USSR   UDC: 616.988.75-085.371:576.85.23(ECHO)7-036.8

BLINOVA, M. I., RITOVA, V. V., VOROSHILOVA, M. V., YERMOL'YEVA, Z. V., Central Institute for the Advanced Training of Physicians, Institute of Virology imeni Ivanovskiy, Academy of Medical Sciences USSR, Institute of Poliomyelitis and Viral Encephalitides, Academy of Medical Sciences USSR, Moscow

"Study of the Epidemiological Effectiveness of the Stimulator of Interferon Formation During an Outbreak of A2 (Hong Knog) Influenza"

Abstract: More than 100 new viruses producing respiratory diseases have been discovered during the past ten years, requiring development of new prophylactic methods.

A study in groups of children and adults showed that ZhEV-4 (Zhivaya enterovirusnaya vaktsina--live enterovirus vaccine), a stimulator of interferon formation, had a prophylactic effect for healthy persons in contact with infected persons. Per=oral immunization of children by vaccine (in a 1:10 dilution) at

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USSR

two-week intervals reduced incidence by a factor of 2.8; the protective coeffi-
cient was 64%. The same results were obtained with adults. After intranasal
administration of the vaccine, the incidence of influenza dropped by a factor
of 2.6 and the protective coefficient was 61%. Persons who received a single
vaccine administration had a mild form of flu. When people received the vaccine
twice or three times, only isolated cases were observed. There were no incidents
of allergy or side reactions. The best effect was observed when the vaccine
was used in a 1:10 dilution perorally.

2/2

1/2   033   UNCLASSIFIED   PROCESSING DATE--11SEP70
TITLE--CHRONOCARDIOMETRY IN CORONARY ATHEROSCLEROSIS AND HYPERTENSIVE
   DISEASE -U-
AUTHOR--VOROSHILOVA, S.G., KUBYSHKIN, V.F.

COUNTRY OF INFO--USSR

SOURCE--VRACHEBNOYE DELO, 1970, NR 3, PP 107-110

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ATHEROSCLEROSIS, HYPERTENSION, LUNG, RESPIRATION, MYOCARDIUM,
   HYPODYNAMIA

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1986/0978   STEP NO--UR/0475/70/000/003/0107/0110

CIRC ACCESSION NO--AP0102917
                       .   UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--11SEP70
CIRC ACCESSION NO--AP0102917
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A CERTAIN PARALLELISM HAS BEEN
  FOUND IN PATIENTS WITH CORONARY ATHEROSCLEROSIS AND HYPERTENSIVE DISEASE
  BETWEEN THE EXPRESSION OF CHRONOCARDIOMETRIC SIGNS OF MYOCARDIAL
  HYPODYNAMIA, DISORDERS OF SYSTOLO DIASTOLIC RATIO OF PULMONARY
  RHEOGRAPHIC WAVES AND CHANGES OF THE FUNCTION OF EXTERNAL RESPIRATION.
  MORE DISTINCT DISORDERS OF MYOCARDIAL CONTRACTILITY AND FUNCTION OF
  EXTERNAL RESPIRATION WERE SEEN IN PATIENTS WITH MYOCARDIAL ISCHEMIA. IT
  IS EMPHASIZED THAT AT CERTAIN STAGES THE FUNCTIONAL EXERTION OF
  COMPENSATION MECHANISMS OF CARDIAC INSUFFICIENCY PROVES EFFICIENT,
  EVIDENCED BY THE ABSENCE OF CLINICAL SIGNS OF CIRCULATORY DISORDERS.

UNCLASSIFIED

USSR

VOROSHKO, P. P., KVITKA, A. L., TSYBENKO, A. S., Institute of Strength
Problems, Academy of Sciences of the UkrSSR, Kiev

"Using the Method of Random Walks to Solve Problems in Elasticity Theory"

Abstract: The probabilistic method of random walks over spherical surfaces
is used to solve problems in elasticity theory. The paper gives the re-
sults of digital computer solution (BESM-6, FORTRAN) of the second funda-
mental problem of elasticity theory for a circle and a ring. The accuracy
and economy of the method are studied. The results show an error of less
than 5% in displacements, and less than 10% in stresses. The effective
time of solution with evaluation of variance $D|\psi| \leqslant 0.05$ for a single point
fluctuates from 1.5 to 2 minutes. With an increase in the number of
random walks ($N > 30,000$), the instability of the random number generator
(RNDM) places a limit on accuracy.

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USSR

LYAKHOVICH, L. S., VOROSHNIN, L. G., SHCHERBAKOV, E. D., and PANICH, G. G.

"Siliconizing of metals and Alloys"

Silitsirovaniye metallov i splavov (English version above), Minsk, Nauka i Tekhnika Press, 1972, 280 pp

Translation of Foreword: With the broad application of high temperatures and pressures, corrosive media, vacuum, etc. in modern machines, parts and units must frequently meet a combination of demands which cannot or should not be met from the economic standpoint by volumetric alloying of steels or creation of new alloys. In this case, the solution to the problem is frequently the creation of various protective coatings on the surfaces of products.

Diffusion coatings play a leading role in this respect. Chemical and heat treatment radically changes the physical and chemical properties of surface layers, i.e., of those layers in which breakdown processes are primarily developed.

This book analyzes the methods and technological principles of siliconizing of ironcarbon alloys, and the regularities of formation, structure, and properties of diffusion layers. Silicide coatings on steels and alloys allow significant increases in corrosion resistance, high-temperature oxidation resistance, and hardness and wear resistance, and sometimes allow these pro-

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USSR

LYAKHOVICH, L. S., et al., Silitsirovaniye metallov i splavov, Minsk, Nauka i Tekhnika Press, 1972, 280 pp

perties to be produced in favorable combinations.

Siliconizing is presently used very little in industry. Probably the main reason for this is the lack of suitable technological methods for applying diffusion coatings, as well as the limited information available on the properties of these coatings. Therefore, the authors have turned their attention to the development and description of new methods of saturation and compositions of saturating mixtures and to the study and systematization of the properties of silicon-containing diffusion coatings on metals and alloys.

Due to the limited volume of this monograph, the authors were not able to describe fully the problems of siliconizing of nonferrous and refractory metals, so important from the practical point of view. However, the general principles of formation of diffusion coatings and compositions of saturating mixtures presented in the work can be used for the treatment of nonferrous and refractory metals and alloys.

This book also discusses certain little-studied problems of the thermo-dynamics and mechanism of formation of diffusion coatings by electrolytic and liquid saturation of metals and alloys from melts of salts and oxides. The authors hope that these materials will be useful in the development and study of processes of diffusion saturation with other elements.

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- 5 -

USSR

LYAKHOVICH, L. S., VOROSHNIN, L. G., SHCHERBAKOV, E. D., and PANICH, G. G., Sililtsirovaniye metallov i splavov, Minsk, Nauka i Tekhnika Press, 1972,

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LYAKHOVICH, L. S., VOROSHNIN, L. G., SHCHERBAKOV, E. D., and PANICH, G. G., Silitsirovaniye metallov i splavov, Minsk i Tekhnika Press, 1972, 280 pp

5/6

USSR

LYAKHOVICH, L. S., VOROSHNIN, L. G., SHCHERBAKOV, E. D., and PANICH, G. G.,
Silitsirovaniye metallov i splavov, Minsk, Nauka i Tekhnika Press, 1972,
280 pp

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- 7 -

USSR

VOROSHNIN, L. G.

"All-Union Scientific Conference of Schools of Higher Education on Chemical Heat Treatment of Metals and Alloys"

Moscow, Metallovedeniye i termicheskaya obrabotka metallov, No 1, 1972, pp 74-76

Abstract: Described is an All-Union Scientific Conference on the Chemical Heat Treatment of Steels and Alloys held by the Minsk Polytechnic Institute in May 1971. The conference was attended by 250 delegates representing 104 organizations (educational, research, design and plants). The participants heard 84 reports on diffusion coatings, their structures, properties and applications. The central topics included: the present state and potentials of coatings from refractory phases on metals and alloys; new chemical heat treatments; developments in diffusion chrome-plating; prospects of borating; thermodynamics of electrolytic processes; properties of borated alloyed medium-carbon steels; wear resistance of boride coatings; nondestructive control of layer depths using higher harmonics; siliconizing and aluminizing of metals in a glow discharge; carbonitriding of steel in a fluidized bed;

1/2

USSR

VOROSHNIN, L.G., Metallovedeniye i termicheskaya obrabotka metallov, No 1, 1972, pp 74-76

principles governing diffusion saturation of copper with silicon, aluminum and iron, as well as other equally significant highlights. The majority of reports were published in a special collection prior to the conference which generated animated discussions. The authors of the reports and their associated organizations are cited with each presentation.

2/2

USSR

UDC 621.436.2-222-232.174.
.002.3:669.15'26'74.196

ABACHARAYEV, M. M., Candidate of Technical Sciences, and
VOROSHNIN, L. G., Candidate of Technical Sciences, Associate
Professor

"Protection of Cylinder Bushings of Diesel Engines Against
Cavitation Damages by Chromium-Manganese Diffusion Plating"

Moscow, Vestnik Mashinostroyeniya, No 12, Dec 71, pp 22 —23

Abstract : The use of chromium-manganese diffusion plating for
protection against cavitation erosion of cylinder bushings was
investigated on specimens, 25 mm in diam., 5 mm high, cut out
from a rod of pig iron SCh28-48, and on natural bushings of die-
sel engines Ch8.5/11. The microstructural analysis of the diffu-
sion layer showed two structural zones: a corrosion resistant
graphite-free carbide zone of high hardness (H 100 1210-1500)
directly on the surface and a zone of manganous austenite
(H 100 650-700), graphite-free, highly inclined to strain har-

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USSR

ABACHARAYEV, M. M., et al, Vestnik Mashionostroyeniya, No 12, Dec 71, pp 22-23

dening. The highest cavitation resistance of pig iron was attai-
ned by its saturation in the powder mixture Khl$_{ts}$l at 1050 °C du-
ring 8 hrs. Generally, the chromium-manganese diffusion plating
is a more reliable protection of pig iron against corrosion da-
mage than the electrolytic chrome plating. Two illustr., one ta-
ble, three biblio. refs.

