

USSR

UDC 621.315.592

YELESIN, V. F., Moscow Engineering Physics Institute

"Theory of the Electron Spectrum of a Semiconductor with Charged Impurities in a Strong Electromagnetic Field"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 4, No 8, Aug 70, pp 1524-1528

Abstract: The author considers the effect which impurity scattering has on the electron spectrum of a semiconductor in the field of a strong electromagnetic wave. It is shown that scattering by charged impurities leads to pair annihilation, and that the gap disappears at some critical concentration. The reason is that the impurity field acts with oppositely signed forces on an electron and on a hole. This impurity scattering, which is usually not taken into consideration in saturation theory, plays an important part in the problem of coherent interaction between the electromagnetic field and electrons in semiconductors. The intensity of the field at which the gap appears is estimated. The effect which the density of states has on the model structure of semiconductor lasers and masers is discussed. The author thanks Yu. A. Bykovskiy and V. V. Nikitin for discussing the work.

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1/2 025 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--CARBON DIOXIDE LASER IN A SINGLE PULSE REGIME -U-
AUTHOR--(02)-YELETSIKY, A.V., SMIRNOV, B.M. Y
COUNTRY OF INFO--USSR
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(4), 809-12
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--CARBON DIOXIDE LASER, PULSE LASER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1984/0269 STEP NO--UR/0020/70/190/004/0809/0812
CIRC ACCESSION NO--AT0055065
UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AT0055065

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS CONTINUE THE DISCUSSION, STARTED BY A. E. HILL (1968), RELATED TO THE POSSIBILITIES OF THE CO SUB2 GAS LASER AND ITS OPTIMUM OPERATING CONDITIONS.

UNCLASSIFIED

1/2 045 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--THERMAL REGIME OF A PULSED CO2 LASER -U-
AUTHOR--(03)-YELETSKIY, A.V., LEVINSON, G.P., SVIRIDOV, A.N.
COUNTRY OF INFO--USSR
SOURCE--ZHURNAL PRIKLADNOI SPEKTROSKOPII, VOL. 12, MAR. 1970, P. 543-546
DATE PUBLISHED---MAR70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--CARBON DIOXIDE LASER, MOLECULE; GASEOUS STATE LASER, PULSE
EXCITATION, GAS RELAXATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/1020 STEP NO--UR/0368/70/012/000/0543/0546

CIRC-ACCESSION NO--AP0107534
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0107534

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CALCULATION OF THE LIFETIME OF THE UPPER LASER LEVEL OF THE CARBON DIOXIDE MOLECULE, TAKING INTO ACCOUNT GAS HEATING DURING RELAXATION OF THIS LEVEL. IT IS FOUND THAT THIS TIME PRACTICALLY COINCIDES WITH THE RELAXATION TIME OF THE GAS TEMPERATURE AND THEREFORE DEPENDS ON THE PULSE ENERGY DURING PULSED EXCITATION OF A CARBON DIOXIDE LASER. THE RESULTS OF THE CALCULATION ARE COMPARED WITH EXPERIMENTAL DATA.

1/2 012

UNCLASSIFIED

PROCESSING DATE--13NOV70

TITLE--DEPENDENCE OF PHOTODIFFUSION CURRENTS IN SOLUTIONS ON THE CONCENTRATION OF ELECTRON ACCEPTORS -U-

AUTHOR--(04)--LAKOMOV, V.I., YELEISKIY, V.V., ROTENBERG, Z.A., PLESKOV, YU.V.

COUNTRY OF INFO--USSR

SOURCE--ELEKTRKHIMIYA 1970, 6(3), 415-17

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PHOTOCHEMISTRY, ELECTRODE POTENTIAL, PHOTOELECTRON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1994/1940

STEP NO--UR/0364/70/006/003/0415/0417

CIRC ACCESSION NO--APO115748

UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0115748

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ONE OF THE FUNDAMENTAL STAGES OF THE CONVERSION OF ELECTRONS EMITTED, AFTER IRRADN., FROM METAL INTO THE SOLN. APPEARS TO BE THE SOLVATION (OR HYDRATION) IN THE SOLN. CERTAIN INFORMATION ABOUT THE PROCESS OF HYDRATION OF PHOTOELECTRONS MAY BE ACHIEVED ON THE BASIS OF THE EXPTL. OBSERVED DEPENDENCE OF PHOTODIFFUSION ON THE CONC. OF HYDRATED ELECTRON ACCEPTORS. AS ELECTRON ACCEPTORS H PRIME POSITIVE AND NO SUB3 PRIME NEGATIVE IONS WERE SELECTED. THE ACTIVITY OF H SUB3 PRIME O POSITIVE VARIED FROM 10 PRIME NEGATIVE3 TO 0.8M AND WAS CHECKED AGAINST THE H ELECTRODE POTENTIAL IN THE SAME SOLN. THE DEPENDENCE OF PHOTOCURRENT, J, TO THE 0.4 POWER ON THE POTENTIAL ALPHA AT VARIOUS H PRIME POSITIVE ACTIVITIES WAS ESTABLISHED. IF ACCEPTOR CONC. WAS CHANGED, THE CHARACTER OF THE DEPENDENCE OF THE PHOTOCURRENT ON THE POTENTIAL WAS CHANGED, AND HENCE EXTRAPULATION OF ALL CURVES CONSTRUCTED IN THE SAME COORDINATE SYSTEM MUST RESULT IN DIFFERENT VALUES OF THE THRESHOLD POTENTIAL. A LINEAR RELATION BETWEEN J AND A SUBH30 POSITIVE PRIME ONE HALF AT LOW A SUBH30 POSITIVE WAS OBSERVED. ABOVE A SUBH30 POSITIVE EQUALS 0.2M THE SATN. PHOTOCURRENT BEGINS. THE MEAN DISTANCE MEAN VALUE OF X, AT WHICH ELECTRONS ARE PREFERABLY SOLVATED, WAS FOUND FROM THE PHOTOCURRENT CONC. AND WAS 80-100 ANGSTROM. FACILITY: INST. ELEKTROKHM., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 534.322.3+534.83

GENKIN, M. D., YELEZOV, V. G., YABLONSKIY, V. V.

"Methods for the Active Reduction of Vibrations With Mechanisms"

V sb. Dinamika i akustika mashin (Machine Dynamics and Acoustics -- Collection of Works), Moscow, "Nauka", 1971, pp 70-88 (from RZh-Fizika, No 3, Mar 72, Abstract No 3Zh502)

Translation: The effectiveness and stability of two systems for the active reduction of vibration are analyzed. The systems show promise for application in shockproof mechanisms over wide frequency ranges. The basic element in the system is an electromagnetic or electrodynamic vibrator controlled by an amplified signal from the vibration pickup on a dynamometer. The vibrator partially compensates for the vibration effects at the base in the shock absorber. 15 ref. Authors abstract.

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1/2 011

TITLE--EXPERIMENTAL STUDY OF THE COMPRESSIBILITY OF SULFUR HEXAFLUORIDE

UNCLASSIFIED PROCESSING DATE--11SEP70

-U-
AUTHOR--YELEMA, V.A.

COUNTRY OF INFO--USSR

SOURCE--TEPLOENERGETIKA 1970, 17(2), 70-1

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SULFUR COMPOUND, FLUORIDE, COMPRESSIBLE GAS, MEASUREMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1981/0865

STEP NO--UR/0096/70/017/002/0070/0071

CIRC ACCESSION NO--AP0050859

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0050859

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COMPRESSIBILITY OF SF SUB6 WAS STUDIED EXPTL. BY USING A STAINLESS STEEL MODIFIED CONST. VOL. PIEZOMETER (IS SIMILIAR TO 110 ML). THE SATD. VAPOR PRESSURES WERE MEASURED AT 22 TO 40DEGREES. THE PRESSURE TEMP. O. RELATIONS OF THE GASEOUS SF SUB6 WERE MEASURED AT 40 TO 230DEGREES AND 20 TO 300 ATM. UNDER THESE CONDITIONS NO REACTION OF SF SUB6 WITH THE MATERIAL OF THE PIEZOMETER WAS OBSD. THE COMPARISON OF THE MEASURED VALUES WITH THE RELIABLE DATA SHOWED A GOOD AGREEMENT (PLUS OR MINUS 0.25PERCENT).

UNCLASSIFIED

Acc. Nr: AP0043772

Ref. Code: UR 0056

PRIMARY SOURCE: Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1970, Vol 58, Nr 3, pp 1062-1074

ENERGY DISTRIBUTION OF PHOTOELECTRONS IN A QUANTIZED MAGNETIC FIELD AND PHOTOMAGNETIC OSCILLATIONS OF THE GUREVICH - FIRSOV TYPE

A. S. Aleksandrov, V. F. Yezhov

Relaxation of nonequilibrium electrons produced in a semiconductor by light is considered for the case of a quantized magnetic field. The kinetic equation for the energy photoelectron distribution function when the electrons interact with optical phonons and equilibrium electrons can be reduced to a set of algebraic equations with shifted arguments. The small parameter in this case is the quantity η which is the ratio of the Fermi energy (or temperature for nondegenerate) equilibrium electrons to the Larmor frequency $\hbar\Omega$ (ultra-quantum case). An exact solution of the algebraic set of equations for the distribution function with small quantum numbers is found. The characteristic relaxation times in a magnetic field are calculated for electron-electron interaction. It is shown that electrons with energies smaller than $\hbar\Omega$ in general do

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19770179

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not experience coulomb relaxation. The solutions obtained are employed for analyzing photomagnetic oscillations of the Gurevich — Firsov type experimentally observed by Shalyt and coworkers in the ultra-quantum case [?]. It is shown that the oscillations are due to interaction between photoelectrons and optical phonons and simultaneously with equilibrium electrons. (The oscillations are absent in a pure semiconductor). The oscillation depth may be of the order of unity. The restriction on the equilibrium electron density in a magnetic field, for which the oscillation depth is maximal, is obtained.

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USSR UDC 615.917:547.262].036.11.07:616.36-008.922.1:616-008.939.633.2-074

YELETSKIY, YU. K., Chair of Cytology and Histology, Second Moscow Medical
Institute imeni N. I. Pirogov

"The Effect of Acute Alcohol Intoxication on Oxidative Phosphorylation in Rat
Liver"

Moscow, Farmakologiya i Toksikologiya, Vol 35, No 2, Mar/Apr 72, pp 198-199

Abstract: Tests conducted on rats demonstrated that acute alcohol intoxication causes dissociation of oxidation and phosphorylation in the liver. After intragastric introduction of 22 ml of 50% alcohol per kg body weight, phosphorylation in liver tissue begins to fall in 15 min, reaches a minimum (about 50% of the control level) in 24 hr, and then gradually returns to normal over a period of 8 days. Oxygen consumption also diminishes but to a lesser degree. Thus, the P/O ratio decreases from a control value of about 2 to a minimum of 0.77 in 24 hrs and is restored to normal in 8 days. These findings confirm the previously expressed idea that disturbances in redox processes play a major role in the development of pathological changes in the liver following alcohol intoxication.

