"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

USSR

PSHIROVSKIY, ZB., Nauka I Zhizn', No 3, 1972, pp 20-21

springs contains almost the entire complex of mineral salts necessary for the development of the plants and a sufficient amount of carbon dioxide. All of this created the ideal conditions for a large algae farm in Rupite. It remained only to select the strain corresponding best to these conditions and to work out the best system of cultivating the algae. The Bulgarian scientists dealt with both problems very quickly. Scientific work began in 1967. Chlorella vulgaris S. Z. 8/1, which proliferates in a wide range of temperatures -- from 23 to 41°C., was selected from several strains. Moreover, it turned out that in great concentrations, it possesses capacity for thermoregulation, which is extremely favorable for its cultivation.

After the solution of the biological problems, it was time to solve technical problems: creating corresponding apparatus, first on an experimental, then on an industrial scale. Technical aid to Bulgarian kolhozes was rendered by specialists from Czechoslovakia, the USSR, and Poland. The Poles in particular, provided one of the most important elements of the apparatus, a highly productive centrifuge.

Thus, Chlorella is cultivated in mineral water from hot springs. First, the water is cooled and degassed. The isolated carbonic acid goes into collectors, while the water containing dissolved salts is directed into the closed cycle of the field apparatus. The shallow, slightly inclined,

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USSR

PSHIROVSKIY, ZB., Nauka i Zhi n', No 3, 1972, pp 20-21

open chutes into which the Chlorella is sown is connected by pipes to the collector. The water, containing the Chlorella, flows down from the chute into the collector. A pump immediately returns it to the chutes, and in this way the conditions necessary for a more intensive photosynthesis process are achieved. The water flow in the chutes is stopped by the entire system of partitions. The water flows from the chute to the collector in 5 minutes and is delayed in the collector for only a few seconds. With each cycle, the water contains more and more Chlorella, and becomes greener and thicker.

Harvesting the crop takes place in the evening. The Chlorella-enriched water is directed from the collector to the centrifuge, where the Chlorella is separated from the water. The clean water is pumped back into the field apparatus and water losses are filled by fresh water from the springs. On the way to the chutes, the water carbonic acid is stored after fresh water is degassed) and with several fertilizers containing phosphorus, calcium, and potassium. Chlorella in the form of a dry green mass is the finished product.

The farm in Rupite and its guardian institute cannot complain about lack of interest in its product. On the contrary, the interested parties are impatient and would like Chlorella production to proceed on an industrial scale now, while the scientists still need some time for experiments and research.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

USSR

PSHIROVSKIY, ZB., Nauka I Zhizn', No 3, 1972, pp 20-21

The first forms of products containing up to 30% vegetable protein obtained from dry Chlorella mass from the farm in Rupite have already been made. It is said that an uninitiated person could not distinguish between these products and the usual meat proteins.

Promising results have been obtained in experiments with Chlorella protein added to poultry feed. The meat of chicks receiving this feed was found to be of higher quality. Egg laying capacity was significantly increased (by about 20%) in chickens. The eggs were distinguished by a high vitamin content and -- which is very important for their transport -- by a stronger shell.

Czechoslovak scientists were able to work out an industrial method of obtaining full-value, nourishing broths for microorganisms from the algae protein. This excited a great interest in Chlorella on the part of the pharmaceutical industry.

An unexpected Chlorella consumer might even be the perfume industry. Aromatic compounds have been isolated from the dry Chlorella mass which are used in the production of the finest perfumes.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

USSR

PSURTSEV, V.P., DIANOV, A.P.

UDC 621.391

"Differential System Of Binary Detection"

Kiev, Izvestiya Vuzov SSSR--Radioelektronika, Vol XIV, No 10, 1971, pp 1203-1208

Abstract: A differential system of binary detection of pulse radio signals is theoretically investigated. Precise expressions are found for the characteristics of detection. A block diagram is presented of the differential system which contains a signal gate generator, a radar receiver, a control gate generator, a reversible counter, and a period counter. It is shown that a differential system is significantly less sensitive to fluctuations of the quantization threshold than the ordinary classic system of binary detection. Received by editors 6 July 70; after revision 8 Feb 71. 3 ref. 3 fig. 3 tab.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

USSR

UDC 593.374

ANDREYEV, L. V., KHMELOVSKIY, L. T., BOGATYR', G. P., PTAKHIN, Ye. A.,
Dnepropetrovsk

"The Problem of Stability of Cylindrical Shells Beyond the Limits of Elasticity"

Kiev, Prikladnaya Mekhanika, Vol 18, No 8, Aug 73, pp 38-44.

Abstract: Results are presented from experimental studies of the stability of cylindrical shells made of AMg6 alloy under axial compression and lateral external pressure with various R/h and R/L ratios. A comparison is presented with known theoretical solutions from the theory of small elastic-plastic deformations and the theory of flow. Good agreement is achieved with calculations based on a geometrically linear theory of deformations.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

USSR

UDC 621.383:546.19'681

PTASHCHENKO, A.A., FRESNOV, V.A., KRUGLOV, I.I., GOLEMBIYEVSKIY, N.N., CVOHINNIKOVA, A.P.

"Excess Currents And Aging Of Light-Emitting Diodes Based On GaAs"

Elektron.tekhnika. Nauch.-tekhn.sb. Poluprovodn. pribory (Electronic Technics. Scientific-Technical Collection. Semiconductor Devices), 1971, Issue 7(64), pp 16-20 (from RZh:Elektronika i yeye primeneniye, No 4, April 1972, Abstract No 4B347)

Translation: The aging was studied of GaAs light-emitting diodes with zinc as the acceptor. Both conventional and anomalous aging was observed. It is shown that the excess currents responsible for aging consist of volume and surface components and have a tunnel-thermal nature and are connected with nonuniformities of the p-n junctions. 5 ill. 5 ref. Summary.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

USSR

UDC 537.311.23

LASHKAREV, V, Ye., PTASHCHENKO, A. A.

"The Kinetics of the Impurity Photoconductivity of CdS-Type Semiconductors"

Kiev, Ukrainskiy Fizicheskiy Zhurnal, Vol 15, No 7, July 1970, pp 1108-1115

Abstract: The rules governing the linear and nonlinear relaxation of impurity photoconductivity from the r-centers in CdS-type semiconductors were investigated. The experimental data are in good agreement with a theoretical model which takes into account two recombination levels with very different electron-capture cross sections. In this model the light absorbed by the impurity simultaneously causes v-zone-r-level and r-level-c-zone electron transitions. This model explains the nonmonotonic relaxation in impurity photoconductivity. The above-mentioned considerations permit some parameters of the recombination center in CdS, CdSe, and HgS to be determined.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

USSR UDC 771.537.33

VENDROVSKIY, K. V., VEYTSMAN, A. I., PTASHENCHUK, V. M.

"Signal/Noise Ratio and Quantum Effectiveness of Differentiation in Photographic Emulsion"

Moscow, Zhurnal Nauchnoy i Prikladnoy Fotografii i Kinematografii, Vol 17, No 6, Nov-Dec 72, pp 426-433.

Abstract: The quality of photographic materials of various sensitivities can be characterized by the quantum effectiveness of differentiation. This value compares the actual detector (its "signal/noise" ratio) to an ideal radiation detector, the accuracy of reproduction of which is limited only by photon noise resulting from the discrete nature of the light flux. The macroscopic quantum effectiveness, determining the effectiveness of recording of large parts, is distinguished from the microscopic quantum effectiveness, corresponding to the reproduction of small objects and considering the scattering of light in the light-sensitive emulsion. This work presents experimental results of determination of the signal/noise ratio and quantum effectiveness of films of varying sensitivities.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

1/2 014 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--PREPARATION OF ALKALI METAL METAPHOSPHATES -U-

AUTHOR-(03)-VOROBYEV, N.I., PECHKOVSKIY, V.V., PTASHKOVA, G.V.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 266,745

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,

DATE PUBLISHED--01APR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ALKALI METAL, PHOSPHATE, CHEMICAL PATENT, CHEMICAL PRODUCTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/1074 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0130109

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

2/2 014 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AA0130109

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ALKALI METAL METAPHOSPHATES, SUCH AS KPO SUB3, WERE PREPD. BY TREATING THE CHLORIDE OF THE APPROPRIATE METAL WITH A P COMPD. IN THE PRESENCE OF O AT HIGH TEMPS. POCL SUB3 WAS USED FOR THE P COMPD.; THE ALKALI METAL CHLORIDE WAS USED IN MELT FORM; AND THE PREPN. PROCESS TOOK PLACE AT SIMILAR TO 1000DEGREES.

FACILITY: KIROV, S. M., BELORUSSIAN TECHNOLOGICAL INSTITUTE.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

USSR

UDC 519.2:62-50

PTICHKINA, YE. V.

"Analysis of Automatic Control Systems Consisting of Probability Static Components"

Minsk, Novyye elementy sistem avtomat., telemekhan. i vychisl. tekhniki--Sbornik (New Elements in Systems of Automation, Remote Control, and Computers -- Collection of Works), "Vysheysh. shkola," 1970, pp 104-112 (from Referativnyy Zhurnal -- Matematika, No 6, June 71, Abstract No 6V260, by Ya. Kogan)

Translation: The term probability static component refers to a component whose comprehensive characteristic is a standard law of distribution f(y x), where y is the output and x is the input coordinate of the component. It is assumed that all system links are statistically independent. Integral equations are derived for the laws of distribution of the output coordinates of a closed system consisting of these components. A method for determining standard and nonstandard moments of the output coordinate of a closed system by the standard moments of an open system and nonstandard moments of the input coordinate is proposed.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

1/2 012 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--ON THE ROLE OF THE MAGNETIC FIELD IN A WAVE THEORY OF THE SPIRAL STRUCTURE OF GALAXIES -U-

AUTHOR-(02)-MAROCHNIK, L.S., PTITSINA, N.G.