2/2

UDC 621.785.53

USSR

LYAKHOVICH, L. S., PUCHKOV, E. P., and VOROSHNIN, L. G.,
Belorussian Polytechnical Institute

"Electrolytic Borating of Silicon and Nickel Steels"

Minsk, Akademiya Nauk BSSR, Izvestiya, S riya Fiziko-Tekhni-
cheskikh Nauk, No 2, 1970, pp 110-114

Translation: A study was made of the effect of silicon (up to
3.8%) and nickel (up to 5%) on the structure and kinetics of
growth of a boronated layer of carbon (0.4% C) steel. Simul-
taneously, the distribution of silicon and nickel deep inside
the boronated layer and the transition zone as well as the dis-
tribution of boron and carbon deep inside the transition zone
were studied. It is shown that silicon reduces the depth of
the boride zone, and nickel somewhat increases it. In silicon
steels, under the layer of borides, there is a well-developed
zone of δ-phase whose thickness is determined by the initial
content of silicon in the steel and by the parameters of the
boroting process: the temperature and the holding time. With
silicon content in steel above 3%, and the α-phase zone
changes into α'-phase and δ-phase zones. It was established
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USSR

LYAKHOVICH, L. S., et al., Akademiya Nauk BSSR, Izvestiya,
Seriya Fiziko-Tekhnicheskikh Nauk, No 2, 1970, pp 110-114

that, in the process of formation of the boride layer, silicon
is partially diffused in borides; however, the basic portion
of silicon is forced back inot the basic metal, a fact which
leads to the appearance of the α-phase zone under the layer
of borides. The concentration of silicon in the zone of α-phase
is approximately two times greater than that of the initial
one in steel. Nickel is also diffused in the boride layer,
whereby the maximum concentration of nickel is observed in the
zone of Fe_2B boride. Both elements increase the solubility
ob boron if austenite. Silicon has an insignificant effect on
decreasing the depth of boron penetrability into the basic
metal, and nickel has practically no effect.

2/2

1/2   038   UNCLASSIFIED   PROCESSING DATE--16OCT70
TITLE--COMPOSITION FOR LOW TEMPERATURE ELECTROLYTIC BORON PLATING -U-

AUTHOR-(05)-LYAKHOVICH, L.S., VOROSHNIN, L.G., KARPENKO, D.P.,
  KOSACHEVSKIY, L.N., DOLMANOV, P.V.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 261,086
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--06JAN70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--CHEMICAL PATENT, ELECTROLYTE, METAL PLATING, BORON, LEAD
  OXIDE, BORON COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1994/2001   STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0115800
                          UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--16OCT70
CIRC ACCESSION NO--AA0115800
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE COMPN. CONSISTED OF NA
   SUB2 B SUB4 O SUB7. 10H SUB2 O 60-75 AND PBO 25-40 WT. PERCENT.
   FACILITY: BELORUSSIAN POLYTECHNIC INSTITUTE.

UNCLASSIFIED

1/2   012   UNCLASSIFIED   PROCESSING DATE--11DEC70
TITLE--REPRODUCTION OF BASIC FUNDS IN THE USSR -U-

AUTHOR-(04)-ARAKELYAN, A.A., VOROTILOV, V.A., KANTOR, L.M., PAVLOV, P.M.

COUNTRY OF INFO--USSR

SOURCE--REPRODUCTION OF BASIC FUNDS IN THE USSR (VOSPROIZVODSTVO OSNOVNYKH
   FUNDOV V SSSR) MOSCOW, MYSL', 1970, 484 PP
DATE PUBLISHED--------70

SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES

TOPIC TAGS--INDUSTRIAL MANAGEMENT, FINANCE, ECONOMIC SYSTEM CAPITAL
   INVESTMENT, INDUSTRIAL DEVELOPMENT, S AND T DEVELOPMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0051   STEP NO--UR/0000/70/000/000/0001/0484

CIRC ACCESSION NO--AM0123832
                          UNCLASSIFIED

2/2   012   UNCLASSIFIED   PROCESSING DATE--11DEC70
CIRC ACCESSION NO--AM0123832
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TABLE OF CONTENTS: CHAPTER I
ECONOMIC NATURE OF BASIC INDUSTRIAL FUNDS 3.   II STRUCTURE OF BASIC
FUNDS 43.   III BRANCH STRUCTURE OF BASIC FUNDS 58.   IV INDICES OF
UTILIZATION OF BASIC FUNDS AND PREREQUISITES FOR THEIR HIGH
EFFECTIVENESS 74.   V INCREASE OF THE ACTIVE PERIOD OF BASIC FUNDS 107.
VI IMPROVEMENT OF UTILIZATION OF BASIC FUNDS PER UNIT OF TIME 132.
VII ECONOMIC REFORM AND IMPROVEMENT OF UTILIZATION OF BASIC FUNDS 161.
VIII DEPLETION OF BASIC FUNDS 181.   IX SERVICES OF BASIC FUNDS 201.   X
DEPRECIATION OF BASIC FUNDS 220.   XI ACCUMULATION OF BASIC FUNDS AS A
FACTOR OF HIGH RATES OF DEVELOPMENT OF THE NATIONAL ECONOMY 281.   XII
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XIII CAPITAL CONSTRUCTION AND REPRODUCTION OF BASIC FUNCS 358.   XIV
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PROBLEMS IN REPRODUCTION OF BASIC INDUSTRIAL FUNDS OF SOCIALIST NATIONAL
ECONOMY.

UNCLASSIFIED

USSR   V   UDC 539.04-539.17

VOROTNIKOV, G. S.,   ROVINSKIY, B. M.

"A Comparative Evaluation of Results of Relaxation Tests on Annular and Cylindrical Specimens"

Kiev, Problemy Prochnosti, No 6, June 1970, pp 25-27

Abstract: Results of comparative relaxation tests on annular and cylindrical specimens at room temperatures are presented. It is pointed out that in tests conducted by earlier authors, use was made of the BR-8 machine, for which the point of departure is not deformation, but the load upon the specimen. The curves presented by earlier authors for comparison of the relaxation of annular and cylindrical specimens have large point dispersion fields which mutually overlap; this casts doubts about the full comparability of the data. The results of the present investigation indicates the possibility of considerable divergence in the relaxation curves for annular and cylindrical specimens, and furthermore with a sign opposite to that which should have been theoretically expected. This is an indication of the fact that the use of data obtained by the annular motion for a uniaxial stressed state is possibly open to doubt, and requires further detailed experimental testing and theoretical study.

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Epidemiology

USSR

UDC 616.981.452

VOROTNIKOV, I. A., Kirghiz Antiplague Station, Ministry of Health USSR

"Mechanism of the Retention Agent of Plague Between Epizootics in a Central Asian High-Mountain Focus"

Frunze, Sovetskoye Zdravookhraneniye Kirgizii, No 3, May/Jun 70, pp 33-34

Abstract: On the basis of a survey of the Soviet literature, it was determined that the main reservoirs of plague in Central Asian mountain foci are rodents (marmots in particular) and their specific ectoparasites, fleas. Infected fleas may remain in marmot holes, even empty ones for most of the year. Although many fleas die naturally during the summer, a substantial number of the early spring generation survive. Plague epizootics among marmots start in mid-May and reach a peak in June and July. By August the wave subsides, but some sick animals may be found almost up to the beginning of the hibernation period. Another parasite of marmots is the Ixodes crenulatus tick. Plague bacteria have survived in I. crenulatus taken from dead marmots for as long as 142 days. However, this tick is not believed to play a major role in the epizootic process in Central Asian mountain foci of plague.

1/1

USSR

MAGIDEY, P. L., VOROTNIKOV, Ye. G.   UDC 536.24

"Experimental Studies of the Effect of Recirculation on Heat Exchange in a Furnace"

Tr. Krasnodar. politekhn. in-t (Works of Krasnodarsk Polytechnical Institute), 1972, No. 39, pp 105-112 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3B917)

Translation: The results of an experimental study of the distribution of temperature and radiant flows in a furnace of a gas-oil boiler of productivity 120 t/hr. It is shown that the application of recirculation of smoke gases within limits up to 45% has a considerable effect on the distribution of temperature in radiant flows and in particular moves the high temperature zone upwards, and also balances the temperature distribution in the furnace. I. B. Palatnik.

1/1

USSR

UDC 621.382.3

AKSENOV, A.I., VOROTNIKOVA, D.N., FURMEL', V.M.

"Operational Parameters And Characteristics Of Transistors Of Average Power 1T403A--1T403I (Review)"

Elektron. tekhnika. Nauchno-tekhn. sb. Poluprovodn. pribory (Electronic Technology. Scientific-Technical Collection. Semiconductor Devices), 1970, Issue 2(52), pp 167-168 (from RZh--Elektronika i yeye primeneniye, No 3, March 1971, Abstract No 3B195)

Translation: The families of input and output voltampere characteristics are presented for the transistors 1T403A--1T403I in circuits with a common base and common emitter, and also the relation $h_{21e} = f (I_k, V_k)$ in the range of collector currents and voltages. All measurements were conducted at temperatures of 20 and 70° C. It is reported that the thermal constants junction-- case and junction--medium amount to 60-70 msec and 10 min, respectively. N.K.

1/1

Acoustical and Ultrasonic

BESPALOVA, Ye. I., VOROTNIKOVA, M. I., KONONENKO, V. O.

"Diffraction of a Shock Wave in Water Against an Absolutely Rigid Nonmoving Cylinder"

Abstract: The hydrodynamic pressure field around an infinitely long, absolutely rigid nonmoving cylinder in an acoustic medium is studied when the cylinder is struck by a shock wave with exponential pressure drop behind the leading edge. The solution, first found in the field of a Laplace transform, is sought in the space of the true variable by the method of numerical inversion using Legendre polynomials. The method is applicable for any time interval. Experimental recording of pressure at several points around metal cylinders qualitatively confirms the course of the process of loading of the cylinder with time.

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USSR   UDC 629.12:539.4.109

ANIK'YEV, I. I., VOROTNIKOVA, M. I., KONONENKO, V. O. (Kiev), Institute of
Mechanics, Academy of Sciences, Ukrainian SSR

"Some Experimental Results With Regard to the Action of a Lateral Shock Wave
in Water Upon Cylindrical Shells"

Abstract: In the article are set forth the experimental results on a study
of the process of deformation under the action of an unsteady lateral load
on cylindrical shells of fiberglass-reinforced plastic and stainless steel.
The shell under investigation, hermetically sealed by two fiberglass-reinforced
plastic bottoms and weighted with loads such that the entire system has zero
buoyancy, is placed in a working basin (a water-filled cylindrical tank). It
is noted that the stability loss of the fiberglass-reinforced plastic shell
takes place simultaneously in several different forms, and that the maximum
deformation of the shells develops over a time which is several times longer
than the time it takes for the wave front to traverse a distance equal to
the shell diameter. 3 figures. 3 references.

1/1

1/2   023

UNCLASSIFIED

TITLE--THEORY OF ADIABATIC AND NONADIABATIC ELECTROCHEMICAL REACTIONS -U-

PROCESSING DATE--16OCT70

AUTHOR-(03)-DOGONADZE, R.R., KUZNETSOV, A.M., VOROTYNTSEV, M.A.