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UDC 612.821.6

AGADZHANYAN, N. A., DORONIN, G. P., and YELETIMOV, A. I.

"The Effect of Pressure Chamber Training on Chain Motor Conditioned Reflexes in Rats"

Moscow, Zhurnal Vyshey Nervnoy Deyatel'nosti, Vol 22, No 1, Jan/Feb 72, pp 37-45

Abstract: Experimental rats were subjected to training in the pressure chamber at a simulated altitude of 5,000 m. Rats were kept in the chamber for 1.5 to 4 hr/day for 10 days. Before and after the chamber training, the animals were exposed to a simulated altitude of 10,000 m and in some cases to 12,540 m. One group of rats was conditionally trained to get food by a combination of reflexes. Glomectomy was performed on another group of rats before training in the pressure chamber. The third group was trained at 3,200 m altitude in Tuya-Asha mountains, and their survival was checked exposing them step-wise to a 12,000 m simulated altitude at a rate of 25 m/sec. In the case of untrained animals in the first group, severe and prolonged disturbances in conditioned food reflexes were observed, starting with the 5,000 m altitude. A complete inhibition of these reflexes was observed at 7,000-8,000 m altitude. Adaptation to hypoxia in the course of 10-day

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AGADZHANYAN, N. A., et al., Zhurnal Vyshey Nervnoy Deyatel'nosti, Vol 22, No 1, Jan/Feb 72, pp 37-45

training in the pressure chamber secured the necessary physiological shifts, which were expressed in a more effective use of oxygen. This prevented severe disruption of motor reflexes and facilitated the readjustment of rats to high altitude conditions. In animals devoid of sinocarotid receptor zones, the adaptation to severe hypoxia was very slow (3 rats died at 5,000 m during the first two days, and others perished at 10,000 m). This indicates the importance of chemoreceptors in the compensatory-adaptive reactions of the animal organism.

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UDC 616.273.2:612.288

AGADZHANYAN, N. A., EESLAV, I. S., KONZA, E. A., USAKOVA, N. A., and
YELIFIMOV, A. L., Institute of Physiology imeni I. P. Pavlov, Academy of
Sciences USSR, Leningrad

"The Role of Peripheral Chemoreceptors in Reactions of Rats Subjected to Short-Term and Prolonged Hypoxia"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 74, No 10, 1972,
pp 11-15

Abstract: The role of the deafferentated synocarotid and aortic reflectogenic zones on respiratory, cardiovascular, and thermoregulatory activities of rats subjected to hypoxia was studied. The ventilation in intact rats breathing with the air containing 11% ($PO_2 = 83.6$ mm Hg), increased by 20.3% compared with the normal air respiration. No noticeable changes were observed on rats with deafferentated synocarotids on both sides and breathing with the same hypoxia mixture. The same was true for rats with deafferentated aortic zone. A rapid elevation (25 m/sec) of intact rats to 1000-7000 m produced a rapid breathing. The same was observed in deafferentated rats but it occurred much later and was 15-25% lower than in intact rats. The number of heart beats in both groups of animals increased, without any significant difference between them. The severe hypoxia at 7000 m inhibited sharply both the respiration and

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ACADZHANYAN, N. A., et al., Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 74, No 10, 1972, pp 11-15

the cardiovascular activity. A decrease in the pO_2 in the thigh muscle of the deafferentated rats was more noticeable under severe hypoxia. When animals spent 30 min at 5000 m elevation ($pO_2 = 85$ mm Hg), the number of respirations increased during the first 10 min and was high during the entire exposition time, but was lower in deafferentated rats. There were no significant differences in the reactions of the cardiovascular and thermoregulatory systems at this elevation. A complete exclusion of the synocarotid chemoreceptors lowered in pO_2 pressure in the thigh muscles of the deafferentated rats at 5000 m elevation (barochamber) with low oxygen concentration. Intact and deafferentated rats died within 66 and 63 seconds, respectively at 12,200 m elevation. No significant changes in the ventilation system were observed among both groups of rats placed in chambers with 11% oxygen for 30 days. It is concluded that the peripheral chemoreceptors play a definite role in a total adaptation of the animal organism to oxygen deficiency. At the same time, the synocarotid chemoreceptors do not play any significant role in reactions of the cardiovascular and thermoregulatory systems in response to hypoxia. Since the synocarotid deafferentation did not produce significant changes in the adequate ventilation in response to hypoxia it can be assumed that other chemosensitive systems, yet unknown, take part in this process.

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UDC 612.143+612.275.1

AGADZHANYAN, N. A., ISABAYEVA, V. A., BEBINOV, YE. M., and YELETIMOV, A. I.

"Role of the Arterial Chemoreceptors in Adaptation to High Altitudes"

Frunze, Sovetskoye Zdravookhraneniye Kirgizii, No 6, 1971, pp 8-13

Abstract: Experiments were performed on intact and denervated rabbits and rats imported from Moscow (sea level) and marmots at an altitude of 3,200 m to study the part played by the sinocarotid zone in adaptation to a mountain climate. The criterion of acclimatization was the "survival time" at an altitude of 12,000 m (elevation in a pressure chamber at a velocity of 25 m/sec). Tolerance for high altitude did not increase in the intact and denervated rats until after 30 days of acclimatization. The "survival time" at the "altitude" of 12,000 m was significantly longer in the intact rats than in the animals with excised sinocarotid glomera. The results were essentially the same in the experiments with the rabbits. But in the experiments with the marmots, the "survival time" of the intact animals at 12,000 m was 780 sec compared with 1,280 sec for the glomectomized animals. High altitude tolerance was therefore greater in marmots than in the animals living at sea level (rabbits, rats) and a glomectomy caused opposite changes. Whereas high
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AGADZHANYAN, N. A., et al., Sovetskoye Zdravookhraneniye Kirgizii, No 6, 1971, pp 8-13

altitude tolerance of the rabbits and rats decreased after denervation of the sinocarotid chemoreceptors, it increased in the marmots. The dynamics of changes in the RBC, prothrombin time, fibrinogen concentration, and other hematological indexes showed the same pattern. For example, the number of RBC and hemoglobin content increased considerably in the glomectomized rabbits (more than in the intact animals) but decreased in the marmots. Thus, the sinocarotid chemoreceptors play a significant role in the process of adaptation to high altitudes.

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USSR

UDC: 621.396.983

BELOUSOV, N. N., YELFIMOV, V. I., and KIRSANOV, N. I.

"Optimal Algorithm for Measuring the Dispersion of a Random Process With the Effects of External and Internal Additive Noise Taken Separately Into Account"

Kiev, Izvestiya VUZ SSSR-- Radioelektronika, No 10, 1972, pp 1291-1294

Abstract: The problem of measuring the dispersion of a normal stationary random process on a background of normal stationary noise is considered, where both signal and noise processes are noncorrelational. An equation is given for the conditional estimate of the signal dispersion for an accurately known noise dispersion. Although the solution to this equation is well known, it does not take into account the separate effects of the external and internal additive noises. To correct this omission, the present brief communication offers a method of eliminating the effect of the internal noise of the measuring device on the accuracy of the signal dispersion measurement. In developing the algorithm for the dispersion measurement, the authors assume that the samplings of the

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UDC: 621.396.983

BELOUSOV, N. N., et al, Izvestiya VUZ SSSR--Radioelektronika, No
10, 1972, pp 1291-1294

noise and signal mixtures are obtained by a number of identical
measuring devices.

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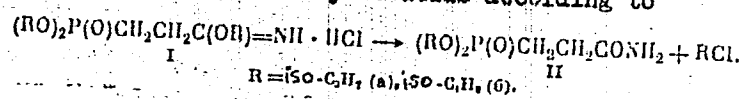
UDC 547.341

SHISHKIN, B. YE., YELFIMOVA, S. N., and NO, B. I., Volgograd Polytechnical Institute

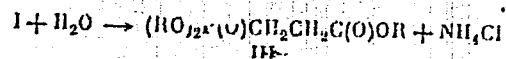
"Conversion of Hydrochlorides of C-Phosphorylated Imidates Into Amides and Phosphonylcarboxylate Esters"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), Vyp 10, 1972, pp 2346

Abstract: Thermal decomposition of the hydrochlorides yielded alkyl chlorides and amides of β -dialkylphosphonylcarboxylic acids according to



The reaction was carried out at 110-130°C; alkyl chlorides were collected in a trap cooled to -70°C, amides were viscous liquids which crystallized in 1-2 months. Hydrolysis of (I) yielded β -dialkylphosphonylpropionate esters (III):



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SHISHKIN, B. YE., et al., Zhurnal Obshchey Khimii, Vol 42 (104), Vyp 10, 1972, p 2346

Boiling points of amides (IIa) and (IIb) were 103-105 and 112-113°C, respectively.

Ester (IIIa) was characterized by b.p. 110°C, d_4^{20} 1.0430, n_D^{20} 1.4350, M_R^D 70.04; and ester (IIIb), b.p. 156°C, d_4^{20} 1.0020, n_D^{20} 1.4360, M_R^D 84.00.

Both esters had an absorption band at 1740 cm^{-1} in their IR spectra.

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UDC 614.715:614.72

YELFIMOVA, YE. V., Candidate of Medical Sciences, GUSEV, M. I., Professor,
NOVIKOV, YU. V., Doctor of Medical Sciences, YUDINA, T. V., SERGEYEV, A. N.,
Candidate of Medical Sciences, Moscow Scientific Research Institute of Hygiene
imeni F. F. Erisman

"Study of the Combined Resorptive Effect of Atmospheric Pollution (Gas and
Dust)"

Moscow, Gigiyena i Sanitariya, No 8, 1972, pp 11-15

Abstract: A study was made of the combined effect of sulfur dioxide, carbon monoxide, phenol and finely dispersed dust characteristic of the air pollution caused by ferrous metallurgy enterprises. Experimental studies were performed on white rats for 96 days in the presence of an aerosol with the following concentrations: SO_2 0.05 mg/m^3 , CO 1 mg/m^3 , phenol 0.01 mg/m^3 and 0.15 mg/m^3 of dust. Significant changes took place in the animals with respect to all tests. The effect of the aerosol in a concentration of 0.5 mg/m^3 implies a reduction in the total nucleic acids and the permeability of the histohematic barriers in the ovaries. One group of rats underwent stable changes in behavior and biochemical and physiological reactions. The total combinations of fractional concentrations of the substances with respect to their threshold values at a level less than one (0.76) has no effect on the animals.

