

1/2 018 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--PHOTONEPHELCMETRIC METHOD FOR DETERMINING BETA LYSINS IN SERUM -U-

AUTHOR--(03)-~~BUKHARIN, O.V.~~, LUDA, A.P., BIGEYEVA, R.I.

COUNTRY OF INFO--USSR

SOURCE--LAB. DELO 1970, (3), 160-2

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BACTERICIDE, BLOOD SERUM, BACILLUS SUBTILIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/0431

STEP NO--UR/9099/70/000/003/0160/0162

CIRC ACCESSION NO--AP0132656

UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0132656

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A RELIABLE PHOTONEPHELOMETRIC METHOD FOR DETN. OF BETA LYSINS IN SERUM WAS DEVELOPED. IT IS BASED ON ANTIBACTERIAL ACTIVITY OF SERUM CONTG. BETA LYSINS AGAINST BACILLUS SUBTILIS. FACILITY: ORENBURG. MED. INST., ORENBURG, USSR.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--THE SURGICAL TREATMENT OF AORTIC COARCTATION IN CHILDREN -U-
AUTHOR--(04)--BURAKOVSKIY, V.I., POKROVSKIY, A.V., BUKHARIN, V.A.,
ALEKSEYEV, G.I.
COUNTRY OF INFO--USSR
SOURCE--KHIKURGIYA, 1970, NR 6, PP 80-88
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--HEART SURGERY, PEDIATRICS, ARTERIAL ANASTOMOSIS, DIAGNOSTIC
METHODS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3002/1777 STEP NO--UR/0531/70/000/006/0080/0088
CIRC ACCESSION NO--AP0129145
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0129145

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE ANALYZES 127 OPERATIONS PERFORMED FOR COARCTATION OF THE AORTA IN CHILDREN, AGED FROM 2 MONTHS TO 15 YEARS. FEATURES PECULIAR TO THE CLINICAL COURSE OF AORTIC COARCTATION AND PROBLEMS OF DIAGNOSIS IN NURSLINGS ARE DESCRIBED. IN THE CLINICAL COURSE OF AORTIC COARCTATION IN CHILDREN THREE PERIODS ARE SINGLED OUT: (1) CRITICAL, (2) PERIOD OF ADAPTATION AND (3) PERIOD OF COMPENSATION, THIS REQUIRING THE CORRECT CHOICE OF THE MODE OF THERAPY. THE AUTHORS HAVE ELABORATED THE INDICATIONS TO THE OPERATION OF RESECTION OF AORTIC COARCTATION IN CHILDREN WHICH ARE DIFFERENT IN EACH AGE GROUP AND SHOULD TAKE INTO CONSIDERATION THE PATIENT'S AGE, SEVERITY OF THE STATE, POSSIBILITY OF SUBSEQUENT GROWTH OF THE ANASTOMOSIS, ETC. THE TECHNIQUE OF DIFFERENT TYPES OF OPERATIONS AND CHOICE OF THE METHOD DEPENDING UPON ANATOMICAL CONDITIONS AND PATIENT'S AGE ARE DESCRIBED IN DETAIL. THE TOTAL MORTALITY COMPRESSED 7.9PERCENT OF CASES. WITH ACCUMULATION OF THE SURGICAL EXPERIENCE AND AFTER THE ELABORATION OF PRINCIPLES OF POSTOPERATIVE MANAGEMENT OF PATIENTS FROM 1967 OUT OF 49 OPERATIONS, INCLUDING 10 IN EARLY CHILDHOOD, THERE WAS NOT A SINGLE LETHAL OUTCOME. FACILITY: INSTITUT SERDECHNO SOSUDISTOY KHIRURGII IMENI A. N. BAKULEVA, MOSKVA.

UNCLASSIFIED

1/2 030 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--ALGORITHM FOR THE AUTONOMOUS CONTROL OF THE ARRIVAL OF A SPACECRAFT
AT A GIVEN LANDING POINT -U-
AUTHOR-(03)-OKHOTSIMSKIY, D.YE., BUKHARKINA, A.P., GOLUBEV, YU.F.
COUNTRY OF INFO--USSR **B**
SOURCE--KOSMICHESKIE ISSLEDOVANIYA, VOL. 8, MAR.-APR. 1970, P. 169-188.
DATE PUBLISHED-----70
SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., SPACE TECHNOLOGY
TOPIC TAGS--ALGORITHM, AUTOMATIC CONTROL, SPACECRAFT LANDING, SATELLITE
MOTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1994/1757 STEP NO--UR/0293/70/008/000/0169/0188
CIRC ACCESSION NO--AP0115586
UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0115586

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DESCRIPTION OF A CONTROL ALGORITHM ENSURING THE GEOGRAPHICALLY SPECIFIED LANDING OF A SPACECRAFT ACCORDING TO A SCHEME OF INITIAL REENTRY WITH EXIT FROM THE ATMOSPHERE, FOLLOWED BY FINAL REENTRY AND LANDING. THE MOTION OF THE SPACECRAFT IN BOTH REENTRY SEGMENTS IS ANALYZED. COMPUTER SIMULATION OF THE CONTROL ALGORITHM DEMONSTRATES THAT A HIGH DEGREE OF BOTH LONGITUDINAL AND LATERAL LANDING ACCURACY CAN BE ACHIEVED EVEN FOR LARGE DISTANCES OF THE INITIAL REENTRY POINT TO THE LANDING AREA, REGARDLESS OF THE LACK OF COMPLETE KNOWLEDGE OF ATMOSPHERIC DENSITY DISTRIBUTION.

UNCLASSIFIED

USSR

UDC: 621.397.3

BUKHAROV, A. K., GOR'YAN, I. S., KOROCHKIN, E. V., KHAVKIN, L. M.,
and TSUKKERMAN, I. I.

"Television Automaton for Recognition Study"

Moscow, Tekhnika kino i televideniya, No 3, 1972, pp 52-56

Abstract: The recognition or classification of images can be automated by the use of histograms statistically representing the characteristics of the structures to be recognized. This article describes an automatic device operating on this principle, which uses the time scale and video signal of a standard television camera. The television equipment is operated in combination with an electronic computer using a specific algorithm and programmed for recognition. A general block diagram of the equipment is given together with specific block diagrams of individual assemblies. Photographic samples are also provided of the type of structures and textures recognized: soil specimens and cross sections of metals. Results of experiments with the device are comparable with those obtained by modeling with a computer.

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1/2 007 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--GLYCOSIDES OF URSOLIC ACID FROM EMPETRUM SIBIRICUM -U-

AUTHOR--(02)-BUKHAROV, V.G., KARNEYEVA, L.N.

COUNTRY OF INFO--USSR **B**

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (1), 171-2

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PROCESSED PLANT PRODUCT, SOLVENT EXTRACTION, CHROMATOGRAPHIC SEPARATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0123

STEP NO--UR/0062/70/000/001/0171/0172

CIRC ACCESSION NO--AP0119119

UNCLASSIFIED

2/2 007

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119119

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE PLANT GAVE, ON CHROMATOG. OF THE CHCL SUB3 EXT. ON SILICA GEL, URSOLIC ACID, M. 273-4DEGREES; ME ESTER M. 164-6DEGREES, (ALPHA) SUBD 68DEGREES. THE SUBSEQUENT EXTN. OF THE PLANT MATTER WITH ETOAC AND CHROMATOG. ON AL SUB2 D SUB3 GAVE THE GLYCOSIDES: EMPETROSIDE A, C SUB36 H SUB58 O SUB8, M. 209-11DEGREES, (ALPHA) SUBD 20DEGREES; EMPETROSIDE B, (CONTG. 71.86PERCENT, C 10PERCENT H), M. 293-5DEGREES, (ALPHA)SUBD 0DEGREES; AND EMPETROSIDE C, C SUB41 H SUB66 D SUB12, M. 185-8DEGREES, (ALPHA)SUBD 10DEGREES. HYDROLYSIS OF THE A FRACTION WITH MEOH-AQ. HCL GAVE D GLUCOSE AND URSOLIC ACID; C FRACTION FAVE URSOLIC ACID, D GLUCOSE AND L ARABINOSE; B FRACTION GAVE D GLUCOSE AND URSOLIC ACID. TREATING THE GLYCOSIDES WITH MEI IN THE PRESENCE OF BAO IN ME SUB2 NCHO 12 HR AT 100DEGREES GAVE A ME ETHER WHICH, HYDOLYZED BY AQ. HCL, GAVE 2,3,4,6,TETRA,O,METHYL,D,GLUCOSE; SIMILAR TREATMENT OF FRACTION B GAVE THE SAME PRODUCT; FRACTION C GAVE ME URSOLATE AND 2,3,6, AND 2,3,4,TRIO,METHYL,D,GLUCOSE. FACILITY: INST. ORG. FIZ. KHIM. IM. ARBUZOVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--EXPERIENCE OF COMPLEX THERAPY OF PATIENTS WITH PSORIASIS USING
HYDROGEN SULFIDE WATER BATHS OF THE DONETSK MINERAL SPRING -U-
AUTHOR-(021)-TIKHAYA, S.K., BUKHAROVICH, A.M.
COUNTRY OF INFO--USSR
SOURCE--VESTNIK DERMATOLOGII I VENEROLOGII, 1970, NR 4, PP 29-32
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--SKIN DISEASE, BATH UNIT, WATER, HYDROGEN SULFIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1990/0564 STEP NO--UR/0206/70/000/004/0029/0032
CIRC ACCESSION NO--AP0108779
UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0108779

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TREATMENT OF 103 PATIENTS WITH PSORIASIS WAS CARRIED OUT USING HYDROGEN SULFIDE WATER BATHS OF THE DONETSK MINERAL SPRING IN COMBINATION WITH ULTRAVIOLET IRRADIATION AND VITAMIN THERAPY. CLINICAL RECOVERY WAS ATTAINED IN 43 PATIENTS, SIGNIFICANT IMPROVEMENT, IN 38, IMPROVEMENT, IN 17. NO THERAPEUTIC EFFECT WAS OBSERVED IN 5 PATIENTS WITH THE SUMMER FORM OF THE DISEASE. DESPITE DISAPPEARANCE OF CLINICAL MANIFESTATIONS OF THE DISEASE, CERTAIN DISORDERS OF THERMOREGULATION REFLEXES TO COLD AND HEAT, AS WELL AS OF ELECTRICAL PERMEABILITY OF THE SKIN AND SOME HISTOLOGICAL AND NEUROMORPHOLOGICAL CHANGES WERE DISCOVERED. THE DETECTED FUNCTIONAL AND PATHOMORPHOLOGICAL CHANGES IN THE SKIN AFTER DISAPPEARANCE OF RASH MAY INDICATE THE FAILURE OF THE TREATMENT GIVEN TO ELIMINATE FACTORS CONDUCIVE TO THE DEVELOPMENT OF PSORIASIS, AND THEREFORE IT IS NECESSARY TO CARRY OUT THERAPY AGAINST RELAPSES. OUR OBSERVATIONS SUGGEST THAT IT IS POSSIBLE TO USE BALNEOTHERAPY WITH HYDROGEN SULFIDE WATERS OF THE DONETSK MINERAL SPRING FOR TREATMENT OF PSORIASIS UNDER LOCAL CONDITIONS. FACILITY: KAFEDRA KOZHNYKH I VENERICHESKIKH BOLEZNEY DONETSKOGO MEDITS. INSTITUTA IM. A. M. GOR'KOGO.

