

USSR

UDC 621.375.82

DUBNISHCHEV, Yu. N., KORONKEVICH, V. P., SOBOLEV, V. S., STOLPOVSKIY, A. A.,  
SENIN, A. G., UTKIN, Ye. N., VASILENKO, Yu. G., SHEYOYLOV, N. F.

"Development of the Doppler Method for Measuring Flow Rate"

V sb. Konf. po avtomatiz. nauch. issled. na osnove primeneniya ETSVM, 1972  
(Conference on the Automation of Scientific Research on the Basis of Com-  
puter Applications, 1972 -- Collection of Works), Novosibirsk, 1972,  
pp 63-70 (from RZh-Fizika, No 11, Nov 72, Abstract No 11D976)

Translation: A two-channel compensation circuit for a laser Doppler device  
for measuring velocity is proposed. Use of this device makes it possible to  
lower considerably the level of the low-frequency component of the signal,  
which causes disturbance in processing the signal. The potential possibi-  
lities of the method of electronic processing of a Doppler signal are con-  
sidered theoretically from the aspect of the accuracy of the measurements.  
The possibilities of the device are illustrated by an autocorrelation func-  
tion for different average flow rates. A. I. Serbin.

1/1

USSR

UDC 621.391.193

SENIN, A. G.

"Analyzing the Optimality Criteria Used in Form Recognition Study"

Novosibirsk, Avtometriya, No 5, 1971, pp 20-25

Abstract: This article deals with recurrent study algorithms, which are widely used in the solution of various problems of the optimization of automatic devices, particularly in the recognition of forms. An expression is given for the approximation of a partition surface, the coefficients in the expression being capable of formation by a regular algorithm of stochastic approximation. Through these algorithms, the coefficients converge to an optimal minimizing error functional. In practice, the partition surface is in the form of the sum of several determined functions with coefficients that are adjusted in the study process.

1/1

USSR

UDC 620.171.3.531.781.2.087-92.62-974



LESHCHENKO, V. M., DOZLOV, I. A., NOVIKOV, N. V., POTAPOVA, V. F., SENIN, A. M.  
and GORODYSKIY, N. I. Institute of Strength Problems, Ukrainian SSR Academy  
of Sciences (Kiev, Kaliningrad, Moskovskaya oblast)

"Investigation of the Work Capability of Series-Produced Tensoresistors Under  
Temperature Conditions to -269°C"

Kiev, Problemy Prochnosti, No 11, Nov 73, pp 101-105

Abstract: On the basis of experimental research, it is established that series-  
produced tensoresistors, with the use of constantan for the sensitive element  
and vinyflex lacquer as the base and adhesive, may be used for the measurement  
of deformations at static and dynamic loads under low-temperature conditions  
(to -269°C). An evaluation is made of the influence of low temperatures upon  
the coefficient of tensoresistor sensitivity, and consideration is given to the  
origination of apparent deformations and to the possibilities of taking them  
into account.

It was found that tensoresistors made in the manner described above are  
capable of functioning to a relative deformation of  $\epsilon \approx 2.5\%$ , and that with  
dynamic loading at a temperature of -269°C and with asymmetric loading to a  
relative deformation of  $\epsilon = \pm 0.43\%$  these tensoresistors are capable of  
1/2

USSR

LESHCHENKO, V. M., et al., Problemy Prochnosti, No 11, Nov 73, pp 101-105

functioning for up to  $(2.4-3.1) \times 10^6$  cycles. The stressed and deformed state of tubular specimens from various materials was investigated during cooling of the specimens from 20 to  $-269^\circ\text{C}$ .

For measuring deformations brought about by temperature gradients or due to inhomogeneity of the material of the components, tensorresistors with identical temperature characteristics should be used, and the tensorresistors should be selected and grouped on the basis of the apparent deformations in the given temperature interval.

7 figures. 6 references.

2/2

USSR

UDC 539.4

SENIN, A. M., LAMASHEVSKIY, V. P., SIDOROV, N. G., KOPYLOV, A. K., NOVIKOV, N. V., and LEBEDEV, A. A., Kiev, Institute for Problems of Strength, Academy of Sciences UkrSSR

"Strength of Welded Pipe Joints from Heterogeneous Metals at Room and Low Temperatures"

Kiev, Problemy Prochnosti, No 8, Aug 70, pp 64-69

Abstract: The results are presented of an investigation of the strength of welded pipe joints made from heterogeneous metals, such as Kh18N10T steel and AMG-6 alloy, using friction welding and a soft AD1 aluminum interlayer. Tests were conducted under various loading conditions at room (20°C) and low temperatures (-180°C). The effect of the scale factor on strength was investigated by varying the pipe diameter, the width of the interlayer, and the shape of the joints. The results show that the width of the soft interlayer in a square butt joint substantially affects the strength of the joint, and that qualitatively different effects are obtained at different temperatures. At room temperature the strength of the joint decreases with interlayer width, while at -196°C the strength increases.

1/2

USSR

SENIN, A. M., et al, Problemy Prochnosti, No 8, Aug 70, pp 64-69

In order to determine the magnitude of thermal stress, an investigation was made of the stress level in the soft interlayer and in joined items during cooling. The measurement of thermal deformations of welded joint elements was conducted tensometrically. The investigation of the effect of loading conditions on strength characteristics was conducted on a test bench designed for combined loading of pipe samples by axial force and internal pressure under conditions of room and low temperatures. The axial and tangential stresses were computed by Lamé formulas for a thick wall cylinder under internal pressure. The fracture stress levels, during application of axial force, internal pressure, and combined proportional loading by axial force and internal pressure at 20° and -180°C are presented in graphs and tables.

2/2

- 40 -

1/2 020 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--ENTHALPY OF BEH SUB2 FORMATION -U-  
AUTHOR-(03)-AKHACHINSKIY, V.V., KOPYTIN, L.M., SENIN, M.D.  
COUNTRY OF INFO--USSR  
SOURCE--AT. ENERG. 1970, 28 (3), 245-7  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY, PHYSICS  
TOPIC TAGS--BERYLLIUM COMPOUND, HYDRIDE, ENTHALPY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1997/1576 STEP NO--UR/0089/70/028/003/0245/0247  
CIRC ACCESSION NO--AP0120355  
UNCLASSIFIED

2/2 020  
CIRC ACCESSION NO--AP0120355

UNCLASSIFIED

PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ENTHALPY OF FORMATION OF SOLID BEH SUB2 AT 298DEGREEEK (DELTA H SUBF298DEGREES) CALCD. FROM DATA ON THE HEATS OF DISSOLN. OF METALLIC BE AND BEH SUB2 IN 5PERCENT HCL, IS NEGATIVE 4.60 PLUS OR MINUS 0.17 KCAL-MOLE.

UNCLASSIFIED



1/2 014

TITLE--AN ALL PURPOSE MILL -U-

UNCLASSIFIED

PROCESSING DATE--30OCT70

AUTHOR--SENIN, V.

COUNTRY OF INFO--USSR

SOURCE--SOVETSKAYA ROSSIYA, JULY 7, 1970, P 2, COLS 6-8

DATE PUBLISHED--07JUL70

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

TOPIC TAGS--ROLLING MILL, METAL ROLLING/(U)300 ROLLING MILL, (U)350 ROLLING MILL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/0866

STEP NO--UR/9022/70/000/000/0002/0002

CIRC ACCESSION NO--AN0122910

UNCLASSIFIED

2/2 014  
CIRC ACCESSION NO--AN0122910  
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT. A NEW ROLLING MILL, THE "350", HAS BECCME OPERATIONAL AT THE KIROV PLANT IN LENINGRAD. IT WILL ROLL SHAPES FROM VARIOUS GRADES OF STEEL. THE MILL CAN BE RETOGLED IN LESS THAN 15 MINUTES TO ROLL SHAPES OF DIFFERENT PROFILE OR SIZE. THE COMPLETELY AUTOMATED 300 M LONG MILL WILL BE SERVICED BY 130 ELECTRICIANS.

UNCLASSIFIED

USSR

UDC 669.71.472

TSYPLAKOV, A. M., SENIN, V. N., TIMCHENKO, B. I., IKRIN, G. YE., FROLOVA, E. B.

"Aluminum Electrolyzer with Consumable Pins"

Tr. Vses. n.-i. i proyekt. in-ta alyumin., magn. i elektrokn. prom-sti  
(Works of the All-Union Scientific Research and Planning and Design Institute  
of Aluminum, Magnesium and Electrode Industry), 1970, No 71, pp 75-84 (from  
RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G168)

Translation: An experimental electrolyzer with a current strength of 130 kiloamps with consumable pins manufactured from 128 x 7 m Cu tubes was tested. Replacement of the extractable steel pins by consumable copper pins permitted the mean voltage to be decreased by 286 millivolts as a result of which the yield of aluminum per kilowatt-hour was increased by 5.5 grams. The current efficiency was increased by 1.25%. Improvement of the anode quality by lowering the thermal load and absence of rearrangement of the pins led to a reduction in the consumption of the anode mass by 67 kilograms/ton of aluminum and a reduction in the removal of carbon-carrying froth by 43 kg/ton as a result of which the consumption of F salts was reduced by 24 kg/ton.

1/2

USSR

TSYPLAKOV, A. N., et al., Tr. Vses. n.-i. i proyekt. in-ta alyumin., magn. i elektrodn. prom-sti, 1970, No 71, pp 75-84

The copper material balance indicating that 89% of the copper goes into the aluminum is presented. The nonrecoverable losses of copper are ~ 4%. There are 3 tables, 1 illustration and an 8-entry bibliography.

2/2

- 6 -

USSR

UDC 533.9

PREOBRAZHENSKIY, N. G., and SENINA, A. V.

"Spectral Characteristics of an Optically Dense Plasma"

Tomsk, Izvestiya Vysshikh Uchebnykh Zavedeniy — Fizika, No 4, 1971, pp 25-37

Abstract: The modern possibilities of spectroscopy of an optically dense plasma are analyzed and reviewed. Primary attention is given to calculating the intensity distribution  $I(\nu)$  with respect to the reabsorbed spectral line, which makes it possible to obtain interesting spectral characteristics of the line, including the integral characteristics.

The radiation transfer equation is derived and solved for  $I(\nu)$  and  $S(\nu, r)$  [the source function] become "disengaged" only under the assumption of complete redistribution with respect to frequencies in the act of re-emission of a photon belonging to the given line. A quantum investigation of the source function is presented, and basic generalizations are made concerning the defined category of problems of plasma physics and generalizations of the Biberman equation of a more general nature: efforts to consider the electron density and plasma temperature gradients and efforts to go beyond

1/2

USSR

PREOBRAZHENSKIY, N. G., and SENINA, A. V., Izvestiya Vysshikh Uchebnykh Zavedeniy -- Fizika, No 4, 1971, pp 25-37

the two-level model of the atom. The successive approach to obtaining the source function  $S(\nu, r)$  connected with investigating the kinetics of the excited atoms in an inhomogeneous (and, in the general case, nonequilibrium) optically dense plasma still has low efficiency from the point of view of finding the spectral characteristics of the plasma. This approach either is connected with extraordinary idealization of the problem or insurmountable mathematical difficulties. The attempt at numerical calculation of the function  $S(\nu, r)$  on a computer using quite strict kinetic equations does not do away with the necessity for numerous approximations of cross sections and simulation of the spatial distributions  $N_e(r)$ ,  $T_e(r)$ ,  $P_e(\nu, r)$ ,  $P_a(\nu, r)$ , and so on. Nevertheless, development of applications of simulation in spectroscopy of optically dense plasma is an urgent problem.

2/2

- 60 -

USSR

UDC: 621.396.622.2

MOVSHOVICH, M. Ye., ~~SENINA R. S.~~

"Characteristics of Mixer Circuits Designed for Use in Micro-electronics"

V sb. Materialy Nauch.-tekhn. konf. Leningr. elektrotekhn. in-t svyazi. Vyp. 5 (Materials of the Scientific and Technical Conference of Leningrad Electrical Engineering Institute of Communications--collection of works, No 3), Leningrad, 1971, pp 213-218 (from RZh-Radiotekhnika, No 3, Mar 72, Abstract No 3D41)

Translation: The authors determine the parameters of frequency conversion when using transistors connected in a differential circuit which is extensively used in micromodules with the difference that resistors are added in the emitter circuit to linearize the transistor characteristics. It is assumed that the transistor characteristics are exponential. N. Ch.

1/1

UDC 621.396.622.2:621.372.622

USSR

SENINA, R. S.

"Steepness of Conversion and Two-Signal Distortions in a Field Transistor Mixer with a Junction Gate"

Materialy nauchno-tekhn. konferentsii. Leningr. elektrotakhn. in-t svyazi Vyp. 3 (Materials of the Scientific and Technical Conference. Leningrad Electrotechnical Communications Institute. Vyp. 3), Leningrad, 1970, pp 219-224 (from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9D18)

Translation: In this article a formula is obtained for the steepness of conversion and the coefficients of two-signal distortions in the converter in a channel transistor in the presence of feedback with respect to alternating and direct current. Results are presented from calculating these variables. The results give good comparison with experimental data.

1/1



UDC 612.821.6.001.5

USSR.