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YELFIMOVA, YE. V., et al., Gigiyena i Sanitariya, No 8, 1972, pp 11-15

The combined resorptive effect of small concentrations of sulfur dioxide, carbon monoxide, phenol and dust is characterized by the summation effect. In estimating the degree of pollution of the atmospheric air in samples taken around the clock, a level for which the total fractional concentration does not exceed 0.76 of the maximum permissible concentrations is recommended.

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UDC 616.61-002.151-02

USSR

AGAFONOV, V. I., Maj Gen Med Serv, Docent; LEV, M. I., Col Med Serv; NOSKOV, F. S., Lt Col Med Serv, Candidate of Medical Sciences; KCHIKOVA, R. Ye., Candidate of Biological Sciences; ~~VELICHASHVILI, R. E.~~, Candidate of Medical Sciences; GAVRILYUK, B. K., Doctor of Medical Sciences; KULIKOV, I. A., Lt Col Med Serv; YEFIMOV, L. S., Lt Col Med Serv; SERGEYCHIK, I. I., Capt Med Serv; BELYAYEVA, H. S.

"Etiological Decoding of an Outbreak of Hemorrhagic Fever With a Renal Syndrome"

Moscow, Voyenno-Meditsinskiy Zhurnal, No 9, Sep 71, pp 46-49

Abstract: In June and July 1970, in the southern area of Khabarovskiy Kray, an outbreak of hemorrhagic fever with a renal syndrome (HFRS) occurred among workers employed on construction work and housed in a tent camp located on a hill surrounded by swampy meadows. Despite repeated rodent extermination, the camp area was infested with rodents and ticks. Relocation of the workers to a nearby village halted the outbreak. Only one of the 34 hospitalized workers died. The onset of the

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AGAFONOV, V. I., et al, Voyenno-Meditsinskiy Zhurnal, No 9,
Sep 71, pp 46-49

disease was acute, and fever of 39-41°C lasted 3-15 days. Renal and cardiovascular insufficiency developed in five patients. The clinical picture was atypical, suggesting both HFRS and leptospirosis. After test for *Leptospira* proved negative in all patients, two types of tests for hemorrhagic fever antigens were performed: indirect hemagglutination inhibition and agglutination with fluorescent antibodies. In the indirect hemagglutination tests, sheep erythrocytes sensitized with antibodies against the 10-10 strain of hemorrhagic nephrosonephritis (HNN) were used. All tests were positive. The fluorescence tests yielded green granular fluorescence in spleen smears. It is concluded that the green granular fluorescence is specific for HNN, and that the granules represent areas of replication of the HNN virus.

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UDC: 681.326

BRILLIANT, M. D., YELIMELEKH, I. M.

"Pneumatic Keyboard of a Typesetting Program Computer"

Pnevmatich, sredstva i sistemy upr. (Pneumatic Devices and Control Systems), Moscow, Nauka Press, 1970, pp 351-354 (from RZh-Avtomatika, Telemekhanika i vychislitel'naya tekhnika, No 9, Sep 70, Abstract No 9B478)

Translation: This article contains a description of a typesetting program computer used to prepare a program for controlling a typesetting machine. The schematic diagram of the pneumatic equipment is presented. The pneumatic keyboards have been tested and can find application in keyboard devices of typesetting program systems: for example, in computers, control panels, and so on. There are three illustrations.

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USSR

UDC 615.779.9:612.886

YELIN, D. M., Col Med Ser and GRUZDEV, A. V., Lt Col Med Serv

"Toxic Effects of Preparations of the Streptomycin Series on Cochlear and Vestibular Functions"

Moscow, Voyenno-Meditsinskiy Zhurnal, No 4, 1970, pp 82-83

Abstract: The deleterious effect of streptomycin preparations is known. Men in military service suffering from tuberculosis were given one gram daily of streptomycin, intramuscularly. Complaints of noise in the ears, dullness and dizziness appeared in some men, who had received 15-60 grams of streptomycin. More serious damage of the acoustic nerve usually occurred in older men. Caloric nystagmus tests showed that the vestibular apparatus was involved less frequently than the cochlear apparatus. Treatment was instituted on the first appearance of symptoms of intoxication. Streptomycin was discontinued. Patients were given a solution of ATP or MAP (myo-adenyl preparation), which has a similar metabolic role to ATP. The use of these products either completely removed or markedly diminished the toxic effects of streptomycin.

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YELIMELEKH, I. M., and SIDORKIN, YU. G.

Struynaya Avtomatika (Pnevmonika) (Jet Automation (Pneumatics)), Leningrad, "Lenizdat," 1972, 211 pp, Annotation p 2, Table of Contents pp 210-211

Translation of Annotation and Table of Contents: The book sets forth the basic principles of jet pneumoautomation (pneumatics) -- a new automatic control technology, which in many cases has significant advantages over electromechanical, electronic, and especially pneumatic (with moving mechanical parts) technology. Examples are given of the use of pneumatics in various sectors of industry.

The book is intended for a wide range of engineering-and-technical and scientific workers occupied with problems in the development, planning, and use of new automation hardware, as well as students in the respective specialties of secondary and higher technical educational institutions.

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YELIMELEKH, I. M., and SIDORKIN, YU. G., Struynaya Avtomatika (Pnevmonika), Leningrad, "Lenizdat," 1972

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YELIMELEKH, I. M., and SIDORKIN, YU. G., Struynaya Avtomatika (Pnevmonika), Leningrad, "Lenizdat," 1972

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UDC: 621.396.69:621.318.4(088,8)

YELIN, L. B.

"An Inductance Coil"

USSR Author's Certificate No 266925, filed 2 Aug 68, published 1 Jul 70
(from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12V390 P)

Translation: An inductance coil is proposed which consists of a coil form with winding located inside two cylindrical ferrite cups and equipped with an adjusting element. To improve the electrical parameters of the coil, these ferrite cups are cut along the generatrix of the cylinder parallel to the axis of the coil.

1/1

UDC 669.721.472(088.8)

USSR

YELEN, N. M., BURDAKOV, YU. M., KOLONIYTSSEV, A. V., CHAIABAYEV, I. A.,
KOLIADZIN, A. A., TSIDVINTSEV, G. V., and BIBIK, G. P., Ust'-Kamenogorsk
Titanium-Magnesium Combine imeni 50th Anniversary of October

"Vacuum Ladle"

USSR Author's Certificate No 254104, filed 28 Nov 66, published 5 Jan 70
(from RZh-Metallurgiya, No 11, Nov 70, Abstract No 11 G139 P)

Translation: A design is proposed for vacuum ladle which consists of a lock
and a tap hole. To simplify the servicing of the magnesium electrolytic
reduction cells, it is equipped with a teeming device, which is made in the
shape of a branch connection with bottom closing device mounted on the lid
of the ladle.

1/1

- 29 -

UNCLASSIFIED

PROCESSING DATE--04DEC70

1/2 014

TITLE--SOME PROPERTIES OF DIPHENYL N ARYLAMINOPHOSPHONIC ESTERS -U-

AUTHOR--(03)-KOZLOV, N.S., PAK, V.D., YELIN, YE.S.

COUNTRY OF INFO--USSR

SOURCE--AKADEMIYA NAVUK BELARUSKAY SSR, VESTSI, SERYYA KHIMICHNYKH NAVUK,
1970, NR 2, PP 102-104

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANIC PHOSPHORUS COMPOUND, ESTERIFICATION, HYDROLYSIS,
BENZENE DERIVATIVE, POLYNUCLEAR HYDROCARBON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3007/1336

STEP NO--UR/0419/70/000/002/0102/0104

CIRC ACCESSION NO--AP0136712

UNCLASSIFIED

PROCESSING DATE--04DEC70

UNCLASSIFIED

2/2 014
CIRC ACCESSION NO--AP0136712
ABSTRACT/EXTRACT--(U) GP-0--

ABSTRACT. MICROFICHE OF ABSTRACT CONTAINS GRAPHIC INFORMATION. THE RESULTS OF THE CONTINUED STUDY OF DIPHENYL ARYLAMINOPHOSPHONATES ARE GIVEN. THE POSSIBILITY OF TRANSESTERIFICATION OF DIPHENYL ESTERS WITH ALKALI ALCOHOLATES IS DISCUSSED AND THE STABILITY OF DIALKYL ESTERS IN ALKALINE MEDIA FOLLOWED BY COMPLETE HYDROLYSIS IN ACID MEDIA IS DESCRIBED. A STUDY WAS MADE OF THE ALKALINE HYDROLYSIS OF DIPHENYL ARYLAMINOPHOSPHONATES IN AN AQUEOUS KOH SOLUTION. SUBSEQUENT ACIDIFICATION YIELDED FREE ARYLAMINOPHOSPHONIC ACIDS. THE INITIAL ESTERS. THE HYDROLYSIS REACTION OCCURRED AS FOLLOWS: THE COMPOUNDS OBTAINED BY THE ALKALINE HYDROLYSIS ARE SHOWN IN THE FOLLOWING TABLE: (TABLE SHOWN ON MICROFICHE).
FACILITY: INSTITUT FIZIKO-ORGANICHESKOY KHIMII, AN BSSR; PERMSKIY SEL'SKOKHOZYAYSTVENNY-INSTITUT.

UNCLASSIFIED

USSR

UDC 547.574+241

KOZLOV, N. S., PAK, V. D., ~~YELIN, YE. S.~~ Institute of Physico-Organic Chemistry, Academy of Sciences Belorussian SSR; Perm Agricultural Institute imeni D. N. Pryanishnikov, Perm, Ministry of Agriculture USSR

"Obtaining Aminophosphinic Esters and Their Acid Decomposition"

Minsk, Vestsi Academiya Navuk Belaruskay SSR, No 2, 1970, pp 87-90

Abstract: The esters of aminophosphinic acids were obtained by condensation of aromatic amines and aldehydes with dialkyl- or diphenylphosphites, and also by condensation of aromatic Schiff's bases with the above phosphites in the presence of a catalyzer, concentrated HCl or SnCl₂. They are white or yellow crystals, soluble in ether, alcohol, benzene, dioxane and acetone. Attempts to use azomethanes with ortho-substituents gave negative results.

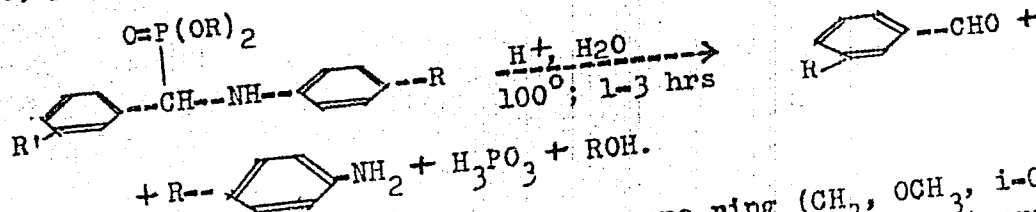
The authors prove experimentally that N-aryl substituents of the aminophosphinic acids are completely decomposed in hydrochloric and acetic acids:

1/2

- 85 -

USSR

KOZLOV, N. S., et al, Vestsi Akademiyi Navuk Belaruskay SSR, No 2,
1970, pp 87-90



Electropositive substituents in the benzene ring (CH₃, OCH₃, i-C₃H₇), as a rule, accelerate decomposition; electronegative substituents (NO₂, Cl, I) slow the reaction by interfering with the transfer of H⁺ to the electrophilic N nucleus.

