

USSR

KOVALENKO, V. M., Izv. SO AN SSSR, Ser. Tekhn. Nauk, vyp. 3, Oct 71, pp 22-27

The experimental values of the average heat transfer coefficient agree satisfactorily with the calculated values. In general, the experiments showed that when measurements are being made in a turbulent boundary layer, simultaneous measurement of the friction drag and heat transfer coefficients is feasible and advisable. The results of systematic experiments can confirm the suitability of existing semi-empirical methods of calculating the supersonic and hypersonic turbulent boundary layer on solids of revolution. Six figures, two tables, bibliography of two titles.

2/2

USSR

UDC 615.372:576.858.25/.036.8

KOVALENKO, V. N., Chair of Nervous Diseases, Kemerovo Medical Institute,  
Kemerovo

"The Clinical Effectiveness of Inactivated Cultural Vaccine Against Tick-Borne Encephalitis and Criteria for Its Evaluation"

Moscow, Zhurnal Nevropatologii i Psikhatrii imeni S. S. Korsakova, Vol 71,  
no 7, 1971, pp 1,006-1,011

Abstract: The clinical manifestations of various forms of tickborne encephalitis and the outcome of the disease were studied on 210 patients (24.4%) immunized with inactivated cultural vaccine and 652 patients (75.6%) who had not been immunized. The ratio of persons immunized with this vaccine among those infected with the disease in Kemerovskaya Oblast was 24.4% vs. an average ratio of 33% of immunized persons; this indicated the superior prophylactic effect of the vaccine. Only persons particularly exposed to infection were immunized. Paralytic forms comprised 35.4% of cases for the immunized vs. 64.6% for nonimmunized patients. The residual manifestations were milder in patients with paralytic forms who had been immunized. The two-wave course of the disease was encountered more rarely in immunized than non-immunized patients. The mortality was 0.5 and 2.7% for immunized and

1/2

USSR

KOVALENKO, V. N., Zhurnal Nevropatologii i Psikhiatrii imeni S. S. Korsakova,  
Vol 71, No 7, 1971, pp 1,006-1,011

nonimmunized patients, respectively. The results indicated that the vaccine was effective in preventing local paralytic forms. On the basis of the almost identical frequencies of meningeal and focal forms of the disease in immunized and nonimmunized patients (64.3 and 67.7%, respectively), one may conclude that in immunized patients the protective effect of the vaccine was chiefly manifested not on the humoral level (prevention of the disease), but on the tissue level (prevention of paralytic forms).

2/2

- 45 -

USSR

UDC 616.988.25-022.395.42-05:616.831.9-002

KOVALENKO, V. N., Chair of Nervous Diseases, Kemerovo Medical Institute

"Characteristics of Meningitis in Tickborne Encephalitis"

Moscow, Klinicheskaya Meditsina, Vol 49, No 2, Feb 71, pp 113-117

Abstract: Seronegative meningitis cases, which were recorded during tickborne encephalitis, were clinically characterized during the last seven years. The meningeal form of tickborne encephalitis was diagnosed on the basis of epidemiological data. Contact with ticks was observed in 95% of the cases and seasonal fluctuation and contact with forests in 100% of the cases. In all patients with the meningeal syndrome, pleocytosis (from 10 ticks and more) was discovered. The meningeal form of encephalitis was confirmed in 70.7% of patients by serological and virological studies. In its clinical manifestations, tickborne, seronegative meningitis is in most cases milder in its meningeal syndrome than is the meningeal form of tickborne encephalitis; also, its acute period is shorter (not exceeding five days). Meningeal symptoms were observed for 5-14 days in tickborne, seronegative meningitis cases, compared to 10-28 days in the meningeal form of tickborne encephalitis. No two peak course was observed in the group of patients afflicted with seronegative meningitis, whereas in 40% of the patients afflicted with the meningeal form of tickborne encephalitis, such a course was observed. A group

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USSR

KOVALENKO, V. N., Klinicheskaya Meditsina, Vol 49, No 2, Feb 71, pp 113-117

of polyseasonal, serous meningitis cases with no epidemiological evidence of tickborne encephalitis was also studied and compared with seronegative meningitis cases. Distinct differences in epidemiological characteristics were observed. It is possible that some patients in the season of tickborne encephalitis carry serous meningitis, the development of which happens to coincide with the tick sting.

2/2

47

USSR

UDC 616.988.25-06:616.833.17-022-031.67

KOVALENKO, V. N., Chair of Nervous Diseases, Kemerovo Medical Institute

"Relationship Between Isolated Ascending Neuritis of the Facial Nerve and Tickborne Encephalitis"

Moscow, Zhurnal Nevropatologii i Psikhatrii imeni S. S. Korsakov, Vol 70, No 8, 1970, pp 1,134-1,138

Abstract: A study was made of 28 patients who exhibited unilateral injury of the facial nerve after having been bitten by ticks. In the seven cases in which tickborne encephalitis was serologically confirmed, the polyencephalitic form prevailed and the nuclei of many cranial nerves were also affected. There was no relationship between the location of the tick bite and the side upon which the facial nerve was affected. In the 21 cases in which no tickborne encephalitis was detected serologically, the facial nerve was affected in a different manner and the location of the tick bite determined the side affected. The results indicate that there is no etiological link between isolated facial neuritis and tickborne encephalitis.

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- 64 -

1/2 023 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--THE CLINICAL PICTURE AND DIFFERENTIAL DIAGNOSIS OF SPINAL STROKES  
-U-  
AUTHOR--(03)-SUBBOTIN, A.V., KOVALENKO, V.N., APASOVA, N.A.  
COUNTRY OF INFO--USSR  
SOURCE--ZHURNAL NEVROPATOLOGII I PSIKHIATRII IMENI S. S. KORSAKOVA, 1970,  
VOL 70, NR 6, PP 824-828  
DATE PUBLISHED--70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--SPINAL CORD, BLOOD CIRCULATION, HEMORRHAGE, ATHEROSCLEROSIS,  
HYPERTENSION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3001/0911 STEP NO--UR/0246/70/070/006/0824/0828  
CIRC ACCESSION NO--AP0126570

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--30UCT70

CIRC ACCESSION NO--AP0126570

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE STUDY CONCERNS A CLINICAL ANALYSIS OF 20 PATIENTS WITH DISORDERS OF SPINAL CIRCULATION. THE DISORDER MORE FREQUENTLY OCCURS IN PEOPLE OLDER THAN 40, AMONG THE ETIOLOGICAL FACTORS A BIG SIGNIFICANCE IS ATTACHED TO THE SIMULTANEOUS INFLUENCE OF SEVERAL FACTORS (SPINAL OSTEUCHONDROSIS, ATHEROSCLEROSIS, HYPERTENSIVE DISEASE, MYXEDEMA, LIGHT SPINAL TRAUMAS), ONE OF WHICH IS THE MAIN, I.E. THE BACKGROUND ON WHICH THE DISORDER APPEARS. THE OTHER FACTORS MAY SERVE AS PRECIPITATING ONES IN CERTAIN PATHOLOGICAL CONDITIONS. THE AUTHORS STRESS THE POSSIBILITY OF DEVELOPING A SPINAL STROKE WITH THE SYNDROME OF BROWN SEQUARD. THE DIAGNOSIS OF DISTURBED SPINAL CIRCULATION IS A VERY RESPONSIBLE ONE AND REQUIRES A THOROUGH CLINICAL ANALYSIS OF EACH CASE WITH THE USE OF SPECIAL METHODS OF DIAGNOSIS AND FOLLOW UP STUDIES. FACILITY: KEMEROVSKOGO MEDITSINSKOGO INSTITUTA.



USSR

UDC: 621.316.933

KOVALENKO, V. P., RODICHKIN, V. A., SMIRNOV, V. G., TIMONIN, A. M.

"A High-Current Spark Discharger"

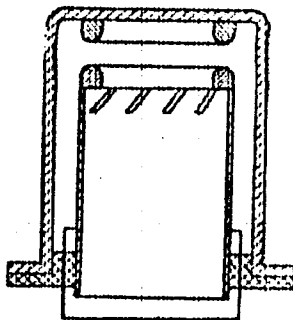
Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Otraztsy, Tovarnyye Znaki,  
No 7, Mar 72, Author's Certificate No 329614, Division E, filed 30 Jun 70,  
published 9 Feb 72, p 212

Translation: This Author's Certificate introduces a high-current spark dis-  
charger which contains ring electrodes and a coaxial cylindrical channel for  
feeding current to the electrodes. As a distinguishing feature of the patent,  
the durability of the discharger is extended by cutting slots at an angle to  
the generatrix through the coaxial current conducting cylinder at the line  
of connection to the ring electrode.

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USSR

KOVALENKO, V. P. et al., USSR Author's Certificate No 329614



2/2

USSR

UDC 518(02)

ILYUKHIN, A. G., and KOVALENKO, V. P.

"Numerical Methods of Processing Information in Studies on Dynamic Systems"

Chislennyye metody obrabotki informatsii pri issledovanii dinamicheskikh sistem (cf. English title above), Kiev, "Naukova dumka," 1971, 176 pp, ill., 81 kopecks (from Referativnyy Zhurnal - Matematika, No 8, Aug 71, Abstract No 8B782 K)

Translation: Given the advances in modern computers, the fields of numerical analysis used in engineering practice in electrical and radio engineering as well as in automatic control theory are outlined. Five chapters of the monograph dealt with the method of least squares (recommendations are given on approximating nonpolynomial type functions); analysis of periodic and quasi-periodic processes (problems of constructing trigonometric polynomials of optimum approximation, convergence of approximation by trigonometric sums, smoothing of approximated functions, and so on are discussed); integral transformations (Fourier and Laplace); orthogonal systems of functions (recommendations are given on using a system of orthogonal harmonic functions and also systems of Walsh and Haar systems); and an introduction is given to the computation of sums (methods of summing series). 76 bibliographic references.  
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USSR

UDC 550.385.41

KOVALENKO, V. S. and TUZOVA, S. I., Siberian Physicotechnical Institute imeni  
~~V. D. Kuznetsov~~, Tomsk University

"Relaxation of High-Energy Protons in the Magnetosphere of the Earth Acted on  
 by Alfvén Waves"

Tomsk, Izvestiya VUZ, Fizika, No 5, 71, pp 65-71

Abstract: The authors cite the basic results from a quantitative investigation of the interaction between protons and Alfvén waves on the basis of a numerical solution to the equation

$$\begin{aligned}
 p^2 \sin \alpha \frac{\partial f}{\partial t} = & \frac{\partial}{\partial x} (p^2 \sin \alpha \langle \Delta x \rangle f) + \frac{\partial}{\partial p} (p^2 \sin \alpha \langle \Delta p \rangle f) + \\
 + \frac{1}{2} \frac{\partial^2}{\partial p^2} (p^2 \sin \alpha \langle (\Delta p)^2 \rangle f) + & \frac{\partial^2}{\partial p \partial x} (p^2 \sin \alpha \langle \Delta p \Delta x \rangle f) + \\
 + \frac{1}{2} \frac{\partial^2}{\partial x^2} (p^2 \sin \alpha \langle (\Delta x)^2 \rangle f), &
 \end{aligned}$$

1/2

USSR

KOVALENKO, V. S., et al, Izvestiya VUZ, Fizika, No 5, 71, pp 65-71

where the quantity  $\langle N \rangle = \lim_{t \rightarrow \infty} \frac{N}{t}$ . The solution is determined substantially by the spectrum of the alfvén waves, and since this is unknown in the magnetosphere, the usually determined approximations must be used. The authors discuss the initial distribution and the boundary conditions used to solve the problem. Using schematics, the authors illustrate and discuss the pitch angles for values of  $\alpha_0$ ,  $L$ , and  $\beta$ . The behavior of the proton distribution function versus the magnetic shell parameter is illustrated on several of the schematics. Finally, the authors estimate the influence of alfvén waves on the lifetime of protons in the geomagnetic trap by finding the total number of particles as a function of time. One disadvantage of the suggested mechanism for particle leakage from the trap is that it does not fall within the theory of an external source. This article contains seven figures and a bibliography of five titles.

2/2

- 69 -

1/2 017 UNCLASSIFIED PROCESSING DATE--11SEP70  
TITLE--EFFECT OF OXYGEN BLOWING OF AN OPEN HEARTH BATH ON THE QUALITY OF  
LOW ALLOY STEEL -U-  
AUTHOR--LASHCHEV, B.YA., DVORYANINOV, V.A., MEDZHIBOZHSKIY, M.YA.,  
KURAPIN, B.S., KOVALENKO, V.S.  
COUNTRY OF INFO--USSR  
SOURCE--STAL' 1970, 30(1), 20-5  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR  
TOPIC TAGS--OPEN HEARTH FURNACE, OXYGEN, LOW ALLOY STEEL  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1987/0160 STEP NO--UR/0133/70/030/001/0020/0025  
CIRC ACCESSION NO--AP0103839  
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0103839

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COMPARISON HEATS WERE MADE IN A 300 TON GAS FIRED OPEN HEARTH FURNACE BY BLOWING THE BATH WITH O, OR BY ADDING THE LATTER TO THE FLAME, BY VARYING BLOWING RATE AND THE TIME BETWEEN THE END OF BLOWING AND DEOXID. INCREASING BLOWING RATE. 6.7-11.7 M PRIME3-TON-HR AND SHORTENING TIME BEFORE DEOXID. FROM 55 TO 7-15 MIN LOWERED H CONTENT, AND THAT OF N FROM 0.0043 TO 0.0038, PURITY OF O HAVING NO EFFECT ON THIS REDN. EXCESS O IN THE METAL OVER THE EQUIL. IS NOT AFFECTED BY THE MANNER OF O INTRODUCTION WHEN ITS C IS GREATER THAN 0.4PERCENT, BUT IT INCREASES PROPORTIONALLY TO THE BLOWING RATE WHEN C DROPS TO 0.15-0.20PERCENT. NONMETALLIC CONTENT AND MECH. PROPERTIES ARE UNAFFECTED BY THE WAY IN WHICH O IS INTRODUCED IN THE METAL.