COUNTRY OF INFO--USSR

SOURCE--ASTROPHYS. SPACE. SCI. (NETHERLANDS), VOL. 7, NO. 3, P. 437-45 (JUNE 1970)

DATE PUBLISHED----JUN70

SUBJECT AREAS--ASTRONOMY,ASTROPHYSICS

TOPIC TAGS--SPIRAL GALAXY, INTERSTELLAR MATTER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605030/001 STEP NO--NE/0000/70/007/003/0437/0445

CIRC ACCESSION NO--AP0141823

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

2/2 012 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0141823

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SPIRAL WAVES IN A MODEL GALAXY CONSISTING OF THE DIFFERENTIALLY ROTATING INTERSTELLAR GAS AND POPULATION I ARE CONSIDERED. THE INSTABILITY OF SPIRAL WAVES IN THE PRESENCE OF DIFFERENTIAL ROTATION AND MAGNETIC FIELD IS FOUND. THIS INSTABILITY MAY LEAD AS WELL AS THE LANDAU INSTABILITY FOUND BY MAROCHNIK AND SUCHKOV (1968, 1969) TO THE FORMATION OF AN OBSERVABLE SPIRAL PATTERN IN A SHORT TIME. IT MAY PLAY A DEFINITIVE ROLE IN THE SPIRAL STRUCTURE FORMATION IN GALAXIES WITH WEAK POPULATION II. (30 REFS). FACILITY: ACAD. SCI. TAKJIK S.S.R., DUSHANBE, USSR.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

PTITSYN, O.B.

B ①

VAN #5, 73 - JPRS 59593 24 Jul 73

UDC: 577.23

SELF-ORGANIZATION OF PROTEIN MOLECULES

[Article by Doctor of Physical and Mathematical Sciences O. B. Ptitsyn, Moscow, Vestnik Akademii Nauk SSSR, Russian, No 5, May 1973, pp 57-68]

Solving the problem of protein means learning to synthesize an amino-acid sequence capable of spontaneously turning into a stable three-dimensional structure which will perform a given function. To do that it is necessary to answer three principal questions:

1) how does a cell synthesize a polypeptide chain with a given amino-acid sequence?

2) how is such a chain self-organized into a given three-dimensional structure?

3) how does the obtained three-dimensional structure perform a given function?

The first and third questions (on protein biosynthesis and on the connection between the structure of a protein and its function) are classical for molecular biology, and in working them out generally known major successes have been achieved. As for the second question (on the self-organization of protein molecules), it was posed only relatively recently. It became possible to speak properly about the self-organization of proteins only when it had been shown that denatured proteins are capable of spontaneously restoring their native structure after the denaturing agent is removed. It was concluded from that that the native structure of a protein molecule corresponds to its thermodynamically most stable state, that is, a minimum of its free energy. It was assumed that both in the process of renaturation in vitro and in the process of self-organization in vivo a protein molecule spontaneously acquires such a structure as a result of thermal motion.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

departments, select and hire workers and solve other administrative questions. To decide institute-wide questions and administer general institute units (the computer center, cryogenic laboratories, design offices, the library, etc), a new organ is created -- a directors meeting in which the director of the Institute and his deputies participate.

By open ballot the participants in the meeting approve the directors of a number of scientific institutions of the Academy elected or re-elected for a new term by the departmen

Approved as directors for the new term were:

VINITI (All-Union Institute of Scientific and Technica Information) -- Doctor of Technical Sciences A. I. Mikhaylov.

Mathematics Institute imeni V. A. Steklov -- Academici I. M. Vinogradov, Institute of High-Pressure Physics -- Academician L. F. Vereshagin, Institute of Physical Problems imeni S. I. Vavilov -- Academician P. L. Kapitsa, Institute of Radio Engineering and Electronics -- Academician V. A. Kotel'nikov, Crimean Astrophysical Laboratory -- Academician A. B. Severny, Physico-Technical Institute imeni A. F. Ioffe -- Academician V. M. Tuchkevich, and Institute of High Temperatures -- Corresponding Member of the AS USSR A. Ye. Sheyndlin.

Institute of Petrochemical Synthesis imeni A. V. Topchiyev -- Corresponding Member of the AS USSR N. S. Nametkin, Institute of Heteroorganic Compounds -- Academician A. N. Nesmeyanov, Institute of Physical Chemistry -- Academician A. N. Frumkin, Institute of Chemistry of the Bashkir Branch -- Corresponding Member of the AS USSR S. R. Rafikov, Institute of Metallurgy of the Urals Scientific Center -- Corresponding Member of the AS USSR N. A. Vatolin, Institute of Biochemistry imeni A. N. Bakh -- Academician A. I. Oparin, Institute of Biochemistry and Physiology of Microorganisms -- Corresponding Member of the AS USSR G. K. Skryabin, Institute of Protein -- Academician A. S. Sarkisov, Institute of Pathology -- Corresponding Member of the AS USSR A. S. Troshin, Institute of Biological Physics -- Academician G. M. Frank, Institute of Physiology imeni I. P. Pavlov -- Academician V. N. Chernigovskiy, Institute of Plant Biology -- Academician B. L. Astaurov, Institute of the Evolutionary Morphology and Ecology of Animals imeni A. N. Severtsov -- Corresponding Member of the AS USSR V. Ye. Sokolov, and the Institute of Biology of the Bashkir Branch -- Doctor of Agricultural Sciences V. K. Gizfanov.

Institute of Geology of the Dagestan Branch -- Candidat of Geological and Mineralogical Sciences K. S. Magatayev,

JPRS 59 593
21 July 1973

VANSSSR - #5 '73
#5 1973

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SECTION IV

Sci Selected Research Institutes
Facilities
PCS-89
June 1971

Name: Protein Research Institute, Pushchino

Description:

(U) During this quarterly reporting period, two new articles were located from the Protein Research Institute at Pushchino. On the basis of one of the articles, which dealt with escherichia coli ribosomes, it was possible to associate one new person, N. I. Smirnov, with the institute[32]. The other article, also on escherichia coli, was issued jointly from the Institute of Genetics and Selection of Microorganisms, Moscow, and the Protein Research Institute at Pushchino[33]. Previous articles by V. I. Permogorov have been issued from the former institute. No previous facility association could be located for V. D. Vasil'yev, but it is likely that he represents the latter institute. This article probably represents some joint work between the two institutes.

(U) As a ready source of reference, given below is a complete listing of personalities identified with the Protein Research Institute to the present time:

All - biochemists

Boletsina, N. V.	Privalov, P. L.
Bershteyn, T. M.	Ptitsyn, O. B.
Chirgadze, Yu. M.	Rashevskaya, Ye. P.
Fedorov, B. A.	Serdyuk, I. N.
Finkel'shteyn, A. V.	Smirnov, N. I.
Glinskaya, O. V.	Spirin, A. S.
Lavrilova, L. P.	Tiktopulo, Ye. I.
[illegible]	Vasil'yev, V. D.
Mitin, Yu. V.	

PTITSYN, O.B.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

1/3 022 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--ON THE CONSTANCY OF THE HYDROPHOBIC NUCLEUS VOLUME IN MOLECULES OF MYOGLOBINS AND HEMOGLOBINS -U-

AUTHOR-(02)-LIM, V.I., PTITSYN, O.B.

COUNTRY OF INFO--USSR

SOURCE--MOLEKULYARNAYA BIOLOGIYA, 1970, VOL 4, NR3, PP 372-382

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--AMINO ACID, HEMOGLOBIN, MUSCLE PHYSIOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/0435 STEP NO--UR/0463/70/004/003/0372/0382

CIRC ACCESSION NO--AP0132659

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

2/3 022 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0132659

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AMINO ACID REPLACEMENTS IN MOLECULES OF MYOGLOBINS AND HEMOGLOBINS OF DIFFERENT ORIGIN HAVE BEEN INVESTIGATED. 31 OF 34 SITES OCCUPIED BY NONPOLAR AMINO ACID RESIDUES IN ALL 52 PRIMARY STRUCTURES KNOWN AT PRESENT FORM A UNIFIED HYDROPHOBIC ZONE (HYDROPHOBIC NUCLEUS OF THE GLOBULE). THE STATISTICAL ANALYSIS OF THE AMINO ACID REPLACEMENTS IN THIS HYDROPHOBIC NUCLEUS HAS SHOWN THAT THEY OCCUR IN SUCH A MANNER THAT THE NUCLEUS VOLUME REMAINS APPROXIMATELY CONSTANT: THE VOLUME DISPERSION DOES NOT EXCEED 230 ANGSTROM PRIME6 (WICH CORRESPONDS TO THE MEAN SQUARE DEVIATION OF 15 ANGSTROM PRIME3) PER SITE IN WHICH AMINO ACID REPLACEMENTS TAKE PLACE. IT IS NOTEWORTHY THAT AT COMPLETELY RANDOM SUBSTITUTIONS OF ONE NONPOLAR AMINO ACID FOR ANOTHER THE VOLUME DISPERSION OF ONE SITE WOULD BE WE00 ANGSTROM PRIME6 (THE MEAN SQUARE DEVIATION MINUS 48 ANGSTROM PRIME3). THE FURTHER STATISTICAL ANALYSIS MAKES IT POSSIBLE TO ESTABLISH THE EXISTENCE OF TWO MECHANISMS ENSURING THE CONSTANCY OF THE HYDROPHOBIC NUCLEUS VOLUME. ON THE ONE HAND, THERE IS A CERTAIN RESTRICTION OF VOLUMES OF THE SIDE GROUPS WHICH CAN OCCUPY EVERY GIVEN SITE IN THE HYDROPHOBIC NUCLEUS, AND, ON THE OTHER HAND, THE HYDROPHOBIC NUCLEUS VOLUME, AS A WHOLE, AND THE VOLUMES OF NUCLEUS SITES, COMPOSED OF THREE SIDE GROUPS EACH, ARE MORE CONSTANT THAN THE VOLUMES OF THE SIDE GROUPS OCCUPYING EVERY INDIVIDUAL SITE, I. E., THE AMINO ACID REPLACEMENTS IN HYDROPHOBIC NUCLEI DO LOCALLY COMPENSATE EACH OTHER.

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3/3 022 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0132659

ABSTRACT/EXTRACT--INASMUCH AS THE VOLUMES OF NONPOLAR SIDE RADICALS ARE PROPORTIONAL TO FREE ENERGIES OF THEIR TRANSFER FROM THE ORGANIC SOLVENT (ETHANOL) TO WATER AT THE SAME TIME FOR THE CONSTANCY OF THE VOLUMES OF NUCLEI MEANS ALSO A CONSTANCY OF FREE ENERGY FOR STABILIZING THE NATIVE SPATIAL STRUCTURE OF GLOBINS BY HYDROPHOBIC INTERACTIONS.