COUNTRY OF INFO--USSR

SOURCE--J. ELECTROANAL. CHEM. INTERFACIAL ELECTROCHEM. 1970, 25(2), 17A-19A

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ELECTRODE REACTION, CALCULATION, ELECTRON ENERGY, ADIABATIC PROCESS, ELECTROCHEMICAL REACTION, NONADIABATIC PROCESS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/1306

STEP NO--NE/0000/70/025/002/0017/0019

CIRC ACCESSION NO--AP0116766

UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--16OCT70
CIRC ACCESSION NO--AP0116766

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PROBABILITY OF ADIABATIC AND
NONADIABATIC ELECTRODE REACTIONS IS CALCD. BY TAKING INTO ACCOUNT THE
MANY POTENTIAL ENERGY SURFACES (TERMS) IN THE INITIAL AND FINAL STATES,
CORRESPONDING TO DIFFERENT POPULATIONS OF THE ELECTRON ENERGY LEVELS IN
A METAL. THE TRANSITION PROBABILITY FOR EACH 2 TERMS IS DETD. MATH.
    FACILITY: INST. ELECTROCHEM., MOSCOW, USSR.

UNCLASSIFIED

1/2   017

TITLE--THEORY OF ELECTROCHEMICAL REACTIONS WITH THE TRANSFER OF SOME
ELECTRONS -U-

UNCLASSIFIED

PROCESSING DATE--16OCT70

AUTHOR--VOROTYNTSEY, M.A.

COUNTRY OF INFO--USSR

SOURCE--ELEKTROKHIMIYA 1970, 6(2), 208-11

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ELECTROCHEMICAL REACTION, CHARGE EXCHANGE, ELECTRON MOBILITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0053

STEP NO--UR/0364/70/006/002/0208/0211

CIRC ACCESSION NO--AP0105152

UNCLASSIFIED

CIRC ACCESSION NO--AP0105152   UNCLASSIFIED   PROCESSING DATE--16OCT70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE THEORY OF MULTIPLE ELECTRON
TRANSFER WAS CONSIDERED FOR 3 RANGES OF OVERPOTENTIAL ETA, I.E., BARRIER
FREE, ACTIVATION FREE, AND THE NORMAL RANGE OF ETA; AND THE TRANSFER
COEFF. ALPHA WAS CALCD. THUS, FOR BARRIER FREE DISCHARGE, A VALUE OF
ALPHA SIMILAR TO 1 WAS RELATED TO CONCN. RATHER THAN ACTIVATION FACTORS.
FOR THE NORMAL ETA RANGE, ALPHA SIMILAR TO ONE HALF AND FOR ACTIVATION
FREE DISCHARGE, ALPHA SIMILAR TO 0.   FACILITY: INST.
ELEKTROKHIM., MOSCOW, USSR.

UNCLASSIFIED

1/2   025
UNCLASSIFIED
TITLE--PROPERTIES OF POLARIZATION CURVES -U-   PROCESSING DATE--09OCT70

AUTHOR-(02)-VOROTYNTSEV, M.A., KUZNETSOV, A.M.

COUNTRY OF INFO--USSR

SOURCE--ELEKTROKHIMIYA 1970, 6(2), 261-5

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--ELECTRODE POLARIZATION, CURRENT DENSITY, ELECTROLYTIC CELL,
  TRANSITION PROBABILITY, MASS TRANSFER, HEAT OF REACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1984/0426
                                    STEP NO--UR/0364/70/006/002/0261/0265
CIRC ACCESSION NO--AP0055210
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0055210   PROCESSING DATE--09OCT70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN EQUATION FOR THE CURRENT I IN A
GENERAL FORM HAS STUDIED: I EQUALS E INTEGRAL DEPSILON M (EPSILON) W
(EPSILON), WHERE W (EPSILON) IS THE PROBABILITY OF THE TRANSITION OF A
QUASIPARTICLE FROM THE LEVEL TO THE ION IN UNIT TIME, M (EPSILON) DETS.
THE PROBABILITY TO FIND M ELECTRONS IN AN ELECTRODE WITH THE OVERALL
ENERGY EPSILON. AT REACTION HEATS THAT ARE HIGHER THAN THE ENERGY OF
REORGANIZATION THE MICROSCOPIC TRANSFER COEFF. ALPHA(DELTAJ) IS OF AN
INFINITELY LARGE SCALE OF CHANGE. THE MACROSCOPIC TRANSFER COEFF. OF
CHANGE HAS 2 AREAS WITH INFINITELY LARGE SCALE OF CHANGE: ONE AREA
WHERE THE COEFF. IS ZERO (ACTIVATION FREE DISCHARGE) AND ONE WHERE IT IS
UNITY (BARRIER FREE DISCHARGE). THE WIDTH OF THE TRANSITIONAL AREA FROM
ZERO TO UNITY IS IN THE ORDER OF THE ENERGY OF REORGANIZATION. THUS,
THE WIDTH OF THE NORMAL AREA ON THE CURVE OF THE MACROSCOPIC TRANSFER
COEFF. IS OF THE SAME ORDER.   FACILITY: INST. ELEKTROKHIM.,
MOSCOW, USSR.

1/2   018
TITLE--KINETICS OF IRREVERSIBLE THERMAL DENATURATION OF CHYMOTRYPSIN
COMPARATIVE STABILITY OF THE PROTEIN MOLECULE AND ITS ADSORPTION SITE

UNCLASSIFIED   PROCESSING DATE--09OCT70

AUTHOR-(03)-ANTONOV, V.K., VOROTYNTSEVA, T.I., KOGAN, G.A.

COUNTRY OF INFO--USSR

SOURCE--MOLEKULYARNAYA BIOLOGIYA, 1970, VOL 4, NR 2, PP 240-245

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CHEMICAL REACTION KINETICS, PROTEIN, ENZYME ACTIVITY, OPTIC PROPERTY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1983/1417

STEP NO--UR/0463/70/004/002/0240/0245

CIRC ACCESSION NO--AP0054279

UNCLASSIFIED

UNCLASSIFIED

CIRC ACCESSION NO--AP0054279   PROCESSING DATE--09OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE IRREVERSIBLE THERMAL
DENATURATION KINETICS OF CHYMOTRYPSIN HAVE BEEN STUDIED BY FOLLOWING, ON
THE ONE HAND, THROUGH INTENSITY CHANGES ON THE OPTICAL ROTATORY
DISPERSION CURVE AT 233 MU CHARACTERIZING THE CONFORMATIONAL STATE OF
THE MOLECULE AND, ON THE OTHER HAND, CHANGES IN CONCENTRATION OF
CHYMOTRYPSIN PROFLAVINE COMPLEX CHARACTERIZING THE STATE OF THE
ADSORPTION SITE OF THE ENZYME. BOTH METHODS ALLOW TO OBTAIN VALUES OF
EFFICIENT RATE CONSTANTS OF DENATURATION AND THERMODINAMIC ACTIVATION
PARAMETERS FROM WHICH THE CONCLUSION WAS DRAWN THAT UNDER THE
EXPERIMENTAL CONDITIONS THE CONFORMATIONAL STABILITIES OF THE MOLECULE
AS A WHOLE AND OF ITS ADSORPTION SITE ARE EQUAL. COMPARISON OF THE
THERMODYNAMICS DATA OBTAINED IN THE PRESENT WORK WITH THOSE IN THE
LITERATURE HAS SHOWN THAT THE ACTIVATION PARAMETERS ARE HIGHLY DEPENDENT
UPON THE PH OF THE MEDIUM AND ELECTROSTATIC INTERACTIONS ARE A VERY
IMPORTANT FACTOR IN DETERMINING THE STABILITY OF THE NATIVE CHYMOTRYPSIN
STRUCTURE.

UNCLASSIFIED

USSR

UDC 621.385.632.2

VOROVICH, E.B.

"On The Harmonics Of A Current In Type M Devices"

Translation: On the basis of the Faynshteyn--Kayno method an expression is obtain-
ed for the harmonics of the high-frequency current in Type M devices. It was found
that in such an approach, not only the first but also harmonics of the current de-
pend on the function

$$\phi(y) = \frac{1}{E_0 D} \int_0^y E(\zeta) d\zeta$$

and finding higher harmonics reduces to a calculation of one simple integral.
Summary.

1/1

USSR

VOROVICH, I. I., MINAKOVA, N. I., Rostov-na-Donu

UDC 539.3

"Equations of Axisymmetric Stress-Strained State of a Curved Spherical Shell Made of a Nonlinear Elastic Material With Large Deformations"

Moscow, Prikladnaya metamatika i mekhanika, Vol 37, No 5, 1973, pp 934-939

Abstract: A successive derivation is presented for the basic equations of axisymmetric deformation of a spherical shell made of nonlinear elastic material under the assumption of smallness of the relative elongations by comparison with one and with arbitrary angles of rotation. The most widespread versions of the boundary problems for studying curved shells with large deformations were proposed earlier /E. Reissner, Contributions to Appl. Mech., J. W. Edwards, Ann Arbor, Michigan, 1949; Proc. Appl. Math., Vol 3, 1950, pp 27-52, and so on/. The general formulation of the boundary problems for studying curved shells with large deformations appears in the papers by J. L. Sanders /Quart. Appl. Math., Vol 21, No 1, 1963/ and W. T. Koiter /Proc. Koninkl. nederl. acad. wet., C, Vol 69, No 1, 1966/. However, only the geometric nonlinearity is considered in these papers. Equations in boundary conditions for axisymmetric deformation of curved spherical shells are now presented for finite displacements considering physical nonlinearity. On the basis of the boundary problems obtained it is possible to investigate the effect of the curvature and physical nonlinearity on the critical state of the shell.
1/1

USSR

VOROVICH, I. I.

UDC 517.9:539.3

"On the Behavior of Plates of Arbitrary Shape After Loss of Stability"

Leningrad, V sb. Probl. mekhan. tverd. deformir. tela (Problems in the Mechanics of a Solid Deformable Body -- collection of works), "Sudostroyeniye," 1970, pp 113-119 (from RZh-Matematika, No 7, July 1970, Abstract No 7B475)

Translation: It is known with regard to the problem of an Euler elastic that the greater the compressive force, the more equilibrium shapes an elastic rod has. Similar results are found in this article for elastic plates of arbitrary shape. The analysis is based on Karman equations. Use of variational and topological methods led to determination of a set of equilibrium shapes without any assumptions on the smallness of the parameters defining the problem. Author's abstract.

1/1

- 24 -

USSR

VOROVKOV, A. A.

"Concerning Factorization Identities and the Distribution Properties of the Supremum of Sequential Sums"

Abstract: The paper consists of two parts. The first part is, to a considerable extent, in the nature of a survey and, in particular, sets forth analytical methods for obtaining multiparametric factorization identities. These methods, which are rather simple, apparently contain extensive potentialities in connection with direct probability approaches. The second part of the study is devoted to a study of the properties of the supremum of sequential sums of independent, identically distributed random variables.

1/1

USSR

VOROZHEYKIN, V. V.