UNCLASSIFIED

USSR

UDC: 53.077.08+53.001.5

ZAKHAROV, O. V., KOVALENKO, V. V., KOLOBASHKIN, V. M.

"Calculating the Gamma Radiation Dose Rate of a Gas Jet Propagating in the Ground Layer of the Atmosphere"

V sb. Vopr. dozimetrii i zashchity ot izluch. (Problems of Dosimetry and Radiation Shielding -- collection of works), vyp. 12, Moscow, Atomizdat, 1971, pp 94-97 (from RSh-Fizika, No 4, Apr 72, Abstract No 1A696)

Translation: The gamma radiation dose rate of a gas jet is calculated using data on distribution of the concentration of activity in the ground layer of the atmosphere. The results of the computation are presented in the form of the reduced dose rate created by the gamma radiation of a jet escaping from a source with a rate of 1 curie/s at a wind speed of 1 m/s for a long-lived isotope with  $K_\gamma = 1 \text{ r}\cdot\text{m}^2/\text{hr}\cdot\text{curie}$ . The reduced dose rate depends weakly on the gamma radiation energy: in the energy range from 0.1 to 2.5 MeV it changes by  $\pm 30\%$  from the value at  $E = 1 \text{ MeV}$ . Accounting for the radioactive decay of isotopes with  $T_{1/2} \geq 20 \text{ min}$  gives a correction to the dose rate calculated for long-lived isotopes of no more than 8%. The position of the maximum for the ground-layer dose rate in the case of

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USSR

ZAKHAROV, O. V. et al., Voпр. dozimetrii i zashchity ot izluch., vyp. 12, Moscow, Atomizdat, 1971, pp 94-97

a source raised above the surface does not coincide with the position of the maximum for the ground-layer concentration of an isotope for all investigated gamma radiation energies and meteorological parameters. The maximum for the ground-level concentration of gases is located much further from the source than the maximum for the ground-level dose rate.

A. A. Smetanin.

2/2

USSR

UDC 539.21:536.42

KOVALENKO, V. N., POLBOYA, A. P., and SEMENOV, A. I.

"Effect of Crystallization Conditions on the Kinetics of Disintegration of Supersaturated Solid Solutions"

V sb. Kristallizatsiya i faz. prevrashcheniya (Crystallization and Phase Transformations--collection of works) Linsk, "Nauka i Tekhn." 1971, pp 164-171 (from RZh-Fizika, No. 9, 1971, Abstract No. 9E366)

Translation: An x-ray investigation was made of the effect of the temperature of the tempering process from the fluid state, and the cooling rate, on the composition and the kinetics of disintegration of the solid solutions of the following alloys: 1) Al, 3% Mn; 2) Al, 3.1% W; 3) Al, 2.8% Cr; 4) Al, 3.5% Mn, 3% W; 5) Al, 3% Cr, 3% W; 6) Al, 4% Cu, 3% Mn; 7) Al, 5% Cu, 1.2% Cr. Quickly crystallized films were obtained by the Davets method. The composition of the solid solution was determined micrographically. In crystallization on copper and steel substrates of alloys 1-4, supersaturated solid solutions with the composition of

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USSR

KOVALENKO, V. V. et al, Kristallizatsiya i faz. prevrashcheniya, Minsk, "Nauka i Tekhn." 1971, pp 164-171

the original fluid were formed independent of the tempering temperature (850-980° C). However, their temperature stability depends on the crystallization conditions: a reduction in the cooling rate and the tempering temperature leads to an increase in the temperature at the beginning of the disintegration and an increase in the commencement time and duration time of the disintegration. In the crystallization of the alloys 6 and 7, the Mn and Cr are completely fixed in the solid solution, while the Cu content depends on the crystallization conditions. The low-temperature tempering is accelerated with a reduction in the melting point and an increase in the thermal conductivity of the substrate. With an increase in the annealing temperature to 350° C (alloy 6) the disintegration of the solid solution is accelerated with an increase in the tempering temperature of the melt. Author's abstract.

2/2

- 89 -

Acc. Nr:

AP0043740

Abstracting Service <sup>K</sup> 5/70  
INTERNAT. AEROSPACE ABST.

Ref. Code:

LLR 0370

A70-23786 # Phase diagram of rapidly crystallized Al-Cu-Mn alloys (Diagramma sostoiiani bystro zakristallizovaniykh splavov Al-Cu-Mn). A. F. Polesia and V. V. Novalenko, *Akademiya Nauk SSSR, Izvestiya, Metallurgiya*, Jan.-Feb. 1970, p. 173-177, 11 refs. In Russian.

Study of the structure of rapidly crystallized alloys of the Al-Cu-Mn system, showing that a high rate of cooling of the melt during crystallization leads to the formation of ternary solid solutions supersaturated with manganese and copper. It is found that during rapid crystallization of the melt the formation of a ternary phase T-Al<sub>12</sub>Mn<sub>2</sub>Cu in the Al-Cu-Mn system is suppressed. Phase diagrams of supersaturated ternary solid solutions are plotted for two cooling rates (1000 and 10,000 deg/sec). A nonequilibrium phase diagram of rapidly crystallized alloys is also plotted, showing a broad region of a homogeneous alpha solid solution, two-phase alpha + theta and alpha + A16Mn regions, and a ternary alpha + theta + A16Mn region.

A.B.K.

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REEL/FRAME  
19770146

18

Veterinary Medicine

USSR

UDC 616-084+619.9

KOVALENKO, YA. R., Academic, All-Union Order of Lenin Institute of Experimental Veterinary Medicine (VIEV)

"Ways of Increasing the Effectiveness of Counter-Epizootic Measures"

Moscow, Vestnik Sel'skokhozyastvennoy Nauki, No 9 (213), Sep 73, pp 48-59

Abstract: Kovalenko studies infectious diseases in cattle, pigs, and horses, and attempts to combat these diseases with vaccinations. It is necessary to know the nature of the agent of infection, the mechanism of transferring the agent of infection, the preservation of the agent of infection outside the animal, and the means of creating immunity in the animals to eradicate these diseases.

Large-scale animal breeding is often composed of animals brought together from many areas to one central fattening area, and it often results in respiratory and gastro-intestinal diseases as a result of poor lodgings. It is necessary to quarantine animals and give them medical checks before they enter fattening areas. Weakened animals are subject to infectious diseases and can infect others. Factors of nature, soil, and climate influence the microflora and microfauna of the agents of infection and the onset of illness. Temperature extremes, severe rains, high humidity and physical fatigue also play a role.

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USSR

KOVALENKO, YA. R., Vestnik Sel'skokhozyastvennoy Nauki, No 9 (213), Sep 73, pp 48-59

Anthrax has in the past caused great cattle-breeding losses, and the USSR yearly vaccinates 185-200 million animals. Vaccination by itself is not the answer because the infectious agent can remain in the soil up to 10 years when diseased animals are buried improperly. Additional methods are needed for burying animals and for excavations and plowing, because even vaccinated animals, if their resistance is low, can get the disease.

Brucellosis is a complicated disease and is countered by a complex of economic and other measures. Its basic causes are unsatisfactory isolation of sick animals and bad sanitation. Farms need better lodgings for isolation. Tuberculosis is difficult to counteract because the pathogen can live for years outside the animal; thus sick animals and objects around them are both sources of infection. Incidence has declined sharply over the years and at the end of 1972 in the RSFSR 0.53% of the cattle were infected with tuberculosis. Classical hog cholera is the potentially most dangerous infection of pigs. New vaccines have led to a sharp decrease of incidence, with 0.03-0.04% of the animals infected in 1972. Ringworm accounts for 40% of all infectious diseases of cattle, but a vaccine using the intramuscular method of introduction is 98-99% effective.

2/2

- 84 -

Veterinary Medicine

USSR

UKC 636+576.8.094.29

KOVALENKO, Ya. R., SIDOROV, M. A., FESENKO, I. D., FEDEXOV, Yu. N.

"Reactogenic and Immunogenic Properties of Cholera Virus Vaccine from the K Strain for Hogs Kept at High Ambient Temperature"

Moscow, Sel'skokhozyaystvennaya Biologiya, Vol 7, No 5, 1972, pp 759-762

Abstract: A study was made of the reactogenic and immunogenic properties of the cholera virus vaccine from the K strain for hogs kept at high ambient temperatures for the period of the adaptive and productive phases of immunogenesis. Under the conditions of high temperatures and humidity, gilts exhibit a standard stress reaction. The live virus vaccine from the K strain injected in these gilts causes a severe postvaccinal reaction, and some of them become sick and die exhibiting clinical and pathoanatomical symptoms characteristic of cholera. A stressed immunity develops in the gilts injected with the live virus vaccine by the fifth day.

A total of three experiments were performed over the course of 3 years on 92 gilts with a live weight from 22 to 45 kg. One group of pigs was kept under the customary conditions of the hoghouse (a temperature of 16-22°, a relative humidity of 75-85%, air movement at 0.1 m/sec, a carbon dioxide gas content of 0.22-0.23%, and an oxygen content of 20.8-20.85%); another group  
1/3

USSR

KOVALENKO, Ya. R., et al., Sel'skokhozyaystvennaya Biologiya, Vol 1, No 5, 1972, pp 759-762

of the same age which had previously been kept under the same conditions was moved to the climate chamber 3 days before vaccination and for 7 days after injection of the vaccine they were kept in it 8 hours a day and then in the hothouse. In the climate chamber at a level of 30 cm from the floor the temperature was maintained at 30-32°C with air circulation of 0.15 m/sec and a relative humidity of 75-90%. At night when the heaters were shut down the temperature dropped to 22-25°C for 5 hours, the relative humidity reached 95-100%, and the carbon dioxide gas concentration in the daytime did not exceed 0.25% and at night 0.32% with an oxygen content of 20.41 to 20.71%. Comparative data are tabulated for the different groups of gilts. As a result of the stressed state arising from the increased temperature and humidity, the phagocytic activity of the blood neutrophils of the pigs dropped, the synthesis of specific globulins was suppressed, and the overall resistance of the organism was lowered. Against this background, the reactogenic property of the live virus vaccine from the lapinized K strain is intensified, and individual series of this vaccine caused postvaccinal cholera and death in the animals. The intensified proliferation of the cells in the lymphatic series with intense synthesis of ribonucleic acid caused by the high temperatures insures rapid

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USSR

KOVALENKO, Ya. R., et al., Sel'skokhozyaystvennaya Biologiya, Vol 1, No 5, 1972, pp 759-762

penetration and reproduction of the lapinized cholera virus in the organism of the gilts. This promotes the manifestation of the reactogenic property and the creation of a stressed immunity.