FACILITY; INSTITUTE FOR PROTEIN RESEARCH, ACADEMY OF SCIENCES, USSR, PUSTCHINO-ON-OKA.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

1/2 · 020 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--INTRAMOLECULAR SALT BONDS IN SYNTHETIC POLYAMPHOLYTE; A COPOLYMER OF 2 METHYL 5 VINYLPYRIDINE AND METHACRYLIC ACID -U-

AUTHOR-(04)-KIPPER, A.I., DMITRENKO, L.V., PTITSYN, O.B., SOGOMONYANTS, ZH.S.

COUNTRY OF INFO--USSR

SOURCE--MOLEKULYARNAYA BIOLOGIYA, 1970, VOL 4, NR 2, PP 175-183

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--COPOLYMER, PYRIDINE, METHACRULIC ACID, POTENTIOMETRIC TITRATION, SPECTROPHOTOMETRIC ANALYSIS, INTRAMOLECULAR MECHANICS, CHEMICAL BONDING, PROTEIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/1716 STEP NO--UR/0463/70/004/002/0175/0183

CIRC ACCESSION NO--AP0100313

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

2/2 020 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0100313

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INVESTIGATION WAS CARRIES OUT OF ELECTROCHEMICAL AND CONFORMATIONAL PROPERTIES OF A WATER SOLUBLE COPOLYMER OF 2 METHYL 5 VINYLPYRIDINE AND METHACRYLIC ACID (50:50) BY POTENTIOMETRIC TITRATION, SPECTROPHOTOMETRIC TITRATION (FROM ULTRAVIOLET AND INFRARED SPECTRA) AND BY VISCOMETRY. IT WAS SHOWN THAT IN THE PH RANGE FROM SIMILAR 2 TO SIMILAR TO 7 AN INTRAMOLECULAR SALT BOND WAS FORMED OF THE TYPE NH PRIME PLUS COO WITHOUT COUNTER IONS FROM THE SOLUTION. ABOUT 30PERCENT OF GROUPS OF EACH TYPE WAS INVOLVED IN THE SALT BONDS. THE OCCURRENCE OF INTRAMOLECULAR FORCES OF ELECTROSTATIC ATTRACTION LEADS TO A MORE COMPACT CONFORMATION OF THE MACROMOLECULE AS COMPARED WITH THAT OF THE GAUSSIAN COILS. THE PROPERTIES AND BEHAVIOUR OF THE AMPHOLYTE PERMITS TO CONSIDER IT AS AN APPROXIMATED PROTEIN MODEL.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

Biochemistry

USSR

UDC 547.963+539.19

PTITSYN, O. B., Protein Institute, Academy of Sciences USSR

"Physical Principles Governing the Self-Organization of Protein Chains"

Moscow, Uspekhi Sovremennoy Biologii, No 1, 1970, pp 26-48

Abstract: Existing information on the forces at work in protein molecules, and on the ways in which the sequence of amino acids in the polypeptide chain uses these forces to code the spatial structure of the protein chain, is presented. The survey embraces the conformation of monomer units of the protein chain, alpha-and beta- structures of globular proteins, the compact structure of globular proteins, coding of the spatial structure of globular proteins, coding of the spiral portions, and the mechanism of self-organization of protein molecules.

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1/2 011 UNCLASSIFIED PROCESSING DATE--11DEC70

TITLE--NONLINEAR WAVES OF STELLAR DENSITY AND THE SPIRAL STRUCTURE OF GALAXIES -U-

AUTHOR--PTITSYNA, N.G.

COUNTRY OF INFO--USSR

SOURCE--ASTRONOMICHESKII ZHURNAL, VOL. 47, NO. 3, 1970, P. 499-502

DATE PUBLISHED--------70

SUBJECT AREAS--ASTRONOMY,ASTROPHYSICS

TOPIC TAGS--GALAXY, MODEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605013/004 STEP NO--UR/0033/70/047/003/0499/0502

CIRC ACCESSION NO--AP0140393

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2/2 011 UNCLASSIFIED PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0140393

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DISCUSSION OF THE EXISTENCE OF NONLINEAR STELLAR DENSITY WAVES, FREE OF DISTORTION BY DIFFERENTIAL ROTATION, IN A SELF GRAVITATING SINGLE COMPONENT PLASMA CYLINDER. IT IS SHOWN THAT SMALL AMPLITUDE WAVES WHOSE FRONT HAS THE FORM OF A LOGARITHMIC SPIRAL CAN EXIST IN SUCH A GALACTIC MODEL. THESE WAVES MAY BE RESPONSIBLE FOR THE SPIRAL STRUCTURES OBSERVED IN GALAXIES WITH DEVELLPED SPHERICAL SUBSYSTEMS. FACILITY: AKADEMIIA NAUK TADZHIKSKOI SSR, INSTITUT ASTROFIZIKI, DYUSHAMBE, TADZHIK SSR.

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USSR

UDC 632.95

PTITSYNA, N. V., and BRAGINA, V. V.

"The Determination of Residual Amounts of Neorone, Galechrone and Gardona in Apples"

Trudy Vtorogo Vsesoyuznogo soveshchaniya po issledovaniyu ostatkov pestitsidov i profilaktike zagryzaneniya imi produktov pitania, kormov i vneshney sredy (Works of the Second All-Union Conference on the Study of Pesticide Residues and the Prevention of Contamination of Food Products, Fodders and the Environment by Them), Tallinn, 1971, pp 194-196 (from Referativnyy Zhurnal -- Khimiya, No 10 (II), 1972, Abstract No 10N510 by T. A. Belyayeva)

Translation: To 100-200 g of crushed apples is added 300-400 ml petroleum ether; then Na_2SO_4, evaporated and pesticides are identified using thin-layer chromatography: neorone on silica gel KCK-2, bentonite on Al_2O_3, bentionite or Al_2O_3; gardona on bentonite or Al_2O_3; galechrone on Al_2O_3. On Al_2O_3 chromatography is conducted in a system of n-hexane-acetone 5:1 (for galechrone, 19:0.5 is better). Development is conducted with a reagent containing a solution of 0.5 g $AgNO_3$ in 5 ml water, 5 ml of an aqueous solution of NH_4OH, 0.3 ml of 30% hydrogenperoxide and ~90 ml water (total volume: 100 ml).

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

1/2 036 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--STRUCTURE OF THE POLYMER OF 3,3,3,TRIFLUORO,1,2,EPOXYPROPANE -U-

AUTHOR-(04)-KUMPANENKO, I.V., KAZANSKIY, K.S., PTITSYNA, N.I., KUSHNEREV, M.YA.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(4), 822-8

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--MOLECULAR STRUCTURE, EPOXY COMPOUND, FLUORINATED ORGANIC COMPOUND, PROPANE, X RAY ANALYSIS, IR SPECTRUM, CRYSTAL LATTICE STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1383 STEP NO--UR/0459/70/012/004/0822/0828

CIRC ACCESSION NO--AP0135057

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

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UNCLASSIFIED

CIRC ACCESSION NO--AP0135057 PROCESSING DATE--20NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. X RAY DATA INDICATED THAT POLY(3,3,3,TRIFLUORO,1,2,EPOXYPROPANE) (I) HAD A RHOMBIC LATTICE WITH THE PARAMETERS: ALPHA EQUALS 11.42 PLUS OR MINUS 0.01ANGSTROM; B EQUALS 6.26 PLUS OR MINUS 0.01 ANGSTROM; C EQUALS 6.26 PLUS OR MINUS 0.01 ANGSTROM; AND Q EQUALS 4. THE IR SPECTRA OF I AND THEIR RELATION TO POLYMER STRUCTURE WERE DISCUSSED. FACILITY: INST. KHIM. FIZ., MOSCOW, USSR.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

UNCLASSIFIED

TITLE--EXPERIENCE WITH CLINICAL USE OF VIBRAMYCIN -U-

PROCESSING DATE--30OCT70

AUTHOR-(05)-MIKHNEV, A.L., PTUKHA, R.M., TYDELSKAYA, I.L., KRYLOVA, N.M., YAKOVENKO, S.N.

COUNTRY OF INFO--USSR

SOURCE--VRACHEBNOYE DELO, 1970, NR 2, PP 12-16

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BLOOD SERUM, PROTEIN, TETRACYCLINE, INFECTIOUS DISEASE, SELECTIVE DRUG EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1985/0454

STEP NO--UR/0475/70/000/002/0012/0016

CIRC ACCESSION NO--AP0100932

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

2/2 019 UNCLASSIFIED

CIRC ACCESSION NO--AP0100932 PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. VIBRAMYCIN (DOXICYCLIN) EXERTS A CHARACTERISTIC OF TETRACYCLINS ACTION SPECTRUM BUT IT PROVED MORE EFFICIENT THAN ITS STRUCTURAL HOMOLOGUES. TOLERANCE OF THE DRUG WAS GOOD AND ONLY TWO PATIENTS DEVELOPED VOMITING. VIBRAMYCIN PROVED HIGHLY EFFICIENT IN THE TREATMENT OF ACUTE INFECTIOUS DISEASES. THE CONCENTRATION OF DOXICYCLIN REACHES 2.55-1.72 GAMMA-ML OF BLOOD SERUM FOLLOWING INTAKE OF 200 MG. WHICH IS SIGNIFICANTLY HIGHER THAN WITH OTHER TETRACYCLINS. FURTHER INTAKE PER 100 MG KEEPS ANTIBACTERIAL CONCENTRATION ON A HIGH LEVEL. DATA ON THE BINDING OF DOXICYCLINE BY BLOOD SERUM PROTEINS ARE ONLY PRELIMINARY AND CONTROVERSIAL AND NEED FURTHER STUDY.

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PTUSHCHENKO, V.

Secy of Vinnitsa Municipal Comm.

VINNITSA PARTY CHIEF COMMENTS ON ROLE OF TRADE WORKERS

(Excerpts from article by V. Ptushchenko, first secretary of the Vinnitsa Municipal Committee of the Ukraine Communist Party: "The Right to Be an Organizer"; Moscow, Pravda, Russian, 7 January 1972, p 2)

A most important task in exercising control is the careful selection and training of trade personnel.

Much initiative in working with personnel is being manifested by the party organization of the Central Department Store. A collective of energetic, skilled workers has been formed here. The store is one of the first in the Ukraine to begin introducing progressive trade methods. During the last 4 years alone commodity circulation in this area has increased by 2.5 times.

What is valuable here is that personnel are treated with care, but with strictness. In selecting specialists and heads of the middle echelon, the party bureau and management study their organizational abilities, interests, level of political steeling, and occupational training. The promotion or transfer of a leading worker is also as a rule not done without the consent of the party bureau. In shifting the store self-service, communists helped management to better place personnel, train them to work under new conditions. The party bureau is now concerned about improving the economic training of personnel. For young people, conditions are being created for study in evening schools and correspondence course departments of VUZ and technicums.