UDC 8.74

"Input Language of the Arkhivarius Library Program of the SMO ASVT"

Tr. NII upravl. vychisl. mashin (Works of the Scientific Research Institute of Control Computers), 1971, vyp. 4, pp 27-30 (from RZh-Kibernetika, No 7, Jul 72, Abstract No 7V594)

Translation: The input language of the Arkhivarius library program of the SMO ASVT is described. The program provides for insertion, deletion, re-placement, changing places and names of files in the library and also obtain-ing a library catalog and checking the order numbers of the numbering fields of the file entries included in the library.

1/1

1/3   049

TITLE--THERMAL TRANSFORMATIONS OF RADIATION DEFECTS IN LITHIUM FLUORIDE CRYSTALS -U-

UNCLASSIFIED

PROCESSING DATE--30OCT70

AUTHOR-(02)-PCLITOV, N.G., VOROZHEYKINA, L.F.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(2), 343-50

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--LITHIUM FLUORIDE, CRYSTAL DEFECT, RADIATION EFFECT, ANNEALING, NEUTRON IRRADIATION, F CENTER, IMPURITY CENTER, OPTIC SPECTROMETER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1983/1619

STEP NO--UR/0181/70/012/002/0343/0350

CIRC ACCESSION NO--AP0054468

UNCLASSIFIED

CIRC ACCESSICN NC--AP0054468   UNCLASSIFIED   PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN LIF CRYSTALS, BY THE METHOD OF
OPTICAL SPECTROSCOPY, THE PROCESSES WERE STUDIED OF THERMAL
TRANSFORMATION OF RADIATION DEFECTS OF FRENKEL AND F CENTERS INTO
ASSOCD. QUASIMETALLIC METALLIC, AND AT. CENTERS. THE CRYSTALS WERE
IRRADIATED WITH DOSES OF 10 PRIME14 MINUS 1.5 TIMES 10 PRIME18
NEUTRONS-CM PRIME2. THE TEMP. AND TIME OF ANNEALING WERE VARIED,
DEPENDING ON THE DOSE OF RADIATION. AT THE INITIAL STAGE OF ANNEALING
OF THE CRYSTALS IRRADIATED IN A REACTOR WITH A DOSE OF GREATER THAN OR
EQUAL TO 10 PRIME17 NEUTRONS-CM PRIME2, A SET OF QUASIMETALLIC CENTERS
IS PRODUCED IN THE CRYSTALS. WITH FURTHER ANNEALING THEY CHANGE INTO
METALLIC CENTERS AND AT. CENTERS. TO METALLIC AND AT. CENTERS
CORRESPOND ABSORPTION BANDS AT 490 AND 275 NM (W SUB2 AND W SUB1).
BETWEEN THESE BANDS A W SUBK BAND IS OBSD. DUE TO QUASIMETALLIC CENTERS;
AMONG THEM THE SHARPEST IS THE BAND AT 350 NM. THE COLLOIDAL ORIGIN OF
THE W SUB2 BAND IS CONFIRMED BY ITS BEHAVIOR WHEN THE TEMP. OF THE
CRYSTAL DECREASES, WHEN THE CONCN. OF HYDROXYL AND O CONTG. GROUPS
CHANGES, ON VARIATION OF THE ANNEALING TIME, ETC., AND ALSO COINCIDENCE
OF ITS SPECTRAL POSITION WITH THE CALCD. VALUE OBTAINED BY THE DOYLE
THEORY. IN THE PROCESS OF PROLONGED ANNEALING, THERMAL DISSOCN. OF
METALLIC CENTERS IS ACCOMPANIED BY AN INCREASE IN THE CONCN. OF AT.
CENTERS. INITIALLY, ON DECOMPN. OF METALLIC CENTERS, ASSOCD. AT.
CENTERS ARE FORMED WITH A W SUB1 BAND AT 295 NM, WHICH THEN DECOMPD.,
FORMING SIMPLE AT. CEN ERS WITH W SUB1 BAND AT 270-5 NM.

UNCLASSIFIED

UNCLASSIFIED

CIRC ACCESSION NO--AP0054468

PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--QUASIMETALLIC AND METALLIC CENTERS BECOME LARGER ON INJECTION UF ELECTRONS INTO THE CRYSTALS (BETA DECAY OF TRITIUM, OPTICAL DECAY OF F CENTERS). THE APPEARANCE OF METALLIC CENTERS IS CONFIRMED BY EPR SPECTRA AND ELECTRON MICROSCOPY. FACILITY: INST. FIZ., TBILISI, USSR.

UNCLASSIFIED

1/2   014

UNCLASSIFIED

TITLE--QUASI METALLIC CENTERS IN LITHIUM FLUORIDE CRYSTALS -U-

PROCESSING DATE--18SEP70

AUTHOR-(02)-VOROZHEYKINA, L.F., POLITOV, N.G.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(1), 124-7

DATE PUBLISHED--------70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, PHYSICS

TOPIC TAGS--LITHIUM FLUORIDE, CRYSTAL, GAMMA RADIATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/0216

STEP NO--UR/0181/70/012/001/0124/0127

CIRC ACCESSION NO--AP0055012

UNCLASSIFIED

2/2   014
CIRC ACCESSION NO--AP0055012   UNCLASSIFIED   PROCESSING DATE--18SEP70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FORMATION WAS INVESTIGATED OF
QUASI METALLIC CENTERS IN LIF CRYSTALS AS A RESULT OF THERMAL
TRANSFORMATIONS OF RADIATION DEFECTS.   IN THE OPTICAL ABSORPTION
SPECTRUM OF CRYSTALS WITH QUASI METALLIC CENTER, BANDS WERE OBSD. WITH
MAX. AT 320 AND 375 NM. THE SPECTRAL POSITION OF THESE MAX. IS SHIFTED
TOWARD LONGER WAVELENGTHS AS THESE CENTERS BECOME BIGGER.   FORMATION
AND STABILITY OF QUASI METALLIC CENTERS DEPEND IN A COMPLEX MANNER ON
THE CONCN. OF ANIONIC IMPURITIES AND THE TEMP. OF ANNEALING. VARIATION
WAS STUDIED OF THE DIMENSIONS AND CONCN. OF QUASI METALLIC CENTERS ON UV
AND GAMMA IRRADN.

UNCLASSIFIED

USSR

NIKITIN, V. N., LITVINENKO, D. A., STETSENKO, B. A., GLADSHTEYN, L. I.,
KACHURIN, D. S., and VOROZHTSHCHEV, V. I., Central Scientific Institute of
Ferrous Metallurgy, Kuznetsk Metallurgical Combine

"Increasing the Ductility and Impact Strength of Carbon Steel"

Moscow, Metallurg, No 8, Aug 71, pp 17-19

Abstract: A basic structural steel for different structures and machines is
steel St. 3sp which, according to GOST 380-60 has an impact strength of 3 kg-
m/cm^2 at -20°C. Aluminum in the amount of 0.1-0.2% improves its impact
strength and increasing Al content to 0.052% does not improve strength proper-
ties but leads to an increased ductility of hot-rolled steel from 20-25.7%
at 0.0074% Al up to 26-34.0% at 0.052% Al. In studies of steels St. 3 sp
and St. 3Yu in sheet form it was found that aluminum improves their impact
strength at -40°C, although the thicker the sheet the greater the tendency
to cold brittleness. Steel St. 3Yu has a greater impact strength than St. 3sp
due to smaller size of ferrite grains. In all instances (for steel St. 3sp)
strength properties were better for the normalized state than for the hot-
rolled state.

1/1

- 29 -

USSR

UDC 632.95

KRASOV, V. M., and VOROZHISHCHEVA L. M.

"The Determination of Residues of Organochlorine Pesticides in Balanced Fodders"

Tr. 2-go Vses. Soveshch. po issled. ostatkov pestitsidov i profilakt. zagryazneniya imi produktov pitaniya, kormov i vnesh. sredy (Work of the Second All-Union Conference on the Study of Pesticide Residues and the Prevention of the Contamination by them of Food Products, Fodders, and the Environment), Tallinn, 1971, pp 167-168 (from Referativnyy Zhurnal -- Khimiya, No 10 (II), 1972, Abstract No 10N467 by T. A. Belyayeva)

Translation: For determining residues of organo-chlorine pesticides in balanced fodders and other products containing a large quantity of coextrac- tive substances thin-layer chromatography on Al_2O_3 with gypsum is used. The chromatograms developed with a 2% solution of diphenylamine in acetone, and kept for 15-20 minutes under ultraviolet light. n-Hexane is used to extract the pesticides from the samples.

1/1

USSR

VOROZHTSOV, A. Z.

UDC 621.396.62:629.123

"Signal/Noise Ratio at the Receiver Output when Operating over Unmatched Cable"

Tr. TsNII mor. flota (Works of the Scientific Research Institute of the Maritime Fleet), 1970, vyp. 131, pp 106-113 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4D3)

Translation: It is demonstrated that if the external interference exceeds the internal noise of a receiver, the attenuation of the signal by an unmatched cable has an insignificant effect on worsening of the signal/noise ratio at the receiver output.

1/1

USSR   UDC: 621.396.7

VOROZHTSOV, A. Z.

"Phase Telegraphy Methods and Circuits for Shipboard Radio Transmitters"

Tr. TsNII mor. flota (Works of the Central Scientific Research Institute of
the Maritime Fleet), 1970, vyp. 124, pp 100-109 (from RZh-Radiotekhnika,
No 11, Nov 70, Abstract No 11D533)

Translation: The author describes possible methods and circuits for phase
telegraphy in shipboard radio transmitters. Consideration is given to the
passage of phase-keyed signals through diodes, multipliers and frequency
converters. Circuits are given for phase telegraphy by direct and indirect
methods. An analysis is made of the distinction between circuits for phase
telegraphy and relative phase telegraphy. Six illustrations, bibliography
of two titles. Resumé.

1/1

USSR

UDC: 621.396.7

VOROZHTSOV, A. Z.

"Phase Telegraphy Methods and Circuits for Shipboard Radio Transmitters"

Tr. TsNII mor. flota (Works of the Central Scientific Research Institute of the Maritime Fleet), 1970, vyp. 124, pp 100-109 (from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11D533)

Translation: The author describes possible methods and circuits for phase telegraphy in shipboard radio transmitters. Consideration is given to the passage of phase-keyed signals through diodes, multipliers and frequency converters. Circuits are given for phase telegraphy by direct and indirect methods. An analysis is made of the distinction between circuits for phase telegraphy and relative phase telegraphy. Six illustrations, bibliography of two titles. Resumé.