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USSR

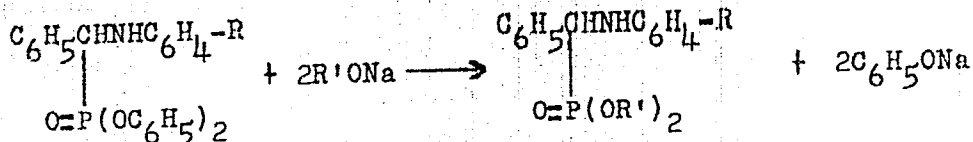
UDC 547.574 + 241

KOZLOV, N. S., PAK, V. D., YELIN, YE. S., Institute of Physico-Organic Chemistry, Academy of Sciences Belorussian SSR; Perm Agricultural Institute imeni D. N. Pryanishnikov, Perm, Ministry of Agriculture USSR

"Some Properties of Diphenyl Esters of N-aryl Substituted Amino-phosphinic Acids"

Minsk, Vestsi Akademiyi Navuk BSSR, No 2, 1970, pp 102-104

Abstract: Failing to achieve transesterification of diphenyl esters by aliphatic alcohols, the authors accomplished it readily with alcoholates of alkaline metals:



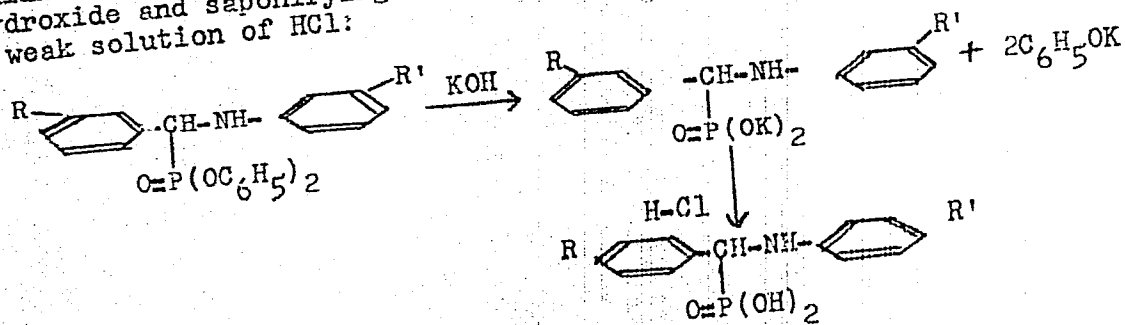
where R = H, n-CH₃, m-CH₃; R' = CH₃, C₃H₇, C₄H₉.

1/3

USSR

KOZLOV, N. S., et al, Vestsi Akademiyi Navuk BSSR, No 2, 1970, pp 102-104

The authors also succeeded in obtaining N-aryl substituted aminophosphinic acid by heating the esters in an aqueous solution of potassium hydroxide and saponifying them, and subsequently treating them with a weak solution of HCl:



2/3

- 84 -

USSR

KOZLOV, N. S., et al, Vestsi Akademiya Navuk BSSR, No 2, 1970,
pp 102-104

These products are insoluble in ether, benzene, dioxane and water, but are soluble in alcohol and aqueous solutions of alkalies. When analyzed by infrared spectroscopy, the products do not give absorption bands characteristic for the NH-group.

3/3

USSR

UDC 547.861.07

YELINA, A. S., MUSATOVA, I. S., and SYROVA, G. P.

"Pyrazines and Their N-oxides. III. Synthesis and Properties of N-oxides of 2 and 2,3-substituted Pyrazines"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 9, 1972, pp 1275-1280

Abstract: The synthesis of N-oxides of 2 and 2,3-substituted pyrazines is described. Under the effect of alkaline reagents, the synthesized di-N-oxide of pyrazine-2-carbaldehyde in which the aldehyde group is in the hydrate form, undergoes oxidation-reduction leading to deoxidation of one of the nitrogen atoms of the ring and oxidation of the dihydroxymethyl group to a carboxyl group. In connection with the high antitubercular activity in vitro of the di-N-oxides of unsubstituted and N-substituted amides of quinoxaline-2-carboxylic acid, the corresponding derivatives in the pyrazine series were synthesized and their biological activity was studied. Paramagnetic resonance and infrared spectral data are also given.

1/1

USSR

UDC 547.863.1'781'861.07

YELINA, A. S., MUSATOVA, I. S., TSYRUL'NIKOVA, L. G., All-Union Scientific Research Chemical-Pharmaceutical Institute imeni S. Ordzhonikidze, Moscow

"N-Oxides of Imidazo[4,5-b]quinoxalines and Imidazo[4,5-b]pyrazines"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 9, 1972, pp 1266-1270

Abstract: The synthesis of mono and di-N-oxides of methyl derivatives of imidazo[4,5-b]quinoxaline and imidazo[4,5-b]pyrazine is described. High reactivity of the 20methyl group in N-oxides of 20methylimidazo[4,5-b]-quinoxaline was found by comparison with the corresponding unoxidized derivative. No noticeable antibacterial activity was detected. Experimental procedures and results are presented for the synthesis of 4-N-oxide of 2-methylimidazo[4,5-b]quinoxaline (II) and 4,9-di-N-oxide of 2-methylimidazo[4,5-b]quinoxaline (III), the conversion of II and III into the 4-N-oxide of 3-amino-2-hydroxyquinoxaline (IV) and 1,4-di-N-oxide of 2-amino-3-hydroxyquinoxaline (V), the N-oxidation of 2-methylimidazo[4,5-b]pyrazine (VIa), N-oxidation of 5,6-dimethylimidazo[4,5-b]pyrazine (VIb), the synthesis of 1-benzyl-5,6-dimethylimidazo[4,5-b]pyrazine (IX), mono-N-oxide of 1-benzyl-5,6-dimethylimidazo[4,5-b]pyrazine (X), 4-N-oxide of 2-styrylimidazo

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USSR

YELINA, A. S., et al., Khimiya Geterotsiklicheskikh Soyedineniy, No 9, 1972, pp 1266-1270

$\sqrt{4,5-b}$ quinoxaline (XI), 4,9-di-N-oxide of 2-styrylimidazo $\sqrt{4,5-b}$ quinoxaline (XII), 2-(o-hydroxystyryl)imidazo $\sqrt{4,5-b}$ quinoxaline (XVII), 4-N-oxide of 2-(o-hydroxystyryl)imidazo $\sqrt{4,5-b}$ quinoxaline (XVIII), the oxidation of compounds I and II by selenium dioxide, deoxidation of the styryls XIII and XI by potassium manganate, the reaction of 2,3-diaminoquinoxaline with dimethylformamide and the synthesis of 2-methylimidazo $\sqrt{4,5-b}$ quinoxaline.

2/2

USSR

UDC 621.357.12:661.418(088.8)

EBERIL', V. I., YELINA, L. M., SHKRED, V. V., TSEYTLIN, R. I., YURKOV, L. I.,
GURVANOV, L. S., KORYAGIN, V. I., PANCHENKO, M. B., and SHANTALIN, A. M.

"Process of the Decomposition of Active Chlorine in Solution"

USSR Authors' Certificate No 335211, filed 20 Jun 60, published 15 May 72
(from Referativnyy Zhurnal -- Khimiya, No 8, (II), 1973, Abstract No 8L254P)

Translation: A process is patented for the dissociation of active chlorine in solutions by means of heating, which is distinguished in that, in order to increase the velocity of dissociation, a process occurs in order to maintain a stable pH value for the solution equal to 5.5 to 6.5. It is proposed to carry out the process by bubbling gases which have been pre-heated and humidified to 60-100% (relative to the temperature of the solution). The value of the pH of the solution during the process stays in the region 5.5 to 6.5 by the addition of alkaline or alkali salts to the solution. The temperature of the solution is confined to the region 60-100°C. The process is carried out either as a batch or as a continuous system, for example, for the flow of the pre-heated solution across a step-wise capacity pattern. The solution is made alkaline at the beginning of the process; that is, the most rapid reduction in the pH of the solution occurs during the first stage of the pro-

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- 4 -

USSR

EBERIL', V. I., et al., USSR Authors' Certificate No 335211, filed 20 Jun 60, published 15 May 72

cess when velocity of dissociation of the active chlorine is highest. From 50-100% of the alkali reagents supplied in the solution are introduced during the first 60 minutes of the process.

2/2

Acc. Nr:
AP0036567

Ref. Code: UR 0301

PRIMARY SOURCE: *4* Voprosy Meditsinskoy Khimii, 1970, Vol 16,
Nr 1, pp *42-46*

EFFECT OF ANION SURFACE-ACTIVE SUBSTANCES ON HYALOURONIDASE
OF ST. AUREUS

Yelinov, N. P.; El'-Sukari, Adel'

Chemical Pharmaceutical Institute, Leningrad

Anion surface-active substances inhibit the hyalouronidase of *S. aureus*. The kinetics of enzymatic action in the presence of three anion surface-active substances was studied. During the growth of cells with sub-bacteriostatic concentrations of anion surface-active substances the enzymatic activity is significantly decreased 18 hr after the beginning of growth. At the same time the inhibition of growth was not detected.

D.A.

6

REEL FRAME

USSR

UDC 576.881.252.098.31:577.154.365/.095.18

YELINOV, N. B., EL'-SUKARI, A., Chemico-Pharmaceutical Institute,
Leningrad

"The Effect of Anionic Surfactants on the Hyaluronidase of Staphylococcus aureus"

Moscow, Voprosy Meditsinskoy Khimii, Vol 16, No 1, Jan/Feb 70, pp 42-46

Abstract: The effect of anionic surfactants on the hyaluronidase of St. aureus was studied. Study of the kinetics of the enzymatic action of hyaluronidase on hyaluronic acid in the presence of the surfactants Na laurate, sulfonol, and tamol N, indicated that hyaluronidase activity was inhibited by these substances. Upon cultivation of St. aureus in meat-peptone broth for 18 hr. in the presence of the surfactants in sub-bacteriostatic concentrations, hyaluronidase activity was reduced significantly as compared with controls, while the growth of the culture was not inhibited.