The municipal party committee has involved itself more deeply in raising the skills of trade workers. A seminar has been organized for the heads and the party aktiva of enterprises. At this seminar the students study problems connected with economics, obtain expert knowledge on commodities, and learn progressive trade forms and methods for training service workers. The people's trade university under an affiliate of the trade and economics institute has been operating in Vinnitsa for 2 years. Its students are young sales people. Sixty-four communist labor schools and 93 trade mastery schools have been set up at enterprises of the branch. The best trade and public-catering workers are studying in many of the latter.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

UNCLASSIFIED

PROCESSING DATE--17JUL70

TITLE--ADSORPTION OF CARBON MONOXIDE ON THE SURFACE OF A TUNGSTEN SINGLE CRYSTAL PARTIALLY FILLED WITH THORIUM -U-

AUTHOR--AGEYKIN, V.S., ~~PTUSHINSKIY, YU.G.~~, POLOZOV, B.P.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970 12(1), 221-6

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--GAS ADSORPTION, CARBON MONOXIDE, SINGLE CRYSTAL PROPERTY, TUNGSTEN, METAL SURFACE IMPREGNATION, THORIUM, WORK FUNCTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1979/1998 STEP NO--UR/0181/70/012/001/0221/0226

CIRC ACCESSION NO--AP0048276

UNCLASSIFIED

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AP0048276 Abstracting Service: CHEMICAL ABST. 5-70

Ref. Code: UR 0181

104165k Adsorption of carbon monoxide on the surface of a tungsten single crystal partially filled with thorium. Ageikin, V. S.; Ptushinskii, Yu. G.; Polozov, B. P. (Inst. Fiz., Kiev, USSR). *Fiz. Tverd. Tela* 1970, 12(1), 221-6 (Russ). The effect of partially filling a W surface with Th on the adsorption of CO was investigated. A large effect was obsd. with a very small amt. of Th on the W surface. In the mechanism of adsorbtion capacity suppression of the W surface, the dominant role is played by the charge state of the Th atoms. The charge of the adsorbing atoms sharply decreases with increasing degree of coverage. Results obtained for W faces with different work functions correlate with the expected dependence of the charge state of adsorbed atoms on the initial work function. A. Libackyj

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USSR

GINZBURG, V. L., PTUSKIN, V. S., and TsYTOVIch, V. N., Physical Institute imeni P. N. Lebedev, Academy of Sciences of the USSR

UDC 523.165

"On the Role of Plasma Effects in the Propagation and Isotropization of Cosmic Rays in the Galaxy"

Moscow, Izvestiya Akademii Nauk SSSR, Vol 37, No 6, 1973, pp 1150-1154

Abstract: This work is based on FIAN Preprint No 161, 1972, by the same authors, which contains more detailed calculations and discussion. The present article communicates only some basic results of this work. The basic purpose of this study is to consider the waves developed in the movement of charged particles; the interaction of those waves with the particles; the effects of other waves, externally generated; and the interactions among the waves. The overall result is to introduce consideration of plasma effects in the standard diffusion model of cosmic radiation.

Three basic types of waves are considered: magnetohydrodynamic, whistlers, and Langmuir waves. When cosmic rays move with an average velocity exceeding the phase velocity of the waves, instabilities arise and there is a "maser" expansion of the oscillation due to anisotropy in the angular distribution function of cosmic rays.

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GINZBURG, V. L., et al., Izvestiya Akademii Nauk SSSR, Vol 37, No 6, 1973, pp 1150-1154

To develop waves in interstellar plasma, the increment must exceed the decrement due to damping. Damping of MHD waves is due to collisions between ions and neutral particles, while the other two types are damped by electron-ion collisions.

Formulas are given in the article for calculating the change in direction of particles subject to these turbulent waves. These results can be used, in turn, to make an approximate determination of the coefficient of diffusion.

Preliminary evaluations show that nonlinear processes cannot be ignored in the relaxation of the anisotropic distribution of cosmic rays of a single order. Further, there is still no rigorous theory of MHD turbulence, particularly in a collision plasma. However, analysis indicates that whistlers and Langmuir waves are not likely to arise when the anisotropy of the radiation is low, so that MHD waves must be most significant in reducing low anisotropy, except for cases in which whistlers and Langmuir waves may develop due to external sources.

On the other hand, analysis shows that the spectrum that is attained cannot be established solely by effects due to the cosmic rays themselves, and that external sources of sufficient power to provide the necessary MHD waves

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GINZBURG, V. L., et al., Izvestiya Akademii Nauk SSSR, Vol 37, No 6, pp 1150-1154

are not available. Other mechanisms, such as circulation in magnetic fields or scattering in magnetic anomalies, must be assumed. A theoretical study of MHD turbulence in collision plasmas and the possibility of shock wave formation would be valuable. There may also be new types of waves in a mixture of relativistic and nonrelativistic gases.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

USSR

UDC 536.24:536.42

PUASSON, G.

"Heat Exchange Between a Rarefied Air Flow and a Porous Body Supplied With Water"

V sb. Teplo- i massoperenos. T. 1. Ch. 3 (Heat and Mass Transfer. Vol. 1. Part 3 -- Collection of Works), Minsk, 1972, pp 209-221 (from RZh-Mekhanika, No 8, Aug 72, Abstract No 8B869)

Translation: An experimental study of heat exchange at small velocities (u_∞ < 4 m/sec) between the flow of a rarefied gas ($p_\infty \sim 2$ mm Hg) and a porous medium formed by glass spheres of diameter 1.5 mm (porosity of the medium 37%) is described. The porous medium was placed in the horizontal wall at the distance x_0 = 30 cm from the beginning of the dynamic boundary layer. The dimensions of the porous body are the following: length 20.5 cm, width 6.8 cm, depth 8.2 cm, surface with nylon coating of thickness 0.1 mm. Experimental relationships were obtained for the reduced local Nusselt numbers for the surface of the porous sample and the evaporation surface. The experimental results are analyzed. The existence of an optimal evaporation depth ψ_{opt} was established at which the heat exchange is a maximum.

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PUASSON, G., Teplo- i massoperenos. T. 1. Ch. 3, Minsk, 1972, pp 209-221

There occurs along the length a rapid decrease in heat transfer up to the value of heat exchange on the isothermal surface. The theory of A. V. Lykov is supported up to values of ψ_{opt}. The experiment does not correspond to this theory for $\psi > \psi_{opt}$. A. I. Bunimofich.

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Acc. Nr. AP0048836 Abstracting Service: -- CHEMICAL ABST 5-70 Ref. Code UR 0459

90905n Initiating action of some unsaturated peroxides during styrene polymerization in bulk. Pashin, Yu. A.; Pokhmurskaya, M. V.; Yurzhenko, T. I.; Krut, A. V. (Lvov. Politekh. Inst., Lvov, USSR). *Vysokomol. Soedin., Ser. A* 1970, 12(1), 248-51 (Russ). The initiating action of several unsatd. peresters during bulk polymn. of styrene was compared with that of their satd. analogs. Peresters studied were *tert*-Bu peracrylate (I), *tert*-Bu perpropionate (II), *tert*-Bu permethacrylate, *tert*-Bu perisobutyrate, *tert*-Bu percrotonate (III), and 2-(vinylethynyl)-2-propyl hydroperoxide (IV). The initiating action was detd. from the rate of polymn. of styrene dilatometers at initiator concn. 0.00565, 0.0281, and 0.0556 mole/l. and 70-90°. The d.p. varied linearly with time (at 20-3% conversion). The unsatd. peresters had greater initiating action than their satd. analogs. Thus, after 2 hr the conversion was 13.3% with I compared with 11.0% with II. The initiating action of IV was intermediate between that of I and III. The unsatd. peresters had lower activation energies (14.5-15 kcal/mole) than their satd. analogs (19.0-23.2 kcal/mole). The mol. wt. of the polystyrenes obtained was inversely proportional to the perester (both satd. and unsatd.) concn., apparently due to intensification of breaking of the growing polymer chains. The unsatd. peresters initiated polymn. of vinyl monomers at comparatively low temps. and gave branched polymers.

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UDC 612.822.3+612.821.6

PUCHINSKAYA, L. M., Institute of Higher Nervous Activity and Neurophysiology, Academy of Sciences USSR, Moscow

"Evoked Potentials and Perception of Stimuli Characteristics at Different Attention Levels in Children and Adolescents"

Moscow, Zhurnal Vysshey Nervnoy Deyatel'nosti, Vol 23, No 3, May/Jun 73, pp 640-642

Abstract: A study was made of the average evoked potentials (AEP) in children 7-12 years of age to light stimuli of differing intensity, and of their correlation to perception of the differences at various attention levels. It was found that the AEP in children whose attention had not specifically been directed to differences in signal intensity was characterized by a high degree of similarity in potentials from the occipital, parietal, central, and post-frontal areas. The potentials were simple; component formation was poor. When the children were asked to watch for differences in signal intensity, the AEP in most cortical areas became more complex in response to both light intensities. New components appeared, and changes occurred in amplitude relations between individual components.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

Acc. Nr.: AP0029085

Ref. Code: UR 0246

PRIMARY SOURCE: Zhurnal Nevropatologii i Psikhiatrii, 1970, Vol 70, Nr 1, pp 76-80

CHANGES OF BIOELECTRICAL BRAIN ACTIVITY IN TYPICAL NEURALGIA OF THE TRIGEMINAL NERVE AND FACIAL SYMPATHALGIA

Yerokhina, L. G.; Puchinskaya, L. M.

The authors studied the bioelectrical brain activity in 105 patients with different pain syndromes of the face (66 with ipsilateral, 5 with bilateral typical neuralgia of the V nerve, 4 with postherpetical neuralgia, 4 with neuralgia of the glossopharyngeal nerve and 25 with facial sympathalgia). In typical neuralgia the EEG shows signs of irritation, desynchronization and discharges of paroxysmal bilateral activity. These changes were especially stressed in registrating the biopotentials during or proximately following the attack of neuralgia. The authors presume that these changes may indicate to the involvement of the stem reticular formation in the complex mechanisms of the pathogenesis of a typical neuralgia of the trigeminal nerve.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

USSR

VAGIN, V. N., PUCHIN'YAN, V. K.