1/1

USSR

UDC 550.834:553.982

VOROZHTSOV, L. N., BALLAKH, I. Ya., KOZMODEM'YANSKIY, V. V., Institute of Geology and Development of Mineral Fuels, "Mangyshlakneftegeofizika" Trust

"Summation of Vertical Seismic Profiling Recordings on the Basis of Controlled Directional Reception"

Abstract: The application of a basic modification of controlled directional reception for stratographic tying in of reflected waves and for determining the level of intensity of multiple waves on the vertical seismic profile is discussed along with a description of the results of applying the first correlation modification of controlled directional reception that has been widely applied in the development of vertical seismic profile recordings. Recordings were obtained in conducting vertical seismic profiling in a bore on the Mangyshlak Peninsula in which the correlation of the waves and their stratographic tying in was extremely difficult. The complexity of the wave picture on the vertical seismic profile recording was caused by the upper portion of the geological section and the predominant intensity of the incident wave. The latter were processed on the "POISK-1-24-RNP-V" adder to improve separation and tracing the waves on the vertical seismic

1/2

USSR

VOROZHTSOV, L. N., et al, Neftegazovaya geologiya i geofizika, No. 4,
1972, pp 30-34

profile recordings. Preliminary amplification and the number of channels
added was selected in such a way that the incident waves could be corre-
lated along with the rising waves. The summation bases for the modifica-
tion of controlled directional reception were selected from previously
obtained directional tapes in intervals where sharp reflecting boundaries
are absent and the sensitivity of the channels is the same. It is con-
cluded that summation of vertical seismic profile recordings on the
basis of controlled directional reception makes it possible to carry out
separation of reflected waves and their stratographic tying in and to
determine the intensity of multiple waves. Summation on the basis of
controlled directional reception is recommended for processing of ver-
tical seismic profiling recordings when the analysis does not give positive
results under processing by other methods.

2/2

1/2   016
TITLE—SYNTHESIS AND SOME REACTIONS OF FLUOROAROMATIC COMPOUNDS —U—

UNCLASSIFIED

PROCESSING DATE--09OCT70

AUTHOR—VOROZHTSOV, N.N.

COUNTRY OF INFO—USSR

SOURCE—ZH. VSES. KHIM. OBSHCHEST. 1970, 15(1) 52-63

DATE PUBLISHED--------70

SUBJECT AREAS—CHEMISTRY

TOPIC TAGS—FLUORINATED ORGANIC COMPOUND, CHEMICAL SYNTHESIS, CHEMICAL REACTION

CONTROL MARKING—NO RESTRICTIONS

DOCUMENT CLASS—UNCLASSIFIED

PROXY REEL/FRAME—1992/1577

STEP NO--UR/0063/70/015/001/0052/0063

CIRC ACCESSION NO—AP0112571

UNCLASSIFIED

CIRC ACCESSION NO--AP0112571   UNCLASSIFIED   PROCESSING DATE--09OCT70
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT.   A REVIEW THROUGH PART OF 1969, OF
SYNTHESIS OF ORGANIC F COMPDS. BASED ON AROMATIC SYSTEMS AND THEIR
PRINCIPAL REACTIONS, WITH 73 REFS.

UNCLASSIFIED   89

USSR

VORSHEVSKIY, A. V., GRUDEN', O. K.   UDC: 62-55

"A Method of Obtaining Constant Lead Time With Monitoring of Slip in an
Automatic Synchronizer"

USSR Author's Certificate No 316153, filed 8 May 70, published 1 Nov 71
(from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 9,
Sep 72, Abstract No 9A186 P)

Translation: A method is known for obtaining a constant lead time with
monitoring of slip in an automatic synchronizer. The disadvantages of
this method are the relatively small maximum permissible angle of lead,
low accuracy of maintaining a constant lead time when there is a change
in the magnitude and sign of slip, and the complexity of realizing moni-
toring of slip. As a distinguishing feature of the proposed method, to
improve accuracy and reduce complexity each of the variable voltages to
be synchronized is algebraically added to a constant voltage whose magni-
tude and sign depend on the magnitude and sign of slip, pulses are shaped
(e. g., by means of a flip-flop with peak transformer at the output), and
the output element of the synchronizer is acted on if there is time coin-
cidence of the above-mentioned pulses.

1/1

1/2   026
TITLE--SYNTHESIS AND SOME PROPERTIES OF HYDROGALLOCARBONATES OF SODIUM AND
    POTASSIUM —U—   UNCLASSIFIED   PROCESSING DATE--13NOV70
AUTHOR-(05)-TCMILOV, N.P., BERGER, A.S., VORSINA, I.A., POROSHINA, I.A.,
    MERKULOV, A.G.
COUNTRY OF INFO--USSR

SOURCE--IZVESTIYA SIBIRSKOGO OTDELENIYA AKADEMII NAUK SSSR, NO 4, SERIYA
    KHIMICHESKIKH NAUK, 1970, NR 2, PP 87-95
DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CARBONATE, SODIUM COMPOUND, POTASSIUM COMPOUND, X RAY
    ANALYSIS, IR SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1993/0584
CIRC ACCESSICN NO--AP0113475   STEP NO--UR/0289/70/000/000/0087/0095
                                UNCLASSIFIED

CIRC ACCESSION NO--AP0113475   UNCLASSIFIED   PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HYDROGALLOCARBONATES OF SODIUM AND POTASSIUM NA SUB2 O.GA SUB2 O SUB3. 2 CO SUB2.4H SUB2 O AND K SUB2 O.GA SUB2 O SUB3.2CO SUB2.3H SUB2 O WERE PREPARED FROM THE SOLUTION MIXTURE OF GALLATES AND BICARBONATES OF SODIUM AND POTASSIUM RESPECTIVELY. THE PHYSICO CHEMICAL CHARACTERISTICS OF THESE SUBSTANCES SUCH AS THE REFRACTION OF LIGHT, SPESIFIC GRAVITY, DIMENTIONS OF CELLS WERE DETERMINED. THE PROCESS OF THERMAL DECOMPOSITION OF SODIUM AND POTASSIUM HYDROGALLOCARBONATES WAS STUDIED UNDER STATIC AND DYNAMIC CONDITIONS OF HEATING AND UNDER HIGH TEMPERATURE X RAY ANALYSIS. SOME PECULIARITIES OF IR SPECTRA OF OBTAINED COMPOUNDS WERE ALSO DISCUSSED. FACILITY: INSTITUT FIZIKO-KHIMICHESKIKH OSNOV PERERABOTKI MINERAL'NOGO SYR'YA SO AN SSSR, NOVOSIBIRSK.

UNCLASSIFIED

UNCLASSIFIED
TITLE--EXTRACTION OF THALLIUM (III) FROM SULFURIC ACID SOLUTIONS BY BIS (2,ETHYLHEXYL) HYDROGEN PHOSPHATE -U-

PROCESSING DATE--23OCT70

AUTHOR-(03)-LEVIN, I.S., RODINA, T.F., VORSINA, I.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(2), 496-501

DATE PUBLISHED------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--THALLIUM, SULFURIC ACID, METAL CHEMICAL ANALYSIS, PHOSPHATE, HYDROGEN COMPOUND, SOLVENT EXTRACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1952

CIRC ACCESSION NO--AP0118914

STEP NO--UR/0078/70/015/002/0496/0501

UNCLASSIFIED

CIRC ACCESSION NO--AP0118914   UNCLASSIFIED
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT.   COMPN. OF TL(III) COMPLEXES OF   PROCESSING DATE--23OCT70
BIS(2,ETHYLHEXYL) H PHOSPHATE (HR), WHICH FORM DURING AN EXTN. OF
TL(III) FROM H SUB2 SO SUB4 SOLNS., DEPENDS NOT ONLY ON THE NATURE OF
EXTG. SOLVENT BUT ALSO ON H SUB2 SO SUB4 CONCN. EQUIL. CONSTS. FOR
TL(III) HR COMPLEX EXTN. BY ORG. SOLVENTS OCTANE, HEPTANE, CYCLOHEXANE,
C SUB6 H SUB6, MEPH, ME SUB2 C SUB6 H SUB4, CHCL SUB3, AND CCL SUB4, AT
PH 0.5-3.0 ARE GIVEN.

UNCLASSIFIED

USSR

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UDC: 621.039.524.034.3

BUSHUYEV, A. V., VORTSOV, V. G., and DUVANOV, V. M.

"Study of a Field of Fast Neutrons in the Shell of a Uranium-Graphite Reactor with a Rhodium Threshold Detector"

Moscow, Atomnaya Energiya, Vol 28, No 5, May 70, p 420

Abstract: This work describes the apparatus and methods used for measurements with a rhodium detector. It is shown that in certain cases the use of cadmium to suppress the background of thermal neutrons leads to errors. The experiments were performed in a graphite pile with nine rods of natural uranium. Experiments were performed in a dry cell and in a cell with 2-1 and 11-mm water layers around the fuel elements. The method of effective threshold sections was used to determine the effective reaction threshold, 0.72 MeV, and the effective cross section, 0.68 barns, with an uncertainty of about 1%. The 11 mm water film decreases the fast neutron flux by $9.5 \pm 1.5\%$, leaving the distribution in space almost unchanged. The calculated ratio of fast neutron flux to thermal neutron flux with the 11-mm water shield was 8.5% less than the similar ratio for the dry cell.

1/1

USSR

ATANOV, YU. A., VORZUNOV, V. A.

621.317.335:621.317.738:531.787.084.2

"Dielectric High Pressure Transducer"

Tr. Metrol. In-Tov SSSR, Vyp. 104(164), [Works of Metrological Institutes of USSR, No. 104(164)], pp 53-55 (translated from Referativnyy Zhurnal Metrologiya I Izmeritel'naya Tekhnika, No. 4, 1970, Abstract No. 4.32.725, unsigned)

Translation: The design of a high pressure transducer consisting of a coaxial cylindrical condenser filled with the manometric fluid is described. Recording of pressures is based on the change in dielectric permiability of the fluid with pressure. In contrast to ordinary capacitive transducers, this dielectric transducer has no elastic metal membrane and can be used for measurement of high pressures on the order of 10,000 kg/cm^2 and higher. The dependence of the electrical capacitants of the transducer on pressure is established as a result of calibration using an absolute piston manometer. Non-polar or slightly polar fluids having low temperature coefficient of dielectric permiability are recommended for usage as manometric fluids. The transducer can be used in systems for automatic pressure regulation, since the output parameter -- electrical capacitance -- is used in high-sensitivity resonance devices. One illustration, four biblio. refs.

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USSR

KHUBOV, A. N., VOSKANOV, T. G., GEVORKOV, G. S., KARAYEV, S. K., MDIVANI,
A. G., SIMONYAN, A. A., SHAKHRAMANOV, A. Kh., Baku Division of the All-
Union Scientific Research Institute for Drilling Techniques, All-Union
Scientific Research Institute for Drilling Techniques and "Kaspmorneft'"
Combine

UDC 622.24.054.322:622.24.051.64

"Effectiveness of Applying Slow-Speed Turbodrills in Drilling With Diamond
Chisels"

Dzerzhinsk, Bureniye, No. 4, 1972, pp 3-7

Abstract: The results of experimental boring with diamond chisels of dia-
meter 241 mm in combination with slow-speed and high-revolution turbodrills
when approximately the same power is supplied to the chisel are analyzed.
It is shown that the highest economic and technical operating indices for
diamond chisels are achieved by applying a slow-speed low-pressure turbine
of precision casting, namely the 3TSSh-190TL turbodrill and the 33/11
turbine. This turbine can operate consistently at revolutions of 250-400
per minute and can take axial loads of 12 tons or more. Data are presented
on the consumption of DRS241S2 diamond chisels, the nature of their wear,
and the change in mechanical rate during drilling. It is shown that a

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USSR

KHUBOV, A. N., et al, Bureniye, No. 4, 1972, pp 3-7

decrease in the number of revolutions to 300-400 per minute had a favorable
effect on the wear and an increase in cutting capacity by a factor of 2
is achieved at the same mechanical rate.