BUKHENSKIY, M.F.

SOVIET HISTORY OF THE DEVELOPMENT OF HOLOGRAPHY
(conference in Tbilisi)

Article by candidates of technical sciences M. F. Bukhenskiy
and N. M. G. Lomaj, ~~Scientific Institute of Optics and Spectroscopy,
USSR Academy of Sciences, Moscow, USSR~~
Vol. 57, No. 10, October 1979, pp. 1247-1251

Sci. USSR 57(10)
1247-1251

The concept "holography" (Greek origin) includes an aggregate of methods of recording and subsequent restoration of wave fronts of radiation containing complete information about an object, which makes it possible to obtain three-dimensional images of the object. Any wave process (radio frequency, visible or infrared radiation of objects, etc.) waves) and acoustic vibrations) can be recorded on a suitable recording medium in the form of an interference picture.

Holography as a universal method of investigation finds application in very varied areas of science and technology. There are, for example, processes and effects which at the present time are not amenable to precise quantitative study by holographic methods. This applies in particular to very rapid physical processes such as the formation of cracks in polymers, the condensation of fuel in a working engine, and the flow in wind tunnels. Holographic methods are also used in the flaw detection of industrial articles. They are also also of exceptional importance in optical diagnostics, which can be used to visualize internal regions of parts.

The sphere of application of holography is steadily expanding. Testimony to this was the first all-union conference held in Tbilisi on 21-26 May by the Scientific Council for Laser Graphics of the USSR Academy of Sciences, the Institute of Radio Engineering, Electronics and Automation, in view about 300 representatives of 209 scientific organizations of the country participated. The purpose of the conference was to sum up the results of the

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UDC 539.376+532.135

STARKOV, Ye. A., BUKHGALTER, V. I.

"Determination of Rheological Properties of Thermoplastic Polymers for Selection of Extrusion Modes"

Tekhnol. Mashinostroyeniya [Machine Building Technology -- Collection of Works], No 11, Tula, 1971, pp 158-174, (Translated from Referativnyy Zhurnal, Mekhanika, No 11, 1972, Abstract No 11 V587 by N. I. Malinin).

Translation: A tubular viscosimeter is described, designed for determination of the rheological characteristics of polymer melts. The polymer is forced into the tube by a small worm press similar to those used in worm extruders. A method is described for processing the experimental data, also including determination of the ordinary corrections used in viscosimetric measurements. The results of determination of the rheological characteristics of low and high density polyethylene and polypropylene are presented. It is established that the viscous properties of the polymers studied are satisfactorily described by the exponential Ostwald-De Vale formula. 7 Biblio. Refs.

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USSR

UDC: 8.74

BUKHGOL'TS, N. V.

"On the Problem of Minimizing the Working Storage of an Adaptive Digital Computer"

Tr. In-ta elektron. upravl. mashin (Works of the Institute of Control Computers), 1972, vyp. 17, pp 79-85 (from RZh-Kibernetika, No 5, May 73, abstract No 5V768 by V. Mikheyev)

Translation: The author considers the problem of minimizing the working storage of an adaptive memory with a fixed set of problems whose length may exceed the volume of the working storage. A new algorithm ("tapasdlip") is proposed for constructing a table of pairwise compatibility of variables for long programs. This algorithm utilizes the fact that in determining the compatibility of two variables, all commands may be excluded from the program which do not permit access to the cells which store these variables, except transfer commands and marker commands, to which a control is transmitted. As a result, an abbreviated program scheme is obtained in which the

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BUKHGOL'TS, N. V., Tr. In-ta elektron. upravl. mashin, 1972, vyp. 17, pp 79-85

relative arrangement of commands for access to cells in which we are interested is the same as in the initial program, and the length of the abbreviated program is considerably less than the length of the initial program. The abbreviated program scheme is accommodated in toto in the memory. This enables the use of already available algorithms for constructing the Spurs of variables. If the Spurs do not intersect, it is assumed that the investigated pair of variables is compatible. To determine the compatibility of n ($n > 2$) variables the described operations are repeated for each pair of variables. To determine pairwise compatibility of one of n variables with the others, its Spur is constructed $(n - 1)$ times rather than only once.

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1/2 024 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--EFFECT OF THE PROPERTIES OF CARCASS CORD ON THE CROSS SECTION
CONFIGURATION OF R TIRES -U-
AUTHOR--(02)-DROZDOVA, V.V., BUKHIN, B.L. B
COUNTRY OF INFO--USSR
SOURCE--KAUCH. REZINA 1970, 29(2), 39-41
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--CORDAGE, MOTOR VEHICLE TIRE, METAL, RAYON, WEAR RESISTANCE

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0532 STEP NU--UR/0138/70/029/002/0039/004L
CIRC ACCESSION NO--AP0119451
UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119451

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT WAS STUDIED OF THE CORD TYPE ON THE PERMANENT DEFORMATION OF "R" (RADIAL) TIRES AFTER 1000 KM RUN IN PERIOD. RUNNING IN TIRES WITH METAL OR RAYON (I) CORDS INCREASED THE MAX. TIRE WIDTH BY 3.5PERCENT. IN THE CASE OF TIRES WITH NYLON (II) CORDS THE MAX. WIDTH INCREASE WITH 6.1-7.5PERCENT. THE TIRE DIAM. MEASURED AT THE TREAD CENTER INCREASED BY SIMILAR TO 2PERCENT INDEPENDENTLY OF THE CORD MATERIAL. THE TIRE DIAM. MEASURED AT THE TREAD EDGE INCREASED DURING THE RUN IN PROPORTIONATELY WITH THE TENSILE COMPLIANCE OF THE SIDE CARCASS WALLS. THIS CAUSED DIFFERENCES IN THE SHAPE OF THE CONTACT AREA BETWEEN THE TIRE AND THE ROAD SURFACE. THE CONTACT AREA OF TIRES WITH II CORDS WAS NEARLY RECTANGULAR. THE CONTACT AREA OF TIRES WITH I OR METAL CORDS WERE ELLIPSOID. THE CONTACT PRESSURE WAS MORE EVENLY DISTRIBUTED AND 9-17PERCENT LOWER FOR TIRES WITH II CORDS THAN FOR TIRES WITH I CORDS, RESULTING IN A SLOWER WEAR OF THE II TIRES. FACILITY: NAUCH.-ISSLED. INST. SHINNOI PROM., MOSCOW, USSR.

UNCLASSIFIED

USSR

ZUEV, Yu. S., REVAZOVA, M. A., BUKHINA, M. F.

"Influence of Morphology of Elastomers on Strength Properties Under Various Deformations"

Tr. Mezhdunar. Konf. Po Kauchuki i Rezine [Works of International Conference on Cautchouc and Rubber], Moscow, Kimiya Press, 1971, pp 146-152. (Translated from Referativnyy Zhurnal Mekhanika, No 1, 1972, Abstract No 1V1497 by I. M. Kershteyn).

Translation: The influence of the size of crystalites and degree of crystallinity on the strength properties of elastomers is studied. Films about 10 μ thick of regular structure polychloroprene (type N¹ nairite) and urethane rubber (type SKU-8) are studied. The rate of crack propagation is used as the strength characteristic, allowing the restructuring occurring during deformation of the polymer to be considered. Specimens with various initial spherulite dimensions (60-100, 10-30 and 1-3 μ) were stretched to a predetermined deformation level and subjected to corrosive media: ozone-containing air and mixtures of isoamyl alcohol and water. The birth and growth of microcracks and macrocracks were observed in a microscope. At relatively low deformation (less than 100% for nairite and less than 25% for SKU-8) transverse macrocracks were formed, while at high deformations (over 400% for nairite, over 300% for SKU-8) longitudinal cracks formed. At intermediate deformations, both types

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USSR

UDC 621.311.26:621.311.072.311.011.3.076.12

MILYAKH, A. N., TONKAL', V. Ye., and BUKHINSKIY, S. I.

"Possibility of Self-Compensation of the Reactive Load Power in Multiphase Frequency Converters"

V sb. Probl. tekhn. elektrodinamiki (Problems of Technical Electrodynamics -- collection of works), vyp. 24, Kiev, Naukova Dumka Press, 1970, pp 3-8 (from RZh-Elektrotehnika i Energetika, No 4, Apr 71, Abstract No 4 Ye242)

Translation: A study is made of a circuit permitting use of the reactive power of an RL-load to improve the power factor of a multiphase frequency converter. In the example of operation of a three-phase frequency converter with a sinusoidal output voltage on a symmetrical linear actively inductive load it is demonstrated that the described circuit is operating properly when $\cos \phi$ of the load is no less than 0.5544. The calculation formulas for determining the total active power, the reactive power and the distortion power in the presence of compensation are presented. There are 6 illustrations, 1 table, and a 5-entry bibliography. [Institute of Electrodynamics of the Ukrainian SSR Academy of Sciences, Kiev]

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1/2 022 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--CONDITION OF THE BONE SYSTEM IN PATIENTS WITH DIFFUSE TOXIC GOITER
AT PUBERTAL AGE. CLINICAL RENTGENOLOGICAL STUDY -U-
AUTHOR-(C2)-BUKHMEN, A.I., KALENOVA, N.P.

COUNTRY OF INFO--USSR

B

SOURCE--PEDIATRIYA 49(1): 29-32. 1970

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--RADIOLOGY, BONE, GOITER, ENDOCRINE SYSTEM DISEASE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/0343

STEP NO--UR/0546/70/049/001/0029/0032

CIRC ACCESSION NO--AP0155836

UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0135836

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CLINICO RENTGENOLOGICAL OBSERVATIONS AND ANALYSIS OF THE CONDITION OF THE BONE SYSTEM IN 35 PATIENTS WITH DIFFUSE TOXIC GOITER AT PUBERTAL AGE WERE MADE. THE BONE SYSTEM IN PATIENTS WITH DIFFUSE TOXIC GOITER AT PUBERTAL AGE UNDERGOES CERTAIN CHANGES. PATIENTS WITH HYPERTHYREOSIS HAVE MODERATELY OR WEAKLY PRONOUNCED OSTEOPOROSIS MAINLY IN THE BONES OF THE HANDS. GROWTH AND DIFFERENTIATION OF THE SKELETON AT PUBERTAL AGE IN HYPERTHYREOSIS GOES 2-5 YR AHEAD OF NORMAL. IN CASES WHEN HYPERTHYREOSIS IS ACCOMPANIED BY HYPOGONADISM THE BONE AGE LAGS BEHIND THE NORMAL AND HIGH STATURE IS CHARACTERISTIC OF THESE PATIENTS. FACILITY: INST. EXP. ENDOCRINOL. CHEM. HERM., ACAD. MED. SCI. USSR, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 536.24.532.54

BUKHMAR, M. A., USTIMENKO, B. P.

"Investigation of Aerodynamics and Heat Exchange of Twisted Flows Developing in a Restricted Space"

V sb. Teplo- i massobmena (Heat- and Mass-Transfer--collection of works), T. 1, Minsk, 1972, pp 90-97 (from RZh-Mekhanika, No 7, Jul 72, Abstract No 7B787)

Translation: An experimental study of the principles governing a twisted flow was made based on the example of flow in cylindrical cyclone chambers. For purposes of generalization, this material is compared with previously found data on flow in tubes, curved channels, and the gaps between rotating cylinders. The study of aerodynamics and heat exchange was done on a cyclone chamber model with one-, two- and four-way airfeed over a Reynolds number range from $2.1 \cdot 10^5$ to $1.5 \cdot 10^6$ and parameter ω (equal to the ratio of the flow temperature T_+ to the wall temperature T_0) from 1.0 to 2.3.