"Study of Cooperative Solutions in the Game 'The Prisoner's Dilemma'"

Problemy Bioniki [Problems of Bionics -- Collection of Works], Moscow, Nauka Press, 1973, pp 361-366 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V488, by the authors).

Translation: A game of two persons with two strategies and nonzero sum is studied. The possibilities of development of cooperative solutions in the game of two stochastic automata modeled by computer is studied.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

USSR

UDC 681.3

PUCHIN'YAN, V. K., SHEIN, P. D., SHTEYN, M. Ye.

"Problem of Optimal Division of a Graph and Arrangement of Digital Computer Devices"

Sistemy Raspredeleniya Resursov na Grafakh [Systems for Distribution of Resources on Graphs -- Collection of Works], Moscow, Acad. Sci. USSR Computer Center, 1970, pp 118-126, (Translated from Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract No 6 V574 by O. Belkin).

Translation: One problem of modular planning of digital computers is studied. A circuit is to be represented, fixed on a structural level by a set of modules of the next level so that the number of connections between the modules is minimal. The plan of the device is fixed by an equivalent graph, the points of which correspond to modules in the initial circuit. The lines of the graph are identified with the connections between modules. Further, the problem of division of the system is reduced to the problem of division of its equivalent graph. The algorithm for division consists of organization of an ordered selection of all possible sets of line numbers, i.e. all possible divisions, satisfying certain conditions. The division satisfying these conditions is considered optimal. The algorithm suggested was programmed on the M-220 digital computer. The time of solution of the problem remains within permissible limits with 20-30 points on the graph.

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USSR

UDC 681.3(07)

KSENOFONTOV, I. S., LEMBERG, V. M., PUCHKO, A. N., ZHUKOVYEMEL'YANOV, O. D., and YAKOVLEV, K. A.

Elektronnyye Tsifrovyye Vychislitel'nyye Mashiny (Dopushcheno Ministerstvom Vysshego i Srednego Spetsial'nogo Obrazovaniya SSSR v Kachestve Uchebnogo Posobiya dlya Tekhnikumov) (Electronic Digital Computers [Authorized by the USSR Ministry of Higher and Secondary Specialized Education as a Textbook for Tekhnikums]), Moscow, "Mashinostroyeniye," 1970, pp 369-371

Translation:

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USSR

KSENOFONTOV, I. S., et al., Elektronnyye Tsifrovyye Vychislitel'nyye Mashiny (Dopushcheno Ministerstvom Vysshego i Srednego Spetsial'nogo Obrazovaniya SSSR v Kachestve Uchebnogo Posobiya dlya Tekhnikumov) (Electronic Digital Computers [Authorized by the USSR Ministry of Higher and Secondary Specialized Education as a Textbook for Tekhnikums]), Moscow, "Mashinostroyeniye," 1970, pp 369-371

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KSENOFONTOV, I. S., et al., Elektronnyye Tsifrovyye Vychislitel'nyye Mashiny (Dopushcheno Ministerstvom Vysshego i Srednego Spetsial'nogo Obrazovaniya SSSR v Kachestve Uchebnogo Posobiya dlya Tekhnikumov) (Electronic Digital Computers [Authorized by the USSR Ministry of Higher and Secondary Specialized Education as a Textbook for Tekhnikums]), Moscow, "Mashinostroyeniye," 1970, pp 369-371

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KSENOFONTOV, I. S., et al., Elektronnyye Tsifrovyye Vychislitel'nyye Mashiny (Dopushcheno Ministerstvom Vysshego i Srednego Spetsial'nogo Obrazovaniya SSSR v Kachestve Uchebnogo Posobiya dlya Tekhnikumov) (Electronic Digital Computers [Authorized by the USSR Ministry of Higher and Secondary Specialized Education as a Textbook for Tekhnikums]), Moscow, "Mashinostroyeniye," 1970, pp 369-371

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USSR

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PUCHKO, A.N.

Digital Computer

D-1

USSR

JPRS 53478, 24 July 1971

GAVRILOV, Yu.V., PUCHKO, A.N.

UDC 681.325.5

"Arithmetic Devices for High-Speed Digital Computers"

Arifmeticheskiye Ustroystva Bystrodeystvuyushchikh ETSVM [English version above], Moscow, Sovetskoye Radio Press, 1970, 280 pp

Annotation: This book covers the general theoretical as well as practical problems of the construction of arithmetic devices for electronic digital computers. The most effective algorithms for operation of arithmetic devices of various types are described and several new hardware designs in the construction of arithmetic units are analyzed. Comparative evaluations of several versions of the organization of arithmetic devices are presented.

The book is designed for a broad range of engineers and scientific workers involved in problems of planning and operation of digital computers, as well as graduate students and students in the higher levels of the corresponding specialties.

45 tables; 83 figures; 48 biblio. refs.

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Table of Contents appears in the JPRS

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USSR

UDC 681.3

GAVRILOV, Yu. V., PUCHKO, A. N.

"Arithmetic Devices for High-Speed Digital Computers"

Arifmeticheskiye Ustroystva Bystrodeystvuyushchikh ETsVM. [English Version Above] Moscow, Sovetskoye Radio Press, 1970, 280 pages (Translated from Referativnyy Zhurnal Kibernetika, No. 4, April, 1971, Abstract No. 4 V625K).

Translation: This book analyzes methods of performance of arithmetic operations in binary notation, as well as problems of their circuit realization. In the explanation of individual statements, arithmetic devices of specific computers are used as examples. Table of Contents: Chapter 1. Systems of Notation and Forms of Representation of Numbers; Chapter 2. Binary Adders; Chapter 3. Methods of Performing Multiplication in the Binary System of Notations; Chapter 4. Methods of Performing Division in the Binary System of Notations; Chapter 5. Operations of Comparison of Codes in the Arithmetic Devices of Digital Computers; Chapter 6. Operations of Shifting of Codes in the Arithmetic Device.

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GAVRILOV, Yu.V., PUCHKO, A.N. UDC 681.325.5

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USSR

GAVRILOV, Yu. V., PUCHKO, A. N., Arifmeticheskiye Ustroystva Bystrodeystvuyushchikh ETSVM, Moscow, Sovetskoye Radio Press, 1970, 280 pp.

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GAVRILOV, Yu. V., PUCHKO, A. N., Arifmeticheskiye Ustroystva Bystrodeystvuyushchikh ETSVM, Moscow, Sovetskoye Radio Press, 1970, 280 pp.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

USSR UDC 621.785.53

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

"Electrolytic Borating of Silicon and Nickel Steels"

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

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

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USSR

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

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

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

USSR

UDC: 539.128.2

BALDIN, A. M., BEZNOGIKH, Yu. D., ZINOV'YEV, L. P., ISSINSKIY, I. B., KAZANSKIY, G. S., MIKHAYLOV, A. I., MOROZ, V. I., PAVLOV, N. I., and PUCHKOV, G. P.

"Acceleration and Removal of Deuton Beams from the OIYaI Synchrophasotron"

Moscow, Pribory i Tekhnika Eksperimenta, No. 3, 1971, pp 29-31

Abstract: This article describes the realization of a proposal for accelerating and extracting deutons with existing synchrophasotron systems made in an earlier article (Beznogikh, Yu. D., et al, Reprint OIYaI, 1968, No. R9-4214, Dubna). The basic idea of the proposal was to multiply the linear acceleration by two through halving the velocity of the deutons going into and coming out of the linear accelerator compared to the velocity of the protons. The acceleration in the synchrotron is done in two steps: first, doubling the acceleration; second, reaching the limiting frequency of the accelerating system and then making the transi-

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USSR

BALDIN, A. M., et al., Pribory i Tekhnika Eksperimenta, No 3, 1971, pp 29-31

tion to the plateau in the first multiple of the acceleration. By using a debuncher at the accelerator output, the capture of the deutons in first the quasi-betatron and then the synchrotron modes was increased. The authors are associated with the OIYaI (Joint Institute of Nuclear Research, Dubna).

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

PUCHKOV, I.F.

Microelectronics

JPRS 57333

25 October 1972

MICROELECTRONICS

Excerpts from Russian-language book edited by F. V. Lukin; Mikroelektronika, No 5, 1972, Sovetskoye Radio Publishing House, Moscow, UDC 621.382:621.396.6-181.5.

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recording and readout. The memory element consists of two four-electrode Gunn instruments, the first of which serves for recording and storage, the second of which serves for readout of the stored information. The time of the recording-readout cycle is about 0.5 nsec. The power computed in storage mode 1 is about 100 mW; in storage mode 0 it is about 115 mW.

The article contains 4 figures and 3 bibliographic references.

UDC 681.142 → 621.374.3

Diode-Transistor Logic Circuit With Feedback. Naumov, Yu.Ye. and Puchkov, I.P. In the Collection Mikroelektronika, edited by F.V. Lukin, No 5, p 166, Sovetskoye Radio Publishing House, 1972.

The article gives a theoretical analysis of the electrical parameters of a circuit with feedback; its advantages are analyzed in comparison to the diode-transistor circuit without feedback. It is shown that the use of a feedback circuit is especially effective in designing micropower circuits. An experimental investigation is given for the circuit with feedback in the micropower band a comparison is given with the microcircuit "Mikrovatt-1".

The article contains 11 figures, 1 table, and 6 bibliographic references.

UDC 621.382.029.64

Logic Elements on Gunn Diodes. Voronkova, G.M., Orlova, L.K., Staroselskiy, V.I., and Sapel'nikov, A.K. In the Collection Mikroelektronika, edited by F.V. Lukin, No 5, p 182, Sovetskoye Radio Publishing House, 1972.

The article describes the properties of experimental samples of planar Gunn diodes. On 200-μm long samples the authors make a current impulse shaper and memory elements of two types.

The article contains 6 figures, 1 table, and 5 bibliographic references.

UDC 621.375.001.24:621.382.32

Static Analysis of the Simplest Differential Cascade on MDP Transistors. Stepanenko, I.P. In the Collection Mikroelektronika, edited by F.V. Lukin, No 5, p 190, Sovetskoye Radio Publishing House, 1972.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

USSR

UDC 621.382.8--621.396.6--181.5

NAUMOV, YU.YE., BEDREKOVSKIY, M.A., RUCHKOV, I.F.

