955. Acad Sci USSR. Inst of Metallurgy imeni A. A. Baykov. Min Electrical Industry USSR. State Union Sci Res Electrocarbon-Part Inst. Affiliate. (Dissertation for the Degree of Candidate of Technical Sciences).

SO: Knizhnaya Letopis' No. 46, 12 November 1955. Moscow

LIVSHITS, P.S.

137-1958-2-2710

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 2, p 73 (USSR)

AUTHOR: Livshits, P.S.

TITLE: Using the Methods of Mathematical Statistics to Study the Properties of Ceramet (Metal-ceramic) Compounds (Primeneniye metodov matematicheskoy statistiki k izucheniyu svoystv metallokeramicheskikh kompozitsiy)

PERIODICAL: V sb.: Poroshkovaya metallurgiya. Nr 4. Moscow, 1956, pp 5-21

ABSTRACT: The possibility is explored of using the formulae and methods of mathematical statistics to characterize the properties of industrial ceramet materials manufactured by standard processes; the output of semifinished electric brushes at the "Elektrougli" plant (translation: Electrocarbons) is taken as an example. Included are tables and diagrams representing statistically a number of the technological characteristics of semifinished electric brushes (Cu-graphite, Cu-graphite-Pb, and others). The arrangement and distributions exhibited make possible certain inferences concerning the characteristics of mass-produced semifinished electric brushes and make possible also an estimation of the properties of the entire output of the industry.

Card 1/1

I. B.

1. Ceramic compounds--Analysis

LIVSHITS, P.S., inzhener.

Problem of using statistical and mathematical methods in working
out All-Union State Standards for industrial production. Standarti-
zatsiia no.2:32-39 Mr-Ap '56. (MLRA 9:5)
(Standardization)

LIVSHITS, P.S., inzhener.

Application of preferred numbers to the selection of dimensions
for electric contact brushes. Standartizatsiia no. 4:17-20 J1-Ag
'56. (MLBA 9:11)

(Brushes, Electric--Standards)

LIVSHITS, P.S., inzhener.

Determination of brush characteristics by statistical methods.
Vest.elektroprom. 27 no.5:43-48 My '56. (MLRA 9:12)

1. FNIIEI MEP.
(Brushes, Electric--Quality control)

LIVSHITS, P.S.

28-1-2/42

AUTHOR: Livshits, P.S., Engineer

TITLE: Mathematical Computations for Establishing Industrial Mass Production Standards (Matematicheskiye raschety pri sostavlenii standartov na massovuyu produktsiyu promyshlennogo proizvodstva)

PERIODICAL: Standartizatsiya, # 1, Jan-Feb 1957, p 9-14 (USSR)

ABSTRACT: The article proposes a statistical probability-curve system as one of the possible computation systems applicable in establishing "ГОСТ" standards for mass production quality. The author states that the work done during the past years on standardization problems of industrial mass production has shown that the probability methods are applicable for this purpose. The article contains 3 diagrams, 2 tables and 5 Slavic references, all Russian.

ASSOCIATION: Filial Nauchno-issledovatel'skogo elementno-elektrologol'nogo instituta.

AVAILABLE: Library of Congress
Card 1/1

LIVSHITS, P.S., Cand Tech Sci -- (diss) "Classification
and evaluation of ^{perfection of} electric brush production." Mos,
TsBTI ^(Sci Res Inst) of Electric Industry, 1958, 16 pp (Min of
Higher Education USSR. Inst of Nonferrous Metals
and Gold im M.I. Kalinin) 150 copies (KL, 32-58, 108)

- 30 -

Livshits, P.S.
LIVSHITS, P.S., inzh.

Evaluation of the commutating properties of electric brush materials. Elektrichestvo no.1:81-84 Ja '58. (MIRA 11:2)

1. Filial nauchno-issledovatel'skogo instituta elektrotekhnicheskoy promyshlennosti.
(Brushes, Electric)

Livshits, P.S.

110-2-12/22

AUTHOR: Livshits, P.S. (Engineer)

TITLE: Volt-ampere and frictional characteristics of electrical brush materials (Vol't-ampernyye i friktsionnyye kharakteristiki elektroshchetchnykh materialov.)

PERIODICAL: Vestnik Elektromyshlennosti, 1958, No.2, pp.43-46 (USSR)

ABSTRACT: This article gives the results of investigations of the transitional voltage-drop in a pair of brushes and the coefficient of friction of brushes on a commutator; also the influence of certain factors on these characteristics. Special test rigs known as short-circuited collectors with reciprocating traverse were used, but unfortunately, the accuracy is poor. There are various chance errors and, therefore, only statistical and not functional relationships can be established between the variables studied. A brief review is then given of the method of correlation analysis which was applied to the relationship between the current-density in the brush and the transient voltage-drop at the sliding contact. Well-defined relationships were established, as will be seen from the curves given in Fig.1 for test results on materials grades ЭГ4, and МЭС7. Each line on Fig.1 relates to one pair of specimens. By mathematical treatment of the data given in Fig.1 it was possible to graph correlational relationships in Fig.2, which also includes similar graphs for materials of grades ЭГ-14, ЭГ-15, М-6 and МГ-2. Graphical

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110-2-12/22

Volt-ampere and frictional characteristics of electrical brush materials.

representation is inconvenient and a formula is given that represents the curves of Fig.2. This table includes constants which are tabulated for the different materials in Table.1, and from these values the voltage drop is calculated as a functional current for the various materials. (The same formula may be used to determine the expected scatter of results; the constants required for this purpose are also given in Table 1. A volt-ampere characteristic for material $\exists\Gamma$ -2A calculated in this was is given in Fig.3. The correlation method was also applied to experimental data relating the coefficient of friction to the circumferential speed of the commutator. The appropriate relationship for various kinds of material are plotted in Fig.4. The graphs are then expressed analytically; the appropriate constants are in Table 2. An example of friction calculations is given. The remainder of the article is concerned with the permissible limits of application of the results given. In conclusion, mention is made of the influence of temperature on the characteristics studied. With a sliding contact in the absence of current, the influence of temperature is large, but is much greater when current is flowing. Published data states that in the temperature range of 70 - 110°C the voltage drop and friction fall, but if the temperature is further raised they commence to rise again. The experimental data given in this work were obtained with a commutator

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110-2-12/22

Volt-ampere and frictional characteristics of electrical brush materials.

temperature of 55 - 60°C. There are 2 tables, 5 figures, 6 literature references (5 Russian, 1 English).

SUBMITTED: April, 10, 1957.

ASSOCIATION: FNII EP.

AVAILABLE: Library of Congress.