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Acc. Nr: **AF0034395**

Ref. Code: UR 0297

PRIMARY SOURCE: Antibiotiki, 1970, ~~15~~ 15, Nr 2, pp 158-161

EFFECT OF CATIONIC, ANIONIC AND NON-IONOGENIC SURFACE ACTIVE SUBSTANCES (SAS) AND ANTIBIOTICS ON LOSS OF GYALURONIDASE FROM CELLS OF STAPHYLOCOCCUS AUREUS

Yelinox, N. P.; El'sukari, A.

Chemico-Pharmaceutical Institute, Leningrad

A number of substances, belonging to ionic and non-ionic surface active substances, as well as to antibiotics was studied. Their effect on the loss of gyaluronidase from the cells of Staphylococcus aureus was found. At the same time it was shown that efficacy of cationic substances was higher than that of anionic ones, while non-ionic twins (40, 80, 85) and OP-7 had no effect on the enzyme loss, though protected the cells from the action of anionic detergents. An increase in the enzyme level in outer medium on addition of cationic and anionic surface active substances and antibiotics was due to liberation of gyaluronidase from dead cells.

DN.

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REEL/FRAME
19711054

172 024 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--THE SYNTHESIS OF PLASMOCCOAGULASE INDUCED BY SOME MICROORGANISMS -U-
AUTHOR--(103)-YELINOV, N.P., ZAIKINA, N.A., CHMILENKO, G.S.
COUNTRY OF INFO--USSR
SOURCE--ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII, 1970, NR 3,
PP 98-103
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--STAPHYLOCOCCUS, BLOOD SERUM, CULTURE MEDIUM, FUNGUS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1990/1492 STEP NO--UR/0016/70/000/003/0098/0103
CIRC ACCESSION NO--AP0109552
UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0109552

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INTRODUCTION OF THE SERUM INTO THE NUTRIENT MEDIUM CAUSED CONSIDERABLE ACCELERATION OF SYNTHESIS OF STAPHYLOCOCCUS PLASMOCOAGULASE. THIS ACTION WAS RETAINED FOR SOME TIME AFTER THE REMOVAL OF THE INDUCING AGENT ONLY BY THE MICROBIAL CELLS WHICH WERE IN DIRECT CONTACT WITH THE SERUM; THIS ACTION WAS LOST IN FURTHER TRANSFER ON THE MEDIA. THE ACTION OF THE SERUM ON COAGULASE SYNTHESIS WAS NOT ASSOCIATED WITH ITS EFFECT OF REPRODUCTION OF STAPHYLOCOCCUS. IN ALL PROBABILITY, THE INDUCING EFFECT OF THE SERUM DEPENDED ON THE PRESENCE OF PROTHROMBIN AND OF THE COAGULATION FACTOR VII IN IT, WHICH SERVED AS PLASMOCOAGULASE SUBSTRATES. REMOVAL OF THESE FACTORS BY ADSORPTION OR BY INACTIVATION BY HEATING CONSIDERABLY REDUCED THE CAPACITY OF THE SERUM TO INCREASE THE AMOUNT OF COAGULASE IN THE CULTURE MEDIUM. THE RATE OF FORMATION OF COAGULASE BY STAPHYLOCOCCI PROVED TO INCREASE IN THE PRESENCE OF IONIZED MANGANESE. THIS EFFECT WAS MANIFESTED ONLY IN THE PRESENCE OF MANGANESE IN THE NUTRIENT MEDIUM AND DISAPPEARED IMMEDIATELY AFTER ITS REMOVAL. THE CONTENT OF PLASMOCOAGULASE ROSE IN THE CELLULAR EXTRACT OF THE FUNGI GROWN ON THE SERUM CONTAINING MEDIUM. THIS EFFECT WAS REVEALED IN 23 OF 37 STRAINS STUDIED, AMONG WHICH REPRESENTATIVES OF VARIOUS TAXONOMIC GROUPS OF FUNGI WERE PRESENT.

UNCLASSIFIED

UDC 621.315.422

USSR

GOLIK, L.L., ARTOCOLEVSKAYA, YE.S., ~~YELINSON, M.I.~~

"Influence Of Light On The Parameters Of SbSJ Crystals Close To Phase Transition"

Radiotekhnika i elektronika, Vol XVII, No 6, June 1972, pp 1339-1341

Abstract: The effect is studied of light (of excess carriers) on the magnitude ΔT_p , the dielectric constant (ϵ) and the pyrocurrent (I_p) in SbSJ crystals. In addition, the temperature of cleavage [rasployniye] is compared with the temperature of the maximum of curves $\epsilon(T)$ and $I_p(T)$. The magnitude ϵ was determined with respect to the capacitance of the crystal and was measured by a Ye8-2 bridge (frequency 1 kHz); I_p was recorded with a U1-2 electrometer with a uniform heating of the crystal at the rate of 1-1.2 deg./min. The authors thank V.A.Lyakhovitskaya for furnishing the SbSJ crystals. 2 fig. 10 ref. Received by editors, 22 December 1971.

1/1

I/2 017 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--ENERGY SPECTRUM OF ELECTRONS IN BISMUTH FILMS STUDIED BY THE TUNNEL
EFFECT -U-
AUTHOR--(03)-KORNEYEV, D.N., LUTSKIY, V.N., YELINSON, M.I.
COUNTRY OF INFO--USSR
SOURCE--FIZ. TVERD. TELA 1970, 12(5), 1333-5
DATE PUBLISHED-----70
SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., PHYSICS, MATERIALS
TOPIC TAGS--TUNNEL EFFECT, BISMUTH COMPOUND, ELECTRON ENERGY LEVEL,
ELECTRON SPECTRUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3005/0971 STEP NO--UR/0181/70/012/005/1333/1335
CIRC ACCESSION NO--AP0133057
UNCLASSIFIED

2/2 017

CIRC ACCESSION NO--A0133057
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--04DEC70

ABSTRACT. THE DIFFERENTIAL CHARACTERISTICS OF TUNNEL SYSTEMS CONTG. FILMS OF BI WERE MEASURED. THE ABOVE CHARACTERISTICS HAVE AN OSCILLATORY CHARACTER, DETD. BY DIMENSIONAL QUANTIZATION OF THE ELECTRONIC SPECTRUM IN THE THIN FILMS. A PICTURE WAS OBTAINED OF THE DISTRIBUTION OF QUASIDISCRETE LEVELS IN A FILM OF FIXED THICKNESS.
FACILITY: INST. RADIOTEKH. ELEKTRON., MOSCOW, USSR.

UNCLASSIFIED

Acc. Nr:

AP0050041

Abstracting Service:
CHEMICAL ABST. 5/70

Ref. Code:
UR 0109

105051g Pressure sensitivity of Schottky diode current.
~~Elinson, M. I.; Pokalyakin, V. I.; Polvakova, A. L.; Stepanov,
G. V.; Shklovskaya-Kordz, V. V. (Inst. Radiotekh. Elektron.
Moscow, USSR). Radiotekh. Elektron. 1970, 15(1), 210-13
(Russ). The effect of a const. or alternating pressure from
corindon or glass needles on Shottky diodes obtained by sputter-
ing of a Au film on n-Si was studied. The mechanism of current
change is discussed, and the role of modifications of surface center
states is pointed out.~~
G. Thirot

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REEL/FRA
19801980

4 N+

USSR

UDC 616-001.12

YELINSKIY, M. P.

"Decompression Disorders After a Stay Under 'Safe Pressures' or at 'Safe Altitudes'"

Moscow, Voenno-Meditsinskiy Zhurnal, No 7, 1970, pp 60-63

Abstract: A review is presented of literature data on decompression disorders associated with exposure to pressures and altitudes normally considered to be "safe." A prolonged stay under what is normally considered a safe pressure, especially when accompanied by physical effort, as well as rapid elevation to seemingly safe altitudes, may result in the development of gas bubbles in the organism, pain, and even fatalities if normal decompression procedures are not employed. Such disorders may occur at pressures as low as 2.25 atm or elevations of 8,000.

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Analysis and Testing

USSR

UDC (546.882+546.883):535.651

YELINSON, S. V.

Spektrofotometriya Niobiya i Tantala (Spectrophotometry of Niobium and Tantalum), Moscow, Atomizdat, 1973, 288 pp

Translation of Annotation: The development of an extensive metallurgy of niobium and tantalum is related to rapid progress in the fields of nuclear energy, rocketry, and other branches of industry requiring the reliable and precise methods for the determination and analysis of these elements. The complexity of the niobium and tantalum chemistry lies in the fact that these elements tend to undergo hydrolysis, polymerization, and copolymerization with elements of neighboring groups, and are capable of forming complex compounds and colloidal solutions. Therefore, the classical gravimetric and volumetric methods with complex separation of niobium and tantalum and their isolation from other elements do not satisfy the requirements of industrial control. As a result, spectrophotometric methods with the application of organic reagents have been widely employed for some time. However, the vast material accumulated on the spectrophotometry of niobium and tantalum is scattered in the form of individual articles among many publications which are in some instances not easily accessible. This monograph summarizes systematically not only the accumulated literature data but also presents the research results

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USSR

YELINSON, S. V., Spektrofotometriya Niobiya i Tantalata (Spectrophotometry of Niobium and Tantalum), Moscow, Atomizdat, 1973, 288 pp.

of the author and his colleague on complex niobium and tantalum compounds and the use of the most promising organic reagents. As a result of these studies it was possible to develop precision photometric and differential spectrophotometric methods for the determination of niobium and tantalum in metals, alloys, and other materials. These methods are currently being used presently in industrial control. In order to comprehend the processes taking place in the course of color reactions suitable for spectrophotometry, the states of niobium and tantalum in solutions as function of the structure of organic reagents and their ability to produce color compounds with these elements are described in Chapters 1 and 2. The book describes in detail the methods based on the most valuable (for spectrophotometry) tertiary (mixed) complex niobium and tantalum compounds with metallochromic reagents. The author selected the most promising groups of organic compounds used in the spectrophotometry of niobium and tantalum from the great number of organic reagents. Chemical analysts will find in this book a detailed presentation of reliable and proved methods for the determination of niobium and tantalum in ores, concentrates, metals, alloys, steels, and industrial products, as well as recommendations for the purposeful synthesis of new reagents for niobium and tantalum. Domestic and foreign

2/10

- 2 -

USSR

YELINSON, S. V., Spektrofotometriya Niobiya i Tantalala (Spectrophotometry of Niobium and Tantalum), Moscow, Atomizdat, 1973, 288 pp

literature covering up to the first half of 1971 was used in this monograph. The author thanks his colleagues who devoted much time and effort to the development of new methods for the determination of niobium and tantalum: L. S. Mal'tseva, N. A. Mirzoyan, L. I. Pobedina, A. T. Rezova, T. I. Nezhnova, and V. T. Tsvetkova. The author thanks I. I. Brodskaya and T. I. Nezhnova for preparation of the manuscript. The author will gratefully accept all suggestions with regard to this book.