"Analysis Of Internal Noise In Devices Containing Integrated Logical Circuits"

V sb. Mikroelektronika (Microelectronics--Collection Of Works), Moscow, Izd-vo "Sovetskoye Radio," No 4, 1971, pp 106-120

Abstract: An analysis is made of the internal noise which is caused by inductive--capacitive stray coupling between signal conductors connecting integrated logical circuits on boards. The basic factors are considered which determine the amplitude and duration of pulse noise during use of logical circuits with resistance coupling. A block diagram is shown of the equipment with which a comparison of various types of integrated circuits was made. Data are presented on a number of types of integrated circuits. The stability is investigated of a circuit of this type as compared to induced impulse noise. 10 fig. 1 tab. 6 ref.

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UNCLASSIFIED

TITLE--VISCOSITY OF AQUEOUS POTASSIUM HYDROXIDE SOLUTIONS TO 900DEGREES -U-

PROCESSING DATE--11DEC70

AUTHOR-(03)-PUCHKOV, L.V., SARGAYEV, P.M., FEDOROV, M.K.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(3), 677-80

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--HYDROXIDE, POTASSIUM COMPOUND, AQUEOUS SOLUTION, FLUID VISCOSITY, ENTHALPY, ENTROPY, HYDROGEN BONDING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/0960

STEP NO--UR/0080/70/043/003/0677/0680

CIRC ACCESSION NO--AP0131545

UNCLASSIFIED

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2/2 019 UNCLASSIFIED

CIRC ACCESSION NO--AP0131545 PROCESSING DATE--11DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE VISCOSITY OF AQ. 5.01-60.92 WT. PERCENT SOLNS. OF KOH WAS MEASURED AT 25, 50, 75, AND 90DEGREES BY USING AN OSTWALD VISCOSIMETER. THE ENTHALPY DELTA H PRIME PLUS OR MINUS AND ENTROPY DELTA S PRIME PLUS OR MINUS OF THE ACTIVATION OF THE VISCOUS STREAM WERE CALCD. THE PLOTS OF DELTA H PRIME PLUS OR MINUS AND O FDELTA S PRIME PLUS OR MINUS VS. MOL. CONCN. OF KOH, M, AT VARIOUS TEMPS. SHOW. MIN. AT APPROX. M EQUALS 10 TO 12 MOLE PERCENT KOH. THE DECREASE IN DELTA H PRIME PLUS OR MINUS AND DELTA S PRIME PLUS OR MINUS ON INCREASING M FROM 0 TO 12 IS DUE TO A DESTRUCTION OF . BONDS BETWEEN H SUB2 O MOLS. BY HYDROXIDE MOLS. IN CONCD. SOLNS., A MOL. SPACE ORIENTATION IS ASSUMED AGAIN DUE TO AN INCREASE IN ELECTROSTATIC INTERACTIONS BETWEEN THE MOLS. FACILITY: LENINGRAD. TEKHNOL. INST. IM. LENSOVETA, LENINGRAD, USSR.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

UNCLASSIFIED

TITLE--SPECIFIC HEAT OF AQUEOUS POTASSIUM HYDROXIDE SOLUTIONS AT TEMPERATURES SMALLER THAN 400DEGREES -U-

PROCESSING DATE--18SEP70

AUTHOR-(03)-PUCHKOV, L.V., BARANOVA, T.A., LAPIDUS, M.E.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(2), 455-7

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--TEMPERATURE DEPENDENCE, SPECIFIC HEAT, POTASSIUM COMPOUND, HYDROXIDE, SODIUM HYDROXIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/0452

STEP NO--UR/0080/70/043/002/0455/0457

CIRC ACCESSION NO--AP0104065

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

2/2 017

CIRC ACCESSION NO--AP0104065 UNCLASSIFIED PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TEMP. DEPENDENCE OF SP. HEAT OF AQ. KOH SOLNS. (5 TO 50 WT. PERCENT KOH) WAS DETD. AT 25 TO 400DEGREES. THE SP. HEAT INCREASES UP TO 100DEGREES, IS PRACTICALLY CONST. UP TO 150DEGREES, AND INCREASES AT TEMPS. GREATER THAN 150DEGREES. DIFFERENCES IN THE SP. HEAT AND TEMP. DEPENDENCE OF KOH AND NAOH ARE DISCUSSED. V. VESELY.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

1/2 021 UNCLASSIFIED

TITLE--INTEGRAL FREE ENTHALPIES AND ENTROPIES OF DISSOLUTION IN A SODIUM HYDROXIDE AND WATER SYSTEM -U-

PROCESSING DATE--02OCT70

AUTHOR-(02)-PUCHKOV, L.V., MATVEYEVA, R.P.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(2), 335-40

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, CHEMISTRY

TOPIC TAGS--BINARY FLUID SYSTEM, AQUEOUS SOLUTION, SODIUM HYDROXIDE, ENTROPY, HEAT OF SOLUTION, FREE ENERGY, CRYSTAL HYDRATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/0861

STEP NO--UR/0076/70/044/002/0335/0340

CIRC ACCESSION NO--AP0104297

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2/2 - 021

UNCLASSIFIED

CIRC ACCESSION NO--AP0104297 PROCESSING DATE--02OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. VALUES OF INTEGRAL ENTHALPY, DELTA H PRIMEM, ENTROPY, DELTA S PRIMEM, AND FREE ENTHALPY, DELTA G PRIMEM, OF DISSOLN. FOR THE SYSTEM, NAOH-H SUB2 O, WERE CALCD. AT 25-322DEGREES AND OVER A BROAD CONCN. RANGE. A COMPARISON OF THE TEMP. AND CONCN. DEPENDENCY OF DELTA H PRIMEM AND DELTA S PRIMEM ON THY FUNCTIONS REPRESENTING THE 2ND DERIVS. OF DELTA G PRIMEM POINTS TO A CHANGE IN THE CHARACTER OF SOLVATION IN DIL. SOLNS. WITH INCREASING TEMP. THE STRUCTURES FORMED DURING MELTING OF CRYST. HYDRATE, PRESENT IN CONCD. SOLNS., ALSO REMAIN STABLE AT HIGH TEMPS.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

Acc. Nr: AP0047632 Abstracting Service: CHEMICAL ABST. 5-70 Ref. Code: UR0080

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104604c Saturated vapor pressure over aqueous solutions of potassium carbonate. Puchkov, L. V.; Kurochkina, V. V. (Leningrad. Tekhnol. Inst. im. Lensoveta, Leningrad, USSR). *Zh. Prikl. Khim. (Leningrad)* 1970, 43(1), 181–3 (Russ). Pressure of satd. vapor over K_2CO_3–H_2O soln. was detd. at 25, 40, 50, 60, 70, 80, and 90° and the results are tabulated. The system shows a pos. deviation from Roault's law in dil. solns. and a neg. deviation in more concd. solns. Activity coeffs. of K_2CO_3 at 25° and 0.1–8*M* K_2CO_3 concns. are given. HMJR

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

USSR

ZENIN, A. A., et al., Doklady Akademii Nauk SSSR, Vol 198, No 2, 1971, pp 361-362

its action in the condensed phase layer next to the charge surface and in a small part of the gas phase adjacent to this surface. (Manuscript submitted by Academician V. N. Kondrat'yev, 17 Jul 70)

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RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004

Combustion

UDC 536.46

USSR

ZENIN, A. A., LEYPUNSKIY, O. I., and PUCHKOV, V. M., Institute of Chemical Physics, Academy of Sciences USSR, ~~Moscow~~

"Place of Action of a Catalyst in the Combustion of Condensed Substance"

Moscow, Doklady Akademii Nauk SSSR, Vol 198, No 2, 1971, pp 361-362

Abstract: The combustion at 5-60 atm of pressed charges consisting of polymethylmethacrylate and NH_4ClO_4 in the weight ratio of 22.5:77.5 and containing 1% of Fe_2O_3 was studied. The temperature distribution in the condensed and gas phases during combustion was determined by means of thermocouples. It was established that in the pressure range above 10 atm, in which Fe_2O_3 acted as a catalyst, the catalyst reduced the temperature gradient in the gas phase, with the result that heat transfer from the gas phase to the condensed phase diminished; the catalyst substantially increased the width of the heating + decomposition zone in the condensed phase; the catalyst increased the evolution of heat in the decomposition zone of the condensed phase and the gas layer immediately adjacent to this zone; the catalyst practically did not change the mean volume rate of heat evolution in the gas phase. The relations established indicated that the catalyst exerted

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

UDC 678.746.22.06-405.8

USSR

NEKHOROSHEV, A. V., Doctor of Technical Sciences, MERKIN, A. P., Candidate of Technical Sciences, GEYDANS, I. U., PUCHKOV, V. N., Engineers

"Styropore Concrete in Remote Regions and the Arctic"

Moscow, Stroitel'nye Materialy, No 1, Jan. 1973, pp 18-20.

Abstract: The conditions of construction in the Arctic require the development of insulating structural materials. One such material is styropore concrete, developed by "Arktikstroy" Trust. This concrete is made with an artificial filler made of expanded polystyrene beads. Experience has shown that the production of styropore concrete products does not require additional capital investment or the construction of special plants. Styropore concrete has certain technological and economic advantages over other light concretes made with porous fillers: the lightness of the polystyrene beads allows the density of the concrete to be varied widely; the polystyrene beads have minimum water absorption; the raw material for expansion into beads can be economically transported over long distances; the heat conductivity on the material is very low.

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

1/2 028 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--METHOD FOR THE WEAR TESTING OF MATERIALS DURING DRY FRICTION USING RADIOACTIVE ISOTOPES -U-

AUTHOR-(03)-DROZDOV, YU.N., PUCHKOV, V.N., SILIN, A.A.

COUNTRY OF INFO--USSR

SOURCE--ZAVOD. LAB. 1970, 36(3), 345-6

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--RADIOACTIVE ISOTOPE, CYCLOTRON, FRICTION, WEAR RESISTANCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1052 STEP NO--UR/0032/70/036/003/0345/0346

CIRC ACCESSION NO--AP0123045

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

2/2 028 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0123045

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SAMPLE IS 1ST ACTIVATED BY RHO (6-7 MEV) IN A CYCLOTRON, AND AFTER THE FRICTION OPERATION ITS RADIOACTIVITY IS MEASURED AND COMPARED WITH THE RADIOACTIVITY OF A MODEL SAMPLE OF KNOWN DEPTH OF WEAR. FACILITY: GOS. NII MASHINOVED., USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

USSR

KONOVAL'TSEVA, O. T. and PUCHKOVA, A. P.