Card 3/3

AUTHOR: Livshits, P.S., Engineer

SOV-28-58-4-9/35

TITLE: Evaluating the Uniformity of Commercial Mass Production Characteristics (Otsenka odnorodnosti svoystv massovoy produktsii promyshlennogo proizvodstva)

PERIODICAL: Standartizatsiya, 1958, Nr 4, pp 31 - 33 (USSR)

ABSTRACT: Information is presented on a method of calculating numerical values of technical factors determining the characteristics of mass production. Distribution parameters, the coefficient (K) and the gradient (N) of variability are computed. Values of the gradient of variability indicate changes in the production characteristics and make the evaluation of the uniformity of these characteristics possible. N can be applied to standards and helps to solve various

Card 1/2

Evaluating the Uniformity of Commercial Mass Production Characteristics SOV-28-58-4-9/35

problems relating to the techniques and economics of mass production. There are 3 graphs and 6 Soviet references.

ASSOCIATION: Moskovskiy filial Nauchno-issledovatel'skogo instituta elektrotekhnicheskoy promyshlennosti (The Moscow Branch of the Scientific Research Institute of Electro-Engineering Industry)

1. Industrial production--Analysis
2. Industrial production --Economic aspects
3. Industrial production--Standards

Card 2/2

8(5)

AUTHOR:

Livshits, P. S., Engineer

SOV/195-56-12-13/87

TITLE:

Calculation of Losses in the Sliding Contact of Electrical Machines (Raschet poter' v skol'zyashchem kontakte elektricheskikh mashin)

PERIODICAL:

Elektrichestvo, 1958, Nr 12, pp 55 - 58 (USSR)

ABSTRACT:

In the present paper formula (7) for the specific losses in the sliding contact of electrical machines is derived. In the majority of practical cases where sliding contacts are employed the specific losses may be determined by introducing into the above formula the values of A (free term of the volt-ampere characteristic equation), B (angular factor of the volt-ampere characteristic equation), C (free term of the friction characteristic equation), D (angular factor of the friction characteristic equation). Formula (7) also allows to solve the problem of the choice of the appropriate sliding contact surface if the current load is given. Formula (7) is solved with respect to the total losses and is transformed into formula (8). The analysis of this formula shows that

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Calculation of Losses in the Sliding Contact of
Electrical Machines

SOV/105-58-12-13/28

at various values of A, B, C, and D, i.e. among various types of electric brush materials, certain optimum current densities with which the losses in the sliding contact are reduced to a minimum are bound to exist. The regularity in the change of the total losses depends, strictly speaking, on the relation of A, B, C, and D to one another. The influence of B is of particular importance. If $B > 0.02$, i.e. if the volt-ampere characteristics is markedly inclined, the curves of total loss show a more or less distinct minimum. The new data exposed in the present paper permit to give the concept of nominal current density a definite physical significance. It is suggested to regard the nominal current density in the sliding contact of electrical machines as being that particular current density, in which the total loss curve shows the minimum value at a certain velocity v . It can be seen from the table that the nominal current density lies in the range of 11 to 15 A/cm² in the case of "black" (without metal) electric brush material types. In the case of "colored" (with metallic) types, the values are higher, i.e. in the range of 15-20 A/cm². A corresponding modification of the State standards is

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Calculation of Losses in the Sliding Contact of
Electrical Machines

SOV/105-58-12-13/28

requested. There are 3 figures, 2 tables and 7 Soviet
references.

SUBMITTED: April 21, 1958

Card 3/3

LIVSHITS, P.S., inzh.

Evaluating the uniformity of properties of industrial mass production.
Standartizatsia 22 no.4:31-33 J1-Ag '58. (MIRA 11:10)

1. Moskovskiy filial Nauchno-issledovatel'skego instituta elektrotekhnicheskoy promyshlennosti.
(Standards, Engineering) (Quality control)

LIVSHITS, P.S., inzh.

~~SECRET~~ Volt-ampere and friction characteristics of electric brush materials.
Vest. elektroprom. 29 no.2:43-46 F '58. (MIRA 11:3)

1. FNII NP.

(Brushes, Electric)

SOV/110-58-9-14/20

AUTHOR: Livshits, P.S. (Engineer)

TITLE: On the Construction of Brushes (in connection with the issue of Standard GOST 8611-57) (O konstruktivnom oformlenii elektroschetok (k utverzhdeniyu GOST 8611-57)

PERIODICAL: Vestnik Elektromyshlennosti, 1958, Nr 9, pp 58-60 (USSR)

ABSTRACT: The new All-Union State Standard GOST 8611-57 covering the dimensions and construction of brushes for electrical machines was issued in July 1958. It does not apply to brushes for special electrical machines such as are used in the aviation and automotive industries. This article discusses the novelties of the new specification. One of its main sections rationalises the range of brush sizes, offering a standard decimal series of preferred numbers. The method of selecting brush length, width and height according to the standard is discussed, and the main table of new standard dimensions is given; it includes 89 different sizes of brush as against 161 in the old standard. However, it will still be necessary to produce some of the brushes not included in the new standard in order to keep existing machines running. The method of tolerances is

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SOV/110-58-9-14/20

On the Construction of Brushes (in connection with the issue of Standard GOST 8611-57)

somewhat changed in the new standard. The use of sectionalised brushes is permitted. The sections dealing with brush fittings, such as current leads, have been considerably revised and extended. The variety of constructions of leads is reduced. Unlike previous issues, this standard includes clauses on brush-holder design and permits the use of steel for this purpose. A major advantage is that by cutting down the number of brushes the new standard should encourage production in larger batches and so promote the introduction of better methods of manufacture.

There are 1 table, 1 figure and 4 Soviet references.

1. Carbon brushes--Production
2. Carbon brushes--Specifications

Card 2/2

110-58-5-6/25

AUTHORS: Fialkov, A.S., Candidate of Technical Sciences and
Livshits, P.S., Engineer.

TITLE: Problems in the Production of Electrical Brushes
(Nekotoryye voprosy proizvodstva elektroshchetok)

PERIODICAL: Vestnik Elektropromyshlennosti, 1958, Vol 29, Nr 5,
pp 18 - 22 (USSR).

ABSTRACT: To meet present requirements, brushes must have improved commutating properties, must be capable of operating at higher speeds and current-densities and must resist wear. The commutating properties of a brush depend on its structure. Natural graphite compositions are the worst in this respect; the best are disperse carbonaceous materials of the type of carbon-black or wood charcoal powder. A series of carbon-black/graphite brush materials has been developed to give brushes with a range of commutating properties. They are used in blooming mill generators but although commutation is improved the brushes have a short life and it is becoming important to reduce the wear of brushes. Much can be achieved by the use of appropriate binders in combination with carbon-black. Brush wear can also be reduced by improving the commutator surface; an effective way of

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110-58-5-6/25

Problems in the Production of Electrical Brushes

doing this is to use the so-called lubricating brushes of natural graphite, which give the requisite special finish to the commutator. Thus, brushes of the type required to give good commutating properties are used in combination with others that help to form the commutator surface. This arrangement is described at some length.

It is important to be able to run brushes at higher commutator surface speeds. Reduced mechanical friction losses and a lower natural frequency of vibration of the brushes are also desired. To do this it is helpful to reduce the pressure on the brushes and to make them lighter in weight. Light-weight brushes can be made of porous materials. Tests have been made on trial samples of brushes working on commutators with peripheral speeds of some 40 - 50 m/sec. At present, current densities in sliding contacts are governed by standard rules which set current-density limits for particular grades of brushes. . The current density

rises from 6 A/cm² for pure carbon compositions to 20 A/cm² for brushes containing metal. As the current density is increased the total contact surface is reduced. The mechanical losses fall and the electrical losses rise.