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1/2 024 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--CATHODIC REDUCTION OF MANGANESE, II, IONS ON AN AMALGAM ELECTRODE
-U-
AUTHOR--(03)--LANGE, A.A., SHIRIHSKIKH, A.V., BUKHMAN, S.P. **B**
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK KAZ. SSR, SER. KHIM. 1970, 20(2), 68-70
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--MANGANESE ALLOY, ION, AMALGAM, METAL CORROSION, OXYGEN CATHODE
REDUCTION, METAL ELECTRODE, SULFATE, CATHODE POLARIZATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1610

STEP NO--UR/0360/70/020/002/0068/0070

CIRC ACCESSION NO--AP0125232

UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0125232

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FOR THE CATHODIC REDN. OF 0.1 AND 0.25M MNSO SUB4 SOLNS. (PH 2.65-6.5), THE POLARIZATION CURVES WERE MEASURED AT A STATIONARY AMALGAM ELECTRODE AT 20DEGREES. NEAR THE EQUIL. POTENTIALS, THE CURVES OF POTENTIAL VS. LOG C.D. EXHIBITED A PLATEAU. ITS LENGTH DECREASED WITH INCREASING PH. THE EFFECT IS CAUSED BY THE CORROSION OF MN AMALGAMS IN ACID SOLNS., AS WAS SHOWN BY THE MEASUREMENTS OF CURRENT EFFICIENCIES. FACILITY: INST. KHIM. NAUK, ALMA ATA, USSR.

UNCLASSIFIED

USSR

UDC 629.73.621.45:338

BUKHMAN, YA. Z., Candidate of Technical Sciences

"Utilization of Aircraft Engines With Completed Service Life"

Moscow, Mekhanizatsiya i Avtomatizatsiya Proizvodstva, No 10, 1973, pp 9-10

Abstract: Modern turboprop and turbojet engines are compact, light in weight, are very sturdy, are reliable, are simple to operate, and have many other advantageous features. For reasons of flight safety, the engines are "grounded" in a condition that permits their long use as power installations on the ground. Examples are shown of the varied uses to which such "retired" engines can be put. Increased research is called upon to find additional uses for these engines.

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USSR

UDC: 621.43.011:533+621.5:533

BEKURYAYEV, V. I., BUKHMEN, Ya. Z., STEPANENKO, O. A.

"High-Velocity Turbulent Stream Produced by a Jet Engine. Comparing Theory With Experiment"

Tr. Leningr. gidrometeorol. in-ta (Works of the Leningrad Hydrometeorological Institute), 1972, vyp. 45, pp 73-76 (from RZh-Mekhanika, No 7, Jul 72, Abstract No 7E407)

Translation: The theory of turbulent jets propagating in a stratified atmosphere is compared with the results of observations of the propagation of a gas jet produced by the RD-3M turbojet engine. The observations were made at the Sibay Mine Quarry where extensive work is being done on the use of turbojet engines for creating artificial wind in the quarry. The results of the comparison are given in the form of graphs showing the experimental and theoretical trajectories of the axis or contour of the jet. The comparison shows satisfactory agreement between theory and experiment. Authors' abstract.

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BUKHONINA, G.A.

**RADIO ENGINEERING /
Diode Switching
Devices**

Bukhonina, G. A.

Вестник Академии Наук СССР, Радиоинженерия

JPRS 54764
22 December 1971

NONLINEAR AND MICROWAVE RADIO ENGINEERING SYSTEMS

Selected articles from the Russian-language book edited by L. D. Bakhtakh, corresponding member of the USSR Academy of Sciences and V. I. Smolyanov, candidate of engineering sciences. Nelinennyye i svyaznyye ustroystva mikrovolnovoy oblasti. Sbornik nauchnykh trudov gosnauki vuzov i zhurnalov. Seriya "Vysokaya Frekvencia". Vol. 2, No. 7, 1970, signed to press 14 October 1970. Machine Building Press, Moscow.

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- a - [1 - USSR - F]

UDC 629.7.051:621.346.001

A STUDY OF SOME CHARACTERISTICS OF DIODE SWITCHING DEVICES IN THE DECI-METER RANGE

Engineers G. A. Buzhoma, G. P. Vasil'yev, V. A. Gal'kovskiy, I. Ye. Gol'ber, and Candidate of Engineering Sciences V. N. Ginzburg pp. 284-311

In this collection [reference 9] the results of an investigation of diode switching devices in the decimeter range controlled by semiconductor P-n-junctions have been explained. The basic electric parameters of the models of charge-over switches (losses and phase-frequency characteristics) turned out to be in good agreement with the calculated data.

This work is devoted to an investigation of certain parameters of diode switching devices that are important in practice. An analysis has been performed of the limitations which are imposed on the quick operation of such devices by the reaction of the high-frequency circuits. Some limitations in the band width of diode switching devices (commutators) in the decimeter range associated with this fact have been analyzed. The features of the operation of these devices at the power levels of the microwave signal close to limiting value for the controlling diodes have been considered.

Quick Operation

The quick operation of diode switching devices may be limited by three factors:

- (a) the speed of operation of the electronic mechanism of the controlling semiconductor element;
- (b) the processes in the element control circuits;
- (c) the processes in the high-frequency circuits of the commutator.

A number of works [references 2, 3, 4] have been devoted to investigation of the quick operation of the electronic mechanism of semiconductors. As a result, we may consider it established that the natural time of point-contact and diffusion germanium diodes is considerably less than 10⁻⁹ seconds. According to some data [reference 4] it is no worse than 0.1 nanosecond. In other words, in the decimeter wave range the operation of such diodes as the 1A501 may be considered as practically inertia-free.

CONCLUSIONS

An analysis of the circuits of diode switching devices demonstrated that a number of their properties, such as quick operation, bandwidth, noise, and limiting magnitude of controlled power, depend upon the selection of an additional reactively ordering into the circuit of the diode on-off switch. If the reactance is selected, the parameters turn out to be unambiguously defined. At the same time, because of other characteristics of these switching devices, these parameters may be changed within known limits. For example, it has been theoretically and experimentally demonstrated that we may achieve a quick action of diode switching devices in the decimeter band assembled from germanium diodes of type 1A501 of the order of three high-frequency periods. The magnitude of the limiting controlled power may also be varied precisely thus within definite limits and, in particular, may exceed those values which are guaranteed for the diodes by the supplier. For a widening of the working frequency band additional circuit solutions are required, such as, for example, hooking up detuned diode on-off switches in cascade, with these switches spaced along the line at a distance of a quarter wave length from each other.

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3. Garver, R. V., Spenser, E. G., Le Graw, R. C. "High-speed microwave switching of semiconductors," Journal of Applied Physics, 1957, vol. 28, No. 11.
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8. Drake, Ivan, "A broad-band modulation radiometer in the centimeter range with a traveling-wave tube," Zarubezhnaya radioelektronika (Foreign radio electronics), 1978, No. 8.
9. Vaill'ev, G. P., Yevdokimenko, Yu. A., and Ginzburg, V. N., "Calculation and designing of diode switching devices, etc.," page 265 of this collection.

USSR

UDC 621.396.61.029.64

BUKHONINA, G. A., VASIL'YEV, G. F., GALKOVSKIY, V. A., GOL'BERG, I. YE.
~~GINZBURG, V. N.~~

"Study of Some Characteristics of Decimeter-Range Diode Commutation Devices"

Tr. Mosk. aviats. in-ta (Works of Moscow Aviation Institute), 1970, vyp. 215,
pp 284-310 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4D328)

Translation: A study is made of the effect of the high-frequency circuits of decimeter-range diode breakers on their speed, bandwidth, noise and behavior at microwave levels close to limiting for control p-n diodes. It is demonstrated that the speed of all the commutation devices with p-n diodes in the decimeter range is on the order of units of nanoseconds with the exception of the maximum decoupling setup time in the blocked arm of the switch which is on the order of hundreds of nanoseconds. One method of expanding the operating band of the switches is presented. The bibliography has 8 entries.

1/1

1/2 026 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--GENERAL PROPERTIES AND CONSTRUCTION OF THE ROOT LOCI OF AN EQUATION
WITH A QUADRATIC FREE PARAMETER -U-
AUTHOR-(02)-BUKHOVTSEV, B.B., KULAGINA, O.V. 6

COUNTRY OF INFO--USSR

SOURCE--MOSKOVSKII UNIVERSITET. VESTNIK. SERIJA III-FIZIKA, ASTRONOMIJA,
VOL. 11, JAN-FEB. 1970, P. 74-82
DATE PUBLISHED-----70

SUBJECT AREAS--MATHEMATICAL SCIENCES

TOPIC TAGS--DIFFERENTIAL EQUATION, CONTROL SYSTEM STABILITY, AERODYNAMIC
ROLL, HODOGRAPH, PARAMETER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1983/1628

STEP NO--UR/0188/70/011/000/0074/008Z

CIRC ACCESSION NO--AP0054474

UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0054474

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANALYSIS OF THE GENERAL PROPERTIES OF DIFFERENTIAL EQUATIONS WHOSE COEFFICIENTS DEPEND QUADRATICALLY ON A FREE PARAMETER. EQUATIONS OF THIS TYPE, FOR EXAMPLE, DESCRIBE THE BEHAVIOR OF SOME AUTOMATIC CONTROL SYSTEMS, WHERE THE FEEDBACK FACTOR CAN BE TREATED AS THE FREE PARAMETER. THE PROBLEM OF STUDYING THE STABILITY OR QUALITY OF SUCH SYSTEMS LEADS TO THE ANALYSIS OF THE BEHAVIOR OF THE ROOTS OF THE CORRESPONDING CHARACTERISTIC EQUATION, FOR A CONTINUOUSLY VARYING FREE PARAMETER. IT IS SHOWN THAT THE GENERAL PROPERTIES OF ROOT LOCI CAN BE USED TO PLOT ROOT HODOGRAPHS. FORMULAS FOR DETERMINING THE ASYMPTOTIC CURVES OF THE ROOT LOCI OF EQUATIONS OF VARIOUS CLASSES ARE DERIVED, USING WHICH ROOT LOCI CAN BE CONSTRUCTED WITHOUT RECOURSE TO ANALYTICAL FORMULAS OF HIGHER ORDER. A METHOD OF CONSTRUCTING ROOT LOCI OF EQUATIONS WHOSE COEFFICIENTS DEPEND QUADRATICALLY ON A FREE PARAMETER IS PROPOSED, WHICH MAKES USE OF METHODS DEVELOPED FOR EQUATIONS WITH A LINEAR PARAMETER. THE METHOD IS APPLIED TO AN EQUATION DESCRIBING THE MOTION OF AN AIRCRAFT WITH ROLL CONTROL, WHERE THE FLIGHT VELOCITY IS TREATED AS THE FREE PARAMETER.

FACILITY: MOSKOVSKII GOSUDARSTVENNYI UNIVERSITET, MOSCOW, USSR.