"Organization of a Library in the TAAM-23 Translating System for a Configuration of the Minsk-23 Computer without an Operational System and with an Operational System"

Materialy Mezhvuz. Konf. po Mat. Obespecheniyu Avtomatizir. Sistem Upr. [Materials of Inter-University Conference on Control System Automation Software], Moscow, 1973, pp 174-181 (Translated from Referativnyy Zhurnal Kibernetika, No 10, 1973, Abstract No 10V668)

Translation: Two approaches are presented to the realization of the operator of the LIBRARY procedure of ALGEK algorithmic language. The operator is used to access library subroutines.

The first approach to realization is related to development of the TAAM-23 translator for the ALGEK language for the Minsk-23 computer configuration without an operational system and consists in the use of the interpretation method. For this, an interpreting system (IS) is developed, allowing the necessary program to be called to a defined point in the operational accumulator, adjusted to its position, control shifted to a certain standard subroutine and return made to the main program.

The second approach to realization of the LIBRARY procedure operator involves development of a version of the TAAM-23 translator from

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

USSR

KONOVAL'TSEVA, O. T. and PUCHKOVA, A. P., Materialy Mezhvuz, Konf. po Mat. Obespecheniyu Avtomatizir. Sistem Upr., Moscow, 1973, pp 174-181

ALGEK for a configuration of the Minsk-23 computer with an operational system. In this case, the compilation method is used.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

USSR UDC 616.34-022-078:576.8.083.33

YURKO, L. P., LITINSKIY, YU. I., and PUCHKOVA, A. V., Department of Infection Pathology, Central Scientific Research Institute of Epidemiology and Second Clinical Hospital for Infectious Diseases, Moscow

"Use of Modern Liquid Enrichment Media to Diagnose Intestinal Infections"

Moscow, Laboratornoye Delo, No 9, 1971, pp 544-547

Abstract: A comparison was made of the value of selenite broth and medium M (magnesium) in diagnosing acute intestinal infections. Medium M was prepared by mixing together three solutions: (i) peptone, NaCl, Kh_2PO_4, yeast dialysate, and distilled water; (ii) $MgCl_2$ and distilled water; (iii) 0.15% aqueous solution of brilliant green. A total of 1,263 coprological analyses were made of stools obtained from adults hospitalized with diagnoses of food poisoning, acute dysentery, gastroenterocolitis, etc. Positive identifications were made in 107 cases. Shigella strains were identified in 10 cases (9 S. sonnei strains and 1 S. flexneri strain) while Salmonellas belonging to 13 serotypes of groups B, C, D, and E were identified in 97 cases. Most of the Salmonellas identified were from group C. The two media were of equal value except that three more cultures were isolated from the M medium than

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

USSR

YURKO, L. P., et al., Laboratornoye Delo, No 9, 1971, pp 544-547

from the selenite broth. The M medium is particularly recommended for diagnostic purposes because it is convenient, cheap, and can be stored.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

Polymers and Polymerization

USSR

UDC 638.632

PUCHKOVA, I. A., NININ, V. K., SHORYGINA, N. V., GEFTER, Ye. L., and ZHURAVLEVA, L. S.

"A Method of Making Polymers Which Contain Phosphorus"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 36, 1971, Author's Certificate No 322347, Division C, filed 24 Jul 70, published 30 Nov 71, p 55

Translation: This Author's Certificate introduces: 1. A method of making polymers which contain phosphorus and are based on phenol, formaldehyde and an organophosphorus compound. Synthesis is done by two-stage polycondensation of phenol with the phosphorus-containing compound in the presence of heat with subsequent treatment of the resultant product in formaldehyde at a temperature of up to 100°C. As a distinguishing feature of the patent, the fire resistance of the resins is improved by using di-ββ'-chloroethyl ether of vinylphosphonic acid (vinifos) as the phosphorus-containing compound, and carrying out the first stage of the reaction in an acid medium at 130-200°C for 3-7 hours. 2. A modification of this method distinguished by the fact that phenol and vinifos are taken in ratios from 1:2 to 1:4. 3. A modification of this method distinguished by the fact that the formaldehyde is taken in a ratio of 0.7-0.9 mole per mole of phenol.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

ACC. NR. AP0055594 Abstracting Service: CHEMICAL ABST. 5-70 Ref. Code 4R0411

107140j Effect of lipids on the content of sulfhydryl groups and disulfide bonds in gluten. Baikov, V. G.; Nechaev, A. P.; Puchkova, L. I.; Terent'eva, G. N. (Moscow Technol. Inst. Food Ind., Moscow, USSR). *Prikl. Biokhim. Mikrobiol.* 1970, 6(1), 32-6 (Russ). The addn. to gluten of capronic, caprinic, myristic, stearic, oleic, linoleic, and linolenic acids and of their esters resulted in a decrease of the amt. of SH groups and SS bonds, as detd. by amperometric titrn. in the presence or absence of 7*M* urea. Possible mechanisms of changes in the rheological properties of gluten treated with fatty acids are discussed.

Lola Brodfeld

EB

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REEL/FRAME
19840896

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

Acc. Nr: AP0049776 Abstracting Service: CHEMICAL ABST. 5-70 Ref. Code: UR0191

99958q Use of alcohols from wide fractions for preparing unsymmetrical adipates and maleates. Ignatova, G. N.; Puchkova, V. V.; Moskovkina, E. M.; Grishko, N. I.; Balashova, T. S.; Shlenskaya, T. N. (USSR). *Plast. Massy* 1970, (1), 17–20 (Russ). Unsym. maleates and adipates, e.g., Bu nonyl maleate, Bu undecyl maleate, maleates from C_{7-12} and C_{7-9} alcs., Bu nonyl adipate, and adipates from C_{4-12}, C_{7-9}, C_{11-16} alcs. were prepd. by a 2-stage procedure. Thus, maleic anhydride and the higher alc. were refluxed (in 1:1.02 molar ratio) at 70–90° without a catalyst, then the lower alc. was added (in a 20% excess) and the mixt. was further refluxed with H_2SO_4 at 140–50°. For unsym. adipates the starting material was adipic acid. The content of the monoester in the reaction mixt. was detd. by ir spectroscopy. The unsym. adipates and maleates were used for the modification of poly(vinyl chloride) (I). Modified I exhibited excellent freeze resistance (to −55°) and good physicomech. properties. CKIR

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REEL/FRAME 19801694

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

USSR UDC 591.461.2:591.147.4

BABAYEVA, A. KH., PUCHKOVA, L. V., and TUROVSKIY, V. S., Institute of Physiology and Experimental Pathology of the Arid Zone, Academy of Sciences, Turkmen SSR

"Participation of Mitochondria in the Mechanism of Action of Antidiuretic Hormone"

Ashkabad, Izvestiya Akademii Nauk Turkmenskoy SSR, Seriya Biologicheskikh Nauk, No 2, 1971, pp 47-51

Abstract: Intramuscular injection of antidiuretic hormone (ADH) to white rats after a water load altered the potassium and sodium content of the mitochondria in both layers of the kidneys. The sodium concentration increased while the potassium concentration remained unaffected. More sodium and less potassium were present in the medullar mitochondria than in the cortical mitochondria. The hormone also stimulated oxygen uptake by the mitochondria and decreased phosphorylation while intensifying the formation of lactic acid in the hyaloplasm. Thus, the mitochondria in both functional layers of the rat kidneys take an active part into the processes involved in maintaining homeostasis. They supply the required energy by intensifying glycolysis and altering the rate of oxidative metabolism. At the same

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USSR

BABAYEVA, A. KH., et al., Izvestiya Akademii Nauk Turkmenskoy SSR, Seriya Biologicheskikh Nauk, No 2, 1971, pp 47-51

time they regulate the ion composition of the cells, thereby stabilizing the water-salt equilibrium.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

USSR

UDC 541.14+535.34-15+535.373

MEL'NIK, V. I., PUCHKOVSKAYA, G. A., KHARCHENKO, N. P., and SHPAK, M. T.

"Peculiarities of IR Absorption and Phosphorescence of Products of Benzophenone Photochemical Reactions"

Leningrad, Optika i Spektroskopiya, Vol 34, No 1, Jan 73, pp 101-105

Abstract: The authors isolated in pure form the products of the benzophenone-benzpinacone photochemical reaction, studied their IR absorption and phosphorescence spectra, and compared the results with benzophenone data. The effect of low temperatures and solution concentrations on photochemical reaction efficiency was studied. There was found to be considerable weakening of the photochemical transformations of benzophenone at low temperatures.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

USSR

PUCHKOVSKAYA, N. A., Hero of the Soviet Union, Academician of Academy of Medical Sciences USSR, and Director, Odessa Scientific Research Institute of Eye Disease and Tissue Therapy imeni Academician V. P. Filatov

"Returning the World"

Moscow, Trud, 1 Dec 71, p 4

Abstract: The main area of interest at the Odessa institute is corneal transplants. They developed the method for transplanting partial corneas which is not widely used, with 90 percent success. Most failures are the result of biological incompatibility between the patient and the donor. A second main concern of the institute has been eye burns. Formerly they were considered to be incurable and only local in effect. It was shown at the institute that the effects of eye burns spread throughout the organism, even causing biochemical changes in the blood. Burns on the cornea are treated by grafting or by injecting blood serum from a person who has previously suffered skin burns. The graft must be done soon after the accident. In extreme cases grafts of mucous membrane from the patient's lip may be applied by layers inside the eyelid and to the globe. A plastic replacement has also been used, but rejections are still frequent with this method. Whole eye transplants are

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

USSR

PUCHKOVSKAYA, N. A., Trud, 1 Dec 71, p 4

considered possible, and they are being tried with animals, but the problems of (1) biological incompatibility and (2) restoring immediate blood circulation make it impractical for human beings at this time. The institute is now using very modern equipment in its work. Ultrasound has been employed to detect glass fragments which x-rays could not locate, as well as tumors. Lasers have been successfully used to coagulate a split in the pipil and to turn a tumor, discovered early enough, into scar tissue. The latest addition to the institute is a contact lens laboratory.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

UDC 621.384.664

USSR

GALYAYEV, N. A., GOLOVINA, N. I., GRACHEV, M. I., GRIDASOV, V. I., GUBRIYENKO, K. I., YEREMENKO, Ye. V., ZAPOL'SKIY, V. N., ZELENOV, B. A., KOTOV, V. I., KUZNETSOV, V. S., MERKER, E. A., MYZNIKOV, K. P., PUCHUGIN, V. A., PRILEPIN, A. A., SELEZNEV, V. S., SEREBRYAKOV, B. A., KHODYREV, Yu. S., and CHEPEGIN, V. N.