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110-58-5 6/25

Problems in the Production of Electrical Brushes

Consequently, the total loss curve has a minimum value and is of the shape shown in Fig.1. Temperature limitations on brushes are usually imposed not so much by the brushes themselves as by the other materials used in the machine. In particular, it may not be possible to maintain the requisite finish on the commutator if the brushes are not of suitable composition. Brushes are made that are able to work at commutator surface temperatures of 120 - 180 °C. Brushes of particularly good mechanical properties are required for electric traction applications. Recent developments in this field have called for improved brushes. One type of material that meets the new requirements is grade EG-2P-2. Its special feature is that the basic coke-graphite structure is very porous. These pres are impregnated with carbonaceous substance, which is stoved to form a further coke basis linked with the first one. The resulting material is very strong. The operating properties of brushes are improved if they are worked in an inclined rather than a radial position. Inclined brushes are widely used in equipment for aviation, automobiles and tractors but, in general, the electrical

Card3/4

Problems in the Production of Electrical Brushes

110-58-5-6/25

engineering industry underestimates the importance of this factor. Another and very effective measure is to use a sectional construction in which the brush is sub-divided. Graphs of zones of sparkless operation when using solid and sub-divided brushes on a machine are shown in Figure 2. Considerable improvement results from sub-division and the true area of sliding contact is increased.

A number of constructions of brushes are illustrated in Figure 3. A further possibility is to use sub-divided brushes in which different parts are made of different materials; the leading edge is made of natural graphite and the trailing edge of hard carbon-black composition. This gives the same effect as mixed arrangements. Very often, considerable improvement can be effected without changing the brush-holders. There are 3 figures and 3 references, 1 of which is French and 2 German.

ASSOCIATION: Branch of NII EP

SUBMITTED: April 19, 1957

Card 4/4

LIVSHITS, P.S.

Structure and properties of copper - graphite mixtures. Zhur.prikl.
khim. 31 no.3:394-402 Nr '58. (MIRA 11:4)
(Copper) (Graphite)

LIVSHITS, Pavel Sergeevich; BELKIN, M.D., red.; BORUNOV, N.I., tekhn.
red.

[Brushes for electric machinery; technology, testing, characteristics,
design and use] Shchetki dlia elektricheskikh mashin; tekhnologiya,
ispytaniia, kharakteristiki, konstruirovaniie, ekspluatatsiia. Moskva,
Gos. energ. izd-vo, 1961. 214 p. (MIRA 14:8)
(Brushes, Electric)

LIVSHITS, P.S., kand.tekhn.nauk; SYSOYEVA, L.P., kand.tekhn.nauk;
TEMKIN, I.V., inzh.

New brands of materials for electric brushes. Vest. elektroprom.
31 no.8:17-19 Ag '60. (MIRA 15:5)
(Brushes, Electric)

LIVSHITS, P.S., kard.tekhn.nauk

Optimum operation of an electric slide contact. Vest. elektroprom.
33 no.8:47-50 Ag '62. (MIRA 15:7)
(Electric contactors)

LIVSHITS, P.S.

Comparative analysis of the uniformity of compact and powder metal properties. Fiz. met. i metalloved. 14 no.2:309-311 Ag '62. (MIRA 15:12)

1. Filial Vsesoyuznogo nauchno-issledovatel'skogo instituta elektromekhaniki.

(Metals) (Metal powders)

LIVSHITS, P.S., kand. tekhn. nauk

Effect of specific pressure on the life of electric brushes.
Vest. elektroprom. 34 no.8:46-48 Ag '63. (MIRA 16:9)

(Brushes, Electric)

LIVSHITS, P.S., kand. tekhn. nauk (Moskva)

Experimental data on the use of electrical brushes with increased
current density in a slide contact. Elektrichestvo no.8:73-76
Ag '63. (MIRA 16:10)

LIVSHITS, P.S., kand. tekhn. nauk

Standardization of the makes of electric brushes. Elektrstekhnika 35 no.5:27-30 My'64. (MIRA 17:8)

LIVSHITS, P.S., kand. tekhn. nauk; BORDACHENKOV, A.M., inzh.; CHIKUNOV, O.V.,
inzh.

Determination of the operating characteristics of traction motor brushes.
Elektrotehnika 36 no.7:34-36 J1 '65. (MIRA 18:7)

ACC NR: AP6036906 (A) SOURCE CODE: UR/0226/66/000/011/0085/0088

AUTHOR: Livshits, P. S.

ORG: Branch of the All-Union Scientific Research Institute of Electromechanics
(Filial vsesoyuznogo nauchno-issledovatel'skogo institut elektromekhaniki)

TITLE: Some regularities in the changes of properties of contact materials
prepared by methods of powder metallurgy

SOURCE: Poroshkovaya metallurgiya, no. 11, 1966, 85-88

TOPIC TAGS: powder metal, graphite, carbon black, copper, contact
material, elastic modulus, friction coefficient, RESISTIVITY, ELECTRIC
CONDUCTOR

ABSTRACT: Some regularities in the changes of properties of powder materials
are described for forming an electric sliding contact, depending on the ratio of
graphite, carbon black, and copper introduced into these materials. The character-
istics examined include: elastic modulus of the first type, specific weight,
resistivity, transient voltage drop, friction coefficient, wear, and correlation
index. Some of these characteristics were analyzed simultaneously; the relations
existing between pairs of characteristics are described. The authors note that the

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ACC NR: AP6036906

above regularities were determined without data of actual tests. The factual data for plotting the curves were obtained on the basis of earlier industrial research with the use of mathematical statistics. Orig. art. has: 1 figure. [Based on author's abstract] [NT]

SUB CODE: 11/SUBM DATE: 06Jul66/ORIG REF: 004/

2/2

LIVSHITS, Pavel Yuri'yevich; POMIN, Kirill Aleksandrovich; SEMENENKO, P.A.,
red., inzh.; FREGER, D.P., tekhn.red.

[Knurling convex numerical symbols on steel disks; the practice
of the "Svoboda" Plant in Leningrad] Nakatyvanie vypuklykh
tsifrovyykh znakov na stal'nykh diskakh; opyt Leningradskogo
zavoda "Svoboda." Leningrad, 1956. 10 p. (Leningradskii dom
nauchno-tekhnicheskoi propagandy. Informatsionno-tekhnicheskii
listok, no.42. Mekhanichskaia obrabotka metallov) (MIRA 10:12)
(Marking devices)

SOV-113-58-10-4/16

AUTHORS: Livshits, P.Yu., Koganer, V.E.