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3/10

USSR

YELINSON, S. V., Spektrofotometriya Niobiya i Tantalala (Spectrophotometry of Niobium and Tantalum), Moscow, Atomizdat, 1973, 288 pp

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USSR

YELINSON, S. V., Spektrofotometriya Niobiya i Tantara (Spectrophotometry of Niobium and Tantalum), Moscow, Atomizdat, 1973, 288 pp

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USSR

YELINSON, S. V., Spektrofotometriya Niobiya i Tantalala (Spectrophotometry of Niobium and Tantalum), Moscow, Atomizdat, 1973, 288 pp

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USSR

YELINSON, S. V., Spektrofotometriya Niobiya i Tantalala (Spectrophotometry of Niobium and Tantalum), Moscow, Atomizdat, 1973, 288 pp

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YELINSON, S. V., Spektrofotometriya Niobiya i Tantalata (Spectrophotometry of Niobium and Tantalum), Moscow, Atomizdat, 1973, 288 pp

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YELINSON, S. V., Spektrofotometriya Niobiya i Tantalala (Spectrophotometry of Niobium and Tantalum), Moscow, Atomizdat, 1973, 288 pp

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USSR

YELINSON, S. V., Spektrofotometriya Niobiya i Tantalata (Spectrophotometry of Niobium and Tantalum), Moscow, Atomizdat, 1973, 288 pp

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10/10

1/2 028 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--X RAY CHAMBER FOR STUDYING THE DEFORMATION OF THREADLIKE CRYSTALS
-U-
AUTHOR--(03)--YELISEYENKO, L.G., LEBEDINSKAYA, S.B., LINKOVA, D.YE.
COUNTRY OF INFO--USSR
SOURCE--PRIB. TEKH. EKSP. 1970, 1, 220-1
DATE PUBLISHED--70
SUBJECT AREAS--PHYSICS, METHODS AND EQUIPMENT
TOPIC TAGS--X RAY CAMERA, CRYSTAL DEFORMATION, FIBER CRYSTAL, X RAY
DIFFRACTION ANALYSIS, IRON
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1988/1554 STEP NO--UR/0120/70/001/000/0220/0221
CIRC ACCESSION NO--AP0106300
UNCLASSIFIED

2/2 028

CIRC ACCESSION NO--AP0106300
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT. AN X RAY CAMERA IS DESCRIBED FOR
STUDYING OF THE ELASTIC DEFORMATION OF THREADLIKE CRYSTALS BY USING THE
CHARACTERISTIC RADIATION OF THE X RAY TUBE. REFLECTION OF CO K SUB
ALPHA RADIATION FROM THE (310) PLANE OF A FE WHISKER WAS PHOTOGRAPHED.
THE FE WHISKER WAS DEFORMED BY TENSION. THE DEVICE MEASURES THE CHANGE
IN INTERPLANAR DISTANCES WITH AN ACCURACY OF SIMILAR TO 0.01PERCENT.
FACILITY: DAL'NEVOST. GOS. UNIV., VLADIVOSTOK, USSR.

UNCLASSIFIED

Instrumentation and Equipment

USSR

UDC 621.791.948+621.375.8.037:
681.326.3:62-41

TYCHINSKIY, V. P., Doctor of Technical Sciences, VASIL'YEV, K. V., Candidate of Technical Sciences, TROFIMOV, A. A., BABENKO, V. P., SUKHININ, G. K., YELISEYENKOV, V. I., Engineers, Research Institute for Gas Welding and Cutting Machinery

"Program-controlled Machine for Gas-laser Cutting of Sheet Materials"

Moscow, Svarochnoye Proizvodstvo, No 4, Apr 72, pp 52-53.

Abstract: The Institute has developed a machine for cutting of alloy steels, titanium and other materials using carbon-dioxide lasers, allowing any contour to be cut in the tracking mode. Contour control of the machine is by a digital programmed device using punch tape. The machine has been tested using various materials including 1-10 mm sheets of low-carbon and alloy steels of various types. Good cutting accuracy has been achieved: parts have been cut from sheets up to 3 mm thick, with smooth, even edges, and very small zone of thermal effect near the cut. Cuts are very thin (a few tenths of a millimeter).

1/1

USSR

UDC 547.26'118

YELISEYENKOV, V. N., PUDOVIK, A. N., and BUREVA, N. V., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences USSR, Kazan'

"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, (tetraethyl diamido)-phosphorous and alkyl-methylthiophosphonic 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 dialkyl-thiophosphoric and alkyl(diethylamido)phosphorous acids -- monothiopyrophosphates are formed containing β , β -dichlorovinyl group as one of the radicals.

1/1

- 25 -

USSR

UDC 542.91:661.718.1

YELISEYENKOV, V. N., BUREVA, N. V., and PUDOVNIK, A. N., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences USSR

"Reaction of Amidophosphites With Dialkylphosphoric and Dialkylthiophosphoric Acids"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 9, Sep 71, pp 2013-2018

Abstract: The authors studied reactions of amidophosphites and phosphorous acid amides with dialkylphosphoric and dialkylthiophosphoric acids. It was found that these reactions result in the elimination of amine and the formation of ester-amides of subphosphoric or subthiophosphoric acid. The reaction is reversible. The resultant anhydrides react with sulfur with evolution of heat to give ester-amides of mono- and dithiopyrophosphoric acid. The authors found a simple and convenient method for the synthesis of these ester-amides in one step without elimination of the intermediate anhydrides.

1/1

USSR

UDC 541.127.3:542.938:547.26'118

BEL'SKIY, V. Ye., BEZZUBOVA, N. N., YELISEYENKOV, V. N., and PUDOVIK, A. N.,
Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, USSR
Academy of Sciences

"Kinetics of the Hydrolysis of Mixed Esters of Methylphosphonic Acid Which
Contain P-O-C and P-S-C Bonds"

Leningrad, Zhurnal Obshchey Khimii, Vol XL, No 12, Dec 70, pp 2557-2560

Abstract: As a continuation of studies begun in 1969, the authors examined
the reactions between water and the OH^- ion, and a number of the derivatives
containing P-O-C and P-S-C bonds.

It was concluded from kinetic data that the reaction between water and the
mixed esters having the P-O-Alk and P-S-Alk groups includes breaking of the
C-O bond. Further, the effect of $p_\pi - d_\pi$ interaction between phosphorus
and thiol sulfur on reactivity is insignificant. The linear relationship
between the rate constants of hydrolysis for the mixed thiolphosphonates
and fluorides of phosphorus-containing acids of similar structure was
shown.

1/1

USSR

UDC 542.91:661.718.1

FUDOVIK, N., YELISEYENKOV, V. N., SERKINA, N. A., and LIPATOVA, I. P.,
Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of
Sciences USSR

"Reactions of Amidophosphites with Alkylmethylphosphonic and Thiophosphonic
Acids"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 5, 1971,
pp 1039-1044

Abstract: The action of alkylmethylphosphonic and alkylmethylthiophosphonic acids on bis(diethylamido)alkylphosphites and tris(diethylamido)phosphite was investigated. The reactions led to mixed anhydrides of methylphosphonic (thiophosphonic) and amidophosphorous acids. The amount of diethylamine (80-95 percent) formed in these reactions corresponds to the amount of mixed anhydride (70-85 percent) formed, showing the lack of side reactions. The diethylamine formed can react both with the anhydride formed, as well as form a salt with the starting acid, $\text{GH}_3(\text{RO})\text{P}(\text{X})\text{CH}\cdot\text{HNEt}_2$, partially removing it from the reaction. The reactions can occur both in an organic inert solvent, as well as in its absence, and the yield of reaction products is not affected by the order in which the starting reagents (acid to phosphite or vice versa) are

1/2

USSR

PUDOVIK, N., et al., Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 5, 1971, pp 1039-1044

added. To increase the yields of anhydrides, the reagents must be mixed in the cold and after removal of the solvent the reaction mixtures must be heated at 10-50 mm and 60-120° until diethylamine is no longer formed. The mixed anhydrides obtained are saponified with water, forming the diethylammonium salt of phosphorous acid; they add sulfur with evolution of heat, forming pyrophosphonatothiophosphates.

2/2

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USSR

UDC 541.127.3:542.938:547.26'118

BEL'SKIY, V. Ye., BEZZUBOVA, N. N., AKAMIN, V. D., YELISEYENKOV, V. N.,
RIZPOLOZHENSKIY, N. I., and PUDOVIK, A. N., Corresponding Member of the
USSR Academy of Sciences

"Reactivity of Phosphonic Acid Esters and Their Thio-Analogs in Alkaline
Hydrolysis"

Moscow, Doklady Akademii Nauk SSSR, Vol 197, No 1, March-April 1971, pp 85-87

Abstract: Nucleophilic substitution on the phosphorous atom decreases on re-
placement of the phosphoryl oxygen by sulfur. This was established as a result
of studying the kinetics of hydrolysis of various esters and acid chlorides of
phosphoryl oxygen. However, it still remained unclear whether the reaction
rate changed to an equal extent on replacement of the P=O by P=S for a series
of compounds with close structure. This paper contains a study of the kinetics
of alkaline hydrolysis of some esters and thio esters of substituted phosphonic
and thiophosphonic acids. The data obtained permits the conclusion to be
drawn that the change in reactivity on converting from phosphoryl to thio-
phosphoryl compounds essentially depends on the nature of the substitutions
on the phosphorus, and a decrease in the reaction rate constant does not
1/2

USSR

BEL'SKIY, V. Ye., et al, Doklady Akademii Nauk SSSR, Vol 197, No 1, March-April 1971, pp 85-87

always occur. The mechanism of this effect is discussed, the experimental procedure is presented, and tables of values are given for the activation energy E and the pre-exponential factor A in the equation $K = A \exp(-E/RT)$ for the reaction with OH^- -ion, and the hydrolysis rate constants of KOH .

A definite tendency toward an increase in absolute magnitude of the pre-exponential factor is noted on the replacement of oxygen atoms by sulfur in phosphonates. If it is considered that nucleophilic substitution on the phosphorus requires the formation of a pd -bond in the activated complex, the increase in the pre-exponential factor indicates high availability of the d -orbitals of phosphorus in the thio-derivatives for nucleophilic attack.