2/2

Abstract: North Asian tickborne rickettsiosis which was initially identified
in Krasnoyarsk Kray in 1936, still occurred there in 1967, with a distribution
exceeding that in any other part of the USSR. From 1936 to 1967, 10,634 cases
of this disease were recorded in Krasnoyarsk Kray. The highest incidence of
the disease was in the 30 south-eastern rayons. Children younger than 16 yrs
were mainly affected (6113% of cases). The principal vector of the disease
was D. nuttalli. The agent (D. sibiricus rickettsiae) was isolated for the
first time from I. persulcatus and H. concinna. The most effective methods
of detecting D. sibiricus rickettsiae in ticks were by immunofluorescence tests
and tissue culture methods. Comparison of results obtained by various test
methods showed that epidemiological data pertaining to exposure of the popula-

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USSR

SHAYMAN, M. S., et al., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii,
No 4, Apr 71, pp 7-11

tion to the infection could be best obtained by means of skin allergy tests.
It was established that a considerable degree of latent immunity existed
in the population. Absence of latent immunity was one of the reasons for the
predominant occurrence of the disease among children.

2/2

USSR   UDC: 536.23

VARGAFTIK, N. B., VOSHCHININ, A. A., BERZHENTSEV, V. V., STUDNIKOV, Ye. L.,
Moscow Aviation Institute imeni S. Ordzhonikidze

"Experimental Determination of the Thermal Conductivity of Sodium Vapor"

Abstract:. A previous paper (Vargaftik, N. B., Voshchinin, A. A., Teplo-
fizika Vysokikh Temperatur, Vol 5, No 5, 1967) gave the results of mea-
surements of the thermal conductivity of sodium vapor by the method of
coaxial cylinders. In these experiments, the fraction of radiant heat
transfer was 20-40%. To reduce the percentage of radiation, the authors
of this paper made a new installation with a working gap of 0.2 mm instead
of the 0.6 mm used in the previous research. The measurements were made
at 1095 K and 2000-50000 N/m². In spite of the relatively low pressures,
the concentration of diatomic molecules varied considerably (from 1 to 10%).
The thermal effects of the reaction were considerable, affecting both the
thermal conductivity and the effective heat capacity. The results of the
experiments are tabulated. The experimental error is about 6%. It is

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USSR

VARGAFTIK, N. B. et al., Teplofizika Vysokikh Temperatur, Vol 11, No 2,
Mar/Apr 73, pp 422-423

found that at about 1100 K (the principal isotherm) the ratio of thermal
conductivities of sodium vapor at 50000 and 10000 N/m^2 is about 1.30,
which agrees well with data in the literature obtained by another method.

2/2

USSR

BARGAFTIK, N. B., VOSHCHININ, A. A., Moscow Aviation Institute imeni
S. Ordzhonikidze

"Experimental Determination of Integral Radiation Capacity of Nickel"

Abstract: Experimental data are produced on the integral radiation capacity
ε of polished nickel, and the capacity of nickel exposed to alkali metal
vapors. A general equation is suggested for ε in the temperature interval
from 0 to 1400°C. The formula, $\varepsilon = 0.05 + 0.135 \cdot 10^{-3}t$, where t is in °C,
can be used for the temperature range from 500 to 1400°C with an accuracy
of ±5%. In the 0-500°C interval, the accuracy decreases to ±10%.

1/1

USSR   UDC 621.375.024

VIDZHYUNAS, A. M., VOSILYUS, S. K.

"Frequency Characteristics of DC Transistor Amplifying Cascades"

Techn. kibernetika, Tekh. kibernetika (Technical Cybernetics), Kaunas, 1970, pp 238-244 (from RZh-Radiotekhnika, No 8, Aug 70, Abstract No 8 D80)

Translation: This article contains an investigation of an analysis of the frequency characteristics of amplifying cascades based on replacement of transistors by an active three-terminal network. The complex values of the conductivity matrix elements of the transistor based on a T-type equivalent circuit for drift-free transistors are presented. The frequency characteristics of the standard cascades are analyzed, and it is demonstrated that they have nonminimal phase properties. The calculation results are verified experimentally.

1/1

USSR   UDC 621.375.4

VIDZHYUNAS, A. M., VOSILYUS, S. K.

"Estimating the Effect of Scattering of the Transistor Temperature Parameters
on the Drift of Amplifying Cascades"

Translation: This article contains an investigation of a procedure for estimat-
ing the effect of scattering of the transistor temperature parameters on the
drift of amplifying cascades. Here, the transistor is depicted as an active
three-terminal circuit, and the drift is estimated by three equivalent sources
of drift currents. Histograms of the equivalent sources of the drift currents
are presented for the P40A transistor, and the statistical drift parameters in
standard cascades are analyzed.

1/1

Nitrogen Compounds

USSR

UDC 542.91:547.362

MAVROV, M. V., VOSKANYAN, E. S., SEVERINA, T. A., and KUCHEROV, V. F.,
Institute of Organic Chemistry imeni N. D. Zelinskiy, Academy of Sciences
USSR

"Synthesis of Diacetylenic Hydroxyamines"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 5, 1971,
pp 1088-1091

Abstract: Several new types of polyfunctionally substituted diacetylenes were
synthesized by the condensation of 4-hydroxy-3-alkyl(or dialkyl) amino-
butynee-1 with different bromoacetylenes under Kadio-Khodkevich conditions.
The highest yields of the desired products (70-90 percent) were obtained when
(Ia) was condensed in methanol solution in the presence of catalytic amounts of
Cu_2Cl_2, and in an aqueous solution of ethylamine with a 1.5-2 fold excess of
the corresponding bromoacetylenic compounds at temperatures not higher than
-10°. Infrared spectra of these compounds contain absorption bands in the
2200-2260 cm^{-1} region. They are of moderate intensity corresponding to the
conjugated substituted diacetylenic group. Also found in the spectra are
absorption bands corresponding to the bond vibrations of the functional groups.
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USSR

MAVROV, M. V., Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 5, 1971, pp 1088-1091

After exhaustive catalytic hydrogenation in alcoholic solution in the presence of a Pt-catalyst, diacetylenic hydroxylamines readily absorb 4 moles of H_2 (forming previously unknown aliphatic hydroxylamines (III). No other synthetic pathways were known for these products.

USSR

UDC 669.713.7.01

REVAZYAN, A. A., MELKONYAN, V. A., AGASIYEV, L. I., and YOSKANYAN, G. M.

"Anode Diffusion in Aluminum Electrolysis"

Moscow, Tsvetnyye Metally, No 10, Oct 70, pp 38-40

Abstract: The existence of diffused hydrogen in aluminum is discussed on the basis of available data. An experiment on the electrolysis of a cryolite aluminum oxide melt in a sintered corundum cell, conducted with the purpose of establishing whether the hydrogen comes from water electrolysis, is described. The possibility of hydrogen anode diffusion and its cathode emanation was verified by laboratory tests in the sintered corundum cell. The absence of a cathode aluminum formation process was demonstrated by conducting the electrolysis with a hydrogen-saturated anode.

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1/2   008
TITLE--REACTION OF MANGANESE SULFATE WITH SODIUM METASILICATE IN AN
    AQUEOUS SOLUTION -U-
    UNCLASSIFIED   PROCESSING DATE--23OCT70
AUTHOR-(03)-BABAYAN, G.G., VOSKANYAN, S.S., MKRTCHYAN, R.T.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(3), 491-7

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--MANGANESE COMPOUND, SULFATE, AQUEOUS SOLUTION, SODIUM
    COMPOUND, SILICATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/1944
CIRC ACCESSION NO--AP0118906
    STEP NO--UR/0080/70/043/003/0491/0497
        UNCLASSIFIED

CIRC ACCESSION NO--AP0118906   UNCLASSIFIED

PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REACTION BETWEEN MNSO SUB4 AND
NA SUB2 SIO SUB3 WAS STUDIED AS A FUNCTION OF THE RATIO MN
PRIME2POSITIVE -SIO SUB3 PRIME2NEGATIVE IN INTERVALS 0.05-3.0 BY THE
FOLLOWING METHODS: SOLY., D., PH, ELEC. COND. OF THE SOLNS. IN THE
ABOVE RANGE, 2 COMPDS. ARE FORMED, AT MN PRIME2 POSITIVE -SIO SUB3
PRIME2 NEGATIVE OF 0.05-0.7, A MN SILICATE WITH A RATIO MNO-SOO SUB2
EQUALS 0.5, AND AT MN PRIME2 POSITIVE -SIO SUB3 PRIME2 NEGATIVE RATIOS
OF 0.9-3.0, A MN METASILICATE WITH A RATIO MNO-SIO SUB2 EQUALS 1.0.
THERMOGRAPHIC STUDIES USING A QUARTZ BALANCE SHOWED THAT THE DEHYDRATION
PROCESS OCCURS CONTINUOUSLY UP TO 30PERCENT OF H SUB2 O CONTENT WHERE
ONLY A SMALL INFLECTION IS OBSD. THE DTA CURVE OF MN SILICATE HYDRATE
INDICATES A STRONG ENDOTHERMIC EFFECT AT 90DEGREES AND A WEAK EXOTHERMIC
EFFECT AT 575DEGREES. X RAY DATA FOR MNSIO SUB3 ARE PRESENTED.
FACILITY: ERAVAN. NAUCH. ISSLED. INST. KHIM., EREVAN, USSR.

UNCLASSIFIED

USSR

UDC 669.295.046.78

VELIKORODNYY, I. G., BEREZHNOY, N. N., BUGAYENKO, V. A., BERNADO, V. F.,
VOSKERICHYAN, A. KH.

"Study of the Magnetic Properties of the Process of Slag Pelletizing"

Sb. nauch. tr. N.-i. i proyekt. in-t po obogashch. i agloner. rud chern. met.
(Collected Scientific Works of the Scientific Research and Planning Design
Institute with Respect to Beneficiation and Sintering   of Ferrous Metal Ores),
1971, vyp. 15, pp 54-56 (from RZh-Metallurgiya, No 4, Apr 72, Abstract No
4G210)

Translation: The laboratory studies at the Mekhanobrchermet Institute with
respect to pelletizing Ti slag and Fe and Ti concentrates established the
possibility of obtaining pellets of satisfactory strength. One illus-
tration and 1 table.