TITLE: An Electronic Fuel Injection Control System (Sistema elektronogo upravleniya vpryskom topliva)

PERIODICAL: Avtomobil'naya promyshlennost', 1958, Nr 10, p 12 - 15 (USSR)

ABSTRACT: The Tsentral'noye konstruktorskoye byuro toplivnoy apparatury - TsKB TA (Central Designing Office for Fuel Apparatus) developed an electronic fuel injection control system. Figure 1 shows the circuit diagram of this system. It consists of a transistorized kipp oscillator, a distributor and electromagnetic injection nozzles. The electronic unit is controlled by various transducers, for example a vacuum transducer in the intake channel, engine temperature transducer, choke transducer and a transducer for sudden accelerations of the engine. Tests were conducted on an ordinary one-cylinder L-head engine "L-2". A graph (Figure 9) shows that the engine with electronic fuel injection control possesses a higher efficiency than with an ordinary carburetor. TsKB TA

Card 1/2

An Electronic Fuel Injection Control System

SOV-113-58-10-4/16

is now testing the electronic fuel injection control system on a four-cylinder engine and on a vehicle. There are three graphs, six diagrams and 1 circuit diagram.

ASSOCIATION: Tsentral'noye konstruktorskoye byuro toplivnoy apparatury
(Central Designing Office for Fuel Apparatus)

1. Fuel injectors--Control systems 2. Electronics--Applications

Card 2/2

LIVSHITS, P.Yu.; LOPATIN, V.S.; MARKOVA, K.G.; ROGOV, M.A.

Electronic device for moisture measurement in FIV retted flax
tow. Tekst. prom. 25 no.3:70-71 Mr '65. (MIRA 18:5)

1. Vedushchiye inzhenery Leningradskogo spetsial'nogo konstruktorskogo byuro tekstil'noy promyshlennosti (for Livshits, Lopatin, Markova). 2. Glavnyy konstruktor Leningradskogo spetsial'nogo konstruktorskogo byuro tekstil'noy promyshlennosti (for Rogov).

LIVSHITS, P. Z.
USSR/Engineering -- Stress

FD-2616

Card 1/1 : Pub. 41/2/21

Author : Livshits, P. Z., Leningrad

Title : ~~On the distribution of stresses along the contact surface in the hot fitting of a constant-thickness disc on a solid shaft~~

Periodical : Izv. AN SSSR. Otd. Tekh. Nauk 4, 23-42, Apr 1955

Abstract : Studies the stress distribution when a disc (or bushing) is fitted onto a shaft. Presents a method for the theoretical determination of stresses based on the work of A. I. Lur'ye. The suggested method differs from previously proposed ones in that it takes into account the friction on the contact surface. Formulae, tables. Eleven references, 8 USSR.

Institution :

Submitted : January 31, 1955

LIVSHITS, P.Z., Cand Phys-Math Sci --(disc) " On the concentration
of tensions in ^{the} ~~axial~~ ^{fly} ~~axial~~ ^{parts designed} ~~axial~~ ^{details} ~~axial~~ ^{copied}
~~for~~ ^{for} structural strength in machine building." Len, 1958. 22 pp
with drawings (Min of Higher Education USSR. Len Polytechnic Inst
in M.I.Kalinin). 100 copies. Bibliography: pp 22 (11 titles).
(KL, 28-58, 92).

LIVSHITS, P.Z.

Calculating the tightness of flanged joints in compressors and
low-pressure blowers. Trudy Len. khim.-farm. inst. no.4:105-111
'58. (MIRA 12:12)

(Chemical engineering--Equipment and supplies)
(Flanges)

LIVSHITS, P.Z.

Distribution of contact pressure in the tight fitting of a disk
on a short shaft with free faces. Trudy Len. khim.-farm. inst.
no.4:115-122 '58. (MIRA 12:12)
(Disks, Rotating)

LIVSHITS, P.Z.

Distribution of stresses on the smooth part of a bolt stem
subjected to static loads. Trudy Len. khim.-farm. inst. no.4:
123-137 '58. (MIRA 12:12)
(Bolts and nuts--Testing) (Strains and stresses)

AUTHOR: Livshits, P.Z.

SOV/24-58-9-9/31

TITLE: On the Distribution of Contact Pressure Along the Circumference of a Rotating Disc (O raspredelenii kontaktnogo davleniya po posadochnoy dline vrashchayushchegosya diska (vtulki))

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Technicheskikh Nauk, 1958, Nr 9, pp 66 - 73 (USSR)

ABSTRACT: The author has discussed earlier (Ref 1) the stress distribution along the surface of contact of a long massive shaft in fitting a stationary disc of constant thickness with a given tolerance for the case when the outside radius of the disc is considerably greater than the inner. This paper gives the solution of a similar problem for a rotating disc for different ratios of the radii and given boundary conditions on the outer surface. The case of uniformly distributed loading is discussed in detail. Graphs of the contact pressure distribution for various angular velocities are given. It is noted that at the operating rpm, as in the whole range of angular velocities over approximately half the contact circumference, the required pressure exceeds that given by Lamé's well-known formulae for

Card1/2

SOV/24-58-9-9/31
On the Distribution of Contact Pressure Along the Circumference of
a Rotating Disc

rotating thick-walled cylinders. Finally graphs of the pressure on the sides of the discs are given for different combinations of parameters depending on the relative contact circumference. There are 6 figures and 4 Soviet references, and 3 tables.

SUBMITTED: April 14, 1958

Card 2/2

LIVSHITS, P.Z. (Leningrad)

Stressed state of an elastic cylinder loaded with tangential forces
along the side surface. Insh.sbor. 30:47-56 '60. (MIRA 13:10)
(Elastic plates and shells)

LIVSHITS, P.Z., kand.fiziko-matematicheskikh nauk

Calculation of thermal stresses in cylinders with a finite
length. Energomashinostroenie 7 no.5:24-27 My '61.

(MIRA 14:8)

(Cylinders) (Thermal stresses)

LIVSHITS, P.A.

Distribution of contact stresses in press-fitting of a thin
bushing on a continuous shaft. Trudy Len. khim.-farm. inst.
no. 14:264-271 '62 (MIRA 17:2)

Torsion of a circular cylindrical shaft by an axisymmetric
load distributed along its lateral surface according to an
arbitrary law. Ibid.:272-293

S/179/63/000/001/009/031
E081/E141

AUTHOR: Livshits, P.Z. (Leningrad)

TITLE: The question of the bending of a rod of circular cross section

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye tekhnicheskikh nauk. Mekhanika i mashinostroyeniye, no.1, 1963, 76-91

TEXT: The problem is discussed of the stress distribution in a rod of circular cross section loaded on the lateral sides by normal forces which vary along the axis and around the contour of the section. The displacements are written as derivatives of harmonic functions and the stresses then found from Hooke's law. Using Fourier transforms and Bessel functions, the stress distribution is determined for a rod loaded with constant stress over part of its lateral surface, and numerical values for evaluating the solution are tabulated. The case of a concentrated force is also considered and further numerical values for evaluating this solution are tabulated. There are 2 figures and 3 tables.
Card 1/1 SUBMITTED: April 3, 1962

L 8397-65 EWT(m)/SWP(r) ASD(f)/AFWL/SSD EM
ACCESSION NR: AP4048724

S/0179/64/000/004/0105/0115

AUTHOR: Livchits, P. Z. (Leningrad)

TITLE: Stressed state in an electric cylinder loaded laterally with tangential shearing stresses

SOURCE: AN SSSR. Izvestiya. Mekhanika i mashinostroyeniye, no. 4, 1964, 105-115

TOPIC TAGS: stress analysis, shear stress, stress concentration, stress measurement

Abstract: Some results of the development of a task concerning surface stress handling of a round bar are presented. P. Z. LIVCHITS. K. Zaslava. Iz-vestiya Stenzhnaya Krugovogo Poperechnogo Secheniya. Izv. AN SSSR, OTN Mekhanika i Mashinostroyeniye, 1963, No. 1.