"Proton Beam With an Impulse of Up to 70 Gev/s Elastically Dispersed Inside a Target"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, Vol 42, No 7, 1972, pp 1437-1445

Abstract: This paper discusses the operation of a channel built into the French liquid-hydrogen Mirabelle chamber for the accelerator of the Institute of High-Energy Physics (IFVE). The function of the channel is to form pure beams of pi and k mesons, and antiprotons, in a broad range of impulse magnitudes under the action of a high-frequency separator. The secondary particles are generated on the inside of a target placed in the path of a proton beam diverted from the accelerator with an energy of 70 Gev. By using a fast system for aiming the proton beam at the target, together with a kicker magnet in the channel, the required number of particles passing through the chamber can be provided. The optical system of the channel is described with the

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

USSR

GALYAYEV, N. A., et al., Zhurnal Tekhnicheskoy Fiziki, Vol 42, No 7, 1972, pp 1437-1445

aid of diagrams of two possible variants; the beam aiming system and the particle dosage for the bubble chamber are also explained. The authors thank R. M. Sulyayev, P. F. Yermolov, A. M. Moiseyev, M. I. Solov'yev, I. A. Danil'chenko, Ye. A. Parshin, V. M. Kolesnik, A. N. Aleyev, V. D. Rudko, and V. M. Gorshkov for their assistance.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

1/2 024 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--ELECTRODEPOSITION OF IRON ALLOYS -U-

AUTHOR-(04)-VENITSKIY, A.G., KOVTUN, V.I., PUDA, V.A., MYASKOVSKIY, L.M.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 264,097
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--10FEB70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--CHEMICAL PATENT, IRON COBALT ALLOY, MANGANESE ALLOY, ELECTROLYTE, ELECTRODEPOSITION, METAL DEPOSITION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/1427 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0132092

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

2/2 024 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AA0132092

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN FE,CO,MN ALLOY IS PREPD. FROM AN ELECTROLYTE CONTG. FECL SUB2 100-150, COCL SUB2 50-700, AND MNCL SUB2 100-200 G-L. AT PH 0.8-1.0, C.D. 20-50 A-DM PRIME2, AND 30-80DEGREES.

FACILITY: KIROVOGRADSKIY INSTITUT SEL'SKOKHOZYAYSTVENNOGO MASHINOSTROYENIYA.

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

1/2 016 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--CRITICAL PHENOMENA DURING THE THERMAL BREAKDOWN OF POLY, VINYL CHLORIDE -U-

AUTHOR-(02)-PUDOV, V.S., PAPKO, R.A.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. B 1970, 12(3), 218-22

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--THERMAL DEGRADATION, POLYVINYL CHLORIDE, HYDROGEN CHLORIDE, CATALYSIS, CHEMICAL KINETICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0677 STEP NO--UR/0460/70/012/003/0218/0222

CIRC ACCESSION NO--AP0124349

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

2/2 016 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124349

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. KINETIC STUDIES OF POLY(VINYL CHLORIDE) (I) DEHYDROCHLORINATION SUGGESTED THAT IN MOST CASES (WITH THE EXCEPTION OF EXTRA FINE I FILMS AND FINELY DIVIDED I POWDERS) THE HCL EVOLVED DURING THERMAL DEGRADATION CATALYZED FURTHER DEGRADATION. THE CRIT. THICKNESS OF I FILMS, ABOVE WHICH THE CLEAVAGE OF HCL BECAME AUTOCATALYTIC, WAS DETD. FACILITY: INST. KHIM. FIZ., MOSCOW, USSR.

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

USSR

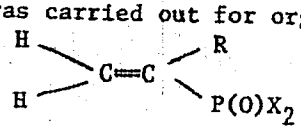
UDC 547.341

PUDOVIK, A. M., STABROVSKAYA, L. A., YEVSTAF'YEV, G. I., REMIZOV, A. B., and GAREYEV, R. D., Kazan State University imeni V. I. Ul'yanova-Lenina

"Kinetics of the 1,3-Bipolar Cycloaddition of Diphenyldiazomethane to Unsaturated Organophosphorus Compounds"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), Vyp 8, 1972, pp 1862-1863

Abstract: The title study was carried out for organophosphorus compounds having the general form



for 12 combinations of R, usually H, and X -- usually alkyl, alkoxyl, aryl, or phenol groups. Values of the velocity constant, ranging from 0.61 to 20.35 are compared with the P=O vibration, from 1190 to 1283 cm^{-1} in a 0.2M benzene solution, and chemical shift of the P^{31} nucleus, from -10 to -33 m.d. in a 50% acetone solution. The reactivity of the studied compounds were closely correlated with the indicators of the influence of substitutions on the electronic behavior of the P atom. For this reaction the energy of activation $E_A = 12.5 \pm 0.4$ kcal/mole and the entropy $\Delta s = -35.2$, in good agreement with the 1,3-bipolar cycloaddition mechanism.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

USSR

UDC 539.194

BABKOV, L. M. KOVNER, M. A., MEL'NIK, V. I., PUCHKOVSKAYa, G. A., KhARCHENKO, N. P., and SHPAK, N. T.

"Vibration, Luminescence, and Absorption Spectra of Benzophenone and Their Interpretation"

Leningrad, Optika i Spektroskopiya, Vol 35, No 1, Jul 73, pp 58 - 64

Abstract: Benzophenone has a number of properties that are presently of interest: significant piezoelectric effect, 100% conversion from the excited singlet level to the triplet state, high photochemical activity in hydrogen-containing solvents, and effective transfer of excitation energy. The majority of these effects are due to the characteristics of the electron structure of the benzophenone molecule.

In this study, infra-red spectra and luminescence and absorption spectra of benzophenone are obtained and their oscillatory structure is resolved. The problem of normal molecular oscillations of benzophenone in the ground electron state is solved. On the basis of a calculation of the frequencies and shapes of oscillations the frequencies are related to types of symmetry of the C_2 group and to oscillations of bonds and angles. The changes in the oscillatory frequencies with excitation to the singlet and triplet electron states are determined and an interpretation of the vibron transitions is suggested.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

USSR UDC 547.26'118

PUDOVIK, A. N., BATYYEVA, E. S., and YASTREMSKAYA, N. V.

"Reactions of Dialkylphosphorous Acid Anilides With Amides of α,β-Unsaturated Carboxylic Acids"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 12, Dec 73, pp 2631-2635

Abstract: It was shown that the dialkylphosphorous acid anilides react with phenylamides and N,N'-dialkylamides of α,β-unsaturated carboxylic acids forming O,O-dialkyl N-arylamido-β-(N-aryl- or N,N'-dialkyl)-carbamoylalkylphosphonates. O,O-dialkyl N-arylimido-β-N-arylcarbamoylalkylphosphonates undergo thermal cyclization yielding 2-alkoxy-1-aryl-2,5-dioxo-1,2-azaphospholanes.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202610004-4

USSR UDC 547.26'118 + 547.442.2

GAZIZOV, T. Kh., KIBARDIN, A. M., PASHINKIN, A. P., and PUDOVIK, A. N., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences USSR

"Reaction of Dialkyl Acyl Phosphites With Diacetyl"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 12, Dec 73, pp 2626-2631

Abstract: Reactions of dialkyl acyl phosphites with diacetyl and benzyl was studied showing that basically they yield dialkyl α-methyl-β-methyl-β-acyloxyvinyl phosphates. As the acid strength of the carboxylic acid comprising the acyl phosphite is increased, the direction of the reaction is shifted partially towards the formation of an alkyl carboxylate and a cyclic alkyl α,β-dimethylvinyl phosphate, respectively.

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"Reactions of 2-Alkoxy(Alkyl)-4,5-benzo-1,3,2-oxazaphospholanes With Nitriles and Esters of α,β-Unsaturated Carboxylic Acids"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 12, Dec 73, pp 2619-2621

Abstract: 2-Alkoxy(alkyl)-4,5-benzo-1,3,2-oxazaphospholanes react with nitriles and esters of α,β-unsaturated carboxylic acids in absence of catalysts. The reactions occur with a migration of hydrogen atom yielding 2-alkyl-2-alkoxy(alkyl)-4,5-benzo-1,3,2-oxazaphospholenes-2.

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"Cycloaddition of N-Phenylsidnone to α-Phenylallenylphosphonate"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 10, Oct 73, p 2329

Abstract: Heating diethyl-α-phenylallenylphosphonate with N-phenylsidnone at 130-140° for 10 hrs leads to the formation of an addition product. IR and PMR spectroscopic data suggest the structures of 1-phenyl-3-diethoxyphosphinyl-4-methyl-5-phenylpyrazole and 1-phenyl-3-methyl-4-diethoxyphosphinyl-5-phenylpyrazole, b.p. 174-175°/0.3 mm, d_4^{20} 1.1741, n_D^{20} 1.5830.

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"Dipole Moments of Some Vinyl Derivatives of the Phosphoric Acid"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 10, Oct 73, p 2328

Abstract: Dipole moments were determined for the ethyl ester of vinylthiophosphoric acid (I) in CCl_4 at 25°, trying to find out which conformations were the most stable ones. The theoretically calculated dipole moment of (I) was close to the experimental when the P=S and the ethyl groups were in $gauche_1$-$gauche_1$ or $gauche_1$-$gauche_2$ orientation, evidently due to a conformational equilibrium. Analogously the dipole moments of diethylvinylphosphine sulfide and vinyl-, vinylthiophosphonic acid dichlorides have been determined. On the basis of the dipole moment value a conjugation of a double bond with $P(S)(C_5H_5)_2$ group has been demonstrated for diethylvinylphosphine sulfide.

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"Reaction of Mixed Phosphoric Acid Anhydrides With Chloral"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 10, Oct 73, pp 2150-2153

Abstract: The reaction of chloral with mixed anhydrides of phosphorous, phosphoric, thiophosphoric and thiophosphonic acids has been investigated. It was shown that in case of the reactions with mixed anhydrides of diethylphosphoric, diethylphosphorous, alkyl(diethylamido)phosphorous, diisobutylthiophosphoric, (tetraethyldiamido)-phosphorous and alkylmethylthiophosphonic and phosphorous acids, in the transitional stage there occurs principally an attack of chloride ion on the tetrahedral phosphorous atom. When chloral is reacted with the anhydrides of dialkylthiophosphoric and alkyl(diethylamido)phosphorous acids -- monothiopyrophosphates are formed containing β, β-dichlorovinyl group as one of the radicals.

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