1/1

1/2 016
TITLE--DEXTRIN 4 GLYCOSYLTRANSFERASE IN HUMAN SALIVA -U-
UNCLASSIFIED
PROCESSING DATE--04DEC70

AUTHOR-(02)-VOSKOBOYEV, A.I., PETROVA, A.N.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(3), 708-10

DATE PUBLISHED------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SALIVARY GLAND, GLUCOSE, STARCH, CHROMATOGRAPHY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605006/E12 STEP NO---UR/0020/70/191/003/0708/0710

CIRC ACCESSION NO--AT0139811
UNCLASSIFIED

2/2   016

CIRC ACCESSION NO--AT0139811   UNCLASSIFIED

PROCESSING DATE--04DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CHROMATOGRAPHIC STUDY OF SALIVA CONTG. EITHER STARCH ALONE OR ADMIXED WITH GLUCOSE AND MALTOSE, THEN INCUBATED, WAS REPORTED. THE ACTIVITY WAS COMPARED WITH THAT OF A PURE ALPHA AMYLASE SPECIMEN FROM MUTANT ASPERGILLUS ORYZAE. THE RESULTS SHOWED THAT THE TRANSFER ACTION OF HUMAN SALIVA IS CATALYZED BY DEXTRIN 4 GLYCOSYLTRANSFERASE PRESENT IN IT.   FACILITY: INST. BIOKHIM. IM. BAKHA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 621.317.382.023

VOSKOBOYNIK, L. B., KHRAPKO, A. M.

"A Thin-Film Bolometer for Measuring Power in the Submillimeter Wavelength Range"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronic Technology. Scientific and Technical Collection. SHF Technology), 1970, vyp. 11, pp 111-116 (from RZh-Radiotekhnika, No 2, Feb 71, Abstract No 2A330)

Translation: The authors present the design and parameters of a thin-film bolometer designed for measuring low power in the submillimeter wavelength range. A special feature of the bolometer is the fact that it is made on the basis of an oversize waveguide with a cross section of 3.6 × 1.8 mm which permits propagation of many modes. The bolometer is studied in the 0.3-0.8 mm wavelength range.

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USSR.

UDC 621.396.6--181.5 (088.8)

BARANOV, A.I., BATSKIAURI, V.D., VOSKOBOYNIKOV, I.I., GAVRILOV, R.A., GALYATKIN,
V.P., GOLUBTSOV, M.S., ZAMIKHOVSKIY, M.B., ZALIPSKIY, A.I., ZLOTIN, V.A.,
KAZATSKER, L.I., LAGUTKIN, G.V., LARIONOV, YU.S., PREOBRAZIENSKIY, S.P., MALKIN,
D.L., RAMENSKIY, I.V., SIMEONOVA, I.S., TIKHOMIROV, B.G., FISHEL', I.SH., SHUBERT.
M.M.

"Device For Deposition Of Multilayer Coverings In A Vacuum"

USSR Author's Certificate No 279291, filed 16 June 68, published 30 Nov 70 (from
RZh--Radiotekhnika, No 9, Sep 1971, Abstract No 9V272P)

Translation: A device proposed for deposition of multilayer coverings in a vacuum
is fulfilled in the form of a number of successively mounted independent operating
chambers supplied with evaporators, heaters, and an exhaust system. The device con-
tains a mechanism for transporting substrates, a mechanism for loading and unload-
ing, and a drive mechanism. With the object of increasing the reliability of the
device and improving the quality and reproducibility of the coverings deposited,
outside of the area of the arrangement of operating chambers and parallel to it a
supplementary vacuum chamber is installed, which serves for the deposition in it of
the transporting mechanism, and which communicates with each of the operating
chambers by means of vacuum-overlapping transfer windows located on the side wall
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USSR

BARANOV, A. I., et al., USSR Author's Certificate No 279291, filed 16 June 68, published 30 Nov 70 (from RZh--Radiotekhnika, No 9, Sep 1971, Abstract No 9V272P)

of the supplementary chamber at places for connection to it of the operating chambers. Each of the operating chambers or a group of them is provided with an individual system of high-vacuum pumping.

2/2

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USSR

VOSKOBOYNIKOV, I. M.

UDC 541.124:532.5

"Decomposition of Hexogene in a Detonation Wave"

V sb. 3-y Vses. simpozium po goreniyu i vzryvu, 1971 (Third All-Union Symposium on Combustion and Explosion, 1971--collection of works), Chernogolovka, 1971, pp 192-193 (from RZh-Mekhanika, No 11, Nov 71, Abstract No 11B742)

Translation: In the example of analysis of the volumetric and surface decomposition of hexogene it is demonstrated that it is possible approximately to calculate the parameters of the two-dimensional detonation wave if a real two-dimensional problem with lateral losses is replaced by a one-dimensional problem. It is proposed that part of the hexogene does not decompose, and it is considered a compressible incompletely heated additive. It is also assumed that the pressure in the reaction zone is constant and equal to the pressure at the Chapman-Jouguet point and that the detonation rate is determined by the total energy released in the reaction zone. The proportion of the hexogene which does not decompose is determined under the assumption that in the two-dimensional problem with axial symmetry the Chapman-Jouguet condition is satisfied on a conical surface. Considering the assumptions made and the assumption that the linear decomposition rate of the hexogene in the surface reaction is determined only by the pressure, the decomposition times of the hexogene grains from the surface
1/2

USSR

VOSKOBOYNIKOV, I. M., 3-y Vses. simpozium po goreniyu i vzryvu, 1971, Chernogo-
lovka, 1971, pp 192-193

are estimated using the relations for the detonation rate as a function of the
diameter of the charge of the mixtures of fine crystalline hexogene with the
liquid explosive and water. As a result of the estimates it was found that the
linear decomposition rates of hexogene from the surface increase with an increase
in pressure on the detonation front and that these rates are approximately iden-
tical for different explosive systems with the same pressure at the detonation
front.

2/2

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UNCLASSIFIED

TITLE--COMPARATIVE STUDY OF EQUATIONS OF STATE FOR PRODUCTS FROM THE EXPLOSION OF ORGANIC LIQUIDS -U-

PROCESSING DATE--30OCT70

AUTHOR-(02)-VOSKOBOYNIKOV, I.M., BOGOMOLOV, V.M.

COUNTRY OF INFO--USSR

SOURCE--TEPLOFIZ. VYS. TEMP. 1970, 8(1), 81-7

DATE PUBLISHED-------70

SUBJECT AREAS--PROPULSION AND FUELS, CHEMISTRY

TOPIC TAGS--EXPLOSION, COMBUSTION PRODUCT, HIGH TEMPERATURE EFFECT, HIGH PRESSURE EFFECT, EQUATION OF STATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0030

STEP NO--UR/0294/70/008/001/0081/0087

CIRC ACCESSION NO--AP0119026

UNCLASSIFIED

CIRC ACCESSION NO--AP0119026   UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE APPLICABILITY OF THE EQUATION
OF STATE OF MOL. CRYSTAL FOR DETN. OF PROPERTIES OF GASES AT HIGH TEMPS.
AND PRESSURES IS DISCUSSED. THE RESULTS OF CALCNS. ARE IN GOOD
AGREEMENT WITH THE EXPTL. RESULTS OBTAINED AT DETONATI.. OF HIGH
EXPLOSIVES. EQUATIONS FOR GENERALIZED EXPRESSION OF THE ADIABATIC SHOCK
CURVE FOR LIQUEFIED GASES AND EXPLOSION PRODUCTS ARE SUGGESTED.
FACILITY: INST. KHIM. FIZ., MOSCOW, USSR.

UNCLASSIFIED

Miscellaneous

USSR

UDC 669.1.003:620.4

VOSKOBOYNIKOV, V. G., PERLOV, N. I., KURBATOVA, N. O., MEL'NIK, N. A.

"Prospects for Utilization of the Thermal Energy of Nuclear Reactors at Ferrous Metallurgy Plants"

Moscow, Stal', No 11, Nov 72, pp 1052-1055.

Abstract: Based on a review of the literature and information materials, as well as the authors' own studies and technical and economic evaluation, possibilities are anlyzed of direct utilization of the thermal energy of nuclear reactors at metallurgical plants. Great interest is being shown in this problem in Japan and West Germany, due to the low reserves of fossil fuel and its high price. In the USA, although nuclear power engineering has been broadly developed, the use of nuclear reactor heat in ferrous metallurgy is considered unfavorable, primarily due to the lower cost of conventional fuel. Versions of the utilization of nuclear reactor heat at metallurgical plants of various structures with blast furnaces and with direct iron reduction shops have been studied for the conditions present in the USSR. The use of the heat of nuclear reactors at metallurgical plants leads to elimination of the share of natural gas from the balance. The low cost of natural gas in the USSR raises doubts as

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USSR

VOSKOBOYNIKOV, V. G., et al., Stal', No 11, Nov 72, pp 1052-1055

to the expediency of this suggestion. An economic criterion is suggested for the effectiveness of the use of nuclear reactor heat in ferrous metallurgy (in comparison to natural gas). The question of the economic effectiveness of the use of nuclear reactors must be solved considering all its aspects on the scale of the entire economy of the nation. At the present time, the problem has not yet gone beyond the stage of scientific research and experimental work.

2/2

1/2 029
UNCLASSIFIED
TITLE--EXPERIMENTAL BLAST FURNACE SMELTING BY USING HOT REDUCING GASES AND
COMMERCIAL OXYGEN -U-
AUTHOR--VOSKOBOINIKOV, V.G.

COUNTRY OF INFO--USSR

SOURCE--STAL' 1970, 30(4), 290-3

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--BLAST FURNACE, NATURAL GAS, OXYGEN, PRODUCTION EFFICIENCY,
FUEL CONSUMPTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/1284

STEP NO--UR/0133/70/030/004/0290/0293
CIRC ACCESSION NO--AP0136690
UNCLASSIFIED

CIRC ACCESSION NO--AP0136690   UNCLASSIFIED   PROCESSING DATE---04DEC70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CONVENTIONAL BLAST OF A 930 M
PRIME3 BLAST FURNACE WAS REPLACED WITH A MIXT. OF HOT DECOMPD. NATURAL
GAS AND COLD O. THE GAS WAS DECOMPD. BY CO SUB2 OF THE BLAST FURNACE
GAS AND STEAM IN A SPECIAL APP. IT WAS HEATED TI 841-914DEGREES AND
COMBINED WITH 221-71 M PRIME3 O PER TON OF IRON AND INTRODUCED IN THE
TUYERES. THEPRACTICE, OPERATING SMOOTHLY AT THE END, LOWERED THE COKE
RATE FROM 555 TO 448 KG PER TON AND DIRECT REDN. TO 10.6PERCENT WHEN
MAKING BASIC IRON. THE OPERATIONS WERE EASILY CONTROLLED BOTH FROM TOP
AND BOTTOM.