ASSOCIATION: none

Card 1/2

17-2-5
ACCESSION NR: AP4048724

SUBMITTED: 17Feb63

ENCL: 00

SUB CODE: AS

NO REF SOV: 005.

OTHER: 001

JPRS

LIVSHITS, R.

Expand exchange of experience. Den. i kred. 19 no.7:71-72
Jl '61. (MIRA 14:7)

1. Zamestitel' glavnogo bukhgaltera Krymskoy kontory Gosbanka.
(Crimea--Banks and banking)

LIVSHITS, R.

← Some problems of production costs in the U.S.S.R. heavy industry.
Vop. ekon. no.12:81-89 D '61. (MIRA 14:11)
(Costs, Industrial)

LIVSHITS, R., kand.yurid.nauk

Employee vacations. Okhr.truda i sovs.strakh. 5 no.1:20-
21 Ja '62. (MIRA 15:2)

(Vacations, Employee)

LIVSHITS, R.

On transferring employees to other work in the same enterprise or department. Sots. trud 7 no.5:136-143 My '62. (MIRA 15:5)

1. Zamestitel' zaveduyushchego yuridicheskoy konsul'tatsiyey Moskovskogo gorodskogo soveta professional'nykh soyuzov.
(Employees, Relocation of)

KAFTANOVSKAYA, A., yurist.; LIVSHITS, R., kand.yurid.nauk

Industrial accidents and liability. Okhr.truda i sots.strakh.
5 no.11:38 N '62. (MIRA 15:12)
(Employers' liability)

LIVSHITS, R.A., kand.med.nauk (Leningrad)

Cytopenia in a female patient with chronic myeloid leukemia following myelosan therapy. Klin.med. 40 no.6:106-108 Je '62. (MIRA 15:9)

1. Iz kafedry vnutrennikh bolezney (zav. - prof. A.A. Kedrov) Leningradskogo sanitarno-gigiyenicheskogo meditsinskogo instituta.

(METHANE SULFONIC ACID) (LEUKEMIA) (ANEMIA)

KRYLOVSKIY, S.S.; ZOLOTAREVSKAYA A.S. [deceased]; OSTROVSKIY, A.N.;
KRECHINA, L.A.; LIVSHITS, R.G.; GARBER, B.A.

Firing refractory raw materials in a fluidized bed. Ogneupory
30 no.10:43-47 '65. (MIRA 18:10)

1. Nauchno-issledovatel'skiy i proyektnyy institut
metallurgicheskoy promyshlennosti.

USSR/Medicine - Caustics
Medicine - Electrotherapy

Nov/Dec 1947

"Utilization of Ultra-high Frequency and Ultraviolet
Therapy and Iodional Electrolysis in Caustic Soda
Burning of the Alimentary Canal in Children," R. I.
Leshchits, Candidate in Medical Sciences, 32 pp

"Vest Oto-Rino-Lar" No 6

General history of adoption of the stated therapy. Due
to the shock which accompanies such caustic burning,
it has been discovered that ultra-high frequency and
ultraviolet ray treatments are most effective during
the more critical period of the poisoning. Thus, due
to its many advantages, it is hoped that this therapy

LC

USSR/Medicine - Caustics (Contd)

Nov/Dec 1947

will be used on children suffering from caustic soda
poisoning. The author also discusses the use of
iodinal electrolysis (Iodionogal'vanizatsiya). Sub-
mitted at the Moscow City Physico-center (Chief Sur-
geon O. V. Glebova, and Prof S. A. Brushcheyn, Hono-
rary Promoter of Sciences) at the Filatov Children's
Hospital (Director: A. V. Chushkhn).

LIVSHITS, R. I.

LC

34745

Livshits, R.I.

LIVSHITS, R.I. (Moskva)

Physiotherapeutic methods in treating sodium hydroxide poisoning
in children. Vop.kur., fizioter. i lech.fiz.kul't. 22 no.3:59-62
My-Je '57. (MIRA 11:1)

(SODIUM HYDROXIDE) (PHYSICAL THERAPY)

BARDYSHEV, I.I.; LIVSHITS, R.I.

Composition of pine flotation oil. Zhur. Priklad. Khim. 25, 1289-95 '52.
(CA 47 no.21:11165 '53) (MIRA 5:12)

Livshits R1

USSR.

BARDYSHEV, I.I.; LIVSHITS, R.I.

Composition of turpentine obtained from the resin of the Siberian fir (*Abies sibirica* Ledeb., *Pinus sibirica* Turcz., *Abies pichta* Forb.). *Zhurn.prikl.khim.* 26 no.12:1304-1309 D '53. (MIRA 6:11)

1. Tsentral'nyy nauchno-issledovatel'skiy lesokhimicheskiy institut. (Turpentine)

GAFT, Ya.M.. kand.med.nauk; Primalni uchastiye: BRANZBURG, N.A., vrach;
GOL'TS, I.P., vrach; GORELIK, Ye.S., vrach; ZVONKINA, O.M., vrach;
LIVSHITS, R.I., vrach; LUR'YE, Ye.L., vrach; OZHE, N.B., vrach;
RYBAL'SKAYA, V.G., vrach; CHELNOKOVA, A.K., vrach; YAVORSKIY, A.V.,
vrach

Dynamics of the tuberculous process in patients transferred to the
third group of dispensary registration. Probl. tub. 38 no.3:3-8
'60. (MIRA 14:5)

1. Iz protivotuberkuleznogo dispansera No.4 Moskvy (glavny vrach -
zasluzhenny vrach RSFSR S.M.Zamukhovskiy).
(TUBERCULOSIS)

SHAUL'SKIY, F.I., prof., doktor tekhn.nauk; LIVSHITS, R.M., kand.tekhn.
nauk; SOLOGUB, N.K., kand.tekhn.nauk

Calculation of work volume and expenses in lengthening of
station tracks. Zhel.dor.transp. 41 no.11:52-54 N '59.
(MIRA 13:2)

(Railroads--Cost of construction)

RASKIN, Ya.L.; LIVSHITS, R.M.; BERLINA, A.A.