UNCLASSIFIED

1/2 026 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--TEMPERATURE FUNCTION OF THE CONDUCTIVITY QUANTUM OSCILLATION
AMPLITUDE OF ANTIMONY THIN FILMS -U-
AUTHOR--KOMNIK, YU.F., BUKHSHTAB, YE.I., NIKITIN, YU.V.
COUNTRY OF INFO--USSR
SOURCE--FIZ. TVERD. TELA 1970, 12(3) 793-8
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--METAL FILM, ANTIMONY, METAL VAPOR DEPOSITION, ELECTRIC
RESISTANCE, QUANTUM OSCILLATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/0658 STEP NO--UR/0181/70/012/003/0793/0798
CIRC ACCESSION NO--AP0105637
UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0105637

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ELEC. RESISTANCE WAS INVESTIGATED IN THIN (IS SIMILAR TO 300 ANGSTROM) POLYCRYST. FILMS OF SB IN A BROAD RANGE OF TEMPS. (4.2-350DEGREE SK). THE FILMS WERE OBTAINED BY VACUUM DEPOSITION IS SIMILAR TO 10 PRIME NEGATIVE 6 TORR ON GLASS SUBSTRATES. THE DEPENDENCE OF THE FILM RESISTANCE ON THICKNESS IS OSCILLATORY. THE PERIOD OF THE OSCILLATIONS DOES NOT CHANGE WITH TEMP. AND IS SIMILAR TO 25 ANGSTROM. THE AMPLITUDE OF THE OSCILLATIONS DECREASES WITH INCREASING TEMP. ACCORDING TO $T \exp(2\pi \text{PRIME}^2 \text{KT} - \text{DELTA} \text{EPSILON SUBF})$, WHERE $\text{DELTA} \text{EPSILON SUBF}$ IS THE SPLITTING OF SUBBANDS CLOSE TO THE FERMI LEVEL AS A RESULT OF SPACE QUANTIZATION. THE VALUES OF $\text{DELTA} \text{EPSILON SUBF}$ WERE DETD. FOR FILMS OF VARIOUS THICKNESSES. THESE VALUES COINCIDE WITH THE EVALUATIONS OBTAINED FROM KNOWN DATA ON THE BAND STRUCTURE OF SB. THE EFFECT OF THE RELAXATION BROADENING OF THE SUBLEVEL EDGES ON THE AMPLITUDE OF COND. QUANTUM OSCILLATIONS IS SHOWN.

UNCLASSIFIED

1/2 008 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--USE OF OLEFINS FOR PREPARING ALKYL SULFONATES -U-
AUTHOR--(05)-TYUTYUNNIKOV, B.N., KARETNIKOVA, V.S., BUKHSHTAB, Z.I.,
YUSHCHENKO, YE.P., GASYUK, L.V.
COUNTRY OF INFO--USSR
SOURCE--NEFTEPERERAB. NEFTEKHIM. (MOSCOW) 1970, (2), 34-6
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, MATERIALS
TOPIC TAGS--ALKENE, BIODEGRADABLE DETERGENT, AMMONIUM COMPOUND,
SULFONATION, SULFITE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1997/0568 STEP NO--UR/0318/70/000/002/0034/0036
CIRC ACCESSION NO--AP0119486
UNCLASSIFIED

2/2 008

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0119486

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NH SUB4 HSO SUB3 WAS ADDED TO HIGHER ALPHA OLEFINS IN THE PRESENCE OF OXIDIZERS TO PRODUCE BIODEGRADABLE SULFONATE DETERGENTS. AIR BUBBLING AND PEROXIDES WERE USED IN THE PRESENCE OF SALTS OF METALS WITH VARIABLE VALENCE. THE REACTANTS WERE HEATED IN CYLINDRICAL REACTORS TO 80DEGREES AND AIR BUBBLED THROUGH FOR 4 HR, THEN THE REACTION MIXT. WAS TRANSFERRED TO THE SETTLER AND COOLED TO 20-50DEGREES. AFTER 3-4 HR, A MINERAL SALT LAYER WAS SEPD. TO BOTTOM. THE UPPER HYDROCARBON LAYER WAS RECYCLED. THE MIDDLE LAYER, CONTG. AN ALC. AQ. SOLN. OF SULFONATES, WAS DILD. 1:1 WITH H SUB2 O AND THE REMAINING HYDROCARBONS WERE EXTG. WITH GASOLINE. THE SULFONATES WERE CONCD. BY DISTG. OFF ALCG. AND H SUB2 O TO OBTAIN AN NH SUB4 ALKYL SULFONATE CONC. CONTG. 45-53PERCENT ACTIVE SUBSTANCE. DATA ON THE PROCESS ARE PRESENTED. FACILITY: KHARKOV. POLITEKH. INST. IM. LENINA, KHARKOV, USSR.

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UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0140271

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TO PREP. "HYDROOXIDATE ALCS.,"
 PARAFFIN WAX IS OXIDIZED, THE PRODUCT EXTD. WITH MEOH TO REMOVE
 UNREACTED HYDROCARBONS, THE CARBOXYLIC ACIDS METHYLATED, AND THE ME
 ESTERS HYDROGENATED. CRUDE OR PURIFIED ALKYL SULFATES PREPD. FROM THE
 "HYDROOXIDATE ALCS." HAD HIGH FOAMING CAPACITY WITH DISTD. H SUB2 O,
 BUT A LOW ONE WITH HARD WATER, DUE TO THEIR CONTENT OF C SUBL6 POSITIVE
 ALKYL SULFATES, WHICH GAVE CA INSOL. SALTS. PURIFIED ALKYL SULFATES
 GAVE SUITABLE PASTE AND POWD. DETERGENTS, ESP. WHEN MIXED WITH FOAMING
 ADDITIVES, FOR BOTH COTTON AND WOOLEN FABRICS. FACILITY:
 KHAR'KOV. POLITEKH. INST. IM. LENINA, KHARKOV, USSR.

UNCLASSIFIED

1/3 017 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--EFFECT OF TEMPERATURE AND PH OF THE MEDIUM ON THE CONCENTRATION OF
FREE RADICALS IN WOOD AND ON ITS BRIGHTNESS -U-
AUTHOR--(04)-BUKHTEYEV, B.M., KLEYMENOVA, T.A., IVANOV, M.A., SHCHERBAKOVA,
L.D.
COUNTRY OF INFO--USSR **B**
SOURCE--BUM. PROM. 1970, (4), 22-3
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--PYROLYSIS, WOOD, CHAIN REACTION, EPR SPECTRUM, FREE RADICAL,
CHEMICAL REACTION TEMPERATURE, THERMAL DECOMPOSITION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1999/1766 STEP NO--UR/0329/70/000/004/0022/0023

CIRC ACCESSION NO--AP0123564
UNCLASSIFIED

2/3 017

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0123564

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EXOTHERMIC DECOMP. OF WOOD (DURING PYROLYSIS), WHICH CAN BE REGARDED AS A SERIES OF CHAIN REACTIONS INVOLVING FREE RADICALS, BEGINS AT 275DEGREES. THE PRESENCE OF FREE RADICALS IN WOOD AT LOWER TEMPS., SUCH AS USED IN KRAFT AND SODA PULPING, HAS BEEN REPORTED AND THERE IS REASON TO BELIEVE THAT WOOD DEGRADATION PROCESSES, PROBABLY INVOLVING FREE RADICALS, OCCUR AT THESE LOW TEMPS. EPR SPECTRA OF SPRUCE, BIRCH, AND ASPENWOOD FLOUR SAMPLES EXPOSED FOR 5-25 MIN TO TEMPS. OF 120, 140, AND 160DEGREES SHOWED THAT 5 MIN HEATING AT 120DEGREES RESULTS IN RECOMBINATION OF PART OF THE STABLE FREE RADICALS. FURTHER HEATING AT THIS TEMP. HAS NO EFFECT ON THE FREE RADICAL CONC. THE CHANGES IN RADICAL CONC. DURING HEATING AT 140 AND 160DEGREES DEPEND ON THE NATURE OF THE WOOD. IN SPRUCE AND BIRCHWOODS, RECOMBINATION OF RADICALS TAKES PLACE DURING THE 1ST FEW MIN; WHILE IN ASPENWOOD, THIS PROCESS IS NOT OBSERVED BECAUSE OF THE INTENSE FREE RADICAL INITIATION WHICH BEGINS DURING THE 1ST MIN OF HEATING. HEATING AT 140 AND 160DEGREES CAUSES DARKENING OF THE WOOD. THE EXPTS. WERE REPEATED WITH WOOD FLOUR SAMPLES TREATED FOR 45 MIN AT 120-180DEGREES WITH BUFFER SOLNS. AT PH'S 1.4-12.5. SIMULTANEOUSLY DETNS. WERE MADE OF THE BRIGHTNESS OF THE WOOD. IN WEAKLY ACIDIC AND NEUTRL MEDIA, THE FREE RADICAL CONC. WAS THE LOWEST AND THE WOOD BRIGHTNESS WAS THE HIGHEST. THIS CONFIRMS THE LIMITED FORMATION OF CHROMOPHORE GROUPS IN LIGNIN IN RADICAL REACTIONS AT NEUTRAL AND WEAKLY ACIDIC PH (SUCH REACTIONS OCCUR MORE EASILY AT ALK. PH).

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PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0123564

ABSTRACT/EXTRACT--THE OVERALL CONCLUSION IS THAT THERMAL INITIATION OF FREE RADICALS OCCURS AT RELATIVELY LOW TEMPS., BUT THE REACTIONS INVOLVING FREE RADICALS ARE OF LOW INTENSITY AND DO NOT DEVELOP INTO CHAIN REACTIONS.

FACILITY: VNIIB, LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC 669.15'74'292'295:620.178.16

MATVEYEV, YU. G., BUKHTIN, V. S., and TARASKO, D. I., Eastern Scientific Research Mining Institute (Novokuznets) and Siberian Metallurgical Institute

"Results of Laboratory Studies on the Wear Resistance of Steel 110G13L, Alloyed with Vanadium, Modified with Titanium and Explosive Strengthened"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy -- Chernaya Metallurgiya, No 8, Aug 73, pp 129-132

Abstract: The effect of additions of vanadium and titanium on the wear resistance of steel 110G13L and the effect of explosive strengthening with a varying degree of cold working on the wear resistance of the same steel alloyed with V and Ti were established. Five heats were tested in which the vanadium content varied from 0.00 to 0.71% and the titanium content -- 0.00 to 0.07%. It was reestablished that additions of the two carbide-forming elements increase the wear resistance of this steel with the best results achieved with additions of 0.5-0.7% V and 0.04-0.07% Ti. Explosive strengthening also increases wear resistance and the optimum hardness of the steel from explosive cold working was 310-350 Ehn. With V and Ti added, the hardness from cold working is increased by 10-15 units. Two figures, and five bibliographic references.

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CONFIDENTIAL U.S.

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UR 0482

Soviet Inventions Illustrated, Section III Mechanical and General,
Derwent, 9-70

244578 GANTRY CRANE comprising trolley with polypast hoist mechanism has the polypasts set horizontally and symmetrically about the lateral axis of the trolley. This increases the height to which the load can be lifted. The crane consists of a rigid rectangular frame 1 with running wheels 2, driven by electric motor 3 via reduction gear 4 and pivoted shafts 5. The trolley is in the form of bearing beam 6 with running wheels 7 driven by electric motor 8 via reduction gear 9 and shafts 10. The hoist mechanism with two load suspensions is made in the form of two horizontal polypasts. The fixed pulleys 12 are set at the edges of the trolley, and the moving pulleys 13 are connected to running nuts, moving in guide beams 6 along a screw driven by electric motor 16 via a reduction gear. Traction cables 18 pass round the fixed and moving

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pulleys. When motor 16 is switched on the screw is rotated via its reduction gear. Due to its two-way thread, the nuts are moved opposite ways, thus moving apart or together the moving pulleys 13, shortening or lengthening the freely hanging suspensions on pulleys 12.