VORONIN, L. G., Corresponding Member of the Academy of Sciences USSR, KONOVALOV, V. F., ~~SENINA, R. YA.~~, and SERIKOV, I. S., Institute of Biological Physics, Academy of Sciences USSR, Pushchino-na-Ok- River

"Correlation Between Electrographic Signs of Cerebral Processes and Short-Term Memory"

Moscow, Doklady Akademii Nauk SSSR, Vol 201, No 1, 1971, pp 253-256

Abstract: The investigation was performed on 70 healthy children and adults aged 5-36 and 46 patients (cerebro sclerosis or alcoholism) whose bioelectrical currents were recorded (visual and motor cortex EEG, skin resistance, ECG, and EMG) while they were being exposed to auditory and visual stimuli and, the same time, the duration and the volume of their short-term memory was being determined by the answers they supplied to questions (asked at progressively longer intervals) as to what they had seen or heard, how much of it, and in what sequence. The period during which the initial signs of cerebral excitation caused by the emotionally indifferent stimuli persisted in the skin-resistance records was longer in children and patients than it was in healthy adults. The volume of short-term memory, on the other hand, was greatest in healthy adults. Thus, there is a reciprocal correlation between the persistence of

1/2

USSR

VORONIN, L. G., et al., Doklady Akademii Nauk SSSR, Vol 201, No 1, 1971,  
pp 253-256

the initial signs and the short-term memory volume. In small children, the power, flexibility, and balance of cerebral activity are not yet fully developed, while in patients with brain damage they are deteriorated; as a result, the initial signs are quenched with a delay. In healthy adults, the well-established cerebral activity as well as the properly functioning second signal system into which the information is transferred are responsible for both the quick quenching of the initial signs and short-term memory of greater capacity.

2/2

- 69 -

USSR

SUSHCHENKO, V. P., SEN'IVSKIY, I. I., MITINEV, V. A.

UDC: 621.397.7

"A Device for Facsimile Recording on Electrochemical Paper"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki,  
No 31, Nov 71, Author's Certificate No 318175, Division H, filed 30Dec69,  
published 19Oct71, p 214

Translation: This Author's Certificate introduces a device for facsimile recording on electrochemical paper. The device contains a scanning drum, a writing element pressed against paper, a spool for the paper roll, take-up rollers, and a heater. As a distinguishing feature of the patent, blurring of the image is reduced by locating the heater in an enclosed chamber with a horseshoe cross section which directs the heat rays through a slot in the chamber wall onto the paper in the region of contact with the writing element.

1/1

UNCLASSIFIED  
TITLE--TEMPERATURE DEPENDENCE OF VIBRATIONAL RELAXATION TIMES IN OXYGEN  
-U-  
AUTHOR--(02)--ISMAYLOV, I., SENKEVICH, A.A. PROCESSING DATE--30OCT70  
COUNTRY OF INFO--USSR  
SOURCE--AKUST. ZH. 1970. 16(1). 150-2  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY, PHYSICS  
TOPIC TAGS--OXYGEN, VIBRATION RELAXATION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1996/1988  
CIRC ACCESSION NO--AP0118947  
STEP NO--UR/0046/70/016/000/0150/0152  
UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0118947

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A FORMULA FOR THE TEMP. DEPENDENCE OF THE ADIABATIC VIBRATIONAL RELAXATION TIME OF O IS DERIVED. THE ADIABATIC VIBRATIONAL RELAXATION TIME OF O IS DERIVED. THE ADIABATIC VIBRATIONAL RELAXATION TIMES CALCD. BY THIS EQUATION FOR O AGREED WELL WITH EXPTL. BETWEEN 200 AND 3500DEGREES K. FACILITY: MOSK. OBL. PEDAGOG. INST. IM. KRUPSKOI, MOSCOW, USSR.

UNCLASSIFIED

SENKEVICH, B. V.

Fochukov, V. N., Shadrkov, O. A.	Application of the TSi-19 Piezoelectric for Ultrasonic Scanning of a Laser Beam .....	402
Vanestian, R. A., Lebedev, L. R., Smaykin, N. I.	Reflection of the Lobes of the Reflection Pattern of Coherent Light on Rotation of the Reflecting Surfaces .....	405
Arzen'yan, T. I.	Study of the Statistical Properties of Variations of the Laser Field Intensity on Propagation on a Ground Route .....	412
Arzen'yan, T. I., Semenov, A. A.	Analysis of Random Variations of the Laser Field Intensity in the High-Frequency Part of the Spectrum During Propagation in the Troposphere	420
Gusev, V. G., Vorobyshikov	Study of the Passage of Phase Modulated and Amplitude Modulated Optical Band Signals Through the Atmosphere .....	425
Hilyutin, Ye. P., Lobkova, L. M., Litvinov, T. P., Chistyakov, A. B.	Experimental Study of Laser Beam Propagation in the Atmosphere .....	429
Lobkova, L. M.	Power Fluctuations of Laser Radiation Caused by a Turbulent Atmosphere .....	435
Vlasov, G. I., Levin, I. H.	Laser Beam Videoinformation Transmission Range in an Aqueous Medium .....	443
Galin, V. N., Kabanov, M. V.	Spatial and Time Characteristics of Atmospheric Noise in the Visible Range of the Spectrum ...	447
Vaytsel, V. I., Khamaystov, S. S.	Holographic Recording Through Random Media ...	453
Sedukhin, B. K., Lyubov, Ye. I., Osipov, Yu. H.	Frequency Stabilization of Laser Emission by the Active Method with the Application of an Auxiliary Heterodyne .....	460
Yegorov, Yu. P., Petrov, A. S.	Experimental Measurement of the Natural Radiation Line Width of a Gas Laser with Coupled Types of Oscillations .....	466
Sagatov, E. A., Nazarov, A. U.	Correlation Analysis of the Coherence of Laser Emission .....	471
Sagatov, E. A., Nazarov, A. U.	Laser Noise During Operation of an Optical Quantum Amplifier .....	478

29  
Page

TECHNICAL TRANSLATION

HW 01 / PSTC-INT-23-2015-72  
29 Nov 72

ENGLISH TITLE: PROBLEMS OF LASER BEAM DATA TRANSMISSION  
PROCEEDINGS OF THE FIRST ALL-UNION CONFERENCE, KIEV,  
SEPTEMBER 1968

RUSSIAN TITLE: PROBLEMY PEREDACHI INFORMATSII LAZERNYM IZLUCHENIEM

AUTHOR: L. A. DERJUGIN, ET AL.

SOURCE: KIEV ORDER OF LENIN STATE UNIVERSITY  
IMENI T. G. SHEVCHENKO

Translated for PSTC by AC51

NOTICE

The contents of this publication have been translated as presented in the original text. No attempt has been made to verify the accuracy of any statement contained herein. This translation is published with a minimum of copy editing and graphics preparation in order to expedite the dissemination of information.

Approved for public release. Distribution unlimited.

Final Page -

Acc. Nr.: AP0046788

Ref. Code: UR0113

USSR

UDC 667.661.92:629.113.901.24

SENKEVICH, E. V.

"Evenness of the Heating of Articles in a Convective Radiation Drier With Low-Temperature Panel Radiators"

Moscow, Avtomobil'naya Promyshlennost' (Motor Vehicle Industry), No 1, 1970, pp 30-31

Translation: A simplified technique is presented for calculating the heating of articles in a convective radiation drying chamber with low-temperature panel radiators. Maximum uniformity of temperature distribution in the articles is obtained in the drying chamber. (1 table, 1 illustration, 7 biblio. ref.)

1/1

18 101

REEL/FRA  
19790092



1/2 023 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--ON THE CLASSIFICATION OF SILICOTUBERCULOSIS -U-

AUTHOR--(05)--MOLOKANOV, K.P., RASHEVSKAYA, A.M., KONCHALOVSKAYA, N.M.,  
SENKEVICH, N.A., KALITEYEVSKAYA, T.N.  
COUNTRY OF INFO--USSR

SOURCE--GIGIYENA TRUDA I PROFESSIONAL'NYYE ZABOLEVANIYA, 1970, NR 4, PP  
49-52  
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--TUBERCULOSIS, SILICA, RADIOGRAPHY, NECROSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1983/1736

STEP NO--UR/0391/70/000/004/0049/0052

CIRC ACCESSION NO--AP0054578

UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0054578

ABSTRACT/EXTRACT--(U) GP--0- ABSTRACT. A CLINICO ROENTGENOLOGICAL CLASSIFICATION OF SILICOTUBERCULOSIS WHICH FOR A NUMBER OF YEARS IS HAS BEEN USED AT THE CLINIC OF THE INSTITUTE OF INDUSTRIAL HYGIENE AND OCCUPATIONAL DISEASES OF THE AMS OF THE USSR, IS OFFERED FOR DISCUSSION. THE AUTHORS SUBDIVIDE SILICOTUBERCULOSIS INTO 2 DISTINCT GROUPS. THE FIRST INCLUDES SILICOTUBERCULOSIS WHERE THE FORM OF TUBERCULOSIS CAN BE CONDITIONALLY SPECIFIED AGAINST THE BACKGROUND OF SILICOSIS. TO THE 2D GROUP IS REFERRED THE PROCESS IN WHICH DEFINITION OF THE TUBERCULOSIS FORM AND, AT TIMES, THE STAGE OF SILICOSIS TOO APPEARS TO BE IMPOSSIBLE. THE FOLLOWING FORMS OF THE DISEASE ARE SET APART WITH REFERENCE TO THE 2D GROUP: SILICOTUBERCULOUS BRONCH ADENITIS, MICRO AND MACRONODULAR AND ALSO MASSIVE SILICOTUBERCULOSIS. MOREOVER, IT IS SUGGESTED THAT THE PRESENCE OF TUBERCULOUS INTOXICATION, CASEOUS DEGENERATION AND POSITIVE BECILLOSCOPY BE POINTED UP SEPARATELY, ALONG WITH THE ABOVE MENTIONED CONDITIONS.

UNCLASSIFIED

USSR

UDC 621.391.63

GALUTIN, V.Z., SENKEVICH, S.S., SKIBARKO, A.P.

"Some Features Of The Operation Of A FM Range Finder With The Use Of A Gas Laser"

Izv. VUZ:Radioelektronika, Vol XV, No 12, Dec 1972, pp 1421-1427

Abstract: The paper studies the peculiarities and possible uses of laser radiation for measurement of distances with the aid of frequency modulation. The effect was experimentally observed of the "unevenness" of change of the medium frequency of the output signal of a laser FM range finder with a change of the distance being measured. A study of the output signal showed that this effect is connected with a quasi-periodicity originating because of the recurrence period of the laser radiation during a change of frequency of the modes which are generated at an intermode distance. The results of a calculation confirm that the effect of "unevenness" is connected with the quasi-periodicity of the radiation. During the calculation, subdivision of the modulation period into individual elementary cycles was employed, which made it possible to obtain an analytical expression for the medium frequency of the output signal. It is concluded that it is impossible with the aid of a laser FM range finder to measure distance more precisely than the doubled length of the resonator. 4 fig. Received by editors, 21 December 1971.

1/1

- 33 -

USSR

UDC 621.91.01

GUN, G. Ya., POLUKHIN, P. I., and SEN'KIN, Ye. N.

"Mathematical Modeling of the Cutting Process"

Moscow, Plasticheskaya Deformatsiya Metallov i Splavov, "Metallurgiya"  
Publishing House, No 64, 1970, pp 41-52

Translation: In this article, the method of using potential fields to analyze the process of chip formation during cutting is considered. Analytical formulas are obtained for calculating the power parameters of the process. Minimizing the function received makes it possible to determine the optimal value of the back rake angle of the cutting tool in different cutting modes. Seven illustrations, 12 bibliographic entries.

1/1

USSR

UDC: 621.396.69:621.316.543(088.8)

SEN'KIVSKIY, I. I.

"A Device for Controlling a Multiple-Position Switch"

USSR Author's Certificate No 270018, filed 24 Jan 69, published 4 Aug 70  
(from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1V316 P)

Translation: This Author's Certificate introduces a device for controlling a switch located in a detachable module. The device contains a control lever connected by a drive mechanism to the switch shaft. The drive mechanism contains a lever mounted on the switch shaft with a slot which accommodates a tang connected to the control lever, and a tongue which rests on the projection of a strip with a specially shaped cut-out surrounding the support rod.

1/1

- 44 -

USSR

UDC: 536.246

BAKALIN, Yu. I., GOLUBENKO, G. G., KOLYKHAN, L. I., SEN'KO, A. S., SOLO-  
V'YEVA, V. N.

"Results of an Experimental Study of Heat Exchange During Boiling of Nitrogen  
Tetroxide in a Vertical Tube"

V sb. Dissotsiruyushch. gazy kak teplonositeli i rab. tela energ. ustanovok  
(Dissociating Gases as Heat-Transfer Agents and Working Fluids in Power  
Plants--collection of works), Minsk, "Nauka i tekhn.", 1970, pp 289-293  
(from RZh-Aviatsionnyye i raketnyye dvigateli, No 3, Mar 71, Abstract No  
3.34.118)

Translation: A description is presented of the experimental installation,  
measurement procedure and data processing method. Results are given from a  
study of heat exchange during boiling of  $N_2O_4$  in a vertical tube with natural  
circulation in the pressure region of 2-50 absolute atmospheres under thermal  
loads of  $(0.4-0.6) \times 10^5$  kcal/m<sup>2</sup>·hr. It is noted that heat exchange during  
boiling of a chemically reacting system differs considerably from heat ex-  
change during boiling of pure inert substances. Three illustrations, bibli-  
ography of five titles. Resumé.

1/1

USSR

UDC 8.74

SEN'KO, A. V.