3/3

USSR

KOVALENKO, YA. R., Editor, Professor, Doctor of Veterinary Sciences, Academician,  
All-Union Academy of Agricultural Sciences

Trudy Vsesoyuznogo Instituta Eksperimental'noy Veterinarii, Aktual'nyye Voprosy  
Veterinarnoy Protifologii (Works of the All-Union Institute of Experimental  
Veterinary Timely Problems in Veterinary Protizology), Moscow, "Profizdat,"  
Vol 38, 1970, 328 pp

Translation: Table of Contents:

Foreward

Markov, A. A., and Abramov, I. V., "Results of 20 Years of Observing Repeated Development Cycles of Babesia ovis in 44 Generations of Phipicephalus bursa"	3
Markov, A. A., and D'yakonov, L. P., "Results of Studying Ways that sheep Blood Parasites Circulate in Warm-Blooded and Arthropod Hosts"	5
D'Yakonov, L. P., "Study of Development of Babesia ovis (Babes, 1892) ub Ticks and a Vertebrate Host"	15
Petunin, F. A., and Kozin, N. P., "Adaptation of Piroplasma to Sheep and Goats"	27
Stepanova, N. I., and D'Yakonov, L. P., "Experiments in Detecting the Possibility of Development of Babesia ovis in vitro from the Organs of Phipicephalus bursa Ticks"	36
	41

1/8

USSR

KOVALENKO, YA. R., Works of the All-Union Institute of Experimental Veterinary Science Timely Problems in Veterinary Protizology, Moscor, "Profizdat," Vol 38, 1970, 328 pp

Zablotskiy, V. T. "Method of Reproduction of Schizonts of Th. Annulata in a Culture of Cattle Cells	44
Zablotskiy, V. T., "Development of Th. Annulata Schizonts in a Culture of Cattle Blood Leucocytes	50
Zablotskiy, V. T., "Joint in vitro Culturing of Cattle Lymph Cells and Chick Fibroblasts"	58
Abramov, I. V., Zablotskiy, V. T., and Kazakov, N. A. "Studying the Effect of Low Temperature (Minus 70°C) on the Biological Properties of Th. Annulata"	64
Barannikov, V. D. "The Effect of Ionizing Radiation on the Pathogen of Cattle Theileriosis in Ticks"	70
Barannikov, V. D., "Using X-Rays to Reduce the Virulence of Th. Annulata Dschumkowsky et Luhs, 1904"	73
Stepanova, N. I., "The Effect of Ionizing Radiation on the Antigenic Properties of Th. Annulata"	78
Barannikov, V. D., "Sensitivity of the Pathogen of Dog Piroplasmosis to Radiation"	82

2/8

- 103 -

USSR

"

KOVALENKO, YA. R., Works of the All-Union Institute of Experimental Veterinary Science Timely Problems in Veterinary Protozoology, Moscow, "Profizdat," Vol 38, 1970, 328 pp

Polyakov, V. F., and Barannikov, V. D., "Nucleic Acid Content in the Ovaries of <i>Hyalomma Anatolicum</i> Koch, 1844 Females"	86
Stepanova, N. I., "Methods of Preparing Antigens for Diagnosing Blood Parasite Diseases and Studying the Immunological State of Sick and Convalescent Animals"	90
Dubovyy, S. Z., "Using the Complement-Fixation Reaction with Theileriosis in Cattle"	96
Polyakov, V. f. "Amino Acid and Mineral Composition of Erythrocyte Forms of <i>Th. Annulata</i> (Dschunkowsky et Luhs, 1904)"	101
Klimov, N. M., and Polyakov, V. F. "Trace Element Content in Cattle Organs During Experimental Theileriosis"	105
Klimov, N. M., and Polyakov, V. F., "Iron Content in the Blood and Organs of Cattle During Experimental Theileriosis"	113
Yevplov, N. N., "Therapy for Cattle with Theileriosis Using Trypaflavin with Tetran and Vitamins"	122
Duysheyev, A. D., "Experiments to Clarify the Sterilizing Effect of Azidine During Piroplasmosis of Cattle"	135
Charyyev, O. Ch., "The Effect of Chemotherapy on the Development of Immunity During Experimental Sheep Babesiosis"	144

3/8

USSR

KOVALENKO, YA. R., Works of the All-Union Institute of Experimental Veterinary Science Timely Problems in Veterinary Protizoology, Moscow, "Profizdat," Vol 38, 1970, 328 pp

Stepanova, N. I., D'Yakonov, L. P., and Kazakov, N. A., "Study of the Effect of Antibiotics of the Tetracycline Series and Splenectomy on the Immunological State of the Cattle Organism During Anaplasmosis"	146
Zolotarev, N. A., and Ganiyev, I. M., "Anaplasmosis of Sheep and Goats in Dagestan"	152
Ganiyev, I. M., "Experiments in Identifying Piroplasma and Anaplasma of Sheep and Goats in Dagestan ASSR"	157
Stepanova, N. I., "The Possibility of Preserving the Invasive Properties of A. Marginale in Lyophilized Blood"	162
Stepanova, N. I. "The Effect of Ultrasound on the Antigenic Properties of Anaplasma ovis"	
Kalyagin, V. V. "Sheep Anaplasmosis in Stavropol'skiy Kray"	169
D'Yakonov, L. P., "Fluorescence Microscopy of Sheep Blood Parasites"	172
Kazakov, N. A., "Glucose Content in Sheep Blood During Anaplasmosis"	179
Kazakov, N. A., "Catalase Activity of Blood in Sheep with Anaplasmosis"	184

4/8

USSR

KOVALENKO, YA. R., Works of the All-Union Institute of Experimental Veterinary Science Timely Problems of Veterinary Protozoology, Moscow, "Profizdat," Vol 38, 1970, 328 pp

Kazakov, N. A., "Toxic Granularity of Neutrophils in Sheep During Anaplasmosis"	191
Kazakov, N. A., "Total Protein, Protein Fractions, and the Albumin-Globulin Ratio in Blood Plasma of Sheep During Anaplasmosis"	193
Kazakov, N. A., "Functional State of the Liver in Sheep with Anaplasmosis"	200
Petrovskiy, V. V., and Rodin, S. D., "The Activity of Some Esterase Systems in Ixodid Ticks"	204
Rodin, S. D., "Inhibiting Acetylcholinesterase and Phenylacetate esterase with Sevin and Dicrosyl in Hyalomma Anatolicum Koch, 1844 Imagoes"	211
Rodin, S. D., "Morphological and Functional Changes in the Hemocytes of Hyalomma Anatolicum Koch, 1844 Ticks Under the Influence of Carbamates"	216
Petrovskiy, V. V., "Comparative Study of the Acaricidal Properties and Effectiveness of Moistened Powders of Soviet and Imported Sevin"	220
Dubovyy, Z. Z., Petrovskiy, V. V., and Donskoy, V. p., "experience of Use of Polychlorpinene for Antitick Treatment of Cattle at Farms of the Checheno-Ingush ASSR"	227

5/8

## USSR

KOVALENKO, YA. R., Works of the All-Union Institute of Experimental Veterinary Science Timely Problems in Veterinary Protizology, Moscow, "Profizdat," Vol 38, 1970, 328 pp

- Vecherkin, S. S., and Duysheyev, A. D. "Using Ko-ral, Phthalophos, and Sevin to Combat Ticks, the Vectors of Agents of Blood Parasite Diseases" 233
- Petrovskiy, V. V., and Rodin, S. D., "The Effect of Sevin, Dicrosyl, and Mixtures of them on the Cattle Organism when Treated Three Times" 240
- Li, P. N., "The Development of Trichomonas foetus in Chick Embryos" 245
- Kogan, G. F., "The Pathogenicity and Specificity of Trichomonads in Calves" 248
- Krylov, M. V., Kheysin, Ye. M., (Deceased), Sokolov, A. M., and Kirillov, A. I., "The Role of Certain Nematodes in Transmitting Toxo plasma" 251
- Timofeyev, B. A., "Nonspecific Resistance Factors During Experimental Toxoplasmosis in Rabbits" 256
- Khvan, M. V., Karpukhin, I. I., and O. A., Vinogradov, "Experimental Besnoitiosis of Cattle and Rabbits" 263
- Nikol'skiy, S. N., and Shchetinin, A. N., "Pneumocystis Penumonia in Hogs" 268
- Nikol'skiy, S. N., and Vodyanov, A. A., "The Significance of Aegyptianella pullorum in Bird Pathology" 277

6/8

- 105 -

USSR

KOVALENKO, YA. R., Works of the All-Union Institute of Experimental Veterinary Science Timely Problems in Veterinary Protizology, Moscow, "Profizdat," Vol 38. 1970, 328 pp

Nuryshv, O. M., "Testing Azidine andFuridine During Experimental Trypanosomiasis (surza) in Dogs"	285
Nigmatullin, T. G., "Study of Some Biochemical Indices in the Organisms of Healthy Bees and Bees with Nosematosis	288
Grobov, O. F., Somolov, V. P., Bondarenko, O. I., and Narbaskova, V. B., "Experiments on the Use of Funagillin D Ts G for Nosematosis in Bees"	294
Laptev, V. I., "Comparative Pathohistological Investigation of the Effect of Certain Parasitic Protozoa on Fish Gills"	302
Ivanova, N. S., "Dynamics of Infestation of Carp and Plant-Eating Fish by Parasitic Protozoa of the Urceolariidae (Stein, 1867) Family During the Winter Period"	309
Lavrent'yev, P. A., and Kahliulin, G. L., "Infestation of Mosquito Larval by Microsporidia"	314
Kislyakova, Z. I., "Contemporary Data on the Position of Sarcosporidia in the System of Protozoa"	317
Abramov, I. V., Stepanova, N. I., Kazakov, N. A., and Zablotskiy, V. T., "A Study of the Effect of Deep Freezing at the Temperature of Liquid	

7/8



USSR

KOVALENKO, YA. R., Works of the All-Union Institute of Experimental Veterinary Science Timely Problem in Veterinary Protizology, Moscow, "Profizdat," Vol 38, 1970, 328 pp

Nitrogen (Minus 195°C) on the Infectiousness of Cattle Anaplasma (Anaplasma ovis, A. marginale) 321  
"In Honor of the 100th Anniversary of the Birth of V. I. Yakimov" 325

8/8

- 106 -

USSR

UDC 616-022

KOVALENKO, Ya. R., Academician, All-Union Academy of Agricultural Sciences  
imeni V. I. Lenin; All-Union Institute of Experimental Veterinary Medicine

"New Data on the Infectious Pathology of Animals"

Moscow, Vestnik Sel'skokhozyaystvennoy Nauki, Vol 16, No 5, May 71, pp 49-55

Abstract: Considerable progress in scientific research and practical applications in the fields of veterinary science and medicine has been made in the USSR during 1966-1970, the period covered by the eighth Five-Year Plan. In reviewing this progress, the following recent developments may be noted. By applying the method of electron microscopy, the structure, development, and interaction with tissue culture cells of viruses of the herpes group isolated from sick animals have been investigated. Methods of diagnosis and prophylaxis have been developed for such virus diseases as rhinotracheitis of cattle, rhinopneumonia of horses, abortion of sheep, and hog pneumonia. In combination with other measures, use of a new highly effective hog cholera virus vaccine derived from the K strain reduced the incidence of hog cholera by a factor of five during 1966-1970. In work conducted at the Institute of Experimental Veterinary Science (VIEV) by Prof. Ye. S. Orlov and A. A. Klochkov, a Dr.

1/3

USSR

KOVALENKO, Ya. R., Vestnik Sel'skokhozyaystvennoy Nauki, Vol 16, No 5, May 71, pp 49-55

melitensis strain of low virulence was obtained by UV irradiation. This strain, while retaining immunogenic properties, did not induce formation of agglutinins and complement-fixing substances in the blood of animals, because protein synthesis in the bacterial cells was inhibited and the content of aromatic amino acids in cells lowered, while the nucleotide composition of DNA remained unchanged. By applying the radioactive tracer method, it was established that Brucella strains are capable of reducing  $\text{Na}_2\text{SO}_4$  and that they exhibit species differences with respect to the incorporation of  $\text{S}^{35}$  from labeled  $\text{Na}_2\text{SO}_4$ . On the basis of this characteristic, it is possible to identify species of Brucella. The characteristics of the DNA composition of Brucella of different species as distinguished from that of other microorganisms were established; this is important from the standpoint of differentiating microorganisms of this group. A new allergen, brucellin VIEM, was developed, which is more effective in diagnostic tests for brucellosis in sheep, goats, and hogs. Diagnostic methods for tuberculosis were developed which are based on differences in the chemical composition and immunological characteristics of proteins isolated from mycobacteria of tuberculosis, of paratuberculosis, and acid-resistant saprophytes.

2/3

- 95 -

USSR

KOVALENKO, Ya. R., Vestnik Sel'skokhozyaystvennoy Nauki, Vol 16, No 5, May 71, pp 49-55

Studies are being conducted at VIEV on the isolation, cultivation, and maintenance of Mycoplasma cultures and on the etiological role of these microorganisms in the pneumonia of calves, sheep, and young pigs. Methods for the identification of these microorganisms were developed. Respiratory mycoplasmosis of poultry has become more widespread in the USSR in recent years because of extensive shipments of poultry and eggs for incubation from farms on which this disease exists and also because of importation of infected poultry from abroad. It was established that transovarian infection is mainly responsible for the spread of this disease. Study of combined and associated immunization of hogs was conducted. A vaccine for the associated immunization of mink against botulism and pasteurellosis was developed and another (by the Yerevan Zooveterinary Institute) for the combined immunization of animals against anthrax and brucellosis. Because of increased industrialization of animal husbandry and poultry breeding, studies of the effects of the microclimate on the resistance to infectious diseases have become important.

3/3

USSR

UDC 636:612

KOVALENKO, Ya. R., SIDOROV, M. A., TATARINTSEV, N. T., FESENKO, I. D., and SHEGIDEVICH, E. A., All Union Institute of Experimental Veterinary Science, Moscow

"The Effect of Elevated Temperature and Humidity of the Environment on Immunogenesis of Swine Infected with Erysipelas"

Moscow, Sel'skokhozyaystvennaya Biologiya, Vol 6, No 4, 1971, pp 591-596

Abstract: Two series of tests were carried out on swine of various weights. One group was kept in normal pigsty conditions at 16-20°C and relative humidity of 75-80%. The other group of similar swine were kept for three days prior to vaccination and for seven days thereafter in a climatic chamber, then transferred to the pigsty. Electric heaters, operating for eight hours daily, produced a temperature of up to 30-32°C, the air was circulated by ventilators, at a velocity of 0.15 m/sec, with a relative humidity of 75-90%. At night the temperature dropped to 22-25°C with humidity of 95-100%. Eighty-three piglets were used in two tests, vaccinated with live erysipelas vaccine strain VR-2. It was demonstrated that in swine kept under conditions of elevated temperature and humidity, the synthesis of protein fractions undergoes a change, the

1/2

USSR

KOVALENKO, Ya., R., et al, Sel'skokhozyaystvennaya Biologiya, Vol 6, No 4, 1971, pp 591-596

phagocytic activity of the blood neutrophils is markedly depressed, nucleic acid synthesis is altered, and the transformation of the blastic elements of lymph tissue into plasmatic ones is retarded. All of this affects the synthesis of specific antibodies. It was determined that elevated temperature and humidity, which produce significant hematological, cytological, and biochemical shifts in the body of swine, are factors which prevent the formation of intense postvaccinal immunity to erysipelas when live VR-2 strain vaccine is used. The surrounding medium and microclimate can have a negative effect on the condition of the swine as stress factors, or be direct causes of disease. Therefore, when measures are being carried out for eradication of swine erysipelas, the effectiveness of vaccination of piglets kept under conditions of elevated temperature and humidity may decline markedly and many of the vaccinated animals fail to acquire any stable immunity.