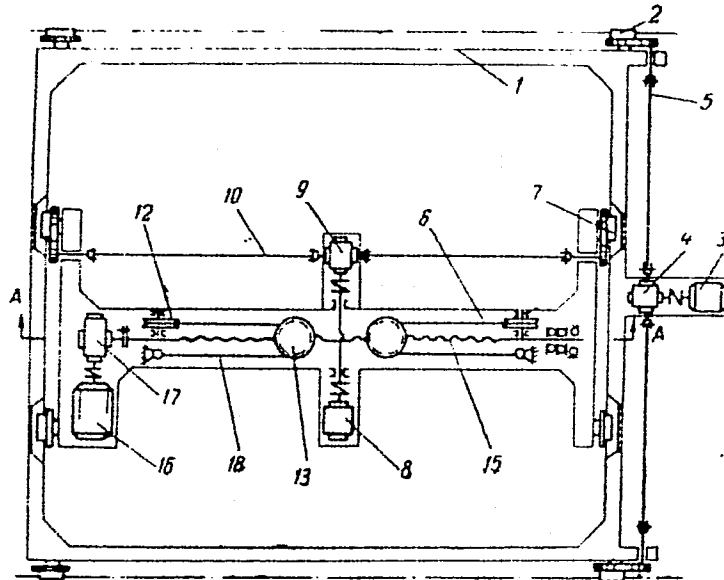
29.12.64. as 936420/27-11, GUBIN, I.P. et al.
Eastern Mining Res. Inst: (8.10.69) Bul.
18/28.5.69. Class 35b, Int. Cl. B 66c.

Gubin, I.P.; Sed'ko, A.P.; Bukhtin, V.S.; Lyubkin, A.P.;
Goncharova, M.A.; Vostochnyy Nauchno-Issledovatel'skiy
Gornorudnyy Institut

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477c

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19821471

1/2 021 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--ROLE OF PHOSPHOLIPIDS IN PANCREATIC SECRETION -U-
AUTHOR--(03)-BUKHVALOV, I.B., NECHAYEVA, N.V., FATEYEVA, V.I.
COUNTRY OF INFO--USSR
SOURCE--TSITOLOGIYA 1970, 12(1), 85-90
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--PHOSPHOLIPID, HISTOCHEMISTRY, PANCREAS, RAT, PROTEIN,
SECRETION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1996/0457 STEP NO--UR/9053/70/012/001/0085/0090
CIRC ACCESSION NO--AP0117693
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0117693

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PHOSPHOLIPIDS (I) WERE LOCALIZED HISTOCHEM. BY THE ACID HEMATIN METHOD OF BAKER AND THE ROLE OF I IN DIFFERENT STAGES OF PANCREATIC SECRETION WAS STUDIED IN 24 HR FASTED RATS AND AT DIFFERENT INTERVALS (5, 15, 30, 45, AND 60 MIN) AFTER ADMINISTRATION OF FOOD TO FASTED ANIMALS. I ACTIVELY PARTICIPATED IN THE FORMATION OF ZYMOGEN GRANULES IN THE CELL MEMBRANES. THE POSSIBLE ROLE OF I IN TRANSMEMBRANAL TRANSFER OF SECRETORY PROTEIN, AS PROPOSED BY HOKIN AND HOKIN, IS DISCUSSED. HOWEVER, THE PRESENT FINDINGS ARE CONTRADICTORY TO THE ABOVE HYPOTHESIS. FACILITY: LAB. CYTOL. BIOCHEM., INST. DEVELOP. BIOL., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 621.771.08

ZASUKHA, P. F., KORSHCHIKOV, V. D., BUKHVALOV, O. B., and WEYSHOV, A. A.

"Bimetallic Rolled Products"

"Bimetallicheskiy Prokat" [English Version Above], Moscow, Metallurgiya Press, 1971, 264 pages

Translation of Annotation: This book presents the properties and area of application of bimetallic rolled products made from steel and non-ferrous metals.

The results of theoretical and experimental studies of the process of joint plastic deformation of dissimilar metals, the specifics of bonding of the metals, and the effect of technological factors on the bonding strength of the layers and the mechanical and operational properties of bimetals are studied. Parameters of the technology and equipment for production of bimetals by the packet and roll methods in the hot, warm, and cold states are presented. Methods of quality control of bimetallic rolled products are described.

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USSR

ZASUKHA, P. F., et al., "Bimetallicheskiy Prokat," Moscow, Metallurgiya Press, 1971, 264 pages

The book is designed for engineering and technical workers of plants and scientific research and planning institutes involved in the development, production, and application of bimetallic materials. It may be useful to students and graduate students of technical schools.

108 figures; 59 tables; 183 biblio. refs.

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ZASUKHA, P. F., et al., "Bimetallicheskiy Prokat," Moscow, Metallurgiya Press, 1971, 264 pages

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ZASUKHA, P. F., et al., "Bimetallicheskiy Prokat," Moscow, Metallurgiya Press, 1971, 264 pages

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ZASUKHA, P. F., et al., "Bimetallicheskiy Prokat," Moscow, Metallurgiya Press, 1971, 264 pages

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Communications

USSR

UDC 621.296.23.019.4


EIKHVINER, V. YE., DUBROVSKIY, V. A., Active Members of the Scientific and Technical Society of Radio Engineering, Electronics and Communications

"Study of Time Distortions of Signals in Long-Range Radio Communications"

Moscow, Radiotekhnika, No 4, 1970, pp 20-25

Abstract: This article contains a discussion of the results of analyzing the statistical laws of variation of time distortions of radiotelegraph signals on long routes. Approximations of the empirical laws for different communication quality are presented, and recommendations are formulated with respect to organization of relays. Actual data are tabulated for example stations around the world.

Experimental investigation of the statistical laws of variation of time distortions of telegraph signals executed with the help of the TANK analyzer on five long-range radio lines demonstrated that approximation of the probability density distribution of the distortions by a power law remains valid not only on single-jump routes but also on multi-jump routes. Approximation by an exponential law is valid when improving the communications quality. Approximation of the communications quality variation law on long-range routes in the "reliability-validity" coordinates, just as on single-jump routes, is characterized by a

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BUKHVINER, V. YE., DUBROVSKIY, V. A., Radiotekhnika, No 4, 1970, pp 20-25

logarithmically normal law. The data obtained permit a quantitative estimation of the communications quality on long-range radio lines, recommendations of signal relays on single-jump spans of 2,000-3,000 km and they also indicate that the keying rate not exceed 100 baud on long-range radio lines.

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USSR

UDC: 621.391.17:621.396.671.3

OLIFIN, L. K. (Deceased), BUKHVINDER, V. Ye., GUREVICH, R. V., and KABAKOVA, A. G.

"Comparison of Receiver Antenna Noise Immunities"

Moscow, Radiotekhnika, No. 6, 1970, pp 66-71

Abstract: The article compares the noise protection provided by antennas 3BS-2 and BS-2, high-frequency antennas used in Soviet broadcasting networks. The BS-2 is recommended as standard for a main radio line 3000 km in length, but has relatively poor noise immunity; the more complex 3BS-2, made up of three BS-2's one behind the other, gives better noise immunity. The measurements on which the comparison is based were made repeatedly and by various means, in 1959-1960, 1966, and more recently. The results of the measurements and descriptions of the procedures and instruments involved are presented. Four of the major results are listed: on practically all frequencies of the shortwave range, the noise immunity of the 3BS-2 was from 1.3 to 3 times that of the BS-2 in Network I; similar results were obtained on Network II; the coefficient of ionic dispersion for network I with a horizontal vibrator was 4-7.5 times less with the 3BS-2 and 3-6 times less with the BS-2; the reliability of communication of the 3BS-2 may exceed that of the BS-2 by as much as 20%.

1/1

USSR

BALAKIN, V. YE., BUKIN, A. D., KURDADZE, L. M., ONUCHIN, A. P., PAKHTUSOVA, YE. V., SEREDNYAKOV, S. I., SIDOROV, V. A., and KHABAKHPASHEV, A. G., Institute of Nuclear Physics of the Siberian Department of the Academy of Sciences USSR

"Observation of Double e^+e^- -Pair Production"

Moscow, Yadernaya Fizika, Vol 16, No 4, 1972, pp 729-733

Abstract: The article describes results of the first experiments (in 1969 and 1970) on the observation of the process of the double pair production of the electron-positron pairs $e^+e^- \rightarrow e^+e^-+e^+e^-$ on a VEPP-2 positron-electron accelerator ring. Papers on this work were presented in 1971 at international conferences in Amsterdam and Cornell. The cross-section of the process for large angles of emission for the produced particles was measured. The experimental results were found to be in agreement with the theoretical calculations of V. N. BAYYER and V. S. FADIN.

The authors thank V. N. BAYYER and V. S. FADIN for discussions.

1/1

1/2 024 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--CONSERVATIVE TREATMENT OF PANCREATIC FISTULAS COMPLICATING THE
COURSE OF ACUTE PANCREATITIS -U-
AUTHOR--BUKIN, A.S.
COUNTRY OF INFO--USSR *B*
SOURCE--VRACHEBNOYE DELO, 1970, NR 3, PP 34-37
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--PANCREATITIS, FISTULA, CLINICAL MEDICINE

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1986/0953 STEP NO--UR/0475/70/000/003/0034/0037
CIRC ACCESSION NO--AP0102892
UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0102892

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANALYSING NINE CASES OF PANCREATIC FISTUALS DEVELOPING AS A COMPLICATION OF ACUTE PANCREATITIS THE AUTHOR CONCLUDES THAT THESE FISTULAS ARE MOST FREQUENTLY INCOMPLETE, EXTERNAL, CONNECTED WITH SMALL DUCTS OF THE PANCREAS, ORIGINATE FROM THE TAIL OF BODY OF THE PANCREAS AND ARE EASILY AMENABLE TO CONSERVATIVE TREATMENT INCLUDING INTRODUCTION OF MELTED BUTTER, IODLIPOL DIRECTLY INTO THE FISTULOUS DUCT.

UNCLASSIFIED

USSR

UDC 621.371.029.55 10

BENEDIKTOV, Ye. A., GETMANTSEV, G. G., YEZHOV, A. I., KOROBKOV,
~~Yu. S.~~, MALYSHEV, S. K., MATYUGIN, S. N., MITYAKOV, N. A.,
SAZONOV, Yu. A., CHERNOV, V. A., BEN'KOVA, N. P., BEREZIN, Yu. M.,
~~BUKIN, G. V.~~, KOLOKOLOV, L. Ye., and PEREKHVATOV, Yu. K.