"An Algorithm for Simulating the Production Control System on a Digital Computer"

V sb. Informatsionno-upravlyayushch. sistemy (Information Control Systems -- collection of works), Cheboksary, 1972, pp 127-159 (from RZh-Kibernetika, No 7, Jul 72, Abstract No 7V632)

Translation: A model of an operative control system comprises the target and the controlling element. The interface between them passes through the work areas, that is, the workers and their machine tools belong to the target, and the section foreman giving assignments to the workers belongs to the controlling section.

1/1

- 76 -

1/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--CHANGE IN THE KINETIC ENERGY OF THE BLAST AND ADJUSTMENT OF THE  
TUYÈRE DIAMETER WHEN USING NATURAL GAS -U-  
AUTHOR-(02)-SENKO, G.YE., STARSHINOV, B.N.  
COUNTRY OF INFO--USSR  
SOURCE--STAL' 1970, 30(2), 107-10  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR  
TOPIC TAGS--COKE, NATURAL GAS, BLAST FURNACE, KINETIC ENERGY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1994/1949 STEP NO--UR/0133/70/030/002/0107/0110  
CIRC ACCESSION NO--AP0115757  
UNCLASSIFIED



2/2 018

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0115757

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CALCNS. PERFORMED AND RESULTS OBTAINED ON BLAST FURNACES OPERATING WITH OR WITHOUT O ENRICHMENT OF THE BLAST AND USING NATURAL GAS ADDNS. TO THE BLAST SHOWED THAT BURNING OF THE LATTER IN THE TUYERES INCREASES KINETIC ENERGY OF THE GAS BLAST MIXT. AND ACTIVATES THE CENTER OF THE FURNACE WHILE REDUCING THE PERIPHERAL EFFECT. THE ORIGINAL LEVEL OF THE KINETIC ENERGY CAN BE RETAINED BY CORRESPONDINGLY INCREASING THE TUYERE DIAM. AN INCREASE FROM 180 TO 190 MM WITH A SIMULTANEOUS INCREASE OF BLAST VOL. FROM 3506 TO 3690 M PRIME2-MIN LED TO IMPROVED OPERATING CONDITIONS, AN 8.5PERCENT PRODUCTION INCREASE, AND A 20 KG-TON LOWERING OF THE COKE RATE, WHILE INCREASING TUYERE LIFE TO 30-5 DAYS. FACILITY: UKR. NAUCH. ISSLED. INST. METAL., KHARKOV, USSR.

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--MEASURING THORON, RADON-220, EXHALATION -U-  
AUTHOR--(03)-STYRO, B., NEDVECKAITE, T., SENKO, E.E.  
COUNTRY OF INFO--USSR  
SOURCE--J. GEOPHYS. RES. 1970, 75(18), 3635-8  
DATE PUBLISHED-----70

SUBJECT AREAS--NUCLEAR SCIENCE AND TECHNOLOGY, ATMOSPHERIC SCIENCES

TOPIC TAGS--RADON ISOTOPE, NUCLEAR EMULSION, RADIOACTIVITY MEASUREMENT,  
IONIZATION CHAMBER, NATURAL RADIOACTIVITY, SEASONAL VARIATION, GROUND  
SURVEY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/1059

STEP NO--US/0000/70/075/018/3635/3638

CIRC ACCESSION NO--AP0136479

UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0136479

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TWO METHODS OF MEASURING PRIME220 RN EXHALATION, BY DISINTEGRATION CHAMBER AND BY NUCLEAR EMULSION, ARE DESCRIBED. THE DATA ON THE PRIME220 RN EXHALATION UNDER VARIOUS WEATHER CONDITIONS AND STATES OF GROUND SURFACE ARE SUMMARIZED. THE AV. VALUES RANGE FROM ZERO, WHEN THE SNOW SURFACE IS COVERED BY ICE. TO 33 TIMES 10 PRIME NEGATIVE10 CI-CM PRIME2 SEC FOR DRY GROUND IN SUMMER.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--TURBULENT EXCHANGE AND WASH OUT BY MEASUREMENT OF NATURAL  
RADIOACTIVITY IN SURFACE AIR -U-  
AUTHOR--(04)-BAKULIN, V.N., SENKO, E.E., STARIKOV, B.G., TRUFKIN, V.A.  
COUNTRY OF INFO--USSR  
SOURCE--J. GEOPHYS. RES. 1970, 75(18), 3669-74  
DATE PUBLISHED-----70

SUBJECT AREAS--NUCLEAR SCIENCE AND TECHNOLOGY, ATMOSPHERIC SCIENCES  
TOPIC TAGS--ATMOSPHERIC RADIOACTIVITY, RADON, ATMOSPHERIC CIRCULATION,  
AEROSOL, DIFFUSION COEFFICIENT, NATURAL RADIOACTIVITY, RADIOACTIVE DECAY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3007/1060

STEP NO--US/0000/70/075/018/3669/3674

CIRC ACCESSION NO--AP0136480

UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0136480

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. BASED ON A COMPARISON OF METHODS OF MEASURING THE DEGREE OF DISEQUIL. BETWEEN THE SHORT LIVED DECAY PRODUCTS OF RN, AN IMPROVED AND SIMPLIFIED METHOD IS PROPOSED FOR GENERAL USE. IN ACCORDANCE WITH THEORETICAL CONSIDERATIONS, THE EXISTENCE OF A LINEAR DEPENDENCE BETWEEN RAA-RAB (PRIME218 PO-PRIME214 PB) AND RAB-RAC (PRIME214 PB-PRIME214 BI) CONCNS. RATIOS IN THE ATM. IS ESTABLISHED, PERMITTING DETN. OF THE ATM. CONCNS. OF RN, RAA, RAB, AND RAC FROM 2 POINTS ON THE RADIOACTIVITY DECAY CURVE FOR AEROSOL SAMPLES COLLECTED ON A FILTER. AS A RULE, 2 MAX. IN THE DIURNAL VARIATION OF DISEQUIL. BETWEEN RN AND ITS DAUGHTER PRODUCTS HAVE BEEN OBSERVED. FROM THE DIFFERENCES IN THIS VARIATION AT ALTITUDES OF 1, 11, AND 20 M, AN ATTEMPT IS MADE TO EXPLAIN THE MECHANISM OF CONVECTIVE AND DYNAMIC COMPONENTS OF TURBULENT EXCHANGE NEAR THE GROUND. FROM THE DIURNAL VARIATIONS OF RN AND THORON (PRIME220 RN) CONCNS. AT 1 AND 5 M AND THEIR SHORT LIVED DECAY PRODUCTS AT 1, 11, AND 20 M ABOVE THE GROUND, THE DIURNAL CHANGE IN THE TURBULENT DIFFUSION COEFF. IN THE SURFACE LAYER IS COMPUTED AND COMPARED WITH THAT FROM METEOROL. PARAMETERS. THE VELOCITY OF WASH OUT OF THE TROPOSPHERE IS ESTD. FROM RN-RAD CONCNS. RATIO VARIATIONS AVERAGED FOR 1 DAY INTERVALS. FACILITY: STATE

TEACHER INST., KIROV, USSR.

UNCLASSIFIED

USSR

12

UDC 539.1.074.3

BORISOV, A. A., BUGORSKIY, A. P., BUSHNIN, Yu. A., DEREVSHCHIKOV, A. A.,  
DUNAYTSEV, A. F., ZHIL'CHENKOV, V. D., MATULENKO, Yu. A., MESHCHANIN, A. P.,  
MIKHAYLOV, Yu. V., NURUSHEV, S. B., SEN'KO, V. A., SMIRNOV, V. V., SMIRNOV,  
Ye. V., SISKIN, V. V., SOLOV'YEV, L. F., and SOLOV'YANOV, V. L., Institute  
of High-Energy Physics, Serpukhov

"A Hodoscopic Installation for Investigation of the Elastic Scattering of  
High-Energy Particles"

Moscow, Pribory i Tekhnika Eksperimenta, No 3, May/Jun 73, pp 49-53

Abstract: A description is given of a hodoscopic installation, developed at  
the Institute of High-Energy Physics, for investigation of the elastic scat-  
tering of high-energy particles within the pulse range of 30-60 gigaelectron  
volts/sec. The range of dispersion angles covered by the installation is  
0-29 millirads with an angular resolution of  $\pm 0.17$  millirad. The total  
solid angle is 39 microsteres. The pulse is determined to within  $\pm 0.22\%$ .  
The resolving time is 35 nanosec. The dead time is 50 microsec. The pulse  
pass band of the spectrometer is 8%. The statistics-setup is up to  $10^6$  per  
hour. The installation is electrically coupled to a "Minsk-22" computer,  
which stores and processes the information during the experiment. The

1/2

12

USSR

BORISOV, A. A., et al., *Pribery i Tekhnika Eksperimenta*, No 3, May/June 73, pp 49-53

obtained results are immediately printed out in the form of tables and graphs, and also appear on the oscillograph screen. Monitoring equipment has been developed, which keeps track of proper operation of the hodoscopes. The first results have been obtained on the scattering of  $\pi^-$ -mesons on nuclei at a pulse of 50 gigaelectron volts/sec and of protons within the initial-pulse range of 30-60 gigaelectron volts/sec. 3 figures. 2 tables. 3 references.

2/2

-1/2 015 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--MOESSBAUER STUDY OF THE IRON GARNET ER SUB3 FE SUB5 O SUB12 -U-  
AUTHOR--(02)-BELOGUROV, V.N., SENKOV, P.YE.  
COUNTRY OF INFO--USSR  
SOURCE--LATV. PSR ZINAT. AKAD. VESTIS, FIZ. TEH. ZINAT. SER. 1970, (1),  
67-8  
DATE PUBLISHED-----70  
SUBJECT AREAS--PHYSICS, EARTH SCIENCES AND OCEANOGRAPHY  
TOPIC TAGS--MOSSBAUER EFFECT, GARNET, IRON COMPOUND  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1997/0021 STEP NO--UR/0371/70/000/001/0067/0068  
CIRC ACCESSION NO--AP0119017  
UNCLASSIFIED



2/2 015

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0119017

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MOESSBAUER EFFECT ON PRIME57  
 FE NUCLEI IN ER SUB3 FE SUB5 D SUB12 WAS MEASURED AT 300 AND 80DEGREE SK.  
 THE PRIME57 CO PREPN. IN A STAINLESS STEEL ENCLOSURE HAVING AN ACTIVITY  
 OF 5 MCI USED AS A GAMMA RADIATION SOURCE WAS KEPT AT ROOM TEMP. IN ALL  
 THE EXPTS. THE APP. WAS OPERATED AT A CONST. ACCELERATION. THE  
 EFFECTIVE INTENSITIES OF MAGNETIC FIELD AT THE PRIME57 FE NUCLEI (H  
 SUBEFF) AND THE ISOMER CHEM. SHIFTS (DELTA) WERE ESTD. AS FOLLOWS (THE  
 TEMP., H SUBEFF, AND DELTA VALUES FOR THE TETRAHEDRAL COORDINATION, AND  
 THE VALUES FOR THE HEXAGONAL COORDINATION GIVEN): 300DEGREE SK, 378 PLUS  
 OR MINUS 10, 0.35 PLUS OR MINUS 0.05, 464 PLUS OR MINUS 10, 0.51 PLUS OR  
 MINUS 0.05; AND 80DEGREE SK, 483 PLUS OR MINUS 10 KOE, 0.34 PLUS OR MINUS  
 0.05 MM-SEC, 549 PLUS OR MINUS 10 KOE, 0.56 PLUS OR MINUS 0.05 MM-SEC.  
 FACILITY: INST. FIZ., RIGA, USSR.

UNCLASSIFIED

USSR

UDC: 621.43.011:533+621.5:533

SENKOVENKO, S. A.

"Structure of an Underexpanded Supersonic Jet of CO<sub>2</sub>"

Tr. II Resp. konf. po aerogidromekh., teploobmenu i massootmenu. Sekts. "Aerodinamika bol'sh. skorostey" (Works of the Second Republic Conference on Aerohydraulics, Heat Exchange and Mass Exchange. "High-Velocity Aerodynamics" Section), Kiev, Kiev University, 1971, pp 154-159 (from RZh-Mekhanika, No 5, May 72, Abstract No 5B486)

Translation: The paper presents the procedure and results of an experimental study of the shape and position of shock waves in underexpanded supersonic jets of carbon dioxide. The experiments were done in a low-density aerodynamic installation. The parameters of underexpanded jets were measured in the Mach number range of  $M=1-5.2$ , roughnesses  $10^{-6} \leq \bar{n} \leq 10^{-4}$ , and stagnation temperatures of 300-1200 K. Flow visualization in a low-power glow discharge was used to determine the position and shape of shock waves. The principal characteristics of suspended and closing compression shocks (the position of the central shock, the diameters of the maximum suspended and central shocks) are determined from photographs of the jets. The con-

1/2

USSR

SENKOVENKO, S. A., Tr. II Resp. konf. po aerogidromekh., teploobmenu i mas-  
soobmenu. Sekts. "Aerodinamika bol'sh. skorostey", Kiev, Kiev University,  
1971, pp 154-159

ditions of self-similarity of the principal geometric characteristics of  
the initial section of the jet are defined. An investigation is made into  
the effect of rarefaction and condensation on jet structure. Bibliography  
of 8 titles. Yu. F. Dityakin.

2/2

- 11 -

USSR

UDC 669.046.54

VASHCHENKO, A. I., SEN'KOVSKIY, A. G., LIFSHITS, A. Ye., and SHUL'TS, L. A.