2/2

- 92 -

K

USSR

UDC 636+576.6.093.2

KOVALENKO, YA. K., SEDOROV, M. A., TATARINSEV, N. P., and MALOK-SKAYA, I. YA., All-Union Institute of Experimental Veterinary Medicine

"Environmental Factors and Immunobiological Reactivity in Animals"

Moscow, Sel'Skokhozvaystvonnaya Biologiya, No 2, 1970, pp 285-294

Abstract: Experiments with swine, mice and rabbits showed that sudden changes in environmental factors (exposure to cold, heat, or sun's rays without preliminary adaptation) and alteration of the diet (reduction of the cereal protein content) induced a stress reaction which resulted in a lowering of general resistance and increased susceptibility to erysipelas, cholera, and typhoid. Sharp changes in temperature, maintenance conditions, or diet weakened, prevented, or delayed the development of immunity in vaccinated animals. The mechanism of action of the physical stressors differs from that of hypoproteinemia. The physical stressors inhibit the body's defensive forces, giving rise to the general adaptation syndrome. This weakens the metabolic processes and exhausts the physiological reserves, including the function of the immunocompetent

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USSR

KOVALENKO, YI. R., et al., Moscow, Sel'skokhozyaystvennaya Biologiya, No 2, 1970, pp 235-244

organs, so that the reaction to antigen is not as strong as under ordinary vaccination conditions. With a protein deficiency, the dissimilation process does not take place normally, and the latent energy of cells is not converted to the kinetic energy needed for the proliferation and transformation of lymphoid into plasmatic cells.

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- 10 -



USSR

K  
KOVALENKO, YE, Professor

"Space Medicine and Earth Medicine"

Moscow, Moskovskaya Pravda, 9 Apr 70, p 3

Abstract: This is a continuation of a series of articles on achievements in astronautics published in honor of Astronautics Day celebrated annually on 12 April. The article deals specifically with the application of techniques developed for space medicine in ordinary Earth facilities such as telemetric monitoring of the heart, respiration and so on, developed first to monitor the reactions of astronauts in space and later adapted to hospital monitoring systems. The effects of carbon dioxide and other expiration products on man are discussed briefly, as applied to the cabin of a space ship and to environmental hygiene. Parallels are drawn between lack of the physical characteristic of modern society and the long-term motionlessness in spaceflight. It is noted that Soviet scientists are developing various original procedures and equipment to prevent the effect of hypodynamia on astronauts. These techniques will be applicable to long-term bedridden patients.

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MEDICINE  
Aerospace Medicine

K

USSR

KOVALENKO, Ye., Professor

"Space and Earth Medicine"

Alma-Ata, Kazakhstanskaya Pravda, 10 Apr 70, p 4

Abstract: Many of the new techniques and discoveries of space medicine are proving very useful in ordinary medicine. Public health is already using new methods developed for space medicine, for processing the huge amount of information obtained by monitoring a patient's heartbeat, respiration, and so on. Space scientists have studied the effect of various atmospheric mixtures on man. Clinics are already using increased concentrations of oxygen to relieve seriously ill persons, and operations are being carried out under increased oxygen pressure. Man ordinarily breathes small quantities of carbon monoxide, ammonia, acetone, aldehydes, and hydrocarbons. In the closed space of a spaceship cabin, they may accumulate in concentrations large enough to be harmful. Specialists in space medicine are studying this problem, and the results should prove useful in terrestrial hygiene. Space scientists are developing diverse, original methods of preventing hypodynamic reactions in cosmonauts. In the near future, these results will be used to aid sedentary workers and patients confined to bed.

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K  
USSR

KOVALENKO, Ye., Kazakhstanskaya Pravda, 10 Apr 70, p 4

Space physiologists are studying the problem of anabiosis; in certain cardio-vascular and respiratory diseases it is sometimes advantageous to lower temporarily the organism's need for oxygen and food until the function of these vitally important systems is restored. An analogous method of creating artificial hypothermia for brief periods is already used in complex heart operations.

2/2

USSR

UIC 612

KOVALENKO, YE. A., Moscow

"Aspects of the Theory of Gas Dynamics in the Organism"

Leningrad, Fiziologicheskii Zhurnal SSSR imeni I. M. Sechenov, Vol 59, No 2,  
1973, pp 315-324

Abstract: A model of  $O_2$  and  $CO_2$  exchange in the various compartments of the body is established on the basis of known facts. Special attention is paid to the neglected factor of convection. Namely, the fraction of plasma filtered from the capillaries into the tissue carries  $O_2$ , and in this way the diffusion path is shortened. The same applies to the reabsorption of interstitial fluid with  $CO_2$  at the venous end of the capillaries. This microcirculation is further promoted by the pulsatile blood pressure and flow in the capillaries. Any muscle contraction mechanically dislocates and stirs the interstitial fluid and the gases dissolved in it. Convection of  $O_2$  and  $CO_2$  is also caused by the formation and flow of lymph. Inside each cell, the circulating protoplasm continuously redistributes the gases. Finally, even the mitochondria inside the cytoplasm actively move toward the area with a high  $O_2$  concentration. These factors add up to a considerable effect, and therefore the current concept that diffusion is the only or the main factor responsible for gas exchange in the body should be thoroughly modified.

1/1

4

USSR

UDC 612.2+612.76

POPKOV, V. L., MAILYAN, E. S., GALUSHKO, Yu. S., KOVALENKO, Ye. A., ZAYTSEVA, Ye. I., NITOKHINA, I. A., STULOVA, L. V., and RYAZHSKIY, A. V., Institute for Biomedical Problems

"Shifts in Gas Exchange, Gas Homeostasis, and Tissue Respiration In Rats During Prolonged Hypokinesia"

Leningrad, Fiziologicheskiy Zhurnal USSR imeni I. M. Sechenov, Vol 41, No 12, 1970, pp 1,808-1,812

Abstract: General gas exchange,  $pO_2$ , and  $pCO_2$  did not change significantly in the tissues of rats kept immobilized in special cages for 60 days. However, during the second month of the experiment, there were periods when the intensity of respiration increased in the liver and decreased in the myocardium. After two months of hypokinesia, the weight of experimental rats was substantially less than that of the control ( $273 \pm 10$  g and  $392 \pm 18$  g, respectively). Also the physical fitness of the experimental animals declined sharply with respect to both dynamic and static work. The duration of maximum dynamic work decreased more than 2.5-fold while the capacity for static work decreased 9-fold.

1/1

USSR

UDC: 612.736.2

KOVALENKO, Ye. A., POPKOV, V. L., KONDRAT'YEV, Yu. I., MAILYAN, E. S., GALUSHKO, Yu. S., PRORONCHUKOV, A. A., KAZARYAN, V. A., HOROMOVA, R. S., SEROVA, L. V., POTAPOV, A. N., ROMANOV, V. S., and PISHCHIK, V. B.

"Shifts in the Functions of the Organism During Prolonged Hypokinesia"

Moscow, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, Vol 14, No 6, Nov/Dec 70, pp 3-9

Abstract: Rats kept immobilized for up to 170 days in special cages showed an increase in general gas exchange and rate of oxygen utilization in the muscles, and a slowing of the rate of tissue metabolism in the liver and myocardium. The level of phosphorylation in the myocardium and, to some extent, in the skeletal muscles and liver dropped. Prolonged hypokinesia also stunted the animals' growth, prevented them from gaining weight, and in some cases caused them to lose weight. Besides disturbing mineral and protein metabolism, immobilization resulted in exhaustion of the hypothalamus - pituitary - adrenal cortex system.

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USSR

KOVALENKO, Yevgeniy Aleksandrovich Professor

"April 12 is Space Day...Space -- Earth... Space Medicine Enriches Terrestrial Medicine"

Moscow, Zdorov'ye, No 4, 1970, pp 23-24

Translation: Space flights lasting many days and the unique experiments performed by the brave crew of miraculous ships enrich the human mind with more and more data, and help us delve into the mysteries of the Universe.

At the same time, the practical results of conquering space are being used more and more in the national economy. It suffices to recall the use of the Molniya communication satellites, which permit television transmission over enormous distances.

What does this young science, space medicine, contribute to its venerable ancestor, terrestrial medicine? First of all, it has given it special new methods and research procedures.

A new branch has emerged, radiotelemetry, which is one of the chief methods of investigation of human function in space. Radiotelemetry makes it possible to record the rate and nature of heart function respiration, body temperature and biocurrents of the brain. It is based on the most progressive advances in electronics, radioengineering, biophysics and physiology. It involves the use of miniature

USSR

KOVALENKO, Yevgeniy Aleksandrovich, Zdorov'ye, No 4, 1970, pp 23-24

and reliable equipment consuming little energy.

Can the advances in radiotelemetry be suitable for ordinary conditions on Earth?

Imagine a geologist working in a hot shop or caisson, high on the mountains or in a distant taiga, a fisherman on the sea or a pilot performing a complex flight. It is precisely telemetry that will make it possible to track the slightest functional deviations in their bodies in case of need.

It will also help specialists in the field of atheletic medicine, who have long dreamed of the possibility of recording the distinctive features of heart function and respiration of figure skaters while they perform complex figures on the icy arena, or of skiers as they fly down a snow-covered run.

In clinics and hospitals, it is also extremely important to observe cardiac activity and respiration continuously and for a long period in seriously ill patients, or in those recovering from complex surgery. Here too, telemetry methods created for space purposes can become irreplaceable aids for the doctor.

The enormous quantity of information obtained in the course of prolonged recording of indices of patients' conditions also means that new methods are required to process it. Space medicine has accumulated quite a lot of experience in this, and it is already being used in public health practice. There are cases where computer techniques and automatic data processing are used; information is



USSR

KOVALENKO, Yevgeniy Aleksandrovich, Zdorov'ye, No 4, 1970, pp 23-24.

stored in the form of a recording on tape many kilometers in length.

During a space flight, it is sometimes desirable to main an atmosphere in the spacecraft cabin different from that on Earth. For example, the general barometric pressure may have to be reduced, with a concurrent increase in oxygen concentration, or the nitrogen in the air may have to be replaced by a lighter gas, like helium. This is why space medicine investigates the effect on man of altered gas environments: higher and lower oxygen content, higher concentration of carbon dioxide, etc. Investigators are determining the significance and role of inert gases, the possibility of replacing some of them by "lighter" and "more fluid" ones.

We should recall that many of these problems are also the concern of clinical medicine. Breathing a higher concentration of oxygen is already used in clinical practice to relieve the condition of seriously ill patients, while surgeons have begun, in recent years, to perform surgery under increased oxygen pressure.

Carbon dioxide has some curious properties in the organism. This is not simply a waste product that the organism must eliminate. Carbon dioxide in the blood has a stimulating effect on circulation and respiration. It helps dilate the vessels of the brain and heart, and it has an effect on metabolism. But high concentrations of carbon dioxide are harmful. Detailed and comprehensive investigation of the effect of this gas on the organism, particularly in spacecraft cabins,

376

USSR

KOVALENKO, Yevgeniy Aleksandrovich, Zdorov'ye, No 4, 1970, pp 23-24

is of enormous importance for general medical practice. Indeed, there are rather frequent instances when people, for some reason or other, remain for a long time in sealed rooms, underwater devices and aircraft cabins.

Man usually exhales not only carbon dioxide, but also small quantities of carbon monoxide, ammonia, acetone, aldehydes and hydrocarbons. All of these substances, as they are called, "harmful admixtures," can accumulate in the sealed space of a cabin in such concentrations that they will no longer be harmless for the organism.

The need to make a thorough study of the concentration of such substances, and the need to determine in detail their effect on the organism and to develop means of removing their adverse effects is obvious. In this respect space hygiene can render a significant service to terrestrial hygiene.

In this era of intensive scientific and technological progress, human labor is undergoing serious changes. Intensive automation and mechanization of production lead to a decrease in the volume of direct physical activity. There is also a marked restriction of movement in those frequent cases when a patient is compelled to remain in bed for some period of time. But is such a regimen therapeutic, or does it create the beginning of disorders in the organism? It would be difficult to answer these questions unequivocally.

4/6

USSR

KOVALENKO, Yevgeniy Aleksandrovich, Zdorov'ye, No 4, 1970, pp 35-38

Soviet scientists are developing various ways and means of preventing the effect of hypodynamia on the organism of cosmonauts. All of these data are already partially used, and soon will find even greater application in solving the most diverse practical problems in medicine. Data on hypodynamia will be used to create optimum programs for exercising patients who must remain in bed for a long time.