"Results of an Experiment in Shortwave Radio Propagation"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl.
Sekt. 3. (Tenth All-Union Conference on the Propagation of Radio
Waves; Report Theses; Section 3--collection of works) "Nauka," 1972
pp 73-76 (from RZh--Radiotekhnika, No 10, 1972, Abstract No
10A367)

Translation: Results of experiments on investigating the charac-
teristics of wave propagation in the decameter range (5.7-15.0 MHz)
are analyzed; the communications took place between the following
magnetically adjacent points: an ionospheric station in Gor'kiy and
two science research ships in the Indian Ocean. In particular, the
possibility of communication over the Peterson beam was estimated.
Two illustrations, bibliography of one. N. S.

1/1

BURKIN, G. V.

ANN/ 18-160/5-nov-72

Acce 42

VIL. ATMOSPHERIC PHYSICS

(7)

Benediktov, Ye. A., G. V. Burkin, Yu. V. Kushnarevskiy, S. N. Matyuzin, N. P. Mozzerov, Yu. K. Perekhvaylov, and M. D. Filigel'.
Reception of Kosmos-381 signals from a conjugate point region. Kosmicheskiye Issledovaniya, no. 2, 1972, 302-303.

An attempt is described to detect satellite r-f signals from a conjugate point, with the object of precluding the possible anomalous magnetospheric or ionospheric modes that may be excited from ground-based transmitters in conjugate point experiments. The tests were done in December, 1970 using the Kosmos-381 satellite which broadcast at 2, 3.2, 5.6, 8.6, 10.4 and 12.8 MHz. Pulse power was 100W, and pulse width was 150µs at a 48 Hz repetition rate; reception was monitored with wideband delta or rhombic arrays at both the Moscow and Gor'kiy tracking stations. During part of the test period the orbital plane, including both the receiver and conjugate points; the remaining orbits included the conjugate point only.

In the 13th recording session with transmission at 12.8 MHz, a signal from the conjugate point (lat. 39.50 S, long. 59° E) was clearly received at Moscow for an interval of 20 seconds, corresponding to a satellite travel of 150 km. The magnetosphere channel width was however somewhat less than this value, since the satellite path was presumably at some inclination to it, and also because the channel tends to "wrap" the transmitted signal near its boundaries. Analogous reception at Gor'kiy was only for 0.25 to 0.5 sec, evidently because the satellite only grazed the waveguide channel. In some cases conjugate point reception was obscured by noise in the 12.8 MHz range; however there were cases where clear line-of-sight signals were recorded with no corresponding conjugate point reception.

Biochemistry

USSR

UDC 577.16+663.0

BUKIN, V. N., Corresponding Member of the Academy of Sciences USSR, and
BYKHOVSKIY, V. YA., Candidate of Biological Sciences

"Microbiological Synthesis of Vitamins"

Moscow, Zhurnal Vsesoyuznogo Khimicheskogo Obshchestva imeni D. I. Mendeleev,
Vol 17, No 5, 1972, pp 521-526

Abstract: The article considers work done in the USSR and abroad in the biosynthesis of vitamins with microorganisms, dealing mainly with the biosynthesis of vitamin B₁₂, riboflavin, β -carotene and ergosterol. The principal producers of these compounds are listed, as well as the highest yields that the literature describes as having been obtained with them. There are now several industrial shops in operation in the Soviet Union in the Glavmikrobioprom [Main Administration of the Microbiological Industry] system for the production of vitamin B₁₂ feed concentrate from acetone-butyl and molasses alcohol stillage, and there is a semicommercial plant turning out β carotene by the microbiological method. Poland plans a β -carotene shop, and there are reports that Pfizer Company plans to produce β -carotene by fermentation in Brazil.

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USSR

BUKIN, V. N. and BYKHOVSKIY, V. YA., Zhurnal Vsesoyuznogo Khimicheskogo Obshchestva imeni D. I. Mendeleev, Vol 17, No 5, 1972, pp 521-526

The article also gives data on the biosynthesis of vitamin B₆, biotin derivatives, coenzyme A, coenzyme Q, cytochrome c and ascorbic acid. Prospects are promising for the development of microbiological methods for the production of coenzyme forms of vitamins -- B₁₂ coenzyme, FAD, NAD and coenzyme A.

2/2

- 9 -

1/2 C20 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--BIOSYNTHESIS OF VITAMIN B SUB12 AND PORPHYRINS BY THERMOPHILIC
METHANE FORMING BACTERIA -U-
AUTHOR-(04)-BYKHOVSKIY, V.YA., ZAYTSEVA, N.I., PANTSKHAVA, YE.S., BUKIN,
V.N.
COUNTRY OF INFO--USSR **B**
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(1), 221-3
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--BIOSYNTHESIS, VITAMIN B COMPLEX, METHANE, BACTERIA, ENZYME
ACTIVITY, PORPHYRIN
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3005/1670 STEP NO--UR/0020/70/191/001/0221/0223
CIRC ACCESSION NO--AT0133575
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AT0133575

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXOGENOUS DELTA-AMINOLEVULINIC ACID (ALA) WAS REQUIRED FOR SYNTHESIS OF PORPHYRINS AND STIMULATED VITAMIN B SUB12 SYNTHESIS IN METHANOBACILLUS KUZNECEOVII CULTURES. TOTAL SYNTHESIS OF VITAMIN B SUB12 AND PORPHYRINS FROM ALA SEEMS TO INVOLVE FORMATION OF PORPHOBILINOGEN DURING ALA-DEHYDRATASE ACTION. THIS ENZYME WAS PRESENT IN M. KUZNECEOVII ACELLULAR EXTS., AND THE ACTIVITY WAS NOT AFFECTED BY ADDN. OF VITAMIN B SUB12 OR HEMIN IN VITRO. ALA-DEHYDRATASE ACTIVITY WAS INCREASED BY ZN AND ESP. BY CO PRIME2 POSITIVE AND WAS INHIBITED BY CHELATING AGENTS. INHIBITION DECREASED IN THE PRESENCE OF METALLIC IONS. FACILITY: INST. BIOKHM. IM. BAKHA, MOSCOW, USSR.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--REGULATION OF THE BIOSYNTHESIS OF VITAMIN B SUB12 AND PORPHYRINS IN
PROPIONIBACTERIUM SHERMANII -U-
AUTHOR--(03)-ZAYTSEVA, N.I., BYKHOVSKIY, V.YA., BUKIN, V.N.
COUNTRY OF INFO--USSR
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(6), 1476-9
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--BIOSYNTHESIS, VITAMIN, PORPHYRIN, BACTERIA, ZINC COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAHE--3003/0888 STEP NO--UR/0020/70/190/006/1476/1479
CIRC ACCESSION NO--AT0129957
UNCLASSIFIED

B

2/2 019

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AT0129957

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DELTA AMINOLEVULINIC ACID DEHYDRATASE (I) ACTIVITY OF P. SHERMANII ACCELLULAR EXTS. OBTAINED FROM CELLS CULTIVATED IN HEMIN WAS SIGNIFICANTLY LOWER THAN THE ACTIVITY IN CONTROL CELLS, BUT THE ACTIVITY OF EXTS. FROM CELLS GROWN IN THE PRESENCE OF VITAMIN B SUB12 WAS THE SAME AS IN THE CONTROLS. TREATMENT OF THE PARENT CELLS WITH ZN OR CO SALTS INCREASED I ACTIVITY. MN, MG, FE, AND NI WERE INEFFECTIVE. EDTA AND 8-HYDROXYQUINDLINE REDUCED I ACTIVITY IN CELL FREE EXTS., SPECIFICALLY DUE TO INHIBITION OF ZN PRIME2POSITIVE. HEMIN SEEMED TO INHIBIT FORMATION OF BOTH I AND PORPHOBILINOGEN. THE REACTIORI OF VITAMIN B SUB12 SUGGESTS THAT ITS ACTION IS DIRECTED TOWARD ENZYMIC SYSTEMS SPECIFIC FOR ITS OWN SYNTHESIS. I SEEMS TO BE ZN ACTIVATED OR ZN CONTG. FACILITY: INST. BIOKHM. IM. BAKHA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 621.357.1:66/.847(088.8)

BUDANOV, V. V., KIBENKO, V. D., BUKIN, S. M., PANOV, V. P.

"Electrochemical Procedure for Obtaining Rongalite"

USSR Author's Certificate No 303317, filed 11 Oct 69, published 14 Jul 71 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12L286P)

Translation: An electrochemical method of obtaining rongalite using cathode reduction has been patented. It is distinguished by the fact that in order to improve the process, increase the yield and improve the quality of the product, zinc formaldehydebisulfite is reduced at a pH of the electrolyte of 5-6, D_c 5-10 a/dm², a raw materials concentration 2 g-mole/liter in SO₂ at a temperature of 85-100°, and the zinc formaldehydesulfoxylate formed is converted to the product by known procedures.

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USSR

UDC 546.791'883.261

KISELEV, V. A., VLASOV, V. G., and BUKIN, V. YE.

"Formation of Mixed Uranium and Tantalum Monocarbides During Concurrent Reduction of Their Oxides With Carbon"

Leningrad, Zhurnal Prikladnoy Khimii, Vol 45, No 8, Aug 72, pp 1657-1660

Abstract: It was established that the apparent activation energy of the thermal carbon reduction of a mixture of oxides increases with the development of the process from 120 to 390 kjoule per mole. The following intermediate products have been identified by x-ray phase analysis: uranium dioxide, tantalum pentoxide, uranium carbide and tantalum carbide. By means of x-ray structural analysis it was shown that up to $\alpha = 0.35$ individual UC and TaC phases are formed. Next, concurrently with the reduction process, formation of solid solutions takes place. Homogenization of solid solutions could be achieved after 4 hrs at 2070°K or after 1.5 hrs at 2270°K. Formation of a continuous series of solid solution in the system UC--TaC was established. An assumption was made that the reactions pass through a stage of formation of vaporized oxides.

1/1

USSR

UDC 669.046.5

1

KHARITONOV, A. S., ZGUR'EV, I. I., MASLOVA, Yu. N., BUKINA, A. F., and BARANOVA, V. G.

"Out-of-Furnace Liquid Steel Degassing by Powder-Like Materials"

Moscow, V sb. "Sovremennyye problemy kachestva stali" (MISIIS) (Collection of Works, Modern Problems of Steel Quality) (Moscow Institute of Steel and Alloys), Izd-vo "Metallurgiya," No 61, 1970, pp 266-267

Translation of Abstract: Data are presented on liquid steel treatment by solid powder-like materials whose boiling temperature is lower than that of steel. Characteristics of the degassing agent (sodium chloride), of the treated 20L steel, melted in a basic 5-ton arc furnace, and of the pre-dried gas carrier (carbon dioxide) are presented. The degree of degassing (47%) with a 1.5 kg/ton sodium chloride consumption is indicated. Consideration is given to the reduction of nonmetallic inclusions and to the improvement of plastic properties in metal refining by sodium chloride. 4 tables.

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USSR

UDC 531.14.087.92:621.385.
.832.522:621.386.965

BALASHOV, A. V., and BUKINA, R. A.

"Dissector LI603 in the Capacity of Photoelectric Sensor of a Scanner-Compensator for Measuring of Dislocations"

Electron. Tekhnika. Nauch.-Tekhn. Sb. Elektronoluch. i Fotoelektr. Pribory / Electron Technique. Scientific Technical Collection. Electron Beam and Photoelectric Apparatus /, No 2(20), 1971, pp 47--49 (from Referativnyy Zhurnal, Metrologiya i Izmeritel'naya Tekhnika, No 32. Single Issue No 1, 1972, Abstract No 1.32.369, Resume)

Translation : The principal arrangement of a rapid action scanner-compensator for the measurement of relative linear dislocations of two objects, developed on the basis of the dissector LI603, is described. From basic experimental results, the rapid action of the system could be ascertained and the extent of error of the measurements evaluated.