Okisleniye i Obezuglerozhivaniye Stali (Oxidation and Decarburization of Steel), Moscow, 1972, Izd-vo Metallurgiya, 336 pp

Translation of Introduction: Steel items are produced mainly from ingots and billets by heating them to high temperature and applying high pressure (rolling, stamping, forging, and others). Thereafter a great number of items are subjected additionally to heat treatment. Both processes require heating of the metal in flame or electric furnaces to high temperatures. After heating, the metal interacts with the furnace atmosphere (with combustion products in the open-flame furnace, and with air in electric furnaces) and the ensuing reaction with gases-oxidizers leads to oxidation and decarburization of steel.

The oxidation of steel increases with the heating temperature, provided other conditions are equal. The pressure treatment of steel requires heating to high temperatures (1100-1300°C). As a result the oxidation is excessive. Under the best conditions about 1% of the metal undergoes oxidation and is lost in the form of scale, and in some cases the percentage reaches 1.5-2% or more during each heating.

1/14

USSR

VASHCHENKO, A. I., et al., Okisleniye i Obezuglerozhivaniye Stali, Moscow, 1972, Izd-vo Metallurgiya, 336 pp

Considering that during the production of steel items it is often necessary to heat the steel several times, the oxidation increases to 5-6% and the metal is lost as scale. However, the harm produced by oxidation does not end here. The scale which is formed on the metal surface damages high-pressure equipment and causes an excessive wear of it.

In cases when scale is rolled (during hot rolling) and stamped (during stamping) into the metal during the high-temperature treatment, the metal becomes unusable and is lost as scrap.

During production, for example, of sheet metal, thin-walled pipes, and other items, the scale is removed by pickling in special solutions. This complicates the production process and raises the price of parts produced by high-temperature treatment.

In addition to oxidation, the furnace gases also cause the decarburization of steel, which results in losses for the national economy. As a result of decarburization the quality of the metal's surface layer is low. In

2/14

- 52 -

USSR

VASHCHENKO, A. I., et al., Okisleniye i Obezuglerozhivaniye Stali, Moscow, 1972, Izd-vo Metallurgiya, 336 pp

order to produce items with predetermined qualities, this layer must be removed, and that part of the metal is lost. The production of steel items becomes expensive and complicated.

All these facts indicate that the production of steel without the oxidation and decarburization processes is a very important problem for the national economy. This explains why the problem of the nonoxidative and non-decarburizative heating of steel in furnaces is the focus of a great deal of attention in the Soviet Union and elsewhere. A considerable number of works have been published on this subject. Among such Soviet works are those of V. I. Arkharov, A. V. Smirnov and L. V. Beloruchev, V. F. Kopytov, V. A. Kuroyedov, A. A. Skvortsov, N. Yu. Tayts, A. A. Shuykov, I. N. Frantsevich, R. F. Voytovich, V. A. Lavrenko, L. A. Shvartsman, and others. Among foreign authors the following should be named: H. Tamman, C. Wagner, H. F. Mott, K. Hauffe, O. Kubashevski and B. Hopkins, A. J. Hochkiss, C. M. Webber, G. Benar, D. V. Marphy, V. E. Jomini, P. Cofstadt, and others.

Industrial workers also contribute to the decrease of oxidation and decarburization of steel. The combined efforts of scientists and engineers

3/14

USSR

UDC 621.43.011:533;621.5:533

SENKRVENKO, S. A., YUSHCHENKOVA, N. I.

"Effect of Condensation and the Third Phase on the Structure of a Supersonic Underexpanded CO<sub>2</sub> Jet"

11-ya Vses. konf. po vopr. ispareniya, goreniya i gaz. dinamiki dispersn. sistem, 1972 (11th All-Union Conference on Problems of Evaporation, Combustion and Gas-dynamics of Disperse Systems, 1972), Odessa, 1972, p 60 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3B408)

Translation: The results of an experimental study of the effect of condensation and the solid phase on the structure of shock waves in the initial segment of supersonic underexpanded jets of carbon dioxide and air flowing into a rarefied space are presented. The experiments were conducted in a low-density wind tunnel over the following range of parameters: Mach number at the end of the nozzle 1.5-2, stagnation temperature 300-1200°K, degree of nonconformity 10-10<sup>4</sup>, rarefaction criterion 10<sup>-4</sup>-10<sup>-2</sup>. Data on the effect of condensation and the solid phase on the dimensions and position of a Mach disc and the maximum size of the suspended discontinuity were obtained. The mass fraction of the condensate was obtained as a function of Mach number. Yu. F. Dityakin.

1/1

- 62 -

1/2 009

UNCLASSIFIED

PROCESSING DATE--27NOV70

TITLE--DETERMINATION OF FLAVOID COMPOUNDS. I. ANALYSIS OF FLAVONOLS OF THE  
KAEMPFEROL AND QUERCETIN GROUPS IN DIMETHYLFORMAMIDE -U-

AUTHOR--(03)-GEORGIYEVSKIY, V.P., SENNIKOV, G.A., LITVINENKO, A.L.

5

COUNTRY OF INFO--USSR

SOURCE--FARM. ZH. (KIEV) 1970, 25(1), 79-84

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PROCESSED PLANT PRODUCT, KETONE, POTENTIOMETRIC TITRATION,  
SOLVENT EXTRACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/1157

STEP NO--UR/0491/70/025/001/0079/0084

CIRC ACCESSION NO--AP0130185

UNCLASSIFIED



2/2 009 UNCLASSIFIED PROCESSING DATE--27NOV70  
CIRC ACCESSION NO--AP0130185  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FOLLOWING PROCEDURE WAS  
DEVELOPED FOR THE POTENTIOMETRIC DETN. OF KAEMPFEROL, KAEMPFEROL 3  
RHAMNOSIDE, QUERCETIN 3 ARABINOSIDE, QUERCETRIN, RUTIN, ROBININ,  
KAEMPFEROL 3,7 DIRHAMNOSIDE (II), QUERCETIN 3 RHAMNOSIDE, QUERCETIN 3  
GALACTOSIDE, AND DIHYDROQUERCETIN: DISSOLVE A SAMPLE (SIMILAR TO 0.02  
OR SIMILAR TO 0.03 G FOR AGLYCONS AND GLYCOSIDES, RESP.) IN 30 ML HCONME  
SUB2, NEUTRALIZE THE SOLN. IMMEDIATELY BEFORE TITRN. WITH 0.05N ET SUB4  
NCH IN C SUB6 H SUB6 MEQH (4:1), AND TITRATE WITH THIS REAGENT IN A  
SYSTEM COMPRISING A GLASS ELECTRODE AND SCE. THE CONTENT OF AGLYCONS  
WAS ASSESSED FROM THE 3RD POTENTIAL JUMP, THAT OF MONOSIDES, RUTIN, AND  
ROBININ FROM THE 2ND, AND THAT OF I FROM THE 1ST. THE ERROR OF THE  
DETN. WAS PLUS OR MINUS 1-3PERCENT. THE FLAVONOIDS BEHAVE IN HCONME  
SUB2 MEDIUM AS ACIDS OF DIFF NT STRENGTH AND BASICITY.  
FACILITY: KHARKOV SCI.-RES. CHEM.-PHARM. INST., KHARKOV, USSR.

UNCLASSIFIED

Pharmacology and Toxicology

USSR

*S*  
~~SENOV, P.~~ Professor, Honored Scientist of RSFSR, TENTSOVA, A., Decent, and  
AZHGIKHIN, I., Doctor of Pharmaceutical Sciences

"Biopharmacy"

Moscow, Meditsinskaya Gazeta, 15 May 70, p 3

Translation: Modern pharmacy is characterized by a revision of the concepts of the content and prospects of development of a number of disciplines related to the production and analysis of drugs. For example, in the last few years a new branch has emerged and formed: biopharmacy. This branch of pharmaceutical science deals with the relationships between the physicochemical properties of drugs in concrete medicinal forms and their biological action. The objective of biopharmacy is to investigate the effect of the assembled state and degree of dispersion of drugs, the effect of potentiating substances, the form of the drug and means of administration, the effect of manufacturing technology and other factors on the effectiveness of drugs, as well as processes of absorption, accumulation and excretion of preparations and their metabolites from the organism.

It would be difficult to overestimate the importance of biopharmaceutical research

1/7

USSR

SENOV, P., et al, Meditsinskaya Gazeta, 15 May 70, p 3

to the technology of drug manufacture and use. It is important to the patient, for example, how often insulin is administered: once or 2-3 times in one to 1.5 days. It all depends on the technology of manufacturing the preparation: if a suspension is prepared from microcrystalline insulin, it acts for 30-36 hours, and if from amorphous insulin, it acts for 12-16 hours. Potentiating substances also influence the therapeutic effect of drugs: estradiol benzoate administered in the form of an oil solution acts for only three days; but if the oil is replaced by water, the duration of action extends to three weeks. It was found that even traces of talcum retard absorption of phenacetin. All antibiotics of the tetracycline group are very poorly absorbed if potentiating substances containing ionogenic calcium or magnesium are added in the manufacture of tablets.

Biopharmaceutical investigations quite often permit not only a significant decrease in the side effects of a preparation, but also render the technology of manufacturing it more rational and profitable. It was found, for example, that if acetyl salicylic acid is pulverized 20-30 times more, half the dosage can be prescribed. This also applies to levomycetin.

2/7

USSR

SENOV, P., et al, Meditsinskaya Gazeta, 15 May 70, p 3

The choice of the optimum form of the drug and rational means of administration constitute the focal problem of biopharmaceutical research. Thus, indomethacin in tablet form, which is highly effective in treatment of osteoarthritis, often causes injury to the gastrointestinal tract and nervous system disorders. But if it is prescribed in the form of rectal suppositories, the digestive system is not involved, and there are considerably fewer complications with respect to the central nervous system.

At the present time, the intensity of biopharmaceutical research is growing throughout the world. In our country, for a number of years it has been pursued at the clinics and laboratories of the First Moscow Medical Institute imeni I.M. Sechenov, and the Central Pharmaceutical Scientific Research Institute of the USSR Ministry of Health.

It is possible to diminish or completely eliminate specific side effects of psychotropic agents by altering the means of administration. At the Psychiatric Clinic imeni S. S. Korsakov of the First Moscow Medical Institute (with the participation of the Chairs of Drug Technology and Pharmaceutical Chemistry), as well as at the Central Pharmaceutical Scientific Research Institute, studies

3/7

USSR

SENOV, P., et al, Meditsinskaya Gazeta, 15 May 70, p 3

are in progress on the effect of means of administration and drug form on the rate of absorption of the best-known neuroleptic agents: levomepromazine and triflazine. A very interesting fact was discovered with respect to absorption and elimination of these agents: in the case of oral administration, they both usually appear in the blood within 30 minutes. On the first day, 6-20 percent of the ingested dose is excreted in the urine. Excretion in the urine continues for 6-8 days after a single orally ingested dose. During this time, none of the agent was found in the blood in any of the cases. When prescribed by rectum in the same doses, the drugs are found in the blood within 10-15 minutes, and in the urine within 5-10 minutes; 30-40 percent of the administered drug is excreted in the urine in the first 24 hours, and the excretion process terminates within 3-4 days.

Thus, using various methods of administering these agents, physicians can regulate their level in the blood and the duration of circulation. This is of decisive importance not only in choosing the most rational drug, but also in preventing side effects. All this indicates the need to find means of rational prescription and dosage of psychotropic agents.

4/7

USSR

SENOV, P., et al, Meditsinskaya Gazeta, 15 May 70, p 3

In the skin disease clinic of the First Moscow Medical Institute, a study was made of the effect of potentiating substances, the drug form and means of administration on the effectiveness of calcium pangamate for different forms of scleroderma. It was proven that only with prolonged rectal administration is it possible to observe a distinct therapeutic response to the drug.

At the Central Pharmaceutical Scientific Research Institute, a study has been made of the effect of means of administration on effectiveness of prednisolone, triamcinolone, choriogonin, butadione and amidopyrine. They are usually prescribed by mouth, and choriogonine is usually administered parenterally. Steroid hormones administered per os often induce serious complications, which are particularly frequent when prescribed for a long time. They are excreted through the intestine in this case. Rectal administration of steroids provides the same therapeutic response and the same level in blood plasma, but in this case there are absolutely no lesions of the gastrointestinal tract, since much of the preparation is excreted in the urine. It was also found that rectal administration of choriogonin is just as effective as parenteral. Therapeutic doses of butadione, and particularly of amidopyrine, must be considerably reduced when administered by rectum to children.

5/7

USSR

SENOV, P., et al, Meditsinskaya Gazeta, 15 May 70, p 3

At the laboratory of anesthesiology of the Scientific Research Institute of Clinical and Experimental Surgery of the USSR Ministry of Health, data have been obtained which indicate that the effect of premedication depends significantly on the means of administration of drug preparations.

Thus it has been proven that to affect a pathological process successfully, one must know how absorption, distribution and accumulation of the preparation proceed when using various drug forms and different means of administration. Only in this case will drug intervention be rational and reach its mark.

One of the burning problems in modern pharmacy is stabilization of drugs. The most acceptable physical methods of stabilization, particularly of protecting unstable drugs, consist of using various membranes, protective solutions, and buffers.