Space physiology also devotes attention to the problem of anabiosis (marked decrease in oxygen and food requirements). During prolonged spaceflights to other planets, complicated and unforeseen circumstances may develop. One cannot totally rule out the possibility of emergency situations, when it would be necessary to be extremely economical with food, water and oxygen supplies. Part of the crew, after taking the appropriate pharmacological agents and artificially lowering body temperature, might shift to a unique regimen of hibernation until the situation was corrected or until the spacecraft came closer to Earth. Of course, this can only be an extreme measure of protection for some crew members, while the conscious cosmonauts would have to control the flight. At the same time, the results of these investigations may find application in clinical practice. In some diseases of the cardiovascular system or respiratory organs, it is sometimes advantageous to sharply reduce the organism's requirements for oxygen and food until the functions of vital systems are restored.

5/6

USSR

KOVALENKO, Yevgeniy Aleksandrovich, *Zdorov'ye*, No 4, 1970, pp 23-24

An analogous means of creating artificial hypothermia (as yet for a very short time), is already being used in surgical practice during complicated heart surgery. Space research dealing with these problems could help in the future to prolong the time of "minimum life" for therapeutic purposes.

And this is not a complete list of questions arising in space medicine that have the most direct application in national health practice.

Perhaps the most important contribution of space research to medicine is a sort of renewal, an upsurge of new ideas, introduction of better instruments and equipment, the most up-to-date research methods, and methods of obtaining and processing information.

As it absorbs the latest advances of science and technology, space medicine delivers to people the very best, the most progressive and the most effective of its findings.

6/6

1/2 016

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--GLAZES CONTAINING LITTLE OR NO BORON IN THE PRODUCTION OF  
EARTHENWARE -U-

AUTHOR--(04)--SIVCHIKOVA, M.G., KOVALENKO, YU.G., BARSHCHEVSKAYA, A.F.,  
SIDORENKO, A.I.

COUNTRY OF INFO--USSR

SOURCE--STEKLO KERAM. 1970, 27(3), 40-2

DATE PUBLISHED--70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CERAMIC COATING, CHEMICAL COMPOSITION, THERMAL STABILITY,  
BORON OXIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1589

STEP NO--UR/0072/70/027/003/0040/0042

CIRC ACCESSION NO--AP0125211

UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125211

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TWO GLAZES OF THE COMPN. SiO SUB2 2.251, 2.67; AL SUB2 O SUB3 0.233, 0.25; CAO 0.304, 0.329; FE SUB2 O SUB3 0.005, 0.005; B SUB2 O SUB3 O, 0.185P NA SUB2 O 0.206, 0.248; K SUB2 O 0.044, 0.049; MgO 0.116, 0.100; SRO 0.167, 0.174; AND ZNO 0.163, 0.098 MOLE WERE USED FOR GLAZING OF EARTHENWARE WITH 9-12PERCENT OPEN PORSITY. THE FIRING WAS CARRIED OUT IN TUNNEL FURNACES AT 1140-1200DEGREES DURING 16-18 HR. AFTER FIRING, THE LOW B GLAZE SHOWS LEVEL SPREADING AND GOOD POLISH. THE GLAZE IS THERMALLY STABLE. ITS COEFF. OF THERMAL EXPANSION IS LSIGHTLY CHANGED: IT IS 7.0 TIMES 10 PRIME NEGATIVE6 IN THE INTERVAL 20-400DEGREES, AND 7.54 TIMES 10 PRIME NEGATIVE6 AT 20-600DEGREES WHILE THAT OF AN INDUSTRIAL SAMPLE WAS 7.15 TIMES 10 PRIME NEGATIVE6, AND 8.25 TIMES 10 PRIME NEGATIVE6-DEGREE. THE FUSIBILITY OF LOW B GLAZES IS COMPARABLE WITH THAT OF INDUSTRIAL ONES. AT 1140DEGREES IT IS CHARACTERIZED BY THE MIRROR SPREADING AND BY GLOSS. THESE PROPERTIES ARE PRESERVED EVEN AT 1230DEGREES. PETROGRAPHICALLY, THE GLAZE IS PURE GLASSY PHASE WITHOUT REMAINING QUARTZ GRAINS AND GASEOUS BUBBLES. ITS THICKNESS VARIES 100-30 MU. THE POSSIBILITY TO DECREASE THE B SUB2 O SUB3 CONTENT FROM 9.5 TO 4.7PERCENT IN THE GLAZES WAS VERIFIED BY PRODUCTION GLAZED EARTHENWARE. FACILITY: UKR. NAUCH. ISSLED. INST. STEKLO. FARFORD FAYANS. PROM., USSR.

UNCLASSIFIED

PHYSICS  
Acoustics

USSR

KOVALENOK, R. V., MERKULOV, L. G.

"Computing Phonon Absorption of Ultrasonic Waves in Alkali-Halide Crystals"

Leningrad, Fizika Tverdogo Tela, Vol 14, No 2, 1972, pp 340-344

Abstract: The absorption of ultrasonic waves in dielectric crystals is basically determined by phonon-phonon interactions. On the basis of the assumption that the contribution of the phonons to the nonrelaxation elasticity modulus is determined by the change in energy of the thermal phonons due to the change in the limited Debye frequency in the deformation field of the ultrasonic wave, the value of  $\Delta c$ , equal to the difference between the nonrelaxation and relaxation elasticity moduli, was computed. Because experimental research in alkali halide crystals has shown that the temperature dependence of the absorption factors of the crystals cannot be satisfactorily described by an equation derived from that value of  $\Delta c$ , the authors of the present paper re-compute the latter in the quasi-harmonic approximation under the assumption that the number of phonons in each type of oscillation before  $l/2$

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KOVALENOK, R. V. et al, Fizika Tverdogo Tela, Vol 14, No 2, 1972,  
pp 340-344

relaxation remains unchanged and that the change in internal energy is caused only by the change in frequency of the phonon oscillations. The results of the new computation are compared with those yielded by the experiments, and a good agreement between the two is observed. Tables of the two sets of results are given.

2/2

- 35 -



USSR

UDC: 629.7.036.3-255.5:534.1

KOVALEV, A. A., STRUNKIN, V. A., KURTSEVA, I. I.

"The Problem of the Influence of Stream Irregularity on Oscillations of Turbine Blades"

Tr. Kaz. Aviats. In-ta [Works of Kazakh Aviation Institute], 1972, No 151, pp 11-20 (Translated from Referativnyy Zhurnal Aviatsionnyye i Raketnyye Dvigateli, No 5, 1973, Abstract No 5.34.34, from the Resume).

Translation: The equation for forced oscillations of blades under the influence of external forces with amplitude and phase varying with height is studied. The influence of the slope of nozzle blades on the resonance oscillations of power blades of turbines is analyzed. 3 figures, 4 biblio. refs.

1/1

- 126 -

1/2 034 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--POLARIZATION OF THE INDUCED RADIATION OF ORGANIC DYES STUDIED FROM  
THE LASER SPECTRUM -U-  
AUTHOR-(U2)-KOVALEV, A.A., PILIPOVICH, V.A.  
COUNTRY OF INFO--USSR  
SOURCE--KZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(3), 615-19  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS, PHYSICS  
TOPIC TAGS--LIGHT EXCITATION, DYE, GLYCEROL, LIGHT POLARIZATION, LASER  
SPECTROSCOPY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--2000/2014 STEP NO--08/0048770/034/0337/051570619  
CIRC ACCESSION NO--AP0125602

2/2 034

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0125602

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DIRECTION OF MAX. AND MIN. VALUES OF THE INITIAL AMPLIFICATION COEFF. WERE THEORETICALLY AND EXPTL. STUDIED IN THE CASE OF CRYPTOCHYANINE SOLNS. IN GLYCEROL WHEN THE ELEC. VECTOR OF EXCITING LIGHT IS PERPENDICULAR TO THE RESONATOR AXIS (ZETA EQUALS 0), THE DEGREE OF POLARIZATION IS 1 FOR ALL WAVELENGTHS. WHEN THE VECTOR IS PARALLEL (ZETA EQUALS 90DEGREES), THERE IS NO DICHOISM OF THE AMPLIFICATION COEFF. AND THE DEGREE OF POLARIZATION IS ZERO. FOR INTERMEDIATE ORIENTATIONS AMPLIFICATION DICHOISM APPEARS IN GOOD AGREEMENT WITH THEORETICAL CALCS. WHEN ZETA EQUALS 45DEGREES, THE VARIATION OF THE DEGREE OF POLARIZATION IN THE 800 NM BAND IS DIFFERENT FROM THAT IN THE 745 NM BAND; THE DIFFERENCE OF BEHAVIOR IN THE 2 BANDS IS DUE TO DIFFERENCES IN GENERATION PROPERTIES AND TO THE HIGH AMPLIFICATION DICHOISM.

FACILITY: INST. FIZ., MINSK, USSR.

UNCLASSIFIED

KOVALEV, A.F.

meteorology

(2)  
Kovalev's Secret File # 11114

MEMORANDUM FOR THE DIRECTOR, NATIONAL SECURITY AGENCY  
SUBJECT: [REDACTED]

Article by Yu. G. Orlov, A. Kovalev, et al. in the journal "Izv. Akad. Nauk SSSR Ser. Fiz. Mat. Nauk", No. 6, 1972, p. 1000-1004.

A series of experiments for measuring the wind velocity and temperature distribution in the ground layer of the air is described.

The authors describe the method for measuring the wind velocity and temperature in the ground layer of the air. The method is based on the use of a special device which allows the measurement of the wind velocity and temperature in the ground layer of the air in the presence of a jet engine.

The project is of interest for the study of the interaction of the jet engine with the atmosphere. The results of the experiments show that the wind velocity and temperature in the ground layer of the air are affected by the jet engine.

The authors describe the method for measuring the wind velocity and temperature in the ground layer of the air. The method is based on the use of a special device which allows the measurement of the wind velocity and temperature in the ground layer of the air in the presence of a jet engine.

A general view of the device is shown in Figure 1. The device consists of a vertical tube with a diameter of 100 mm. The tube is divided into two parts: the upper part is a wind velocity measuring device and the lower part is a temperature measuring device. The wind velocity measuring device consists of a special probe which is inserted into the tube. The temperature measuring device consists of a special sensor which is also inserted into the tube. The results of the experiments show that the wind velocity and temperature in the ground layer of the air are affected by the jet engine.

USSR

UIC: 620.183:669.018.26

KOVALEV, A. I., KRISTI, Ye. N.

"The Method of Electrical Resistance in Studying Plastic Deformation Under Current"

Moscow, Doklady Akademii Nauk SSSR, Vol 211, No 3, 27 Jul '73, pp 574-576

Abstract: A special investigation was made of the influence of current on the process of plastic deformation and electrical resistance. The experimental materials were technically pure metals -- copper, aluminum and nickel (in the annealed state). Specimens in the form of wires 1.5 and 3.5 mm in diameter were placed under tension at room temperature with and without current. Temperature was thermostatically control in distilled water or acetone. Resistance was measured on the R-306 and R-348 potentiometers. It was found that alternating and direct current have analogous effects on deformation, but alternating current is more effective. Periodically interrupted current is still more effective. Creep rate is most strongly affected by current at loads slightly above the yield stress. After deformation reaches a certain limit, neither current nor pulsations in current have any noticeable effect on creep rate.

1/1

USSR

UDC: 666.6:620.174.05

AKSEL'ROD, Ye. I., VISHNEVSKIY, I. I., KOVALENY, A. I., and TARASOV, V. A.

"Machine for Measuring High-Temperature Deformation in Ceramic Materials by the Pure Bend Method"

Moscow, Zavodskaya laboratoriya, No. 1, 1971, pp 110-111

Abstract: The machine described in this article tests for creep, at temperatures up to 1900° C, densely sintered ceramic specimens by subjecting them to a pure bend. The specimen is heated in a sealed, water-cooled chamber in an electric-resistance oven, and is deformed by a dynamometer consisting of a spring of special steel in the shape of the arc of a circle. Its deformation is measured at the center and at two supporting points by three indicators which can be read through a window in the chamber wall. The temperature of the specimen is measured at its center and its ends by two calibrated tungsten-rhenium thermocouples, type WR5/20. A diagram of the machine, its parts identified by callouts, is given as well as curves of the creep in specimens made of polycrystalline corundum. The authors are members of the Ukrainian Scientific Research Institute of Refractory Materials.

1/1

USSR

UDC 621.377.623.24-52:681.327.22(088.8)(47)

KOVALEV, A. M., TOKAREV, A. S.

"Device for Shaping Current in Deflecting Coils of Cathode Ray Tubes"

Ustroystvo dlya formirovaniya tokov v otklonyayushchikh katodkakh elektron-noluchevoy trubki (cf. English above), Institute of Automatics and Electrometry of the Siberian Department of the Academy of Sciences USSR, USSR Author's certificate, Class H 04 n 3/18, No 323869, announced 18 June 1970, published 9 February 1972 (from RZh-Avtomatika, telemekhanika i vychislitel'naya tekhnika, No 11, Nov 72, Abstract No 11B399 F)

Translation: A device is proposed which contains a dc amplifier with an oscillating circuit, a deflecting system, and a composite emitter repeater. The device is distinguished by the fact that in order to increase the rate of shaping the deflecting current, the dc amplifier output is connected to the input of the composite emitter repeater through an additional winding connected by induction with the winding of the deflecting system. The output of the repeater is connected to a supply source through a diode and connected with the collector of an output transistor, and a winding of the deflecting system is connected to the emitter circuit of this transistor. The base of the output transistor is connected through a stabilizer to the emitter of the first transistor of the composite emitter repeater. 1 ill.