Preparation of graft copolymers based on nitrocellulose and study of their
film-forming capacity. Report No.1. Izokras.mat. 1 ikh prim. no.4:
6-10 '60. (MIRA 13:10)
(Polymers) (Nitrocellulose) (Protective coatings)

RASKIN, Ya.L.; LIVSHITS, R.M.

Methods for the modification of cellulose esters. *Lakokras.mat.1*
ikh prim. no.5:33-37 '60. (MIRA 13:11)
(Cellulose esters)

37449
S/190/62/004/005/026/026
B145/B101

5.3830

AUTHORS: Livshits, R. M., Rogovin, Z. A.

TITLE: Synthesis of graft polymers with compounds of pentavalent vanadium

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 4, no. 5, 1962, 784

TEXT: A method of synthesizing graft polymers without the simultaneous formation of homopolymers is described. The synthesis was carried out with redox systems which consisted of polymers containing reducing groups (e.g., aldehyde or amino groups) and of compounds of pentavalent vanadium or tetravalent cerium (G. Mino, S. Kaizerman, J. Polymer. Sci., 31, 122, 242, 1958). Free macroradicals which may initiate polymerization of monomers contacting them, are formed during the oxidation of the polymers. Chain rupture is caused by a reaction of the growing macroradical with the ions of the oxidizing agent. The synthesis was carried out in aqueous solutions or emulsions of the monomer at $\text{pH} < 5$ and $50 - 60^\circ\text{C}$ with minimum amounts of the vanadium compound. The authors synthesized graft copolymers of dialde-

Card 1/2

LIVSHITS, R.M.; ROGOVIN, Z.A.

Synthesis of graft cellulose copolymers with carbochain polymers in the presence of trivalent manganese pyrophosphate. *Khim.volok* no.6: 38-40 '63. (MIRA 17:1)

1. Moskovskiy tekstil'nyy institut.

ACCESSION NR: AT4017414

8/0000/63/000/000/0100/0106

AUTHOR: Anisova, R. M.; Yegorova, V. N.; Koslov, P. V.; Livshits, R. M.; Rogovin, Z. A.

TITLE: Chemical plasticizing of polymers. I. Chemical plasticizing of nitrocellulose by the implantation of polymethacrylate

SOURCE: Tsellyuloza i yeye proizvodny⁴ye, sbornik statey (Cellulose and its derivatives). Moscow, 1963, 100-106

TOPIC TAGS: plasticizing, plasticizing agent, polymer, copolymer, nitrocellulose, polymethacrylate, polymer thermomechanical property, polymer dynamometric property, nitrocellulose copolymer

ABSTRACT: Using $Ce(NH_4)_2(NO_3)_6$ as the oxidizing and nitrocellulose as the reducing agent, the authors prepared a series of grafted copolymers containing 7.15-95.0% nitrocellulose and 5.0-28.5% polymethacrylate; the maximal polymethacrylate content was obtained in 2 hours. These copolymers were then compared with corresponding mixtures of nitrocellulose and polymethacrylate homopolymers with respect to their thermomechanical and dynamometric properties. The results shown in Figs. 1 and 2 of the Enclosure indicate that the plasticizing effect resulting from the implanta-
Card 1/3

ACCESSION NR: AT4017414

tion of elastic polymer chains into the macromolecules of a rigid polymer is equal to that produced by physical addition of low-molecular-weight plasticizers. The only advantage of chemical plasticizing is the higher value of the modulus of elasticity in the copolymer. Orig. art. has: 2 tables and 4 graphs.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University); Moskovskiy tekstil'nyy institut (Moscow Textile Institute)

SUBMITTED: 01Aug62

DATE ACQ: 06Jan64

ENCL: 01

SUB CODE: OC, MT

NO REF SOV: 008

OTHER: 003

Card 2/3

ACCESSION NR: AT4027414

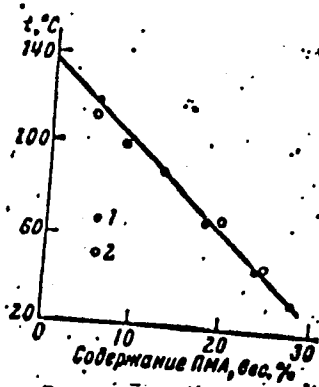


Fig. 1. Dependence of vitrification temperature on the polymethacrylate content (wt. %):
1 - copolymers; 2 - mixtures

ENCLOSURE: 01

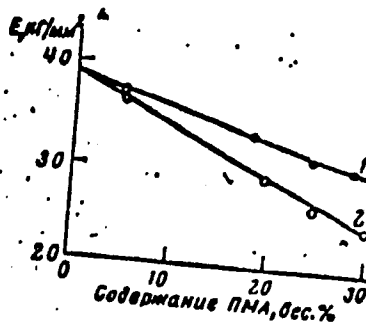


Fig. 2. Dependence of the modulus of elasticity (kg/mm²) on the polymethacrylate content (wt. %):
1 - copolymers; 2 - mixtures

Card 3/3

ACCESSION NR: AT4017417

8/0000/63/000/000/0186/0191

AUTHOR: Movsum-Zade, A. A.; Livshits, R. M.; Rogovin, Z. A.; Konkin, A. A.

TITLE: Synthesis of grafted copolymers of cellulose and polybutylacrylate.

SOURCE: Tsellyuloza i yeye proizvodny*ye, sbornik statey (Cellulose and its derivatives). Moscow, 1963, 186-191

TOPIC TAGS: cellulose, cellulose copolymer, grafted copolymer, polybutylacrylate, copolymerization, polymerization catalyst

ABSTRACT: $Ce(NH_4)_2(NO_3)_6$ was used as the catalyst, the quaternary ammonium salt of diethylaminomethyl dodecyl ester (alkalon D) as the emulsifier and cotton cellulose, hydrated cellulose and butylacrylate as the materials in a synthesis of grafted polymers which, depending on the emulsifier concentration, Ce^{4+} concentration, pH of the medium and temperature, yielded products containing 51-94% cellulose and 6-48% polybutylacrylate. The butylacrylate polymerization rate and the proportion of polybutylacrylate in the polymer were found to rise as the

ACCESSION NR: AT4017417

that of grafting decreased with the pH in tests with 0.05 - 1 mol/liter HNO_3 in the reaction medium. Orig. art. has: 4 tables and 2 graphs.

ASSOCIATION: Moskovskiy tekstil'nyy institut (Moscow Textile Institute)

SUBMITTED: 21Feb63

DATE ACQ: 06Jan64

ENCL: 00

SUB CODE: OC, MT

NO REF SOV: 003

OTHER: 006

APPROVED FOR RELEASE: 06/20/2000, CIA-RDP86-00513R000930310010-4

Card 2/2

L 11.01.5-66 ENT(1)/EWA(j)/EWT(m)/EWP(j)/T/EWA(h)-2 WJ/JK/RM
ACC NR: AR5020058 SOURCE CODE: UR/0081/65/000/012/S130/S130

32
29
B

AUTHOR: Gal'braykh, L.S.; Kryazhev, Yu.G.; Livshits, R.M.