2/2

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1/2 019 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--HYDROLYSIS OF PHOSPHONOUS AND PHOSPHINOUS ACID ESTERS CONTAINING A
PHOSPHORUS HYDROGEN BOND -U-
AUTHOR--(04)-BELSKIY, V.YE., MOTYGULLIN, G.Z., YELISEYENKOV, V.N.,
RAZPOLOZHENSKIY, N.I.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (3), 565-8
DATE PUBLISHED--70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--HYDROLYSIS, ORGANIC PHOSPHORUS COMPOUND, ESTER, CHEMICAL
BONDING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--2000/0905

STEP NO--UR/0062/70/000/003/0565/0568

CIRC ACCESSION NO--AP0124566

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--30OCT70

2/2 019

CIRC ACCESSION NO--AP0124566

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FOLLOWING ETPIQ(O)R(H, PREPD. CONVENTIONALLY, WERE USED (R SHOWN): MEETCH, B SUB12 80-1DEGREES, D PRIME20 0.9865, N PRIME20 SUBD 1.4274; CL CH SUB2 CH SUB2, B SUB0.2 65-6DEGREES, 1.2183, 1.4578; AND ME SUB3C, B SUB0.1 35DEGREES 0.9977, 1.4328. THE LAST WAS RATHER UNSTABLE AND DECOMP. ON STORAGE, EVEN IN A SEALED BULB, WITH LOSS OF ME SUB2C:CH SUB2. THE FOLLOWING VALUES OF AQ. HYDROLYSIS RATE CONSTS. (K TIMES 10 PRIME6 SEC PRIME1 NEGATIVE) (AT 98, 90, 80, AND 70DEGREES, RESP.), ACTIVATION ENERGY (KCAL-MOLE) AND DELTA S PRIME PLUS OR MINUS (E.U.) WERE REPORTED, RESP., FOR. SHOWN ON MICROFICHE. RATE CONSTS. FOR ALK. HYDROLYSIS FOR THE TERT BU ESTER WERE: (K NA 1 MOLE SEC.) 0DEGREES 0.045, 10DEGREES, 0.102, 20DEGREES 0.19, 30DEGREES 0.35, ACTIVATION ENERGY 11.2 AND DELTA S 25 E.U. ALTHOUGH GENERALLY THE AQ. HYDROLYSIS RATE CONSTS. DECREASED WITH INCREASING CHAIN LENGTH AND BRANCHING, THE ESTERS WITH MEETCH AND ME SUB3 C GROUPS WERE GREATLY REACTIVE, OWING TO AN SN 1 MECHANISTIC CHANGE IN THE MECHANISM AT THE C ATOM OF THE ALC. GROUP. FOR OTHER ESTERS CLEAVAGE AT THE P O LINK IS LIKELY, AS IN DIALKYL PHOSPHITES.

FACILITY: INST. ORG. FIZ. KHIM. IN. ARBUZOVA, KAZAN, USSR.

UNCLASSIFIED

1/2 025 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--INTRAMOLECULAR CATALYSIS BY CHLORINE IN THE HYDROLYSIS OF
PHOSPHINATES AND PHOSPHONATES -U-
AUTHOR--(03)-BELSKIY, V.YE., YEFREMOVA, M.V., YELISEYENKOV, V.N.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (3), 561-4
DATE PUBLISHED--70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CATALYSIS, CHLORINE, HYDROLYSIS, ORGANIC PHOSPHORUS COMPOUND,
ACTIVATION ENERGY, INTRAMOLECULAR MECHANICS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/0995 STEP NO--UR/0062/70/000/003/0561/0564
CIRC ACCESSION NO--AP0124654
UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124654

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FOLLOWING VALUES OF RATE
CONSTS. WERE REPORTED FOR AQ. HYDROLYSIS OF INDICATED ESTERS (IN K TIMES
10⁶ SEC⁻¹ PRIME NEGATIVE): (SHOWN ON MICROFICHE). SINCE THE 3,CL
SUBSTITUENT GREATLY INCREASES THE RATE OF AQ. HYDROLYSIS, A FORM OF
INTRAMOL. EFFECT OF CL IN THIS POSITION APPEARS TO EXIST. THE DIFFERENT
BEHAVIOR OF ESTERS IN REACTIONS WITH H SUB2 O AND HO PRIME NEGATIVE IS
EXPLAINED BY DIFFERENT REACTION CENTERS. THE CALCD. ACTIVATION ENERGIES
FOR THESE REACTIONS ARE NOT ANY LOWER FOR ESTERS IN WHICH THE INTRAMOL.
"CATALYSIS" EXISTS THAN FOR THOSE IN WHICH IT IS ABSENT. HENCE, THE
ACCELERATION IS DUE TO INCREASED SIZE FO THE PRE EXPONENTIAL COEFF.
CAUSED BY CHANGE IN POLARIZABILITY OF THE TRANSITION STATE.
FACILITY: INST. ORG. FIZ. KHIM. IN. ARBUZOVA, KAZAN, USSR.

UNCLASSIFIED

172 016 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--REACTION OF AMIDOPHOSPHITES WITH AMMONIUM SALTS OF ACIDS -U-
AUTHOR--(04)--YELISEYENKOV, V.N., PUDCOVIK, A.N., FATTAKHOV, S.G., SERKINA,
N.A.
COUNTRY OF INFO--USSR
SOURCE--ZH. OBSHCH. KHIM. 1970, 40(2) 498
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--AMINE DERIVATIVE, AMMONIUM SALT, HYDROGEN CHLORIDE, ORGANIC
PHOSPHORUS COMPOUND, TRIETHYLAMINE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1570 STEP NO--UR/0079/70/040/002/0498/0498
CIRC ACCESSION NO--AP0112564
UNCLASSIFIED

272 016 UNCLASSIFIED PROCESSING DATE--02OCT70
CIRC ACCESSION NO--AP0112564
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MIXING 12.4 G P(NET SUB2) SUB3 (I)
AND 8.9 G ET SUB3 N.HCL AT 80-90DEGREES IN VACUO (WATER PUMP) GAVE
53PERCENT (ET SUB2 N) SUB2 PCL, B SUB0.02 60DEGREES, N PRIME20 SUBD
1.4900; SIMILARLY 17.35 G I AND 7.7 G ET SUB2 NH.HCL GAVE ET SUB2 NH AND
61PERCENT (ET SUB2 N) SUB2 PCL. AT 40DEGREES, 12.3 G I AND 10.6 G
ETMEP(S)OH.ET SUB2 NH GAVE 100PERCENT ET SUB2 NH AND 61PERCENT (ETSUB2
N) SUB2 POP(S)MEET, B SUB0.007 82-3DEGREES, D PRIME20 1.0368, N PRIME20
SUBD 1.4890. SIMILARLY, 8.5 G ACOH.ET SUB3 N AND 13.1 G (ET SUB2
N)P-(OBU) SUB2 GAVE A MIXT. CONTG. 6.7 G (BED) SUB2 PHO, 0.9 G (BUD)
SUB2 POAC, AND 3.8 G ACNET SUB2. THUS, REACTION OF P(III) AMIDES WITH
AMINE SALTS IS REVERSIBLE, AND REMOVAL OF THE AMINE AS FORMED MAY BE
USED TO DISPLACE THE EQUIL. IN THE DIRECTION OF FORMATION OF PRODUCTS
SHOWN ABOVE BY REMOVAL OF R SUB2 NH.

UNCLASSIFIED

USSR

UDC: 541.128+546.13

BEL'SKIK, V.YE., YEFREMOVA, M.V., YELISEYENKOV, V.N., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences USSR

"Intramolecular Catalysis by Chlorine in Hydrolysis of Phosphinates and Phosphonates"
Moscow, Izvestiya Akademii Nauk SSSR: Seriya Khimicheskaya, No 3, Mar 70, pp 561-564

Abstract: The authors investigated the kinetics of reactions with water and hydroxyl anions for esters of chloroalkylphosphonic and bis(chloroalkyl)phosphinic acids with various positions of the chlorine atom in the molecule. For esters which have the chlorine atom in the γ -position, an unusual increase in the rate of hydrolysis takes place which may be attributed to the intramolecular effect of the chlorine on the reaction center. The rate of hydrolysis in water can be described by an equation for first-order reactions. The rate constants k were determined from a graphic relationship corresponding to the equation

$$-\log C = 0.434kt + \text{const},$$

where C is the ester concentration. The rate constant for alkaline hydrolysis k_2 was determined from the slope of straight lines corresponding to an equation for second-order reactions

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USSR

BEL'SKIY, V.YE., et al, Izvestiya Akademii Nauk SSSR: Seriya Khimicheskaya, No 3, Mar 70, pp 561-564

$$\frac{2.3}{C_0 - (C_{OH^-})_0} \log \frac{C}{C_{OH^-}} = k_2 t + \text{Const},$$

where C_0 and $(C_{OH^-})_0$ are the initial concentrations, while C and C_{OH^-} are the instantaneous concentrations of ester and hydroxyl ions. The difference between the behavior of the esters in reactions with water and their behavior in the case of hydroxyl anions is apparently due to a change in the reaction center. The effect of chlorine on the reaction center during intramolecular catalysis is discussed. The authors thank I.A. ALEKSANDROVA for furnishing the γ -chloro-propylphosphonic acid ester specimens.

2/2

USSR

UDC: 542.938-661.718.1

BEL'SKIY, V.YE., MOTYGULLIN, G.Z., YELISEYENKOV, V.N., RIZPOLOZHENSKIY, N.I.,
Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of
Sciences USSR

"Hydrolysis of Phosphorus Acid Esters Which Contain the P-H Bond"

Moscow, Izvestiya Akademii Nauk SSSR: Seriya Khimicheskaya, No 3, Mar 70, pp 565-
568

Abstract: Continuing their investigation of the kinetics of hydrolysis of phosphorus acid esters containing the P-H bond, the authors studied hydrolysis of a number of alkyl esters of ethylphosphinous acid of the general formula $(RO)C_2H_5P(O)H$ in water at different temperatures. It was found that the rate constants for hydrolysis decrease with an increase in length and branching of the alkyl radicals. Exceptions to this rule are sec.- and tert.-butyl esters which have a higher rate of hydrolysis due to S_N1 splintering at the carbon atom in the alcohol group. It is probable that the P-O bond is broken in the other esters by a mechanism analogous to that observed in dialkylphosphites.

1/1

-45-

USSR

UDC: 547.26'118

YELISEYENOKOV, V. N., PUDOVIK, A. N., FATTAKHOV, S. G., and SERKINA, N. A., Kazan, Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences USSR

"Reaction of Amidophosphites With Ammonium Salts of Acids"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 2, Feb 70, p 498

Abstract: The authors report finding that reactions of amidophosphites with amine hydrochlorides and salts of carboxylic and phosphorus-containing acids are reversible and proceed according to the equation



B = amine; X = Hlg, Ac, P(O)O and P(S)O; R = Alk.

The authors regard the results as important for elucidating the mechanism involved in the phosphorylation of amines and alcohols with amidophosphites, and the question will be considered in a special article.