1/1

Devices

USSR.

UDC 681.327

DOLGOVESOV, B. S., KOVALEV, A. M., KOTOV, V. N., LURROV, A. A., NESTERIKHIN, YU. YE., OBERTYSHEV, K. F., TOKAREV, A. S., YAKIMOVICH, A. P., Novosibirsk

"Problems of Constructing Devices for Operative Interaction of Man with a Computer"

Novosibirsk, Avtometriya, No 2, 1972, pp 35-39

Abstract: Two types of devices corresponding to the basic requirements for systems for operative interaction of man with a computer -- a computer operating in the time sharing mode and peripheral devices numbering from 1 to 1,000 -- have been developed at the Institute of Automation and Electrometry of the Siberian Department of the USSR Academy of Sciences. One of these devices -- the Ekran -- was discussed previously [B. S. Dolgovesov, et al, Avtometriya, No 4, 1971; B. S. Dolgovesov, et al., Avtometriya, No 4, 1971; A. M. Kovalev, et al., Avtometriya, No 4, 1971]. The other -- the Simbol -- is investigated in the present article. A block diagram of the Simbol alphanumeric system is presented, and the algorithms for the various operating modes of the system are discussed. The algorithms of all modes of the system are executed by means of a microprogram control circuit. An effort was made to achieve the fastest possible system for which the principal cycle of the microprogrammed control unit was reduced to a minimum. Where possible the single pulse instructions

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"USSR "

DOLGOVESOV, B. S., et al., Avtometriya, No 2, 1972, pp 35-39

are processed simultaneously; a very high cycle frequency is selected -- 2.5 millihertz. The operating logic of the device can be changed. One of the basic parameters of the operative interaction device along with broad functional possibilities is the information capacity. Thus, much attention was given to the high speed of individual units, in particular, the speed of the symbol generator. The programmed segment method was used as the basis for constructing the symbol generator which provides 1,024 symbols with an image regeneration frequency of 50 hertz. An example image photograph from the Simbol screen is shown.

2/2

1/2 024 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--ISOTYPIC N,GERMANIUM,N,SILICON HETEROJUNCTIONS -U-  
AUTHOR-(04)-FEDOTOV, YA.A., GRUZDEVA, G.A., KOVALEV, A.N., SUPALOV, V.A.  
COUNTRY OF INFO--USSR  
SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(5), 823-9  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--SILICON SINGLE CRYSTAL, GERMANIUM SINGLE CRYSTAL, EPITAXIAL  
GROWTH, HYDROGEN, PHOTOELECTRIC PROPERTY  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3007/0894 STEP NO--UR/0449/70/004/005/0825/0829  
CIRC ACCESSION NO--AP0136328

UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--2/NOV70

CIRC ACCESSION NO--AP0136328

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT WAS STUDIED OF THE TECHNOLOGY OF THE PREPN. OF ISOTYPIC HETEROJUNCTIONS N,GE,N,SI ON THEIR ELEC. AND PHOTOELEC. CHARACTERISTICS. THE ISOTYPIC HETEROJUNCTIONS WERE PREPD. BY THE IODIDE TRANSPORT METHOD, WITH H AS THE CARRIER GAS. GE EPITAXIAL LAYERS WERE GROWN ON FREE SI SURFACES OR IN THE OPENINGS IN A SI OXIDE LAYER, WHICH WERE OBTAINED BY THE PHOTOLITHOGRAPHIC METHOD. THE ADDNL. INTRODUCTION OF LINEAR DEFECTS DURING THE GROWTH OF GE IN THE OPENING OF OXIDE LAYER SUBSTANTIALLY CHANGES THE D. OF STATES ON THE GE-SI INTERFACE. FACILITY: MOSK. INST. STALI SPLAVOV, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC:621.793

FILATOV, V. I., YAGUBETS, A. N., CHELYSHEV, A. A., KOVALEV, A. V.,  
Kishinev

"Programming of Certain Conditions of Electrodeposition of Composite  
Coatings Hardened by Dispersed Particles"

Kishinev, Elektronnaya Obrabotka Materialov, No 5, 1973, pp 37-40

Abstract: The purpose of this article was the development of a mathematical model of the formation of composite electrochemical coatings with various contents of inclusions through the thickness of the coating and experimental testing of the model. The mathematical model of the mechanism of coating formation produced, including hardening of the coatings by dispersed hard particles, demonstrates the possibility of production of wear-resistant coatings with predetermined physical and mechanical properties.

1/1

- 7 -

USSR

UDC 534.252-8

KOVALEV, A. V., YAKOVKIN, I. B.

"Interference Effects in Interdigital Ultrasonic Surface-Wave Converters"

Moscow, Radiotekhnika i Elektronika, Vol 16, No 8, Aug 71, pp 1521-1523

Abstract: The frequency properties of an interdigital ultrasonic surface-wave converter are evaluated as a function of the configuration of the electrodes and induced by the interference effect. The resultant ultrasonic surface-wave field is assumed to be the sum of the fields of the elementary radiators which comprise the converter. It is further assumed that the emitted surface wave is registered by a converter with a band which exceeds that of the radiator, the transverse dimension of this converter being sufficient to capture all the acoustic flux. It is shown that accounting for interference effects in interdigital ultrasonic surface-wave converters enables determination of the frequency band and the shape of the frequency response, as well as the configuration of electrode arrangement and the length of the electrodes as a function of a predetermined frequency response.

1/1

USSR

UDC: 661.145

KOVALEV, B. A., VEDEKHIN, A. F., SHIKUNOVA, S. T.

"Investigation of the Effect of the Reflecting Layer on the Characteristics of Low-Voltage Electroluminescent Devices"

Sb. nauch. tr. VNI lyuminoforov i osobo chist. veshchestv (Collected Scientific Works of the All-Union Scientific Research Institute of Phosphors and Extra Pure Materials), 1971, vyp. 5 pp 207-209 (from RZh-Khimiya, No 7, Apr 72, Abstract No 7L182)

Translation:  $TiO_2$  and barium titanate  $BaTiO_3$  are used in combination with VS-530 dielectric lacquer binder as materials for a reflecting layer. These materials with high permittivity increase the brightness of electroluminescent devices when the weight ratio of the material of the reflecting layer to the dielectric binder is (3-4):1. Resumé.

1/1

USSR

UFG: 600.143

KOVALEV, B. A., VEDEKHIN, A. P., SHEDKOVA, S. T., KHAYALKOVA, A. K.

"Concerning the Question of the Possibility of Developing Low-Voltage Electroluminescent Capacitors"

Sb. nauch. tr. VNI lyuminoforov i osobo chist. veshchestv (Collected Scientific Works of the All-Union Scientific Research Institute of Phosphors and Extra Pure Materials), 1971, vyp. 5, pp 83-92 (from RZh-Khimiya, No 7, Apr 72, Abstract No 7L181)

Translation: The authors consider the feasibility of making low-voltage powder electroluminescent devices. A study is made of the effect which the thickness of the luminescent layer, the filling of the luminescent composition in the dielectric and the permittivity of the material in the reflecting layer have on the distribution of voltage between the reflecting and luminescent layers. It is shown on the example of a blue electroluminescent device that a brightness of 11-12 nits can be produced at a voltage of 50 V and a frequency of 400 Hz when the thickness of the luminescent layer is 10-13 microns, the weight ratio of luminescent composition to dielectric is 3 to 1, the effective permittivity of the reflecting layer is 600 or more, and the thickness of the reflecting layer is 7-20 microns. Test results are presented for experimental CRT models. Bibliography of 6 titles. Resumé.

1/1

USSR

UDC 547.091:632.936.2

KOVALEV, B. G., ISHCENKO, R. I., MARCHENKO, V. A., and FILIPPOVA, M. P.,  
All Union Scientific Research Institute of Biological Methods of Plant Pro-  
tection, Kishinev

"Synthetic Studies in the Area of Insect Attracting Materials (Sex Attractants).  
I. Synthesis of 2-Methyl-7-octadecene Oxide (Disparlure) -- Sex Attractant  
of Gypsy Moth *Parthetria Dispar* L."

Leningrad, Zhurnal Organicheskoy Khimii, Vol 9, No 1, Jan 73, pp 6-8

Abstract: Alkylation of dodecynyllithium with isoheptyl bromide was carried out in phosphoric acid hexamethyltriamide. The reaction product -- 2-methyl-7-octadecyne (I) -- was hydrogenated in hexane over Lindlar catalyst yielding *cis*-2-methyl-7-octadecene. This material was epoxidized with monopero-phthalic acid in chloroform, yielding Disparlure. Reduction of (I) with sodium in liquid ammonia yielded *trans*-2-methyl-7-octadecene which could be used for production of *trans*-disparlure. Preliminary field trials showed this synthetic material to be biologically active in 0.25-0.01 mg dose per trap, retaining their sex attracting activity for prolonged periods under field conditions.

1/1



Acc. Nr: AP 0036441

Abstracting Service:  
CHEMICAL ABST 4170Ref. Code:  
4R 0366

\* 78324q Keto aldehydes. VIII. Acetylenic hydroxy acetals.  
Kovalev, B. G.; Vlad, L. A.; Shamburin, A. A. (Inst. Khim.,  
Sverdlovsk, USSR). *Zh. Org. Khim.* 1970, 8(1), 27-31 (Russ).  
Condensation of  $\text{Ac}(\text{CH}_2)_n\text{CH}(\text{OEt})_2$  with  $\text{RC}\equiv\text{CNa}$  in liq.  $\text{NH}_3$   
gave 84-51%  $\text{RC}\equiv\text{CCMe}(\text{OH})(\text{CH}_2)_n\text{CH}(\text{OEt})_2$  (I) ( $n$  is 3 or 4,  
R is H, amyl, or hexyl). At room temp. in the presence of (dil.  
 $\text{H}_2\text{SO}_4$  I ( $n = 3$ , R = H) underwent intermol. transesterification  
to give 80% 2-methyl-2-ethynyl-6-ethoxytetrahydropyran. At  
70-80° in 15%  $\text{H}_2\text{SO}_4$  I ( $n = 3$ , R is H, amyl, or hexyl) gave the  
corresponding 2-(R<sup>1</sup>-substituted)-2-methyl-6-hydroxytetrahydro-  
pyrans (II) [R<sup>1</sup> is  $\text{HC}\equiv\text{C}$ ,  $\text{Me}(\text{CH}_2)_3\text{C}\equiv\text{C}$ , or  $\text{Me}(\text{CH}_2)_4\text{C}\equiv\text{C}$ ] and  
only small amts. of 6-ethoxy analogs (III) of II, which are very  
readily hydrolyzed to II. The hydrolysis of I [ $n = 4$ , R =  
 $\text{Me}(\text{CH}_2)_3$ ] gave  $\text{Me}(\text{CH}_2)_3\text{C}\equiv\text{CCMe}(\text{OH})(\text{CH}_2)_4\text{CHO}$ , which was  
condensed with  $\text{Ph}_3\text{P}\cdot\text{CHCO}_2\text{Et}$  to give  $\text{Me}(\text{CH}_2)_3\text{C}\equiv\text{CCMe}(\text{OEt})_2\text{CH}\cdot\text{CHCO}_2\text{Et}$  (IV). Alk. hydrolysis of IV gave  
 $\text{Me}(\text{CH}_2)_3\text{C}\equiv\text{CCMe}(\text{OH})(\text{CH}_2)_4\text{CH}\cdot\text{CHCO}_2\text{H}$ . CPJK

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REEL/FRAME  
19721287

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USSR

UDC 547.441.2

K  
KOVALEV, B. G., and DORMIDONTOVA, N. P., Institute of Chemistry, Kishinev, Academy of Sciences Moldavian SSR

"Interaction of Ethyl Ester of Diethylphosphonoacetic Acid and Diethyl Phosphonoacetonitrile With Glutaraldehyde"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 4, Apr 70, pp 932-933

Abstract: The condensation of ethyl ester of diethylphosphonoacetic acid with glutaraldehyde gives 2-carboethoxy-2-hydroxycyclohexene, yield 40 percent. Diethyl phosphonoacetonitrile reacts analogously with glutaraldehyde to give 2-cyano-3-hydroxycyclohexene, yield 40 percent. The interaction of the aldehyde with the phosphonates follows a mechanism consisting in the aldolization of the intermediate compound 2-cyano-3-hydroxycyclohexene with simultaneous Wittig reaction.