Researchers are displaying equal resourcefulness in developing long-acting drugs. For example, "enclosed" tablets, which travel without changing through the digestive tract, release drugs throughout its length. Tablets have also been proposed that consist of dozens of layers (up to 50) each of which disintegrates

6/7

- 67 -

USSR

SENOV, P., et al, Meditsinskaya Gazeta, 15 May 70, p 3

at strictly specific pH values, or in the presence of the appropriate enzymes; there are injections which, at the site of administration, after diffusion of the solvent, gradually release crystals of different size, etc.

Much attention is being devoted by pharmacists to materials for packaging and sealing drugs.

And, finally, one must take into consideration the distinctive features of drug action as related to the patient's age.

7/7



Polymers and Polymerization

USSR

UDC 615.456.014.83:678.7].07

SENOV, P. L., and MIRONOVA, V. A., 1st Moscow Medical Institute imeni I. M. Sechenov, Central Scientific Research Apothecary Institute

"Testing Methods for Polymeric Materials Used as Stoppers in Containers for Injection Solutions"

Moscow, Farmatsiya, Vol 20, No 1, Jan-Feb 71, pp 72-77

Abstract: On the basis of domestic and foreign data a procedure was proposed for testing polymeric stoppers used with injection solutions. Routine testing should include determination of materials bleached out under autoclave conditions, by checking the pH, turbidity, nonvolatile residue, UV absorption, ionic impurities, and thiuram content of water kept in contact with the plastic material. Pyrogenicity, toxicity, and cytotoxicity should be carried out. The plastic materials should be tested for permeability by water vapor and by microorganisms; elasticity should be determined as well as the ability to form tight seals.

1/1

USSR

UDC 615.217:547.751

PIDEVICH, I. N., ~~SENOVA, Z. P.~~, and FEDOROVA, J. B., Laboratory of the Pharmacology of Cardio-Vascular System and the Psychopharmacology Laboratory of the Institute of Pharmacology Ac. Med. Sc. USSR, Moscow

"Study of the Peripheral Antiserotonin Properties of a Series of Novel Indole Derivatives"

Moscow, Farmakologiya i Toksikologiya, Vol 34, No 2, Mar-Apr 71, pp 155-159

Abstract: The investigated indole derivatives exhibit different effect on the serotonin reactive structures of the D-, M-, and the T- type. The strongest D-antiserotonin properties are shown by diamind and indocarb, strongest M-antiserotonin activity is exhibited by K-277, and T-antiserotonin properties - by tipindol. The serotonin-reactive structures leading to positive inotropic effect of serotonin on isolated rabbit's atrium are closely related to T-serotonin reactive structures of the cardio-pulmonary reflexogenic zone of cats, as far as the sensitivity to the investigated blocking agent is concerned.

1/1

USSR

Immunology

UDC 576.858.7(07).3-036.22+616-022.14

POZODINA, V. V., KORESHKOVA, G. V., BOCHKOVA, N. G., SENQUTA, N. B., and  
MEDVEDEVA, G. S., Institute of Poliomyelitis and Viral Encephalitides,  
Academy of Medical Sciences USSR

"Mixed Arbovirus Infections (the Diagnostic, Genetic, and Vaccine Aspects of  
the Problem"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 8, Aug 73, pp 89-90

Abstract: The ecology of arboviruses permits a combined source of infection. Simultaneous infection with Japanese encephalitis and other group A and B arboviruses were observed. Features in the growth of experimental mixed infections were studied for group A (Sindbis + Getz, group B (West Nile + Japanese encephalitis), and group A + B (West Nile + Sindbis). Several different immunological phenotypes were observed and characterized. The interaction of the individual virus type in a mixture may be related to its phenotype. Differences were observed in the experimental A + B mixtures.

1/1

Organophosphorous Compounds

USSR

UDC 546.74-386

TROITSKAYA, A. D., SENTEMGV, V. V., GINZBURG, G. D., Kazan' Institute of  
Chemical Technology imeni S. M. Kirov

"Spectrophotometric Study of the Complex Formation of Nickel Rhodanide (II)  
with Trialkyl Phosphites in Benzene"

Moscow, Zhurnal Neorganicheskoy Khimii, Vol XVIII, No 1, 1973, pp 270-271

Abstract: A study was previously made of the complex formation of nickel  
bromide (II) with trialkyl phosphites in ethanol and benzene [G. D. Ginzburg,  
et al., Tr. Kazansk. khim.-tekhnolog. in-ta, No 34, 38, 1965; No 36, 124,  
1965; Zh. neorgan. khimii, No 13, 1585, 1968; No 16, 1923, 1971]. The  
spectrophotometric method has now been used to study the complex formation  
of nickel rhodanide (II) with triethyl, tripropyl, triisopropyl, tributyl,  
triisobutyl and trifluorobutyl phosphites in benzene. The experimental  
procedure, synthesis of the initial materials and preparation of the sol-  
vents are described in the above-mentioned references and by P. M. Zavlin,  
et al., [Zh. Prikl. khimii, No 10, 2376, 1960; C. Puglisi, et al., J. Inorg.  
Nucl. Chem., No 4, 1069, 1967].

1/2

USSR

TROITSKAYA, A. D., et al., Zhurnal Neorganicheskoy Khimii, Vol XVIII, No 1, 1973, pp 270-271

The intensity of the shortwave absorption band of the nickel rhodanide (II) complexes with trialkyl phosphites is different and increases from the nickel (II) complexes with triethyl phosphite to complexes with triisopropyl phosphite. The intensity of the long wave absorption band increases for complexes with n-trialkyl phosphites: from the nickel (II) complexes with triethyl phosphite to the complexes with tributyl phosphite; it decreases for the complexes with isotrialkyl phosphites in the order triisobutyl phosphite greater than triisopropyl phosphite greater than trifluorobutyl phosphite. The absorption spectra of the complexes of nickel rhodanide (II) with trialkyl phosphites in benzene show that the increase in length of the hydrocarbon radical chain in the molecules of n-trialkyl phosphites does not in practice have any effect on the position of the absorption band peaks of the complexes. The iso-radical in the trialkyl phosphite molecule in the  $\beta$ -position with respect to the phosphorus atom also has no essential effect: the absorption band peaks of the complexes of nickel (II) rhodanide with tributyl phosphate and triisobutyl phosphate correspond to the same wavelength. If the iso-radical is in the  $\alpha$ -position with respect to the phosphorus atom, however, this causes a shift of the absorption bands of the complexes to the shortwave range.

2/2

- 20 -

USSR

UDC [537.226 + 537.311.33] : [537 + 535]

KROO, N. Ya., SENTIRMAJ, Zh.

"Anomalies of Tunnel Resistance Due to the Effect of the Semiconductor-Dielectric Junction"

Dubna, Soobshch. ob"yedin. in-ta yadern. issled. (Reports of the United Institute of Nuclear Research) Laboratory of Neutron Physics, R 13-5852 (Reprint), 1971, 10 pp, illustrated (from RZh-Fizika, No 11, 1971, Abstract No 11E1221)

Translation: Null anomalies of tunnel resistance are detected in contacts with thin layers of unmagnetized metal on the insulator surface. The resultant anomalies are interpreted on the basis of the theory of small capacitances.

1/1

- 50 -

1/2 040

UNCLASSIFIED

PROCESSING DATE--13NOV70

TITLE--EFFECT OF AQUEOUS MEDIA AND ADDITIVES OF SURFACE ACTIVE AGENTS ON  
THE CONTACT FATIGUE STRENGTH OF CHISEL STEEL 20KH3A -U-  
AUTHOR--(05)-KATSOV, K.B., KUSLITSKIY, A.B., KARPENKO, G.V., SENTSOVA,  
E.P., DYUSUSCHE, M.ZH.  
COUNTRY OF INFO--USSR

SOURCE--FIZ.-KHIM. MEKH. MATER. 1970, 5(6), 757-8

DATE PUBLISHED-----70

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

TOPIC TAGS--SURFACE ACTIVE AGENT, ALLOY DESIGNATION, CHROMIUM NICKEL  
STEEL, ELECTROSLAG MELTING, METAL CORROSION, HYDROGEN, FATIGUE STRENGTH,  
METALWORKING, CUTTING TOOL/(U)20KH3A CHROMIUM NICKEL STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1988/0636

STEP NO--UR/0369/70/005/006/0757/0758

CIRC ACCESSION NO--AP0105615

UNCLASSIFIED

212 040

CIRC ACCESSION NO--AP0105615  
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--13NOV70

ABSTRACT. THE TITLE STUDY WAS CARRIED OUT WITH STEEL 20KHN3A MELTED ACCORDING TO 2 ALTERNATIVES: ELECTROARC AND ELECTROSLAG REMELTED. THE LATTER STEEL HAD MUCH LESS IMPURITIES THAN THE FORMER. AFTER MECH. WORKING SPECIMENS WERE SUBJECTED TO CEMENTATION IN SOLID CARBURIZER TO THE DEPTH OF CARBURIZED LAYER 1.8-2.0 MM WITH HARDNESS OF SURFACE LAYER HRC 57 AND 58 (CORE HARDNESS 36-8 HRC). C CONCN. AT A DISTANCE 0.2 MM FROM THE SURFACE WAS 0.8PERCENT; THE MICROSTRUCTURE OF CEMENTED LAYER WAS FINE ACICULAR MARTENSITE, WHILE THAT OF THE CORE WAS TROOSTITESORBITE. TESTING WAS DONE ON A SPECIAL APP. WITH AND WITHOUT ADDN. OF SURFACE ACTIVE SUBSTANCES (S.A.S.) TO THE WATER AND BY USING TAP WATER, STRATAL WATER WITH AND WITHOUT H SUB2 S. THE VERY SHARP DECREASE OF CONTACT ENDURANCE OF STEEL UNDER STUDY IN RUNNING (WASH) WATER WHOULD BE EXPLAINED NOT ONLY BY ADSORPTION EFFECT BUT ALSO BY THE CORROSION IN COMBINATION WITH HYDROGENATION OF STEEL SURFACE IN CONTACT WITH WATER. IN THIS CONNECTION, THE FAVORABLE EFFECT OF S.A.S. IS EXPLAINED BY THE FORMATION ON THE METAL SURFACE OF A POLYMER. PROTECTIVE FILM.

UNCLASSIFIED



USSR

UDC 669.14.018.8:620.194.2

ZAKHAROV, YU. V., Sentyurev, V. P., MARKESHIN, V. S., GRISHIN, A. M., and LEVIN, F. L.

"Corrosion Cracking of Austenitic Steels and Alloys in Boiling 42% Magnesium Chloride"

Spetsial'nyye Stali i Splavy (Special Steels and Alloys -- Collection of Works), No 77, Metallurgiya Press, 1970, pp 99-101

Translation: The influence of nickel on the stability of austenitic steels and alloys to corrosion cracking in boiling 42% magnesium chloride is studied. The values of the long-term corrosion resistance limit are determined as functions of the nickel content. The results of the work make it possible to explain the reasons for the contradictory data from the literature on the influence of alloying elements on the resistance of austenitic steels and alloys to corrosion cracking. 2 figures; 1 table; 9 biblio. refs.

1/1

USSR

UDC 669.14.018.8

ZAKHAROV, YU. V., LEVIN, F. L., Sentyurev, V. P., GRISHIN, A. M., and  
MARKESHIN, V. S.

"Intercrystalline Corrosion of Alloys with 20% Cr and 40% Ni as a Function  
of Alloying"

Spetsial'nyye Stali i Splyavy (Special Steels and Alloys -- Collection of  
Works), No 77, Metallurgiya Press, 1970, pp 95-98

Translation: The influence of C, Nb, Mn, Si, Cr, N, and Al on the stability of iron-chromium-nickel austenitic alloys with 20% Cr and 40% Ni against intercrystalline corrosion (ICC) is studied in the 500-900°C temperature interval with holding times up to 5,000 hours.

It is demonstrated that alloying of the alloys with manganese and aluminum sharply decreases their resistance to ICC after provoking heating. A decrease in resistance is facilitated by increasing the austenitization temperature to 1200°C. 1 figure; 2 tables.

1/1

USSR

UDC 669.15.018.8:620.194.2

ZAKHAROV, YU. V., Sentyurev, V. P., Markeshin, V. S., Grishin, A. M., and Levin, F. L.

"Stress Corrosion Cracking of Austenitic Steels and Alloys in Boiling 42% Magnesium Chloride"

Sb. tr. TsNII chern. metallurgii (Collection of Works of Central Scientific Research Institute of Ferrous Metallurgy), 1970, vyp. 77, pp 99-101 (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 3I597 by authors)

Translation: A study was made of the effect of Ni (10-40%) on the resistance of austenitic steels and alloys (0.02-0.05% C, ~18% Cr, 1-2% Mn, Ti, Nb) to stress corrosion cracking in boiling 42% magnesium chloride. Ultimate long-term corrosion strength values according to Ni content were determined. The results of the work make it possible to give some explanations of the reasons for the contradictory nature of data in the literature on the effect of alloying elements on the stress corrosion resistance of austenitic steels and alloys. Two illustrations. One table. Bibliography with nine titles.

1/1

- 4 -

USSR

UDC 669.15.018.8:620.196.2

ZAKHAROV, YU. V., LEVIN, F. L., SENTYUREV, V. P., GRISHIN, A. M., and MARKESHIN, V. S.