1/1

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Acc. Nr:

AP0049943

Abstracting Service:
CHEMICAL ABST. 5-70

B

Ref. Code:

UR 0065

103490a Device for the automatic determination of phenol in waste waters. FSV-65V type. ~~Bukler, V. O.~~; Ivanov, V. S.; Men'kov, P. A.; Chernousov, N. N. (USSR). *Khim. Tekhnol. Topl. Masel* 1970, 15(1), 38-40 (Russ). The detn. was based on the reaction of water contg. phenol with reagents producing coloration. The color change, depending on the concn. of phenol, was recorded by an automatic photoelec. colorimeter and compared with control glasses corresponding to detd. concns. of phenol. The device included a sampler and sample-prep. system, automatic dosing and mixing water and reagents, colorimeter AKN-65V, and electronic potentiometer EPP-09M3 with scales: 0-10 mV; absorbance units, and 0-50 mg I/l. Thus, 25 ml water at $\leq 40^\circ$ was mixed with pyramidon 1, buffer 7, and NH_4^+ peroxy sulfate soln. 7 ml and transferred into a colorimeter-cuvette. The detn. ranges were 0-5 and 0-50 mg phenol/l., being required 40-60 min/detn., with errors of $\pm 15\%$; sensitivity and reproducibility of 5%.

GCJR

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1/1

REEL/FRAME
19801879

7

1/2 015
UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--BOGOLYUBOV'S INEQUALITY IN STATISTICAL MECHANICS OF CLASSICAL
SYSTEMS -U-
AUTHOR--(02)-SADOVNIKOV, B.I., BUKLI, K. *B*
COUNTRY OF INFO--USSR
SOURCE--VESTNIK MOSKOVSKOGO UNIV. FIZ. ASTRON. USSR, VOL. 11, NO. 1, P.
35-42 1970
DATE PUBLISHED-----70
SUBJECT AREAS--MATHEMATICAL SCIENCES, PHYSICS
TOPIC TAGS--QUANTUM STATISTICS, GREEN FUNCTION, SPONTANEOUS MAGNETIZATION,
MATHEMATIC MODEL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1990/1330 STEP NO--UR/0188/70/011/001/0035/0042
CIRC ACCESSION NO--AP0109414
UNCLASSIFIED

2/2 015 UNCLASSIFIED PROCESSING DATE--23OCT70
CIRC ACCESSION NO--APO109414
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE BOBOYLUBOV'S INEQUALITY (FOR
THE SPECTRAL INTENSITY OF QUANTUM GREEN FUNCTIONS OF TEMP.) HAS BEEN
USED DURING INVESTIGATIONS OF HIGHER ORDER TERMS IN QUANTUM STATISTICAL
SYSTEMS. THE CLASSICAL ANALOGUE OF THIS INEQUALITY IS INTRODUCED HERE
FOR TWO DIMENSIONAL GREEN FUNCTIONS AND IT IS SHOWN THAT THIS
CORRESPONDS TO THE QUANTUM CASE. THE RESULTS ARE APPLIED TO THE
CONSTRUCTION OF THE CLASSICAL ANALOGUE OF THE HEISENBERG'S MODEL FOR
SPONTANEOUS MAGNETISATION OF ONE OR TWO DIMENSIONAL SYSTEMS.

UNCLASSIFIED

USSR

BUKOV, V., Professor

"Healthy Longevity"

Riga, Sovetskaya Latvija, 4 Sep 70, p 4

Abstract: Cardiovascular conditions leading to premature death are enumerated, and it is noted that they all involve a disturbance in metabolic processes within the tissues which are regulated by the nervous system. Lack of regulated physical activity affects the functioning of the nervous system and leaves the heart in a state of untrained weakness. Animals deprived of normal activity for a time grow weak, and when they are again given the freedom to engage in their accustomed activities, some of them die. To insure healthy functioning of the central nervous system, it is necessary to alternate physical and mental activity with 7-8 hours of restoring sleep. Physical exercise should be regulated, increasing over periods of weeks and months, but never in haste and never to the point of fatigue. To try to compensate for weekday neglect of exercise on weekends is harmful. Muscles that have been inactive for several days should be retrained gradually. Sudden strain is disturbing and unnecessary. It is possible to begin with a brisk free walking, gradually increased to an hour, and later advance

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USSR

BUKOV, V., Sovetskaya Latviya, 4 Sep 70, p 4

to a free run, also gradually increased to an hour. Within 2 or 3 months, even an elderly man will be able to run a few kilometers without becoming short of breath. These simple procedures can prevent serious cardiovascular diseases.

2/2

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USSR

UDC 616.831-085.832.9-073.65

BUKOV, V. A., BOBKOV, I. G., and VINOGRADOV, V. I., Laboratory of Pathological Physiology and Experimental Surgery, Institute of Clinical and Experimental Surgery, Ministry of Health USSR

"Determination of Brain Temperature During Cooling of the Head"

Leningrad, Vestnik Khirurgii imeni I. I. Grekov, Vol 104, No 5, May 70, pp 113-114

Abstract: Clinical application of craniocerebral hypothermia requires a reliable, simple, and precise method of indirect determination of the degree of cooling of the brain. Numerous experimental and clinical studies using simultaneous measurements have demonstrated that the temperature in the auditory canal wall near the tympanic membrane registers the temperature of the basal portion of the brain with a precision of ± 0.4 degrees. The temperature of the cerebral cortex may simultaneously be 5 degrees (or more) lower, depending on the depth of surface hypothermia. Since this method is simple and practically nontraumatic, it can be safely used in clinical practice.

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1/2 031 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--DETERMINATION OF THE BRAIN TEMPERATURE IN CRANIOCEREBRAL
HYPOTHERMIA -U-
AUTHOR--(03)-BUKOV, V.A., BOBKOV, I.G., VINOGRADOV, V.I.
COUNTRY OF INFO--USSR **B**
SOURCE--VESTNIK KHIRURGII IMENI I. I. GREKOVA, 1970, VOL 104, NR 5, PP
113-114
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--CEREBRUM, HYPOTHERMIA, CLINICAL MEDICINE

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1990/0577 STEP NO--UR/0589/70/104/005/0113/0114
CIRC ACCESSION NO--AP0108792
UNCLASSIFIED

2/2 031

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0108792

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN CLINICAL APPLICATION OF CRANIOCEREBRAL HYPOTHERMIA IT IS NECESSARY TO HAVE A RELIABLY SIMPLE AND PRECISE METHOD OF INDIRECT DETERMINATION OF THE DEGREE OF THE BRAIN COOLING. AS A RESULT OF EXPERIMENTAL AND CLINICAL STUDIES IT HAS BEEN DEMONSTRATED THAT TEMPERATURE OF THE AUDITORY CANAL WALL NEAR THE TYMPANIC MEMBRANE REFLECTS TEMPERATURE OF THE BASAL BRAIN PORTION WITH A PRECISION UP TO PLUS OR MINUS 0.4DEGREES. WHEREAS TEMPERATURE OF THE CEREBRAL CORTEX IS 5DEGREES AND MORE LOWER DEPENDING ON THE DEPTH OF HYPOTHERMIA. SINCE THIS METHOD IS SILMPLE AND NEARLY ATRAUMATIC, IT COULD BE WIDELY USED IN CLINICAL PRACTICE. FACILITY:
LABORATORII PATOFIZIOLOGII I EKSPERIMENTAL'NOY KHIRURGII INSTITUTA
KLINICHESKOY I EKSPERIMENTAL'NOY KHIRURGII MINISTERSTVA
ZDRAVOOKHRANENIYA SSSR.

UNCLASSIFIED

USSR

UDC 576.858.25

URYVAYEV, L. V., ZHDANOV, V. M., YERSHOV, F. I., ~~CHERNETSOV, Yu. V., and~~
BUKOVSKIY, A. E., Institute of Virology imeni D. I. Ivanovskiy, Academy of
Medical Sciences

"Sedimentation Characteristics of Venezuelan Equine Encephalomyelitis (VEE)
Virus"

Moscow, Voprosy Virusologii, No 3, May/June 70, pp 330-336

Abstract: VEE virus was cultured in chick embryo fibroblasts, concentrated and purified. The optimum method for obtaining biologically active virus components consisted of destroying the virus with ether and Tween. Purified VEE virus sedimented at about 380 S in sucrose gradients, the nuclei at about 160 S. Centrifugation in CsCl gradients showed that VEE infectious material bands in two main positions: most of the virus banded at 1.25 g/ml, and a smaller amount at 1.42 g/ml. The main peak of hemagglutinins was detected at a buoyant density of 1.25 g/ml.

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USSR

UDC 621.373:530.145.6:621.317.17

BUKOVSKIY, B. L., KONCHUKHIDZE, L. A., TOROPOV, A. K.

"An Installation for Measuring Laser Wavelengths in the Infrared Region"

Tr. Sib. NII metrol. (Works of the Siberian Scientific Research Institute of Metrology), 1971, vyp. 9, pp 36-41 (from RZh-Radiotekhnika, No 8, Aug 71, Abstract No 8D238).

Translation: An installation is described for measuring the wavelengths of gas lasers in the infrared region of the spectrum with a measurement precision of the order of 10^{-7} . The unit includes a two-beam Michelson interferometer and an electronic device designed for counting interference bands and determining the fractional part of the order of interference. The master emission source is a frequency stabilized gas laser which emits in the visible region of the spectrum (e. g. a helium-neon laser with $\lambda = 0.6328 \mu$) checked by comparison with a wavelength standard on Kr^{86} with an accuracy of $2 \cdot 10^{-8}$. To obtain a measurement precision of more than 10^{-7} , the path difference or duty-cycle frequency can be increased. The device can also be used to compare wavelengths in the visible region of the spectrum. A. K.

1/1

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USSR

UDC: 547.491.8

B
BUKOVSKIY, M.I., SOLODUSHENKOV, S.N., MOSIYCHUK, A.I., and KUKHAR', V.P.,
Institute of Organic Chemistry, Kiev, Academy of Sciences Ukrainian SSR

"Phosphazotriazines. III. Oxidative Imination of Trivalent Phosphorus Compounds by 1,3,5-Triazine Azides"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 4, Apr 70, pp 782-784

Abstract: For purposes of a study of physiological activity the authors synthesized a series of previously unknown phosphazo-1,3,5-triazines by oxidative imination of trivalent phosphorus compounds with 1,3,5-triazine azides. Triphenylphosphine, trialkyl phosphites and N,N,N,N-tetraethyl diaminoethylphosphite react with 1,3,5-triazine azides to evolve nitrogen and form corresponding phosphazo compounds. Trialkoxyphosphazo-1,3,5-triazines are hydrolyzed by 1 N hydrochloric acid to give 2-N-dialkoxyposphonylamino-4,6-bisarylamino-1,3,5-triazines.