1/1

- 68 -

1/2 011 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--NEW SYNTHESIS OF TRANS,1,ACETOXY,10,PROPYL,5,9,TRIDECADIENE,  
PROPYLURE, SEX ATTRACTANT OF PECTINOPHORA GOSSYPIELLA -U-  
AUTHOR-(03)-SHAMSHURIN, A.A., KOVALEV, B.G., DONYA, A.P.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(6), 1362-4, CHEM

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PHEROMONE, UNSATURATED HYDROCARBON, INSECTA, CHEMICAL  
SYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1998/1015

STEP NO--UR/0020/70/190/006/1362/1364

CIRC ACCESSION NO--AT0121611

UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AT0121611

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REFLUXING PR SUB2 C IS TO CH(CH SUB2) SUB3 BR (I) WITH PH SUB3 P IN C SUB6 H SUB6 20 HR GAVE 62PERCENT QUATERNARY PHOSPHONIUM BROMIDE, AN OIL, WHICH WITH ME SUB3 COK IN THE HEATED 15 HR WITH ACO(CH SUB2) SUB4 CHO AT 80-20DEGREES GAVE PR SUB2 C IS TO CH(CH SUB2) SUB2 CH IS TO CH (CH SUB2) SUB4 OAC, N 20 OVER D 1.4630, B SUB0.5 100-100DEGREES, WHICH WAS PURIFIED ON AL SUB2 D SUB3. THIS WAS CHARACTERIZED BY MASS AND IR SPECTRA AND SHOWN TO BE IDENTICAL WITH THE SEX ATTRACTANT OF THE COTTON MOTH (P. GOSSYPIELLA). THE REQUISITE ALDEHYDE ABOVE, B SUB2 63-50DEGREES, N 18 OVER D 1.4319, WAS PREPD. FROM ACCH(CO SUB2 ET)(CH SUB2) SUB2 CH (OET) SUB2 BY HEATING WITH ETONA-ETOH AT 120-30DEGREES TO YIELD 38PERCENT ETO SUB2 C(CH SUB2)SUB3 CH(OET)SUB2, B SUB2 79-83DEGREES, N 20 OVER D 1.4288, CONVERTING THIS INTO ACO(CH SUB2) SUB4 CH(OET)SUB2, B SUB2 77-8DEGREES, L.4256 (2,4-DINITROPHENYLHYDRAZONE M. 99-100DEGREES) BY REDN. WITH LIALH SUB4, AND KEEPING THE ACETAL IN AQ. ALC. H SUB2 SO SUB4 3.5 HR. PR SUB2 CO WAS CONDENSED WITH (ETO) SUB2 P(OICH SUB2 CO SUB2 ET TO FORM 83PERCENT PR SUB2 C IS TO CHCO SUB2 ET; REDN. WITH LIALH SUB4 TO PR SUB2 C IS TO CHCH SUB2 OH, TREATMENT WITH PBR SUB3, THEN WITH CH SUB2(CO SUB2 ET) SUB2 ANION, SAPON. AND DECARBOXYLATION GAVE PR SUB2 C IS TO CH(CH SUB2) SUB2 CO SUB2 H; ESTERIFICATION WITH ETOH, REDN. WITH LIALH SUB4, AND REACTION WITH PBR SUB3 GAVE I, B SUB2 80-50DEGREES, N 20 OVER D 1.4736.

FACILITY: INST. KHIM., KISHINEV, USSR.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--REACTION OF THE ETHYL ESTER OF DIETHYLPHOSPHONOACETIC ACID AND  
DIETHYLPHOSPHONACETONITRILE WITH GLUTARIC ANHYDRIDE -U-  
AUTHOR--(02)-KOVALEV, B.G., DORMIDONTOVA, N.P.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(4), 932-3

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANIC PHOSPHORUS COMPOUND, ESTER, ACETIC ACID, ACETONITRILE,  
ANHYDRIDE, HYDROXYL RADICAL, CYCLOHEXENE, CHEMICAL REACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3006/1506

STEP NO--UR/0079/70/040/004/0932/0933

CIRC ACCESSION NO--AP0135167

UNCLASSIFIED

2/2 015 UNCLASSIFIED PROCESSING DATE--27NOV70  
CIRC ACCESSION NO--AP0135167  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EQUIMOLAR AMTS. (ETO) SUB2 P(O)CH  
SUB2 CO SUB2 ET AND GLUTARALDEHYDE GAVE UP TO 40PERCENT  
2,CARBETHOXY,3,HYDROXYCYCLOHEXENE, 8 SUB2 72-70DEGREES, N PRIME20 SUBD  
1.4790, AND NOT AN ALDEHYDIC ESTER. SIMILAR REACTION WITH (ETO) SUB2  
P(O)CH SUB2 CN GAVE 40PERCENT 2,CYANO,3,HYDROXYCYCLOHEXENE, 9 SUB1  
120-4DEGREES, 1.50000. FACILITY: INST. KHIM., KISHINEV, USSR.

UNCLASSIFIED

USSR

UDC: 661.143

KOVALEV, B. V., SHIKUNOVA, S. T., VEDEKHIN, A. F.

"On an Accelerated Method of Determining the Drop in Luminescence Brightness of Electrofluorescent Scopes"

Sb. nauch. tr. VNI lyumineskovy i osobo chist. veschestv (Collected Scientific Works of the All-Union Scientific Research Institute of Phosphors and Extra Pure Materials), 1971, vyp. 5, pp 98-107 (from RZh-Khimiya, No 7, Apr 72, Abstract No 7L176)

Translation: An accelerated procedure is proposed for determining the decay time of electrofluorescent scopes on a frequency of 40 Hz over a relatively short period with high precision. Results.

Magnesium

USSR

VASIL'YEV, G. S., YEFIMENKO, G. G., KOVALEV, D. A., SULIMENKO, YE. I., and  
GAMAZOVA, L. B., Dnepropetrovsk Metallurgical Institute

"Effect of Magnesium on the Process of Sintering Briquettes Made of an Iron-  
ore Agglomerate Charge in an Oxidizing Atmosphere"

Novokuznetsk, IVUZ-Chernaya Metallurgiya, No 6, 1971, pp 23-30

Abstract: A study was made of the effect of magnesium additives on the pro-  
cess of sintering and on the quality and phase composition of a briquetted  
agglomeration charge for its solid-phase sintering without fuel in an oxidizing  
atmosphere.

The introduction of MgO into a charge prevents oxidation of magnetite to  
hematite due to its introduction into the magnetite lattice and the sub-  
stitution of FeO for MgO with the formation of solid solutions of MgO in  
Fe<sub>3</sub>O<sub>4</sub>. Dissolving of magnetite in magnesium ferrite increases the system's  
melting point.

Strengthening of samples is manifested by producing a denser structure  
due to the lack of a change in volume as a result of oxidation of magnetite  
to hematite as well as the formation of minerals, containing MgO, which possess  
a coefficient of thermal expansion close to the coefficient of its related  
minerals. Two figures, 5 tables, 5 bibliographical references.

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1/2 020 UNCLASSIFIED PROCESSING DATE--02OCT70  
TITLE--FRAGMENTAL MORPHOFUNCTIONAL ORGANIZATION OF THE BULGAR VASOMOTOR  
CENTER -U-  
AUTHOR-(02)-VALDMAN, A.V., KOVALEV, G.V. *K*  
COUNTRY OF INFO--USSR  
SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 69,  
NR 4, PP 15-21  
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--CAT, HISTOLOGY, SMALL INTESTINE, BLOOD VESSEL, NERVOUS SYSTEM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FREAME--1988/1577

STEP NO--UR/0219/70/069/004/0015/0021

CIRC ACCESSION NO--AP0106321

UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0106323

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPERIMENTS WERE PERFORMED ON 20 CURARIZED CATS. UNIPOLAR STIMULATION (MICROELECTRODE, 30-50  $\mu$ K) OF STRUCTURES OF THE BULBAR VASOMOTOR CENTER WITH SUBSEQUENT HISTOLOGICAL CONTROL WERE PERFORMED. THE VASCULAR TONE OF THE HIND LIMB AND SMALL INTESTINE WAS DETERMINED BY MEANS OF RESISTOGRAPHY. IN STIMULATION OF MEDIAL RETICULAR NUCLEI THE AUTHORS DEMONSTRATED AN ISOLATED RISE OF THE VASCULAR TONE OF ONE CIRCULATORY REGION WITHOUT ALTERATION OF THE TONE IN THE OTHER. UPON ACTIVATION OF THE REGION OF THE SOLITARY TRACT AND DESCENDING PATHWAYS THERE OCCURRED DIVERSE DIRECTED SHIFTS OF THE VASCULAR TONE (DEPRESSOR REACTIONS OF VESSELS OF THE HIND LIMB IN COMBINATION WITH PRESSOR REACTIONS OF VESSELS OF THE SMALL INTESTINE OR VICE VERSA). THE AUTHORS PRESENT A TOPOGRAPHIC DISTRIBUTION OF AREAS WITHIN THE LIMITS OF STRUCTURES OF THE RHOMBOENCEPHALON, DURING THE STIMULATION OF WHICH THERE OCCURRED PREVALENT RESPONSES OF VESSELS OF THE HIND LIMB OR SMALL INTESTINE. THE LOCALITY OF VASOMOTOR REGULATION IS ASSOCIATED WITH THE FEATURES PECULIAR TO THE MORPHOLOGICAL ORGANIZATION OF THE BULBAR VASOMOTOR CENTER AND IS RETAINED IN DEFINITE PARAMETERS OF PHYSIOLOGICAL ACTIVATION.

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PROCESSING DATE--30OCT70

1/2 043

UNCLASSIFIED

TITLE--FORCE COOLED SUPERCONDUCTING SYSTEMS -U-

AUTHOR-(04)-KEILIN, V.E., KLINENKO, E.YU., KOVALEV, I.A., SAMOILOV, B.N.

COUNTRY OF INFO--USSR

SOURCE--CRYOGENICS 1970, 10(3), 224-32

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--SUPERCONDUCTING MAGNET, CRYOGENIC LIQUID COOLING, CURRENT DENSITY, PRESSURE EFFECT, TRANSITION TEMPERATURE, FLUID FLOW, CRYOGENIC PUMP

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
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PROCESSING DATE--30OCT70

GIRC ACCESSION NO--AP0124858

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPTS. WITH A SUPERCONDUCTING COIL (60 MM INSIDE DIAM., 160 MM OUTSIDE DIAM., AND 230 MM LONG) WITH FORCED CIRCULATION OF LIQ. HE SHOWED THAT UNDER FORCED CIRCULATION THE SUPERCOND. WAS DESTROYED AT A COIL CURRENT OF SIMILAR TO 500 A, CORRESPONDING TO A FIELD OF SIMILAR TO 15 KOE. HOWEVER, WITH THE COIL IMMERSSED IN LIQ. HE, THE SUPERCOND. WAS DESTROYED AT 600-700 A. THE COOLING CAPACITY OF HE INCREASED WITH DECREASING PRESSURE, AND WITH DECREASING DIFFERENCE BETWEEN THE CRIT. TEMP. OF THE SUPERCONDUCTOR (10.2DEGREE SK) AND HE TEMP. FORCED COOLED SUPERCONDUCTING SYSTEMS ARE COMPARED WITH TRADITIONAL "POOL" SYSTEMS. A MODEL FOR DETG. THE STABILITY CRITERIA FOR SUPERCONDUCTING CURRENT IS PROPOSED. FACILITY: I. V. KURCHATOV AT. ENERGY INST., MOSCOW, USSR.

UNCLASSIFIED

1/2 045 UNCLASSIFIED PROCESSING DATE--30OCT70  
 TITLE--FORCE COOLED SUPERCONDUCTING SYSTEMS --U-  
 AUTHOR--(U4)-KEILIN, V.E., LKIMENKO, E.LU., KOVALEV, L.A., SAHOILOV, B.N.  
 COUNTRY OF INFO--USSR  
 SOURCE--CRYOGENICS, VOL. 10, JUNE 1970, P. 224-232  
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 SUBJECT AREAS--PHYSICS  
 TOPIC TAGS--SUPERCONDUCTIVITY, CRYOGENIC LIQUID COOLING, CRYOGENIC PUMP,  
 FLUID FLOW, CURRENT STABILIZATION  
 CONTROL MARKING--NO RESTRICTIONS  
 DOCUMENT CLASS--UNCLASSIFIED  
 PROXY REEL/FAME--2000/1275 STEP NO--UK/0000/70/010/000/0224/0232  
 CIRC ACCESSION NO--AP0124926  
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2/2 045

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124926

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FORCE COOLED SUPERCONDUCTING SYSTEMS (FCSS) ARE COMPARED WITH TRADITIONAL 'PDOL' SYSTEMS. A MODEL IS PROPOSED TO DETERMINE THE STABILITY CRITERIA FOR CURRENT IN FCSS AND SOME RESULTS OF THE ANALYSIS OF THIS MODEL ARE PRESENTED. A FORCE COOLED SUPERCONDUCTING COIL AND THE APPARATUS TO TEST THE COIL, BUILT IN IV KURCHATOV ATOMIC ENERGY INSTITUTE DURING 1968, ARE DESCRIBED. THE RESULTS OF THE TESTS ON THE COIL ARE ALSO PRESENTED. FACILITY: AKADEMIIA NAUK SSSR, INSTITUT ATOMNOI ENERGII, MOSCOW, USSR.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--11SEP70  
TITLE--RAMAN AND INFRARED ABSORPTION SPECTRA OF SOME BUTOXY-SILANES -U-

AUTHOR--OZOLINS, L., KOVALEV, I.F., ARBUZOVA, V.A., SHEVCHENKO, I.V.,  
VORONKOV, M.G.