"Intercrystalline Corrosion of Alloys With 20% Cr and 40% Ni as a Function of Alloying"

Sb. tr. TsMII chern. metallurgii (Collection of Works of Central Scientific Research Institute of Ferrous Metallurgy), 1970, vyp. 77, pp 95-98 (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 3I592 by authors)

Translation: The article investigates the effect of C, Nb, Mn, Si, Cr, N, Al on the resistance of austenitic Fe-Cr-Ni alloys with 20% Cr and 40% Ni to intercrystalline corrosion in the 500-900° range with holding periods up to 5000 hours. It is shown that alloying with manganese and aluminum sharply lowers the resistance of the alloys to intercrystalline corrosion after provoking heatings. A rise in austenitizing temperature to 1200° contributes to a diminution of resistance. One illustration. Two tables.

1/1

- 3 -

ACC. Nr:

AP0055909

Abstracting Service: Q-70  
INTERNAT. AEROSPACE ABST.

Ref. Code:

UR 0065

A70-25943 # Investigation of the efficiency of the VNII  
 NP-213 solid lubricating coating (Issledovanie rabotoisposobnosti  
 tverdogo smazochnogo pokrytiia VNII NP-213). G. V. Kurilov, L. N.  
 Senturikhina, I. M. Liubarskii, and V. F. Udovenko (Vsesoiuznyi  
 Nauchno-Issledovatel'skii Institut Neftianoi Promyshlennosti,  
 Moscow, USSR; Akademiia Nauk Ukrainskoi SSR, Fiziko-Tekh-  
 nicheskii Institut Nizkikh Temperatur, Kharkov, Ukrainian SSR).  
*Khimiia i Tekhnologiiia Topliv i Masel*, vol. 15, no. 3, 1970, p. 49-53.  
 12 refs. In Russian.

Experimental investigation of the service life and friction  
 coefficient of a solid lubricating coating (not further specified, but  
 appearing to contain molybdenum disulfide and silicon) as a function  
 of the load, sliding rate, and vacuum level. Test were performed with  
 a film (20 microns) deposited on the surfaces of a sliding contact at a  
 pressure of 2 atm. The efficiency of the coating at high-temperatures  
 in air was also studied. It is found that the friction coefficient  
 decreases with increasing load both in dry and humid air and in  
 vacuum. At high sliding rates and high loads, the temperature and  
 friction coefficient increase and the service life decreases. In vacuum,  
 the service life is 4 to 6 hr at a relative humidity of 50 to 70 percent  
 and 13 to 14 hr in dry air.

V.P.

REEL/FRA  
19841236

CK //

USSR

UDC 621.892:546.77'22:621.793

KURILOV, G. V., UDOVENKO, V. F., YUKHNO, T. P., SEVYURIKHINA,  
L. N., and LYUBARSKIY, I. M., Physicotechnical Institute of  
Low Temperatures of the Academy of Sciences UkrSSR, Char'kov  
"Method for Investigation of Solid Lubrication Coats on  
MoS<sub>2</sub> Base"

Moscow, Zavodskaya Laboratoriya, Vol 39, No 1, 1973, pp 48-50

Abstract: A method was developed for the investigation of solid  
lubrication coats on MoS<sub>2</sub> base (All-Union Scientific Research  
Institute of the Petroleum Industry, VNIIP NP -209, -212, -213,  
-229, and -230) on friction under atmospheric conditions and  
in deep vacuum at low (-90-196 °C) and room temperatures. The  
gaseous products separating on friction were analyzed on the  
MSKh-3A mass-spectrometer located in the vacuum chamber. The

1/2

USSR

KURILOV, G. V., et al., *Zavodskaya Laboratoriya*, Vol 39, No 1, 1973, pp 48-50

longevity of VNII NP -212 coat was found to remain unchanged in deep vacuum at room and low temperatures and its friction process is accompanied by separation of the same masses as at +25 °C. On friction of the VNII NP -212 coat with carbamide resin, close mass-spectrograms at low and room temperatures resulted. Two figures, one table, six bibliographic references.

2/2

- 32 -

027

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--LUBRICATING COATING -U-

AUTHOR--(05)-SENTYURIKHINA, L.N., KUBTSOVA, Z.S., PETROVA, L.N., LUTSENKO,  
G.A., VIGNTSEK, N.I.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 265,447

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,  
DATE PUBLISHED--09MAR70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CHEMICAL-PATENT, PROTECTIVE COATING, LUBRICANT, CHEMICAL  
COMPOSITION, MOLYBDENUM DISULFIDE, SILOXANE, BENZENE DERIVATIVE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

STEP NO--UR/0482/70/000/000/0000/0000

PROXY REEL/FRAME--3003/1798

CIRC ACCESSION NO--AA0130631

UNCLASSIFIED



2/2 027

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AA0130631

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. A LONG LASTING LUBRICATING COATING  
CONTAINS 60-75 WT. PERCENT MO DISULFIDE AND 25-40 WT. PERCENT  
POLYMETHYLPHENYLSILOXANE RESIN WITH A UNIT STRUCTURE ((ME SUB2  
SIO)(PHSIO SUB1.5)(PH SUB2 SIO) SUB0.35).

UNCLASSIFIED

Lubricants and Lubrication

USSR

S

LDC 669.36

SENTYURIKHINA, L. N., LYUBARSKIY, I. M., KURILOV, G. V., UDOVENKO, V. F., and RUBISOVA, Z. S., Physico-Technical Institute of Low Temperatures, Academy of Sciences, Ukrainian SSR, Khar'kov

"Study of the Efficiency and Antifrictional Properties of Hard Lubricating Coatings in Atmospheric Conditions and in High Vacuum With Simultaneous Study of Gas Composition"

Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 6, No 4, 1970, pp 21-25

Abstract: Solid lubricants synthesized from MoS<sub>2</sub> and various film-forming agents were studied in atmospheric conditions and in high vacuum. It was shown that the efficiency of antifrictional properties of these materials depends to a large degree on air humidity and the depth of vacuum. The life expectancy of these coatings both in air and in vacuum depends on their chemical composition. Coatings with organic film forming agents -- urea-formaldehyde and epoxy resins -- performed for the longest period in air and in vacuum. Less durable were coatings from silicon-organic polymers, while coatings with inorganic binder were found to be more efficient in vacuum than under atmospheric conditions. The composition of the gas evolving during the friction also depends on the chemical composition of the film-forming agents.

1/1

USSR

UDC 541.18+621.133.712+62.505

KOMAROVA, I. V., RUBINSHTEYN, R. N., and SENYAVIN, M. M., Institute of Geochemistry and Analytical Chemistry Imeni V. I. Vernadskiy, Moscow

"Optimization Method for the Ion Exchange Water Demineralization Process"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 46, No 11, Nov 72, pp 2834-2837

Abstract: A method has been proposed for the optimization of the ion exchange water demineralization process based on a mathematical model of the process converted to economic criteria. The problem was solved on a digital computer system by one of the nonlinear programs using the approach of the most rapid passage. The conditions for optimal operations of a column have been shown to depend on the properties of the starting and purified water.

1/1

USSR

UDC 541.1 + 541.18 + 543.544.6

KOMAROVA, I. V., GALKINA, N. K., RUBINSHTEYN, R. N., and SENYAVIN, M. M.,  
Academy of Sciences USSR, Institute of Geochemistry and Analytical Chemistry  
Imeni V. I. Vernadskiy, Moscow

"Design of a Ion-Exchange Water Demineralization Process"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 47, No 1, Jan 73, pp 124-129

Abstract: A method is proposed for the design of a process of ion-exchange demineralization of water over incompletely regenerated columns with separate ion exchange resin layers. The initial cycle of water purification over a freshly prepared, fully regenerated ion exchange resin is designed as a dynamics exchange of a substance in the intradiffusional area. The column regeneration and purification of water on the repeatedly studied, incompletely regenerated ion exchange resin was calculated by the layer-by-layer method. The stages are unified by coefficients representing relative decrease in the performance time of incompletely regenerated column in comparison to a fully regenerated one, as a function of the consumption and concentration of the regenerating solution.

1/1

- 17 -

UDC 543.544.6:541.49:546.65

USSR

KUNBAZAROV, A., SOROCHAN, A. M., and SENYAVIN, M. M.

"Chromatographic Separation of Rare Earth Element Mixtures by Means of Organophosphorus Complexes"

Moscow, Zhurnal Neorganicheskoy Khimii, Vol 16, No 3, Mar 71, pp 651-654

Abstract: Conditions for separation of rare earth elements were studied using complex forming agents with two or more phosphonic groups hydroxyethylidene-phosphonic acid - CHEDP, ethylenediaminodiisopropylphosphonic acid - EDDIP, and ethylenediaminotetramethylphosphonic acid EDTP. The experimental system used consisted of cerium-yttrium mixture which was separated by ion exchange chromatography. Stability constants were calculated and checked out experimentally; from these constants coefficients of separation were obtained. It was determined that EDTP was the most effective agent for the separation of test elements. At pH 6.5 the elution curves were completely separated, cerium remaining on the column, yttrium being washed out completely. A shift in the pH in either direction gave less satisfactory results.

1/1

1/2 013

UNCLASSIFIED

PROCESSING DATE--04DEC70

TITLE--CHROMATOGRAPHIC ISOLATION AND SEPARATION OF MIXTURES OF ALKALINE  
EARTH ELEMENTS FROM NATURAL MINERALS -U-

AUTHOR--(03)-ARSLANOVA, S.S., RAKHIMOV, KH.R., SENYAMIN, H.M.

COUNTRY OF INFO--USSR

SOURCE--UZB. KHIM. ZH. 1970, 14 (2), 12-14

DATE PUBLISHED-----70

5

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, CHEMISTRY

TOPIC TAGS--ION EXCHANGE RESIN, CHEMICAL SEPARATION, CALCIUM, STRONTIUM,  
MAGNESIUM/(U)KUZ ION EXCHANGE RESIN, (U)AVI7 ION EXCHANGE RESIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/0356

STEP NO--UR/0291/70/014/002/0012/0014

CIRC ACCESSION NO--AP0137460

UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0137460

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DOLOMITE (0.1 G) WAS CALCINED AT 1000-200DEGREES, FUSED WITH NA SUB2 CO SUB3, DISSOLVED IN H SUB2 O, AND FILTERED. THE FILTRATE WAS TREATED WITH NH SUB3 AND FILTERED. THE ACIDIFIED FILTRATE WAS PASSED THROUGH AV-17 ION EXCHANGER (A STRONG BASIC POLYSTYRENE TYPE) IN OH PRIME NEGATIVE FORM. CELESTINE (0.1 G) WAS FUSED AT 6-700DEGREES WITH NA SUB2 CO SUB3, H SUB2 C SUB2 O SUB4, AND KNO SUB3, DISSOLVED IN H SUB2 O AND FILTERED; 5 ML FILTRATE WAS PLACED ON A COLUMN WITH 3 G CATION EXCHANGER IN NH SUB4 PRIME POSITIVE FORM AND LEFT FOR 12 HR. THEN THE COLUMN WAS WASHED WITH 0.1N NH SUB4 CL AND ELUTED WITH A 0.5PERCENT SOLN. OF (L, HYDROXYPHENYLIMINO)DIACETIC ACID (I) (1 ML-MIN). EVERY FRACTION OF 5 ML WAS IGNITED IN A PT DISH. TIRN. WITH TRILON B GAVE MG WITH ERIOCHROME BLACK T INDICATOR AND CA WITH FLUOREXONE INDICATOR. QUANT. SEPN. OF CA-MG, ELUTED IN THAT ORDER, WAS OBTAINED WITH I, AND THE ORDER MG-CA WITH IMINODIACETIC (II), (BETA HYDROXYETHYLIMINO)DIACETIC (III), AND NITRILOTRIACETIC ACID (IV). SR-CA WAS SEPD. ON KU-2 (A STRONG ACID POLYSTYRENE TYPE EXCHANGER) IN NH SUB4 PRIME POSITIVE FORM, ELUTED IN THAT ORDER BY 0.5PERCENT SOLN. OF I, AND IN THE REVERSE ORDER BY 1.5PERCENT SOLN OF II, OR 0.5PERCENT SOLNS. OF III OR IV. ARTIFICIAL ADMIXTS. OF NA, MG, FE, AND AL DID NOT INTERFERE. FACILITY: TASHKENT. GOSUNIV. IM. LENINA, TASHKENT, USSR.

UNCLASSIFIED

USSR

UDC: 621.391:519.2

PESTRYAKOV, V. B., SENYAVSKIY, A. L., SUDOVITSEV, V. A.

"Noise Suppression in a Small-Channel Communications System"

V sb. Metody pomokhoustoychivogo priyema ChM i FM (Methods of Interference-Free FM and FM Reception--collection of works), Moscow, "Sov. radio", 1970, pp 231-237 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12A31)

Translation: The authors examine problems of the passage of several signals of different power through a channel which contains an ideal band limiter. It is shown that in the case of a small number of signals with stable phase ratios, noise suppression is qualitatively different from power suppression. The magnitude of the suppression in this case depends on the aggregate of parameters acting on the input. It is noted that the difference in the initial phases of the signals has an appreciable effect on the magnitude of suppression. The results found in the work may be used in analyzing communications systems with a rebroadcaster in the case of a small number of input signals. Resumé.

1/1



USSR

S  
UDC 621.391:519.2

PESTRYAKOV, V. B., SUDOVITSEV, V. A., SENYAVSKIY, A. I.

"Distortion of the Amplitude-Phase Structure of Complex Signals in Linear Four-Terminal Networks"

Tr. Mosk. Elektrotekhn. in-ta svyazi (Works of Moscow Electrotechnical Communications Institute), 1970, vyp. 1, pp 22-36 (from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9A40)

Translation: The investigated distortions are evaluated with respect to the type of mutual correlation function between the expected signal and the signal coming to the input of the matched filter the expression for which was derived earlier (see RZh-Radiotekhnika, 1968, 11A25). There is one illustration and a one-entry bibliography.