1/1

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1/2 G15 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--PHOSPHAZOTRIAZINES. III. OXIDATIVE IMINATION OF COMPOUNDS, OF
PHOSPHORUS, III, WITH AZIDES OF 1,3,5,TRIAZINES -U-
AUTHOR-(04)-BUKOVSKIY, M.I., SOLODUSHENKOV, S.N., MOSIYCHUK, A.I., KUKHAR,
V.P.
CCOUNTRY OF INFO--USSR *B*
SOURCE--ZH. OBSHCH. KHIM. 1970, 40(4), 782-4
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANIC PHOSPHORUS COMPOUND, TRIAZINE, ISOMER, IMINE, AZIDE,
ORGANIC SYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1138 STEP NO--UR/0079/70/040/004/0782/0784

CIRC ACCESSION NO--AP0128563
UNCLASSIFIED

2/2 015 UNCLASSIFIED PROCESSING DATE--20NOV70
CIRC ACCESSION NO--AP0128563
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN EQUIMOLAR MIXT. OF PH SUB3 P
AND I IS SHOWN ON MICROFICHE. FACILITY: INST. ORG. KHIM., KIEV,
USSR.

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BUKREYEV, L. F., Engineer and SHILIN, N. V., Candidate of Technical Sciences

"Basic Characteristics and Parameters of TI-100-2 Shock Generators"

Moscow, Elektrotehnika, No 1, Jan 70, pp 17-21

Abstract: This article presents the test results of two TI-100-2 shock generators, built at the "Elektrosila" plant, designed to be used as sources of electric energy in testing high voltage equipment for breakdown capacity and electrodynamic and thermal strength. The TI-100-2 is a 10 kv., three-phase synchronous 3000 rpm shock generator of 100-Mw rated capacity and 2500-Mw short circuit capacity at 12 kv and 0,0070ohm external reactance. A diagram of the energizing circuit is presented. The operation of two TI-100-2 shock generators was evaluated in relation to their use at the Scientific Research Center for Testing High Voltage Equipment (NITS VVA). The results were used for mastering the parallel running of two generators, which presents

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some difficulties in the case of shock generators. For the first time, the basic parameters of shock generators were determined, taking into account the effects of two damper contours: a special damper windings and a massive rotor barrel.

Shock generator characteristics and parameters were determined in accordance with GOST 10169-62. The agreement obtained between the experimental results and the calculated values is satisfactory. Original article has 4 figures and 4 tables.

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BUKREYEV, L. F., Engineer and SHILIN, N. V., Candidate of Technical Sciences

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Abstract: This article presents the test results of two TI-100-2 shock generators, built at the "Elektrosila" plant, designed to be used as sources of electric energy in testing high voltage equipment for breakdown capacity and electrodynamic and thermal strength. The TI-100-2 is a 10 kv., three-phase synchronous 3000 rpm shock generator of 100-Mw rated capacity and 2500-Mw short circuit capacity at 12 kv and 0,0070ohm external reactance. A diagram of the energizing circuit is presented. The operation of two TI-100-2 shock generators was evaluated in relation to their use at the Scientific Research Center for Testing High Voltage Equipment (NITS VVA). The results were used for mastering the parallel running of two generators, which presents some difficulties in the case of shock generators. For the first time, the basic parameters of shock generators were determined, taking into account the effects of two damper contours: a special damper windings
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BUKREYEV, L. F., et al., Moscow, Elektrotehnika, No 1, Jan 70,
pp 17-21

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Shock generator characteristics and parameters were determined in accordance with GOST 10169-62. The agreement obtained between the experimental results and the calculated values is satisfactory. Original article has 4 figures and 4 tables.

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USSR

UDC: 620.179.15

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"Radiation-Type Internal Inspection Units for Checking Materials and Parts"

Sverdlovsk, Defektoskopiya, No 3, May/Jun 71, pp 112-117

Abstract: The paper presents block diagrams and gives descriptions of
some devices based on radiation methods of internal inspection. The
basic technical characteristics of the devices are given, their advantages
and disadvantages are noted, and recommendations are made on using them.
Four figures, bibliography of three titles.

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USSR

UDC 532.517.4

BUKREYEV, V. I.; VASIL'YEV, O. F., Corresponding Member of the USSR Academy of Sciences; LYTKIN, Yu. M., Institute of Hydrodynamics, Novosibirsk

"Effect of the Shape of a Body on the Self-Modeling Characteristic of its Axially Symmetrical Trace"

Moscow, Doklady Akademii nauk SSSR, vol 207, No 4, 1972, pp 804-807

Abstract: The purpose of this paper is to examine the turbulent wake of a body of revolution surrounded by a current of an infinitely uniform incompressible fluid with a constant velocity in a direction parallel to the body's axis. If the Reynolds number is sufficiently large, it can be expected that at sufficiently large distances from the body, a self-modeling flow situation is established. A discussion of the results of detailed experimental research shows that the flow in self-modeling axially symmetrical wakes depends on the shape of the body as well as on the resistive force and the velocity of the incident flow. A description of the apparatus used for these experiments is given with the results presented in the form of curves. The authors express their gratitude to V. A. Kostomakhe and A. V. Gusev for making the measurements.

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.BUKRINSKAYA, A. G., ZHDANOV, V. M.

Subkletochnyye sistemy v virusologii (Subcellular Systems in Virology), Moscow, Meditsina, 1973, 239 pp, 3,000 copies printed

Abstract

The monograph is devoted to one of the newest and most urgent problems of virology and molecular biology: the use of subcellular systems in virology. Subcellular systems have been used in the comparatively recent past, particularly after the discovery of the mechanisms entailed in the biosynthesis of the basic biological polymers: nucleic acids and proteins. The substantial amount of material on the use of acellular systems that has been amassed up to now in the study of viral biosynthesis is only partially presented in reviews published in various periodicals.

The present book is one of the first attempts to summarize current information on this problem. In addition to data from the literature, the monograph presents vast experimental material obtained by the authors.

The book is intended for readers interested in virology, molecular biology, and the molecular basis of the pathogenesis of infectious diseases.

Foreword

In considerable measure the development of virology has been determined by the methodological potential for the study of virus and viral infections.

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BUKRINSKAYA, A. G., ZHDANOV, V. M., Subkletochnyye sistemy v virusologii, Meditsina, 1973, 239 pp

Following the discovery of the first viral diseases of plants, animals and humans the basic method of studying viruses was the reproduction of viral infections in natural hosts and (for viruses afflicting man) laboratory animals. This method is still important today for the study of the development of infection and immunity in the case of viral diseases and for the study of neoplastic processes caused by viruses. A particular place in virological research methods has been taken up with the application of chick embryos that have proven to be sensitive to many animal viruses and that have been suitable for the accumulation of the virus in quantities sufficient for physico-chemical study.

In the early 1950's, a technique was developed for the growing of single-layer cell cultures and it has become broadly applied in virology in a short space of time. The application of the single-layer cell cultures made it possible to overcome the barrier of insusceptibility of laboratory animals to various species, and resulted in the discovery of a number of new viruses that could not be isolated in laboratory animals. Cell cultures also proved to be suitable for the accumulation of viruses, for the study of the cycle of their reproduction and morphogenesis, and in combination with radioactive isotopes -- for the biochemical study of particulars of metabolic processes in the infected

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BUKRINSKAYA, A. G., ZHDANOV, V. m., Subkletochnyye sistemy v virusologii, Meditsina, 1973, 239 pp

cell and in the synthesis of viral and virus-specific products. The method of single-layer cell cultures created the possibility for the development of research on the molecular biology of viruses in animals. This research was developed somewhat earlier in the study of bacterial viruses (bacteriophages) since the technique of producing cultures of bacterial populations was elaborated already in the latter part of the last century. At the present time, the corresponding cell cultures are also used for the investigation of viruses of plants and insects.

The development of research on the molecular biology of viruses naturally created the necessity of developing methods for producing subcellular structures and fractions for the study of individual stages of virus-induced synthesis -- the synthesis of viral proteins and viral nucleic acids. Initially these methods were applied for the study of the reproduction of bacteriophages and soon thereafter for the investigation of the viruses of animals and vegetables. The use of subcellular systems made it possible to obtain important information on many links of virus-induced synthesis at the molecular level and of late to reproduce the biosynthesis of viral nucleic acids and of ribonucleoproteins possessing infectious properties outside the cell.

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BUKRINSKAYA, A. G., Subkletochnyye sistemy v virusologii, Meditsina, 1973, 239 pp

The authors were inspired to write the book owing to the fact that the large amount of factual material that has been accumulated up to now has only in part been summarized in surveys and in individual chapters of monographs and multiple-volume works on virology and molecular biology.

The authors have limited the monograph solely to works concerning the viruses of animals. Materials referring to bacterial viruses are cited only as exceptions.

In the literature devoted to the problem under investigation systems of synthesis of biological macromolecules in subcellular structures and fractions of cells are also not infrequently designated as subcellular, acellular or open systems. We decided to use the first of these designations since it most precisely reflects the substance of the systems in which structures or fractions or derivatives of cells are always used in one degree or another.

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"The Role of Sendai Virus Nucleocapsid in Transcription of Viral RNA"

Moscow, Voprosy Virusologii, No 5, Sep/Oct 72, pp 602-608

Abstract: Sendai virus RNA-polymerase catalyzes incorporation of ribonucleoside triphosphates into an acid-insoluble material in vitro. The incorporation is linear for at least an hour. A portion of the synthesized substance is attached to the nucleocapsid. The bond is specific, and as soon as the growing chain matures into RNA, the molecule becomes free and leaves the structure. Similarly, virus RNA-polymerase promotes synthesis of virus specific RNA in Ehrlich ascites carcinoma cells very soon after these cells are infected with Sendai virus, and RNA transcription occurs in structures resembling virus nucleocapsid. It is concluded that Sendai virus nucleocapsid participates in transcription of virus RNA in vitro and in vivo.

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USSR

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"Infectious Activity of Newly Synthesized Paramyxovirus Ribonucleoprotein"

Moscow, Vorposy Virusologii, No 6, Nov/Dec 71, pp 707-713

Abstract: The infectious factors present in cytoplasmatic extracts of Ehrlich ascites carcinoma cells infected with Sendai virus were investigated on mice by radioactive (P^{32} and H^3 -uridine) and fractionation methods. It was established that the toxicity is due to a newly synthesized viral ribonucleoprotein present in the cytoplasm of the host cells in the form of straight strands and having the buoyant density of 1.38 g/cm^3 . This modified ribonucleoprotein is believed to represent a prefinal stage, after which the strands are arranged into spirals before they are incorporated into the virus. The infectious paramyxovirus ribonucleoprotein was found only in ascitic carcinoma cells.

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"Sedimentation and Density Characteristics of Some Cellular and Virus-Specific
Ribonucleoproteins in Cytoplasmatic Extracts From Chick Embryo Cells Infected
With Newcastle Disease Virus"

Moscow, Doklady Akademii Nauk SSSR, Vol 199, No 1, 1971, pp 219-221

Abstract: Fractionation of a cytoplasmatic extract from chick embryo cells
containing labeled stable cellular RNA (H^3 tagged) and virus-induced RNA
(C^{14} tagged) showed that both labeled compounds sedimented at the same rate
(~ 45 S) and in the same density region (~ 1.46 g/ml). This suggests that
the cellular and virus-specific ribonucleoproteins are physically related.
Such an assumption is consistent with the results of N. V. Kaverin's func-
tional analysis of the viral component of the hypothetical complex, which
indicate that virus-induced RNA can be transported from the 45 S structures
to polyribosomes. This complex is regarded as the initiator of viral protein
synthesis.

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