1/1

USSR

UDC 542.91:547.1'118

YELISEYENKOVA, R. M., RIZPOLOZHENSKIY, N. I., and AKAMSIN, V. D., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Kazan' Branch of the Academy of Sciences USSR

"Esters of the Trivalent Phosphorus Thioacids. Communication 15. Reaction of Thiophosphonous Acid Chlorides and Thiophosphorous Acid Dichlorides With Propargyl Alcohol and Propargyl Mercaptan"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 12, Dec 73, pp 2755-2758

Abstract: Reaction of S-alkylalkyl(aryl)chlorothiophosphonites with propargyl alcohol or propargyl mercaptan in presence of a base leads to the formation of S-alkylalkyl(aryl)allenylthio(dithio)phosphinates which heated with sodium alkoxide are converted to S-alkylalkyl(aryl)propynyl-1-thiophosphinates. Alkyl(aryl)dichlorothiophosphites react with propargyl alcohol forming S-alkyl(aryl)allenylchlorothiophosphonates, while the reaction of ethyldichlorophosphine with propargylmercaptan leads to the formation of ethylallenylchlorothione phosphinate.

1/1

USSR

UDC 542.91:547.1'118

RIZPOLOZHENSKIY, N. I., and YELISEYENKOVA, R. M., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Kazan' Branch of the Academy of Sciences USSR

"Esters of the Trivalent Phosphorus Thioacids. 14 Communication. Reaction of Thiophosphonous Acid Chlorides With β -Ketoalcohols in Presence of a Base"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 12, Dec 73, pp 2749-2755

Abstract: Reaction of S-alkylethyl(phenyl)chlorothiophosphonites with β -ketoalcohols in presence of triethylamine leads to the formation of O- γ -ketoalkyl-S-alkylethyl(phenyl)thiophosphinates, colorless liquids soluble in organic solvents, easily oxidizable in air. O- γ -ketoalkyl-S-alkylethyldithiophosphonates obtained by addition of sulfur could only be separated on a molecular film distillation column. O- γ -ketoalkyl-S-alkylethyl(phenyl)thiophosphonites isomerize easily into S-alkyl- γ -ketoalkylethyl(phenyl)thiophosphinates.

1/1

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USSR

UDC 542.91:547'1'118

AKAMSIV, V. D., YELISEYENKOVA, R. M., and KIZPOLOZHENSKIY, N. I., Institute of Organic and Physical Chemistry imeni A. Ye. Arbutova, Academy of Sciences USSR

"Esters of the Thioacids of Trivalent Phosphorus. Part 12. Esters of Ethyl(Phenyl)- β -cyanalkylthiophosphinic and Ethyl(Phenyl)- α -ketoalkylthiophosphinic Acids"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, 1, Jan 73, pp 80-84

Abstract: A study was made of the reaction of acyl chloride esters of thio-phosphonic acids (I) with α, β -unsaturated nitriles of acrylic and methacrylic acids in the presence of thioacetic acid, acetic acid, and water result in the formation of the esters of the alkyl(aryl)- β -cyanalkylthiophosphinic acids (II); but with thioacetic acid as the proton donor, the products are the esters of the β -cyanalkyldithiophosphinic acids. The reaction of (I) with α, β -unsaturated ketones and acrylonitriles in the presence of water resulted in the formation of the esters of ethyl(phenyl)- α -ketoalkylthiophosphinic acid or of (II).

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USSR

UDC 542.91 + 661.718.1

RIZPOLCZHENSKIY, N. I., AKANSIN, V. D., and YELISEYENKOVA, R. M.,
Institute of Organic and Physical Chemistry imeni A. Ye. Arbusov,
Acad. Sc. USSR

"Reaction of Dihalophosphines With Allylmercaptan"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 1,
Jan 71, p 198

Abstract: Alkyldihalophosphines react with allylmercaptan yielding allylalkylthiophosphinic acid halides. To 33 g ethyldibromophosphine in 30 ml CH_2Cl_2 11.1 g allylmercaptan was added dropwise in an inert atmosphere, followed by 3 hr under reflux. After distillation of the reaction mixture allylthiophosphinic acid bromide was obtained, b.p. 122-123°/12 mm, n_D^{20} 1.5798, d_4^{20} 1.4196. Analogously allylchloromethylthiophosphinic acid chloride was obtained, b.p. 112-114°/12 mm, n_D^{20} 1.5700, d_4^{20} 1.3267.

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1/2 026 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--(FUTURE OF PLANETARY EXPLORATION). DISTANT PLANETS AWAIT US -U-
AUTHOR--YELISEYEV, A.
COUNTRY OF INFO--USSR
SOURCE--ALMA ATA, KAZAKHSTANSKAYA PRAVDA, 12 APRIL 1970, P 3
DATE PUBLISHED--12APR70
SUBJECT AREAS--SPACE TECHNOLOGY, ASTRONOMY, ASTROPHYSICS
TOPIC TAGS--MARS PLANET, MARS TRAJECTORY, SPACECRAFT LANDING, SPACE PROBE,
SATURN PLANET, URANUS PLANET, NEPTUNE PLANET, PLUTO PLANET, JUPITER
PLANET
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1994/0506 STEP NO--UR/9004/70/000/000/0003/0003
CIRC ACCESSION NO--AN0114760
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AN0114760

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE STUDY OF MARS FROM FLY BY TRAJECTORIES, FROM CIRCUMPLANETARY ORBIT AND THEN USING VEHICLES WHICH LAND ON ITS SURFACE WILL PROVIDE MAN WITH NECESSARY INFORMATION FOR PREPARING FOR MANNED FLIGHTS. MANNED SHIPS WILL ALSO BE SENT TO OTHER PLANETS. INVESTIGATIONS OF THE PLANETS WILL BE DIRECTED PRIMARILY TO ATTEMPTS TO DETECT EXTRATERRESTRIAL LIFE. THE STUDY OF ANY FORMS OF BIOLOGICAL ACTIVITY WILL MAKE IT POSSIBLE TO OBTAIN EXCEPTIONALLY IMPORTANT INFORMATION FOR UNDERSTANDING THE PROCESS OF THE GENESIS OF LIFE IN GENERAL. EXPLORATION OF THE PLANETS WILL PURSUE OTHER GOALS AS WELL: AN EFFORT WILL BE MADE TO LEARN THE ORIGIN AND EVOLUTION OF THE SOLAR SYSTEM. THIS WILL PROBABLY BECOME POSSIBLE FROM A COMPARISON OF THE PROPERTIES OF SPACE NEAR THE PLANETS, THEIR ATMOSPHERES AND SURFACE CHARACTERISTICS. LATE IN THE 1970'S THE RELATIVE POSITIONS OF JUPITER, SATURN, URANUS, NEPTUNE AND PLUTO WILL BE SUCH THAT A SINGLE SPACE PROBE WILL BE ABLE TO FLY NEAR SEVERAL PLANETS AND RELAY VALUABLE INFORMATION TO EARTH. THIS FAVORABLE ARRANGEMENT OF THE PLANETS IS A RARE PHENOMENON WHICH MUST BE EXPLOITED. MUCH STUDY OF THE MOON IS REQUIRED.

UNCLASSIFIED

1/2 031 UNCLASSIFIED PROCESSING DATE--02JCT70
TITLE--SPACE MARATHON -U-
AUTHOR-(03)-PARIN, V., PLTROV, B., YELISEYEV, A.
COUNTRY OF INFO--USSR
SOURCE--KNIZHNOYE OBOZRENIYE, JULY 3, 1970, NR 27
DATE PUBLISHED--03JUL70
SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES, SPACE TECHNOLOGY
TOPIC TAGS--MANNED SPACECRAFT, S AND T PUBLICATION/(U)SOYUZ 9 MANNED
SPACECRAFT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1991/1172 STEP NO--UR/0567/70/000/027/0000/0000
CIRC ACCESSION NO--AN0110825
UNCLASSIFIED

2/2 031

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AN0110825

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SPACE EXPLOITS OF THE SOVIET SOYUZ 9 WILL BE TOLD IN THE "KOSMICHESKIY MARAFON" (SPACE MARATHON), A COLLECTION OF ARTICLES AND PRESS RELEASES WHICH WILL BE PUBLISHED BY THE "IZVESTIYA" PUBLISHING HOUSE.

Acc. Nr.: AN0047730

Ref. Code: UR9002

AUTHORS-- SHATALOV, VLADIMIR, AND YELISEYEV, ALEKSEY, ASTRO-
NAUTS OF THE SOVIET UNION

TITLE-- THE FUTURE OF ASTRONAUTICS

NEWSPAPER-- GUDOK, APRIL 12, 1970, P 3, COLS 1-7

ABSTRACT-- IN AN INTERVIEW GRANTED TO A CORRESPONDENT OF THE
NEWS AGENCY, SHATALOV OUTLINED THE FOLLOWING TRENDS IN SPACE EXPLOR-
ATIONS--

- /1/ PRACTICAL USES OF UNMANNED SPACE VEHICLES IN THE INTERESTS OF NATIONAL ECONOMY
- /2/ USING SPACE VEHICLES FOR THE SXPLOATION OF THE NEAR-THE-EARTH AND NEAR-THE-SUN SPACE, PLANETS OF THE SOLAR SYSTEM, ETC.

Reel/Frame
19791335

12

AN0047730

/3/ MANNED ORBITAL FLIGHTS AND THE DEVELOPMENT OF LONG-TERM ORBITAL STATIONS AND BASES FOR LONG-DISTANCE SPACE FLIGHTS

/4/ MANNED FLIGHTS TO STUDY THE MOON AND PLANETS.

SHATALOV ALSO GIVES A DESCRIPTION OF A SPACE STATION - "A BIT OF FANTASY", USING HIS WORDS.

YELISEYEV AGREED WITH SHATALOV'S PROGNOSTICATIONS EXCEPT ON THE "FANTASY" OF THE SPACE STATIONS. YELISEYEV THINKS THAT SPACE STATIONS ARE QUITE WITHIN THE REACH.

2/2

19791336

USSR

UDC: 621.396.677

VERSHKOV, M. V., YELISEYEV, A. A., KURILOV, I. N.

"A Log-Periodic Dipole Antenna"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obratzsy, Tovarnyye Znaki,
No 12, Apr 72, Author's Certificate No 294543, Division H, filed 18 Oct 68,
published 30 Mar 72, p 242

Translation: This Author's Certificate introduces a log-periodic dipole antenna made up of two half-structures. As a distinguishing feature of the patent, the design is simplified by connecting a short-circuited line with an arm length of $(0.10-0.15)\lambda$ in the distribution line at a distance of $(0.20-0.25)\lambda$ from the feed points, where λ is the average wavelength of the band.

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YELISEYEV, B. V.

TECHNICAL TRANSLATION

PTC-ET-21-232-72

ENGLISH TITLE: Thermoelectric Energy Converters

POSITION TITLE: Technicheskoye Preobrazovaniye Energii

AUTHOR: B. V. Yeliseyev, A. P. Pyatitskiy, D. I. Sereyev

SOURCE: Akademiya, Moscow

Translated for PSTC by AC91

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