1/1

- 36 -

USSR

UDC 616.28-072.7:615.373.36+615.849.66]-092.9

SAGALOVICH, B. M., and SENYUKOV, M. V., Laboratory of Pathophysiology, Moscow Scientific Research Institute of the Ear, Throat, and Nose

"Effect of Sensitization of the Organism on the Permeability of the Blood-Labyrinth Barrier to Labeled Streptomycin and Radiophosphorus"

Kiev, Zhurnal Ushnykh, Nosovykh, i Gorlovykh Bolezney, No 4, Jul/Aug 70, pp 18-24

Abstract: Rabbits were sensitized with normal horse serum injected intramuscularly four times every other day. Three weeks later the animals were given streptomycin labeled with S35 or P32 to determine the permeability of the blood-labyrinth barrier to these substances. Sensitization markedly increased the permeability of the barrier between the blood and perilymph, for both labeled streptomycin and radiophosphorus, the extent varying with the degree of sensitization of the animals. The increase was particularly evident in functional hearing tests (sound at a frequency of 8 KHz, 70 db, 5 min exposure, bone conduction).

1/1

1/2 019

UNCLASSIFIED

PROCESSING DATE--300C170

TITLE--EPR SPECTRA OF (CU(TREN)OH) PRIME POSITIVE TREN EQUALS 2,2 PRIME,2  
PRIME PRIME, NITRILOTRIS, ETHYLAMINE WITH TRIGONAL BIPYRAMIDAL STRUCTURE

AUTHOR--(03)-SENYUKOVA, G.A., MIKHEYKIN, I.D., ZAMARAYEV, K.I.

COUNTRY OF INFO--USSR

SOURCE--ZH. STRUKT. KHIM. 1970, 11(1), 23-6

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--EPR SPECTRUM, COPPER COMPLEX, AMINE, ABSORPTION BAND SPECTRUM,  
LOW TEMPERATURE EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1995/1232

STEP NO--UR/0192/70/011/001/0023/0026

CIRC ACCESSION NO--AP0116694

UNCLASSIFIED

PROCESSING DATE--30OCT70

UNCLASSIFIED

2/2 019

CIRC ACCESSION NO--AP0116694  
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. EPR SPECTRA OF THE TITILE COMPLEX  
IN THE LIQ. (25DEGREES) AND GLASSY STATE (MINUS 196DEGREES) AND  
ABSORPTION SPECTRA IN THE VISIBLE REGION WERE MEASURED. BANDS AT 11,600  
AND 14,800CM PRIME NEGATIVE1 WERE APPARENT IN THE ABSORPTION SPECTRUM.  
EPR SPECTRA IN THE GLASSY STATE HAD UNUSUAL FORM AND PARAMETERS GSUB  
PARALLEL TO 2 EQUALS 2.006 IS LESS THAN G PERPENDICULAR TO EQUALS 2.210  
AND MAGNITUDE OF A SUB PARALLEL TO EQUALS 0.68 TIMES 10 PRIME NEGATIVE2  
CM PRIME NEGATIVE1 IS LESS THAN MAGNITUDE OF A PERPENDICULAR TO EQUALS  
1.11 TIMES 10 PRIME NEGATIVE2 CM PRIME NEGATIVE1. A COMPRESSED TRIGONAL  
BIPYRAMIDAL STRUCTURE WITH AN UNPAIRED ELECTRON IS SUGGESTED FOR  
(CU(TREN)OH) PRIME POSITIVE. FACILITY: INST. KHIM. FIZ.,  
MOSCOU, USSR.

UNCLASSIFIED

UDC: 621.375.029.52

USSR

SENYUSHKIN, V. Ye.

"On the Equivalent Circuit of a Parallel Push-Pull Class B Power Amplifier in the High Frequency Region"

Tr. Novosib. elektrotekhn. in-ta (Works of the Novosibirsk Electrical Engineering Institute), 1970, vyp. 2, kn. 2, pp 245-252 (from RZh-Radiotekhnika, No 6, Jun 70, Abstract No 6D92)

Translation: The author analyzes the characteristics of a parallel push-pull power amplifier circuit based on vacuum triodes or transistors as compared with the circuit of a conventional push-pull amplifier. Four illustrations, bibliography of four titles. N. S.

1/1

UDC 621.365.82

USSR

PUGNIN, V. I., SEL'DIMIROV, I. M., SENYGTOVICH, E. G., and TEKUCHEV, A. N.  
"A Study of the Effect of Xenon on the Size of the Population Inversion of  
Oscillatory Levels of the CO<sub>2</sub> Molecule in a Discharge in a Mixture of CO<sub>2</sub> +  
He + Xe"

Tr. Ryazan. Radiotekhn, in-ta (Proceedings of the Ryazan' Radiotechnical  
Institute), No 37, 1972, pp 69-77 RZh-Fizika, No 9, Sep 73, Abstract No  
9D752

Translation: The effect of adding Xe on the amplification of a CO<sub>2</sub> gas dis-  
charge laser was studied. The degree of amplification was recorded as a func-  
tion of the quantity of Xe and the electrical characteristics of the discharge.  
It is suggested that the effect of Xe on the population inversion occurs  
through the change of the electrical characteristics of the discharge: the  
temperatures and concentrations of electrons. Eight bibliographic citations.  
Yu. M.

1/1

1/2 030

PROCESSING DATE--13NOV70

TITLE--IRON, COPPER AND COBALT METABOLISM IN THE ORGANISM OF DOGS  
FOLLOWING EXTENSIVE RESECTION OF THE SMALL INTESTINE -U-

AUTHOR--(J2)-SENYUTOVICH, V.F., GENYK, S.N.

COUNTRY OF INFO--USSR

SOURCE--PATOLOGICHESKAYA FIZIOLOGIYA I EKSPERIMENTAL'NAYA TERAPIYA, 1970,  
VOL 14, NR 3, PP 51-55

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SMALL INTESTINE, SURGERY, IRON, COPPER, COBALT, METABOLISM,  
DOG, BODY WEIGHT, TRANSFERRIN, ANEMIA

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAHE--3002/0027

STEP NO--UR/0396/70/014/003/0051/0055

CTRC ACCESSION NO--A90128157

UNCLASSIFIED

PROCESSING DATE--13NOV70

UNCLASSIFIED

2/2 030  
CIRC ACCESSION NO--AP0128167  
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THIRTY FIVE DOGS WERE SUBJECTED TO EXTENSIVE RESECTION OF THE SMALL INTESTINE (WITH ENTEROENTERO, ENTEROECO, AND ENTEROTRANSVERSOANASTOMOSES). AT THE EARLY AND REMOTE PERIODS AFTER THIS OPERATION A STUDY WAS MADE OF THE QUANTITATIVE CONTENT OF FE, CU AND CO IN THE BLOOD, ORGANS AND TISSUES; AND ALSO OF THE ACTIVITY OF CERULOPLASMIN AND TRANSFERRIN; THESE DATA WERE CONFRONTED WITH THE CHANGES IN THE BLOOD PICTURE. RAPID AND ACUTE REDUCTION IN THE WEIGHT, HYPOPROTEINEMIA, HYPOCHROMIC ANEMIA, REDUCTION IN FE, CU AND CO CONTENT, AND ALSO DIMINISHED ACTIVITY OF CERULOPLASMIN AND OF IRON SATURATION OF TRANSFERRIN OF THE BLOOD PLASMA DURING THE MORE REMOTE POSTOPERATIVE PERIOD CORRESPONDED TO A MARKED CHANGE OF FE, CU AND CO CONTENT IN THE ORGANS AND TISSUES OF EXPERIMENTAL ANIMALS. PARTICULARLY PRONOUNCED DISTURBANCES WERE NOTED IN THE ANIMALS AFTER EXTENSIVE RESECTION OF THE SMALL INTESTINE WITH ENTEROTRANSVERSOANASTOMOSIS. IT IS APPARENT THAT FOLLOWING EXTENSIVE RESECTION OF THE SMALL INTESTINE WITH ANASTOMOSIS WHICH EXCLUDED THE ILEOCECAL PORTION FROM THE NORMAL ACTIVITY THERE OCCURRED A DISTURBANCE OF FE, CU AND CO ABSORPTION FROM THE GASTROINTESTINAL TRACT, WHICH WAS ACCOMPANIED BY DEVELOPMENT OF VARIOUS ANEMIAS, OF HYPOCHROMIC TYPE IN PARTICULAR.

FACILITY:  
KAFEDRA MEDITSINSKOY KHIMII KAFEDRA GOSPITAL'NOY KHIRURGIY KAFEDRA  
PATOLOGICHESKOY FIZIOLOGII IVANO-FRANKOVSKOGO MEDITSINSKOGO INSTITUTA.

UNCLASSIFIED



PROCESSING DATE--23OCT70

1/2 011 UNCLASSIFIED  
TITLE--MODIFICATION OF TRANSFER RNA BY 2, PRIME, 3  
PRIME, 0, 4, (N, 2, CHLOROETHYL, N, METHYLAMINO) BENZILIDENE, URIDINE, 5  
AUTHOR--(04)--GRINEVA, N.I., KNORRE, D.G., SENZHENKO, L.P., TEPLOVA, N.M.

COUNTRY OF INFO--USSR

SOURCE--MOLEKULYARNAYA BIOLOGIYA, 1970, VOL 4, NR 3, PP 307-312

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--RNA, ALKYLATION, CHEMICAL KINETICS, CHROMATOGRAPHIC ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1998/0155

STEP NO--UR/0463/70/004/003/0307/0312

CIRC ACCESSION NO--A0120855  
UNCLASSIFIED

PROCESSING DATE--23OCT70

UNCLASSIFIED

2/2 011

CIRC ACCESSION NO--AP0120855  
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE EFFECTS OF SOME FACTORS HAVE BEEN STUDIED UPON ALKYLATION KINETICS OF TRNA WITH 2 PRIME, 3 PRIME, 0(4, (N, 2, CHLORETHYL, N, METHYLAMINO), BENZILIDENE), URIDINE, 5 EFFICIENCY OF ALKYLATION (THE RATIO OF THE TRNA ALKYLATION RATE TO THAT OF ALL BY PROCESSES) DOES NOT DEPEND SIGNIFICANTLY ON THE TEMPERATURE IN THE RANGE 20-50 DEGREES AND IS PROPORTIONAL TO INITIAL TRNA CONCENTRATION. THE EFFICIENCY OF ALKYLATION MARKEDLY DECREASES IN THE PRESENCE OF MAGNESIUM SALTS. THE RATE AND THE EFFICIENCY OF ALKYLATION DOES NOT DEPEND ON PH WITHIN THE RANGE 6,0-7,5. AS REVEALED BY CHROMATOGRAPHY AFTER TOMLINSON AND TENER THE POLYNUCLEOTIDE CHAIN OF TRNA ALKYLATED FOR 10 PERCENT DOES REMAIN INTACT. FACILITY: INSTITUTE OF ORGANIC CHEMISTRY, SIBERIAN BRANCH OF THE ACADEMY OF SCIENCES, USSR, NOVOSIBIRSK.

UNCLASSIFIED

5  
Genetics

USSR

GRINEVA, N. I., KNORRE, D. G., ~~SENZHENKO, I. P.~~ and TEPLOVA, N. M., Institute of Organic Chemistry, Siberian Department of the Academy of Sciences USSR

"Modification of Transfer RNA by 2',3'-O[4-(N-2-Chloroethyl-N-Methylamino)-Benzylidene]-Uridine-5'-Methylphosphate"

Moscow, Molekulyarnaya Biologiya, No 3, 1970, pp 307-312

Abstract: The effect of temperature, tRNA concentration and pH on the kinetics of the reaction of tRNA with K<sup>+</sup>OPURCl in an aqueous solution was studied. The efficiency of alkylation (ratio of the rate of alkylation of tRNA to the total rates of all the secondary conversions of the reagent) was virtually independent of temperatures ranging from 20 to 50°C and proportional to the initial tRNA concentration. Alkylation efficiency decreased sharply in the presence of magnesium salts. The rate and efficiency of alkylation was also independent of pH in the 6.0 to 7.5 range. Judging by the data of chromatography modified by 10% tRNA (Tomlinson-Tener system), alkylation did not rupture the polynucleotide chain.