ORG: none

TITLE: Developing new types of graft copolymers 7.4.45

SOURCE: Ref. zh. Khimiya, Abs. 12S849

REF SOURCE: Sb. Khimiya i tekhnol. proizvodn. tsellyulozy. Vladimir, Verkhne-Volzsk. kh. izd-vo, 1964, 241-249

TOPIC TAGS: copolymer cellulose, graft copolymer

TRANSLATION: A study of cellulose oxidation by salts of quadrivalent cerium for synthesizing graft polymers has shown that a macroradical is formed at the result of the pyran circle rupture. During the synthesis of methylcellulose/graft polymers the reaction takes place if there is ~ 1 glycol group to 10 glycol links, and it does not occur at $\gamma \sim 200$. The use of quadrivalent cerium and trivalent manganese permits the grafting in an aqueous medium. The homopolymerization of the grafter monomer may be avoided by using the latter in a vaporized state. A study of graft copolymerization of cellulose esters containing aromatic aminogroups under the effect of a 5-valent vanadium has shown that for each mole of the aminogroup, 2 moles of vanadium acids are expended and that the copolymer contains nitrogroups. Grafting of monomers with reducing powers may be accomplished, e.g., by the introduction into the cellulose of

L 14045-66

ACC NR: AR5020058

3

peroxide groups which can be obtained, in particular, by the method of introducing aromatic diazogroups with a subsequent destruction by Fe^{2+} ions. A more practical method is to introduce into the cellulose aldehyde groups (1 to 5) and to oxidize them to peracid by hydrogen peroxide. For synthesizing graft polymers, use may be made of cellulose polymeranalogous conversion reactions or of a cellulose graft component, e.g., graft polymers and polyacrylic hydroxamic acid. The latter is obtained by processing a cellulose graft copolymer with polymethylmetacrylate of either a water or alcohol solution of hydroxylamine. The grafting of certain monomers to cellulose gives new properties to the latter: better resistance to bacteria, better heat resistance, lower combustibility, water resistance, wool-like properties, lesser crumpling, etc. Grafting can also be used for plasticizing cellulose derivatives.
G. Petrzhik.

SUB CODE: 07, III

BVK
Card 2/2

LIVSHITS, R.M.; FROLOVA, A.A.; KOZLOV, P.V.; ROGOVIN, Z.A.

Thermoplastic graft copolymers of cellulose. Vysokom.
soed. 6 no.3:572 Mr'64. (MIRA 17:5)

LIVSHITS, R.M.; ALACHEV, V.P.; PROKOF'YEVA, M.V.; ROGIVIN, Z.A.

Mechanism of the tetravalent cerium salt initiation of the graft copolymerization of cellulose with vinyl monomers. Vysokom. soed. 6 no.4:655-658 Ap '64. (MIRA 17:6)

1. Moskovskiy tekstil'nyy institut. Nauchno-issledovatel'skii institut sinteticheskikh smol.

MOVSUM-ZADE, A.A.; GORYAINOVA, Ye.S.; LIVSHITS, R.M.; ROGOVIN, Z.A.;
KONKIN, A.A.

Chemical plasticization of cellulose triacetates by grafting on
polymethyl methacrylate. Vysokom. soed. 6 no.7:1340-1345 J1 '64
(MIRA 18:2)

1. Moskovskiy tekstil'nyy institut.

L 11358-65 EWT(m)/EPF(c)/EPR(T), ENP(S) PC-4/DT-4/RS-4 RPL #W/RM
ACCESSION NR: AP4045428 570190764/906/009/1624/1628

AUTHOR: Livshits, R. M.; Levites, L. M.; Rogovin, Z. A.

TITLE: Synthesis of modified-cellulose graft copolymers with the aid of pentavalent vanadium compounds. III. The effect of initiation conditions on the polymerization coefficient and the number of grafted chains 13

SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 6, no. 9, 1964, 1624-1628

TOPIC TAGS: copolymer, graft copolymer, cellulose ester copolymer, vanadium oxide initiator, polymerization initiation, polymerization coefficient, alkylcellulose, poly-methacrylate

ABSTRACT: The authors reacted cellulose with 4- β -hydroxyethylsulfonyl-2-aminoaniline in order to obtain a modified cellulose fabric which was then used as the raw material in a graft copolymerization reaction with polymethacrylate, initiated by a solution of HVO_3 in H_2SO_4 . The purpose of the present study was to determine the polymerization coefficient of the cellulose-polymethacrylate graft copolymer, the amount of grafted monomer and the number of grafted chains as a function of the monomer concentration (0.260, 0.332 and 0.400 M), the duration (30--90 minutes) and temperature (50--70°C) of the reaction, and the concentration of HVO_3 ($1.18--76.36 \times 10^{-3}$ M) in H_2SO_4 (1.2--2.0 M). The tabulated

Card 1/2

L 11358-65

ACCESSION NR: AP4045428

results show that the molecular weight of the grafted chains increased with a decrease in temperature and monomer concentration, reaching a maximum of 3000×10^3 at 10.18×10^{-3} M HVO_3 , 0.440 M methacrylate and 60C, decreased with an increase in HVO_3 and H_2SO_4 concentrations, and was unaffected by the duration of the reaction. The number of grafted chains, however, increased as the reaction was prolonged, reaching a maximum of 0.268 per 1000 elementary members in a 90 min. reaction at 60C with 0.44 M methacrylate, 2.0 M H_2SO_4 , and 38.18×10^{-3} M HVO_3 . The molecular weight of the grafted polymethacrylate was determined viscosimetrically from a diagram (viscosity in acetone after esterification) vs. molecular weight prepared by the authors. Orig. art. has: 5 tables and 1 figure.

ASSOCIATION: Moskovskiy tekstil'nyy institut (Moscow Textile Institute)

SUBMITTED: 22Oct63

ENCL: 00

SUB CODE: OC

NO REF SOV: 008

OTHER: 002

Card 2/2

LIVSHITS, R.M.; FROLOVA, A.A.; KOZLOV, P.V.; ROGOVIN, Z.A.

Elasticization of cellulose by grafting in polymethyl and
polybutyl acrylate. Vysokom. soed. 6 no.11:1992-1996 N 164
(MIRA 18:2)

1. Moskovskiy tekstil'nyy institut i Moskovskiy gosudarstvennyy
universitet imeni Lomonosova.

KOZLOV, P.V.; IVENKOVA, N.A.; FROLOVA, A.A.; LIVSHITS, R.M.; MOVSUM-ZADE,
A.A.; KONKIN, A.A.; ROGOVIN, Z.A.

Plasticization of cellulose triacetate by grafting polymethyl
acrylate. Vysokom. soed. 6 no.11:1965-1968 N '64
(MIRA 18:2)

1. Moskovskiy tekstil'nyy institut i Moskovskiy gosudarstvennyy
universitet imeni Lomonosova.

GULINA, A.A.; LIVSHITS, R.M.; ROGOVIN, Z.A.