UNCLASSIFIED

1/2   011

UNCLASSIFIED

TITLE--REDUCING ORE TO SPONGE IRON WITH A HIGH CARBON IRON ALLOY -U-

PROCESSING DATE--11SEP70

AUTHOR--VOSKOBOYNIKOV, V.G., BOROK, B.A., TEPLENKO, V.G., SOLOVYEVA, Z.V., KELTSEV, V.V.

COUNTRY OF INFO--USSR

SOURCE--BRIT. 1,181,207

DATE PUBLISHED--11FEB70

SUBJECT AREAS--MATERIALS, EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--CHEMICAL PATENT, IRON ORE, HIGH CARBON ALLOY, CHEMICAL REDUCTION, CARBON, SPONGE IRON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/0197

STEP NO--UK/0000/70/000/000/0000/0000

CIRC ACCESSION NO--AA0100721

UNCLASSIFIED

2/2   011
CIRC ACCESSION NO--AA0100721   UNCLASSIFIED   PROCESSING DATE--11SEP70
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT. SPONGE IRON THAT IS MORE EASILY
PULVERIZED THAN THE NORMAL SWEDISH PRODUCT, AND CAN BE PRODUCED MORE
QUICKLY AND AT LOWER TEMP.. IS OBTAINED BY HEATING 4.5 HR AT 1000DEGREES
IN H A 40 MM THICK LAYER OF ORE CONCS. MIXED WITH SIMILAR TO ONE THIRD
THEIR WT. OF AN FE-C ALLOY CONTG. 25-50PERCENT C TO PROVIDE SIMILAR TO
9PERCENT C BY WT. IN THE MIXT. THE ALLOY IS PRODUCED BY HEATING SPONGE
FE LUMPS 15-25 MM IN SIZE IN NATURAL GAS AT 850-950DEGREES, WHICH IS
THUS DECOMPD. AND CAN BE USED FOR THE ATM. NOTED ABOVE. THE ORE CONCS.
FOR THIS PURPOSE SHOULD CONTAIN 70PERCENT FE AND BE FINER THAN 0.2 MM.
THE SPONGE IRON PRODUCT CONTAINS 98PERCENT FE AND 0.05PERCENT C, AND IS
EASILY PULVERIZED. THE YIELD-UNIT FURNACE VOL. IS 26PERCENT HIGHER WHEN
THIS REDUCING AGENT IS USED INSTEAD OF COKE. NO SPECIAL APP. IS
REQUIRED.

UNCLASSIFIED

1/2   018
UNCLASSIFIED
PROCESSING DATE--23OCT70

TITLE--ELECTROPHORETIC SEPARATION AND THE DETERMINATION OF ACID SOLUBLE
NUCLEOTIDES CONTENT IN ANIMAL TISSUE -U-

AUTHOR--VOSKOBOYNIKOV, V.G.

COUNTRY OF INFO--USSR

SOURCE--VOPROSY MEDITSINSKOY KHIMII, 1970, VOL 16, NR 3, PP 323-326

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--NUCLEOTIDE, ELECTROPHORESIS, PHOSPHORYLATION, BIOCHEMISTRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/0636

STEP NO--UR/0301/70/016/003/0323/0326

CIRC ACCESSION NO--AP0122738

UNCLASSIFIED

CIRC ACCESSION NO--AP0122738   UNCLASSIFIED   PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RECENTLY SOME REPORTS WERE PUBLISHED ON THE POSSIBLITY OF TISSUE ACID SOLUBLE NUCLEOTIDES SEPARATION ACCORDING TO THE EXTENT OF THEIR PHOSPHORYLATION BY MEANS OF ELECTROPHORESIS. BUT PH CHANGES AND DIFFUSION OF BUFFER AS THE RESULT OF ELECTROPHOREGRAMS HEATING MAKE THE RESOLUTION WORST AND HINDER THE SHORTENING OF ITS DURATION BECAUSE OF POTENTIAL GRADIENT INCREASE. THESE FAILURES IS ABOLISHED BY MEANS OF SEPARATION IN PETROLEUM ETHER LAYER WHICH SERVES AS COOLING AGENT. THE FREE ACCESS TO THE PAPER STRIPS THROUGH THE PERFORATED SUPPORTING PLATE, FORCED CIRCULATION, AND THE CONSTANT TEMPERATURE OF PETROLEUM ETHER PROVIDE THE EFFECTIVE COOLING OF ELECTROPHOREGRAMS. THE STABILITY OF SEPARATION CONDITIONS, GOOD REPRODUCIBILITY AND CLARITY OF ELECTROPHOREGRAMS, AND SHORTENING OF THE DURATION OF SEPARATION TIME UP 10 1,5-1,45H WAS REACHED. THE DESCRIPTION OF THE APPARATUS AND FORMULA FOR THE CALCULATION OF NUCLEOTIDES CONTENT IN MICROMOLES ARE PRESENTED. THE POSSIBILITY OF USE OF SPECIAL COEFFICIENTS IS DISCUSSED.   FACILITY: THE LABORATORY OF BIOCHEMISTRY CENTRAL RESEARCH ROENTGENO-RADIOLOGICAL INSTITUTE, USSR MINISTRY OF HEALTH, LENINGRAD.

UNCLASSIFIED

VOSKOBOYNIKOV, V. V.

JPRS 59205
L-73

3

v-16. STRUCTURE OF THE POLYCRYSTALLINE SILICON FILMS SYNTHESIZED IN A LOW-
PRESSURE REACTOR

[Article by F. L. Edel'man, V. V. Voskoboynikov, V. I. Latina, Novosibirsk;
Novosibirsk, III Simpozium po Protsessam Rosta i Sinteza Poluprovodnikovykh
Kristallov i Plenok, Russian, 12-17 June, 1972, P 67]

The growth processes in the structural characteristics of the polycrystal-
line silicon films obtained by pyrolysis of monosilane in a reduced pressure
reactor are described[1]. The polycrystalline silicon films were applied to the
surface of an amorphous layer of silicon nitride up to 2000 Å thick synthesized
in the same cycle on (111) and (100) silicon. Two regimes are analyzed for
obtaining the polycrystalline silicon: high (I) and low (II) intensity of the
molecular beam.

It is demonstrated that in mode I, two stages of the formation of the
structure are possible: the initial islet growth (primarily to 900°C) and
recrystallization proceeding in individual cases, with the formation of
textures. The time-temperature functions of the number of sinters and the
grain growth rate are presented. The recrystallization activation energy is
defined on the order of 1.2-1.7 ev/at. The pyrolysis temperatures of 700-1100°C
and times of 15-120 seconds were used.

Analogous functions were studied for mode II at temperatures of 700-1200°C
and with a pyrolysis time of 5-120 seconds. The structure of the films retained
the islet nature where, beginning with 900°C, the texturing is noted (with large
exposures), and at ≤1200°C, textures are observed after 10 seconds from the
beginning of pyrolysis. There is a relation between the orientation of the
silicon-substrate and the texture.

[1] B. A. Joyce, et al., Philos. Mag., No 14, 289, 301, 1966; No 15, 1167,
1967; No 17, 1163, 1968; No 19, 403, 1969.

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USSR

VOSKOBYNIKOV, Yu. Ye., TOMSONS, Ya. Ya., Novosibirsk

"The Recovery of the Spectral Densities of Input Signals in Measuring Systems"

Abstract: It is frequently necessary to determine integral characteristics of random processes measured by some device. To increase the frequency range observed and reduce error, it is necessary to consider the dynamic characteristics and noise of the measuring system. Such systems can usually be represented by an integral relationship:

$$\int_{-\infty}^{\infty} k(t-\tau)x(\tau)d\tau + n(t) = y(t) + n(t) = z(t); \quad t \angle OT).$$

However, within a frequency band we have the expression

$$A(\omega)\Gamma_{xx}(\omega) + \Gamma_{nn}(\omega) = \Gamma_{zz}(\omega),$$

where $\Gamma_{xx}(\omega)$ and $\Gamma_{nn}(\omega)$ are the spectral densities of the input signal and noise respectively, and $A(\omega) = |W(i\omega)|^2$; $W(i\omega) = \int_{-\infty}^{\infty} k(\tau)e^{-i\omega\tau}d\tau$. It is 1/2

USSR

VOSKOBYNIKOV, Yu, Ye., TOMSONS, Ya. Ya., Avtometriya, No 4, Jul-Aug 73, pp 27-34

shown that an analysis based on the determination of $\Gamma_{zz}\omega$ and the evaluation of the input signal spectral density from the second expression is more accurate and simpler than an analysis based on the first expression.

Since the calculation of an optimal evaluation requires knowledge of the ratio of the noise spectral density to the output spectral density, which is frequently not available, a method of quasi-optimal evaluation is derived. Criteria are developed for determining the quality of evaluations on the basis of the signal-to-noise ratio at each frequency of the output signal.

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Graphite

USSR

UDC 661.006.2:543.872

ZAKHAROV, B. A., BAGROV, G. N., and VOSKOBOYNIKOVA, G. S.

"Effect of Certain Salts on the Failure of Graphite at 900°C in Air"

Moscow, Neorganicheskiye Materialy, Vol 10, No 1, Jan 74, pp 157-158

Abstract: Data are presented which characterize the effect of certain inorganic substances and compounds on the failure of synthetic graphite in the course of one hour at 900°C, created by thermal shock. Large losses due to burning (up to 50%) are typical for graphite under these conditions. Consequently, the failure of graphite (grade MG-OSCh) and the effect of the chosen inorganic substances were characterized by the distribution of mass according to particles of varying size after heat treatment. Soaking graphite for one hour at 900° C in air causes a breakdown of the graphite particles by 25% and the appearance of new particles measuring 630 (15%), 400 (4%), 250 (1%), and 160 microns (5%). Graphite saturated with phosphoric acid had the same amount of breakdown. Application of haloids (potassium chloride and bromide and ammonium chloride) sequentially lowered the breakdown of graphite from 25 down to 11-5%. Saturation with calcium acetate completely eliminated the breakdown of graphite;
1/2

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ZAKHAROV, B. A., et al., Neorganicheskiye Materialy, Vol 10, No 1, Jan 74, pp 157-158

after heat treatment only particles of the initial size of 800 microns were present. Fourteen inorganic substances were used in this study and a table is presented which shows the percentage of these used along with the particle sizes of graphite resulting from saturation with these substances. One table.

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USSR   UDC 51

BURIKOV, A. D., VOSKOV, I. S., and SUSHCHINSKIY, I. M.

"Method of Solving Special-Type Discrete Programming Problem"

Tr. Mosk. in-ta elektron. mashinostr. (Works of Moscow Institute of Electronic
Machine-Building), 1971, vyp. 16, Part 2, pp 111-117 (from RZh-Matematika,
No 5, May 72, Abstract No 5V422 by YU.FINKEL'SHTEYN)

Translation: The conveyer-line synchronization problem is formulated as a
special-type, integral linear-programming problem. To solve it, the authors
suggest an approximation directed-sorting algorithm (in the majority of experi-
ments conducted by the authors the algorithm yielded an exact solution).

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