1/1

7

USSR

VYSOTSKIY, D. A., PETROV, M. D., REKOV, A. I., ROMANOV, A. I.,  
SEPP, V. A., SEREBRENNIKOVA, V. Ye., SMIRNOVA, L. G., KURTEPOVA, O. I.,  
Institute of High Temperatures of the Academy of Sciences USSR

"Test Results on Installations and Electrode Materials in a Plasma Jet"

Moscow, Teplofizika vysokikh temperatur, No. 3, May/June '72, pp 635-639

Abstract: The characteristics of electrodes of silicon carbide with additives of alloying metals (Mo, Ti, Cr), interelectrode insulators of refractory concretes based on high-alumina VGB and AFB concretes and magnesian MB concrete and module insulation walls of MB concrete were investigated in a model of an MHD generator. The maximum electrode temperature during the experiments reached 2300°K, the interelectrode insulators reached 2100°K and the installation walls reached 1700°K. The electrode samples were prepared by pressing a mixture of SiC powders and the appropriate alloying additive (Mo, Ti, Cr) with organic binding and subsequent heat treatment at a temperature of 2100°C for 10-15 min. The experimental device in which the materials were tested consisted of the following elements: a plasmatron producing an air flow with a

1/2

(4)

USSR

VYSOTSKIY, D. A., et al, Teplofizika vysokikh temperatur, No. 3,  
May/Jun 72, pp 635-639

temperature of 3000°K, a mixing chamber where an easily ionized additive was introduced into the air flow in the form of potassium or  $K_2CO_3$  vapors, a nozzle, the MHD generator channel, and a system for evacuating the gas flow. The flow rate in the channel was approximately 500 m/sec. The advantages of a sectional structure for the channel are shown and it was established that the current density is determined by the conductivity of the films from the interaction products of the electrode and additive materials, independent of the type of alkali additive (potassium or potash vapor) at the temperature of its condensation on the electrode surface. At an electrode temperature of less than 900°K in supplying K-vapors and of 1200°K in supplying  $K_2CO_3$  powder, the current density remains constant at 0.2 a/cm<sup>2</sup>. At these temperatures the current density is evidently determined by the conductivity of the liquid film of the interaction products of the additive material, the working gas, and the electrode and of their emission properties. With an increase in electrode temperature above 900-1200°K the emission properties of the electrode material directly begin to play a basic role.

2/2

- 58 -

UDC: 536.54

USSR

PETROV, M. D. and ~~SEPP, V. A.~~

"Two-Layer Calorimetric Probe for Measuring the Temperature and Full Pressure in High-Temperature Flows"

Moscow, Izmeritel'naya tekhnika, No 4, 1972, pp 49-50

Abstract: The instrument described is a two-layered calorimeter, a structural diagram of which is given, whose operation was studied by the authors under the conditions of a plasma jet with a temperature of about 3000° K flowing from an electric-arc heater into the atmosphere. They estimated the measurement error of the instrument and performed experiments measuring the effect on it of various factors. The instrument was made up of six coaxial tubes made of 1Kh18N9T steel forming two independent cooling systems, an outer layer and an inner layer. The outer has an outside diameter of 6.2 mm and an inside diameter of 4 mm, while the inner layer has an outside diameter of 3 mm and an inside diameter of 1 mm. The ends of the tubes are soldered with a refractory metal, with an air space between the outer and inner layers for thermal insulation. Details of the experiments and the measurement method are given.

1/1

Pharmacology and Toxicology

UDC: 615.787.017.8-053-092+612.822.3.CS7-  
053+591.18-135:577.87:577.17

USSR

FROZOROVSKIY, V. B., SEYDEN, M. A., and KHROMOVA, O. N., Central Scientific Research Laboratory, Pediatric Medical Institute, Leningrad

"Age Differences in the Sensitivity of Rabbit Brains to Choline-Potentiating Preparations"

Elektrofiziologicheskiye Issledovaniya Tsentral'noy Nervnoy Systemy Pozvonochnykh, (Electrophysiological Studies of the Central Nervous System of Vertebrates), Leningrad, "Nauka, 1970, pp 109-113

Abstract: The object of the investigations was to determine age differences in the sensitivity of rabbit brains to armin, galanthamine, proserine, oxazyl, and eserine, all choline-potentiating preparations. This determination is important for establishing rational doses of preparations and regimes of functional and biochemical systems in ontogeny. Adult rabbits and young rabbits 1.5 months of age were used in the experiments. Individual doses of the preparations were administered to the experimental animals, and the duration of the activating reaction was determined by electroencephalography with the use of steel electrodes inserted into the cranium of the animals. Thirty minutes prior to the beginning of the experiments, the animals were given chloralose and metacin respectively

1/2

USSR

PROZOROVSKIY, V. B., et al, Elektrofiziologicheskiye Issledovaniya Tsentral'noy Nervnoy Systemy Pozvonochnykh, (Electrophysiological Studies of the Central Nervous System of Vertebrates), Leningrad, "Nauka", 1970, pp 109-113

in doses of 20 and 2.5 mg/kg body weight, the former to develop a state of drowsiness, and the second -- to prevent the excitation of the peripheral M-cholinergic reactive systems. At the same time anticholinesterase activity of the preparations was determined in vitro with the use of the Hestrin method. The investigations established that the brain sensitivity of the young rabbits is by 1.2-1.7 times lower with respect to armin, galanthamine, proserine, and eserine than that of adult animals, and that doses of these preparations required to induce an activity reaction respectively in young rabbits and adult animals are as follows (in mg/kg): 0.089±0.002 and 0.052±0.007 for armin; 1.100±0.0107 and 0.900±0.039 for galanthamine; 0.190±0.020 and 0.130±0.016 for proserine; 0.079±0.004 and 0.054±0.022 for eserine. The exact dosage of oxazol could not be determined because a dose of 0.2 mg/kg of the preparation killed the young animals. No correlation between the anticholinesterase activity of the preparations and their effect on the electroencephalogram was established.

2/2

- 68 -



PROCESSING DATE--2300110

UNCLASSIFIED

1/5 022

TITLE--INFLUENZA, A TREACHEROUS DISEASE -U-

AUTHOR--SEPP, I. S

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, SOVETSKAYA ROSSIYA, 17 JAN 70, P 4

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--INFLUENZA VIRUS; INTERFERON; BIOLOGIC PERSONNEL, DISEASE CONTROL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1999/0488

STEP NO--UR/9022/70/000/000/0004/0004

CIRC ACCESSION NO--AN0122643

UNCLASSIFIED

PROCESSING DATE--23OCT70

UNCLASSIFIED

2/5 022

CIRC ACCESSION NO--ANO122643  
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. NO INFECTIOUS DISEASE SPREADS WITH SUCH RAPIDITY AND COMPLETE INDIFFERENCE TO GEOGRAPHICAL, AGE, OR ANY OTHER KINDS OF BOUNDARIES AS INFLUENZA. EVERY YEAR 10-15 PERCENT OF ALL PEOPLE ALL OVER THE WORLD GET THE DISEASE AND IN SOME YEARS IT ATTACKS ALMOST THE ENTIRE WORLD POPULATION. THE INFLUENZA VIRUS IS EXCEPTIONALLY VARIABLE. THE DEFENSIVE FORCES OF THE BODY THAT ARE MOBILIZED WHEN A PERSON IS INFECTED BY ONE TYPE OF VIRUS ARE HELPLESS ABAINST ANOTHER TYPE. MOREOVER, LACK OF SUSCEPTIBILITY RESULTING FROM THE DISEASE DISAPPEARS FAIRLY QUICKLY, IN 1-3 YEARS. THAT IS WHY OUTBREAKS, EPIDEMICS, OR PANDEMICS OCCUR AFTER THESE INTERVALS. DURING THE PAST 10 YEARS THEY WERE CAUSED BY THE TYPE A SUB2 OR B VIRUS. THE EPIDEMIC THAT IS NOW RAGING IN MANY COUNTRIES IS CAUSED BY THE A SUB2 VIRUS. PEOPLE SOMETIMES GET THE IMPRESSION THAT MANKIND IS FATED TO HAVE FREQUENT ENCOUNTERS WITH INFLUENZA EPIDEMICS AGAINST WHICH IT IS DEFENSELESS, BUT THIS IMPRESSION IS FALSE. DUE TO THE PROGRESS MADE BY MEDICINE, VIROLOGY IN PARTICULAR, WE HAVE MANY POWERFUL MEANS OF CONTROLLING THE DISEASE. THEIR EFFECTIVENESS WAS MANIFESTED IN THE PANDEMIC OF HONG KONG FLU IN 1968-1969, WHEN THE INCIDENCE OF THE DISEASE IN THE USSR WAS MUCH LOWER THAN IN SOME OF THE HIGHLY DEVELOPED COUNTRIES NAD DEATHS WERE UNCOMMON. THE FIRST MEANS OF PROTECTION AGAINST INFLUENZA IS HEALTHY WORK AND REST CONDITIONS; FREQUENT WALKS OUTDOORS, PHYSICAL EXERCISE, ATTENTION TO PERSONAL HYGIENE AND SANITARY CONDITIONS AT HOME.

UNCLASSIFIED

PROCESSING DATE--23OCT70

UNCLASSIFIED

3/5 022

CIRC ACCESSION NO--AN0122643

ABSTRACT/EXTRACT--CLINICAL EXPERIENCE SHOWS THAT THE COURSE OF INFLUENZA IS PARTICULARLY SEVERE IN THOSE WHO ABUSE ALCOHOL AND IN THOSE SUFFERING FROM METABOLIC, CARDIOVASCULAR, AND RESPIRATORY DISEASES. ON THE OTHER HAND, PEOPLE WHO ARE PHYSICALLY FIT, HARDY, WHO HAVE A HEALTHY MODE OF LIVING EITHER DO NOT CONTRACT INFLUENZA OR HAVE ONLY A MILD BOUT WITH NO COMPLICATIONS. CONDITIONING OF THE UPPER RESPIRATORY TRACT IS VERY BENEFICIAL. IT IS A WELL KNOWN FACT THAT SKIERS AND LOVERS OF OTHER KINDS OF WINTER SPORTS, "WALRUSES", RARELY HAVE COLDS. THE SEVRET LIES NOT ONLY IN THEIR GENERAL HEALTH AND GOOD COMDITON, BUT IN THE UNUSUAL RESISTANCE OF THE MUCOUS MEMBRANES OF THEIR RESPIRATORY TRACT. THIS RESISTANCE CAN BE BUILT UP BY INHALING FRESH FROSTY AIR, RINSING THE MOUTH AND THROAT WITH COLD WATER (ONE SHOULD START WITH WARM WATER AND GRADUALLY LOWER THE TEMPERATURE DAY BY DAY), PUTTING DROPS OF WARM AND SHARP FOOD SEASONINGS AND SMOKING DESTROY THE INTEGRITY OF THE TISSUES AND LOWER THE RESISTANCE OF THE MUCOUS MEMBRANES OF THE MOUTH AND RESPIRATORY TRACT. THE SECOND METHOD OF CONTROLLING INFLUENZA IS COMPULSORY AND EARLY ISOLATION OF A VICTIM WHO IS TO RECEIVE FREE TREATMENT AT HOME OR IN A HOSPITAL. UNFORTUNATELY, PEOPLE OFTEN DO NOT FOLLOW THIS PROCEDURE, THINKING THAT SUFFERING WITH DISEASE "ON THEIR FEET" AND CONTINUING ON THE JOB EVEN WHEN RUNNING A HIGH TEMPERATURE IS A UNIQUE KIND OF "VALOR".

UNCLASSIFIED

PROCESSING DATE--23OCT70

UNCLASSIFIED

4/5 022

CIRC ACCESSION NO--AN0122643  
ABSTRACT/EXTRACT--BUT THIS IS SELFISH BECAUSE SUCH A "MANLY" PATIENT

INFECTS OTHERS AROUND HIM AND MAY DEVELOP SERIOUS COMPLICATIONS AND  
 GENERAL SOCIAL HYGIENIC METHODS ALREADY MENTIONED, WE HAVE SOME SPECIFIC  
 AND NONSPECIFIC MEANS OF PROTECTION. AMONG THE SPECIFIC MEANS ARE  
 INFLUENZA VACCINE AND ANTIINFLUENZA IMMUNOGLOBULIN. NEITHER OF THESE  
 AGENTS IS CAPABLE OF COMPLETELY PREVENTING INFLUENZA FROM SPREADING, BUT  
 THEY CAN REDUCE THE INCIDENCE OF THE DISEASE TWOFOLD OR MORE AND PREVENT  
 THE SEVERE AND COMPLICATED FORMS. THESE AGENTS SHOULD THEREFORE BE USED  
 PRIMARILY AMONG THE MOST THREATENED GROUPS, CHILDREN, WORKERS IN RETAIL  
 SHOPS, TRANSPORT, HOSPITALS AND CLINICS, ETC. ONE OF THE GREAT MEDICAL  
 ACCOMPLISHMENTS OF RECENT YEARS IS THE DEVELOPMENT OF NONSPECIFIC MEANS  
 OF PROTECTION AGAINST VIRAL DISEASES, INFLUENZA IN PARTICULAR. THESE  
 MEANS ARE NEW, BUT THEY HAVE ALREADY DEMONSTRATED THEIR VALUE. ONE OF  
 THEM IS INTERFERON, A PROTEIN THAT PREVENTS VIRUS FROM MULTIPLYING IN  
 HUMAN CELLS. INTERFERON CAN BE PRODUCED ARTIFICIALLY AND THEN  
 INTRODUCED INTO THE RESPIRATORY TRACT (E.G., BY INSTILLING DROPS INTO  
 THE NOSE). INTERFERON ELABORATED BY THE BODY ITSELF AFTER THE  
 INTRODUCTION OF SPECIAL STIMULANTS IS EVEN MORE ACTIVE. TRIALS OF  
 INTERFERON CONDUCTED BY THE LABORATORIES OF ACADEMICIANS Z. V.  
 YERMOL'YEVA AND V. D. SOLOV'YEV AND BY ACADEMICIAN G. V. BAROYANS'  
 DEPARTMENT IN THE CENTRAL INSTITUTE OF ADVANCED TRAINING OF PHYSICIANS  
 SHOWED IT TO BE HIGHLY EFFECTIVE AGAINST INFLUENZA. IT SHOULD BE NOTED  
 THAT ALL THESE SPECIFIC AND NONSPECIFIC AGENTS ARE USED TO PREVENT AND  
 TO TREAT INFLUENZA.

UNCLASSIFIED