Synthesis of graft copolymers of cellulose on the redox system cellulose - Fe^{2+} - H_2O_2 . Khim. volok. no.3:29-32 '65. (MIRA 18:7)

1. Moskovskiy tekstil'nyy institut.

L 00744-66 EPF(c)/EWT(m)/EWP(j)/T RPL RM/WW

ACCESSION NR: AP5020960

UR/0190/65/007/008/1297/1300

53-470

AUTHOR: ^{44.55}Movsum-Zade, A. A.; ^{44.55}Kuznetsov, G. A.; ^{44.55}Fomenko, L. N.; ^{44.55}Livshits, R. M.; ^{44.55}Konkin, A. A.; ^{44.55}Rogovin, Z. A.

TITLE: Plasticization of cellulose triacetates by grafting on polybutylacrylate

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 8, 1965, 1297-1300

TOPIC TAGS: plasticization, block copolymer, thermomechanical property, copolymerization

ABSTRACT: Plasticization of rigid polymers by graft copolymerization with incompatible flexible polymers was investigated. Cellulose triacetate-polybutylacrylate graft copolymers with different compositions were obtained by acetylating previously synthesized cellulose-polybutylacrylate graft copolymers. The latter were synthesized with the aid of an oxidation-reduction system using Ce⁺⁴ salts. Acetylation was carried out in homogeneous medium in the presence of HClO₄ as catalyst. The thermomechanical properties of mechanical mixtures of cellulose triacetate with polybutylacrylate (which is incompatible with the former) and of the graft copolymers were investigated. It was impossible to differentiate be-

Card 1/2

L 00744-66

ACCESSION NR: AP5020960

tween the graft copolymers and the mechanical mixes of the homopolymers.
Plasticization in either system takes place according to a structural mechanism.
Orig. art. has: 1 figure and 1 table

ASSOCIATION: Moskovskiy tekstil'nyy institut (Moscow Textile Institute)
Vladimirskiy nauchno-issledovatel'skiy institut sinteticheskikh smol (Vladimir
Scientific Research Institute of Synthetic Resins)

SUBMITTED: 06Jul64

ENCL: 00

SUB CODE: MT, GC

NR REF SOV: 010

OTHER: 000

SP
Card 2/2

L 1112-66 EWT(m)/EPF(c)/EWP(j)/T/EWA(c) RPL WW/RM

ACCESSION NR: AP5022596

UR/0190/65/007/009/1529/1534
541.64+661.728+678.745

AUTHORS: Gulina, A. A.; Livshits, R. M.; Rogovin, Z. A.

TITLE: Synthesis of cellulose-polyacrylonitrile graft copolymers in the presence of the oxidation-reduction system cellulose - Fe²⁺ - H₂O₂. 2. Investigation of the influence of different initiation conditions on the coefficient of polymerization of polyacrylonitrile and on the degree of cellulose conversion

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 9, 1965, 1529-1534

TOPIC TAGS: polyacrylonitrile, polymer, resin, cellulose, copolymer, graft polymer

ABSTRACT: The factors influencing the coefficient of polymerization in the synthesis of cellulose-polyacrylonitrile graft copolymers and the effect of different initiating conditions on the degree of cellulose conversion have been studied. The synthesis was carried according to the method previously reported by the authors (Khimich. volokna, 1965, 3, 1965). The experimental results are shown graphically in Fig. 1 on the Enclosure. A mechanism for the synthesis of graft copolymers in the presence of cellulose-Fe²⁺-H₂O₂ is proposed. It was found

Card 1/3

L 1142-66

ACCESSION NR: AP5022596

that the coefficient of polymerization of grafted polyacrylonitrile depends on the grafting method and that the degree of cellulose conversion in some cases reached the value of 80%. Orig. art. has: 1 table, 1 graph, and 7 equations. (2)

ASSOCIATION: Moskovskiy tekstil'nyy institut (Moscow Textile Institute) 44, 55

SUBMITTED: 10Oct64

ENCL: 01

SUB CODE: 00,
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NO REF SOV: 004

OTHER: 005

Card 2/3

L 1142-66

ACCESSION NR: AP5022596

ENCLOSURE: 01

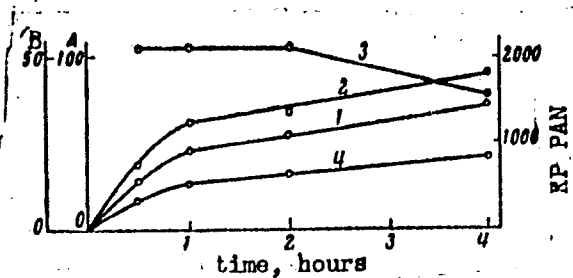


Fig. 1.

Influence of the extent of reaction on the quantity of graft on polyacrylonitrile (1), its conversion (4), coefficient of polymerization KP of grafted polyacrylonitrile PAN (3), and the degree of cellulose conversion (2). Reaction conditions: 60C, liquor ratio 50, acrylonitrile concentration 3.5%, H₂O₂ concentration 0.003%. A- quantity of grafted polyacrylonitrile weight % in respect to cellulose, B- degree of cellulose conversion %

Card 3/3

LIVSHITS, R.M.; ROGOVIN, Z.A.

Graft copolymers of cellulose and its derivatives. *Dop. khim.*
34 no.6:1086-1107 Jè '65. (MIRA 12:7)

1. Moskovskiy tekstil'nyy institut.

2

L 64544-65 EWT(m)/EPF(c)/T/EWP(j) RPL. WW/RM

ACCESSION NR: AP9023219

UR/0190/GH/006/011/1965/1968

AUTHOR: Koslov, P. V.,^{44.55} Movsun-Zado, A. A.,^{44.55} Konkin, A. A.,^{44.55} Rogovina, Z. A.,^{44.55} Ivankova, N. A.,^{44.55} Frolova, A. A.,^{44.55} Lyshits, R. M.,^{44.55}

E4
48
B

TITLE: Plasticizing cellulose triacetate by grafting polymethylacrylate

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 6, no. 11, 1964, 1965-1968

TOPIC TAGS: chain polymer, copolymerisation, plasticizer, cellulose, thermomechanical property, graft copolymer

ABSTRACT: The article describes a study of plasticizing a rigid-chain polymer by grafting copolymerization with a flexible-chain polymer, exhibiting limited compatibility with it. Grafted copolymers of cellulose triacetate and polymethylacrylate were prepared by acetylation of synthesized graft copolymers of cellulose with polymethylacrylate. The thermomechanical properties (deformation, vitrification point) of the graft copolymers and mechanical mixtures of cellulose triacetate with polymethylacrylate were investigated. Plasticizing by graft copolymerization was found to occur on the molecular level, while in the case of mechanical mixtures, a mechanical structuring mechanism was observed. Orig. art. has: 3 graphs, 1 table.

Card 1/2

I 64544-65

ACCESSION NR: AP5023219

ASSOCIATION: Moskovskiy tekstil'nyy institut (Moscow Textile Institute);
Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University)

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SUBMITTED: 06 Jan 64

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SUB CODE: 00, 00

NR REF SOV: 004

OTHER: 000

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Card 2/2