COUNTRY OF INFO--USSR

SOURCE--LATV. PSR ZINAT. AKAD. NESTIS, KIM. SER. 1970, (1), 47-51

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--RAMAN SPECTRUM, IR SPECTRUM, ORGANIC SILANE, ORGANIC OXYGEN  
COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1989/0440

STEP NO--UR/0466/70/000/001/0047/0061

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PROCESSING DATE--11SEP70

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CIRC ACCESSION NO--AP0107046

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

ABSTRACT. RAMAN AND IR SPECTRA OF ME SUB3  
 SI(OBU) (I), ME SUB2 SI(OBU) SUB2 (II), ME SI(OBU) SUB2 (III), SI(OBU)  
 SUB4 (IV), SI(SEC-BUD) SUB4 (V), AND SI(ISO-BUD) SUB4 (VI) WERE  
 MEASURED. FREQUENCIES, INTEGRAL INTENSITIES, HALF BANDWIDTHS, AND  
 DEGREES OF DEPOLARIZATION OF THE RAMAN LINES ARE TABULATED. THE  
 SCATTERING COEFFS. IN THE SCALES 58 PRIME2 PLUS 76 PRIME2 (S) AND 58  
 PRIME2 PLUS 136 PRIME2 (R), THE TRACE, AND THE ANISOTROPY OF THE  
 POLARIZABILITY TENSOR WERE CALCD. ESTN. OF FORCE CONSTS. FOR III AND  
 IV WAS MADE. THE DISPERSION OF THE REFRACTION COEFF. WAS STUDIED IN II,  
 V, AND VI AND THE ABS. RAMAN SCATTERING CROSS SECTIONS FOR THE STOKES  
 WAVES NU SUB3 (SI-O) WERE EVALUATED. THE CORRECTED FREQUENCIES,  
 HALF-BANDWIDTHS, AND ABS. INTENSITIES OF SELECTED IR VIBRATIONS WERE  
 OBTAINED BY NUMERICAL BAND SEPN. THE EFFECT OF SUBSTITUENTS ON THE  
 STUDIED PARAMETERS IS DISCUSSED.

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Acc. No.

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Abstracting Service:  
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4R 0051

95003b Determination of the true values of the parameters of Raman effect lines. III. Morozova I. D.; Kovaleva L. F. (USSR). *Opt. Spektrosk.* 1970, 28(1), 69-71 (Russ). Possibility of calcul. of the true line contours of the Raman scattering by means of the obsd. contours of the investigated and exciting lines was investigated when the latter were in different intervals of the "line shape scale." Generalized functions of the type of convolutions of nonneighboring scale intervals were used as approximating functions. As an example, the convolution of the slit and dispersion functions was discussed and the formulas for the calcul. of true values of the integral intensities, intensities in the max., and half-widths were derived. Moravac

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USSR

UDC 621.385.632:6

KOVALEV, I. S., Corresponding Member of the Belorussian SSR Academy of Sciences, KURAYEV, A. A., DEMIDOVICH, Ye. M., SHEVCHENKO, F. G., Minsk Radio Engineering Institute

"On Calculation of a Gyroamplifier With Takeoff by Coupled Cavities"

Minsk, Doklady Akademii Nauk BSSR, Vol 17, No 11, Nov 73, pp 1007-1010

Abstract: The paper presents optimized versions of energy taps based on coupled resonators in a stability region where self-excitation of the tap is impossible for any electron beam currents and optimized versions of regenerative energy taps where the working current is a given amount lower than the starting current for a given Q of the resonator system of the tap.

1/1

23

USSR

UDC: 621.396.677.71

KOVALEV, I. S., MATYUKOV, G. F., MEL'NIKOV, V. A.

"Effect of Frequency Variation on the Polar Pattern of a Slotted Strip Antenna"

Minsk, *Novyye razrabotki elementov radiotekhn. ustroystv--sbornik* (New Developments in Elements for Electronic Equipment--collection of works), vyp. 1, "Vysheysh. shkola", 1972, pp 140-143 (from *RZh-Radiotekhnika*, No 12, Dec 72, abstract No 12B27 [résumé])

Translation: The article gives the results of a study of the operation of a linear slotted strip antenna with traveling-wave supply. On the basis of the ideas of antenna theory an expression is derived for the angle of inclination of the main lobe from the normal as a function of frequency. A comparison is made with a slot array in a rectangular waveguide. Two illustrations, bibliography of two titles.

1/1

USSR

KOVALEV, I. S., Corresponding Member of the Academy of Sciences Belorussian SSR, Doctor of Technical Sciences, and Professor, Editor

Novyye Razrabotki Elementov Radiotekhnicheskikh Ustroystv (Recent Advances in Components for Radio Engineering Equipment), Minsk, "Vysheynaya Shkola", Vyp 1, 1972, 279 pp

Translation: Table of Contents:	Page
Preface	3
1. General Radio Engineering	
BOGDANOVICH, B. M., "Feasibility of Gain Control Without Distortion of the Channel Frequency and Phase Characteristic Patterns"	5
BOGDANOVICH, B. M., "Reducing Nonlinear Distortions in a Quadrupole Variable-Attenuation Network"	16
ZABEN'KOV, I. I., "Calculating and Measuring the Crossmodulation Distortion in Approximating the Actual Operating Conditions of an Amplitude-Modulated Receiver"	24
KIRILLOV, V. I., "Investigating the Noise Factor of a Transistorized Receiver Having a Lumped-Constant Selectivity Filter at the Input"	29

1/6

USSR

KOVALEV, I. S., Novyye Razrabotki Elementov Radiotekhnicheskikh Ustroystv,  
Vyp 1, 1972, 279 pp

KIRILLOV, V. I. and KOROBOV, R. M., "Investigating the Selectivity Properties of the Detector in Video Receivers"	41
PRESNAKOV, G. P., "Frequency Properties of Certain Nonlinear Function Generators"	50
KIRILLOV, V. I., "Investigating the Noise Factors for a Transistorized Cascode System in the Region of Cutoff Frequencies"	56
KLYUYEV, L. L. and SHPOTA, S. D., "Certain Peculiarities of a Highly Stable Multivibrator Having a High Duty Ratio"	62
KLYUYEV, L. L. and CHERDYNTSEV, V. A., "On the Problem of Complementary Series of Length 10"	64
VALENKO, V. S. and KAFYSHEV, V. I., "On Calculating the Decoupling Level in Microwave Transmission Equipment with Increased Frequency Stability"	66
CHERDYNTSEV, V. A., "Synthesizing Linear Nonstationary Optical Systems With a Constraint"	70
KLYUYEV, L. L., NOSENKO, V. A., SHPOTA, S. D., OSPANIN, A. N., KARPUSHKIN, E. M., and KHEKHNEV, R. G., "A Compact Timer"	76
PUSTOVOYTOVSKIY, A. S., "Analysis and Design of a Penultimate 2/6 Transmitter Oscillator With Automatic Plate Modulation"	81

USSR

KOVALEV, I. S., Novyye Razrabotki Elementov Radiotekhnicheskikh Ustroystv,  
Vyp 1, 1972, 279 pp

SHPOTA, S. D., "The Dynamics of Transistor Saturation in a Multivibrator Circuit"	89
BAKINOVSKIY, K. N., DANILOV, V. A., and CHERNYAVSKIY, A. F., "Analyzing Precision-Frequency Fluctuations by Means of Time-Amplitude Converters"	95
CHEREPANOV, V. A., "Relative Noise Immunity of Correlation Receivers With Channel Asymmetry"	103
CHERNYSHEV, V. O., "Instrument for Determining a Ship's Drift"	108
EFIMCHIK, M. I., TROYAN, F. D., and MISHUK, S. V., "Getting With Opposing Currents"	113
GERMAN, V. A., EFIMCHIK, M. I., TROYAN, F. D., and MISHUK, S. V., "Stroboscopic Instruments Based on Random Coincidence"	118
ZHURAVILEVA, T. A., "Sensitivity of Quasibalanced Bridge Circuits"	123
OVSYANNIKOV, V. A., "The Problem of Selecting Quasimoments in the Variational Problem of Shannon. One-Dimensional Case"	128
ALEKSEYENKO, G. YE., "The Voltage, Current, and Power Equations at an Intermediate Information-Channel Point for a Quadrupole Equivalent Circuit"	131
ALEKSEYENKO, G. YE., "Applying an Active Two-Terminal Network Theorem to an Intermediate Point of an Information Channel and Deriving a Group of Design Equations for the Voltage and Current"	135

USSR

KOVALEV, I. S., Novyye Razrabotki Elementov Radiotekhnicheskikh Ustroystv,  
Vyp 1, 1972, 279 pp

## 2. Microwave Electronics

- KOVALEV, I. S., MATYUKOV, G. F., and MEL'NIKOV, V. A., "The Effect of  
Frequency Variation on the Radiation Pattern of a Stripline Slot  
Antenna" 140
- KUZNETSOV, YE. G. and MATYUKOV, G. F., "Determining the Basic Parame-  
ters of Stripline Balanced Ring Couplers" 144
- MEL'NIKOV, V. A., "Synthesizing a Stripline Slot Antenna With  
Traveling-Wave Feed" 150
- MEYERSON, V. M., "Steady-State Operation of a Tunnel-Diode Oscillator  
Allowing for Output Voltage Nonlinearity" 155
- KOVALEV, I. S., MATYUKOV, G. F., and MEYERSON, V. M., "Investigating the  
Steady-State Operation Relationships for a Tunnel-Diode Oscillator" 160
- KOVALEV, I. S., MATYUKOV, G. F., and KUZNETSOV, YE. G., "Lowpass  
Microwave Stripline Filters" 166
- CHIRKIN, N. M. and LYAMOV, V. YE., "Designing Waveguides With a  
Periodic Structure" 171
- CHIRKIN, N. M., YUR'YEV, V. F., and VLASOV, A. B., "Hypersonic  
Excitation by a Flattened Helix" 175

4/6

## USSR

KOVALEV, I. S., Novyye Razrabotki Elementov Radiotekhnicheskikh Ustroystv,  
Vyp 1, 1972, 279 pp

CHIRKIN, N. M., VLASOV, A. B., and BASOV, V. G., "Evaluating the Resonators Used for Hypersonic Excitation"	182
SAVEL'YEV, V. YA., "Gunn Oscillator Theory"	187
SAVEL'YEV, V. YA., "Electronic Parameters of a Tunnel-Diode Oscillator"	190
MOSHINSKIY, A. V., "Polarization Parameters of the Field Reflected by a System of Two Parallel Elliptical Cylinders With Arbitrary Orientation of the Cross-Sectional Ellipses"	196
KURAYEV, A. A., "Theory of Optimizing Microwave Electronic Instruments"	206
KURAYEV, A. A., "Theory of M-I Amplifiers With a Plasma Four-Row Slow-Wave Structure"	211
KURAYEVA, S. N. and SOROKIN, S. I., "The Thermal Design of Ceramic Vacuum Energy Outlet Windows for High-Power Microwave Instruments"	217
KHANDOGIN, M. S., "Some Parameters of a Tunnel-Diode Detector"	222
POLISHCHUK, A. A., "Electron Bunching in a Nonlinear Field of a Reflector"	227
POLISHCHUK, A. A., "The Effect of Modulation Losses and Space Charge on the Electronic Efficiency of a Reflex Klystron"	233

5/6



USSR

KOVALEV, I. S., Novyye Rizrabotki Elementov Radiotekhnicheskikh Ustroystv,  
Vyp 1, 1972, 279 pp

MINAYEV, M. I., "Estimating the Compressed-Pulse Distortions Caused by Instability of the Amplitude-Frequency and Phase-Frequency Char- acteristics of a Floating-Drift Klystron"	239
MINAYEV, M. I., "Electronic Phase Shifting in a Four-Cavity Klystron for Various Tuning Methods"	243
3. Design and Fabrication Techniques for Radio Equipment	
KHOMCHIK, F. A. and POPOV, G. M., "The Dependence of Input Impedance on the Physical and Structural Parameters of High-Frequency Alloy- Diffused Transistors"	246
STANISHEVSKIY, V. K., TIKHONENKO, V. I., and SHUKLIN, K. S., "Investigating Escapon [Synthetic Butadiene Rubber Heat-Treated Under Pressure] Insulators for the Input Circuits of Electrometers"	251
STANISHEVSKIY, V. K., "A Technique for Mounting Teflon-0 Insulators"	256
MAN'SILIN, G. G. and IGHATOV, V. A., "Procedure for Evaluating and Optimizing the Performance Quality of Radioelectronic Devices"	262
Abstracts of the Articles in This Book	266

6/6

USSR

UDC 621.382.2

~~KOVALEV, I. S.~~, MEYERSON, V. M., KOVALEV, S. I., SHARAFOV, V. V. [Corresponding Members of AS, BSSR]

"Calculation Of Electronic Retuning Of Oscillator Based On a Tunnel Diode With The Aid Of a Varactor"

Doklady Akademii Nauk BSSR, Vol XVI, No 7, July 1972, pp 607-609

Abstract: An experimental study is made of an oscillator based on a non-symmetrical strip with varactor retuning. The equation of an oscillator based on a tunnel diode with a varactor connected to it is solved graphically, which makes it possible to calculate its retuning curve. An analysis is made of the dependence of the frequency retuning of the oscillator on the parameters of the varactor and the resonance system of the generator. The design of the resonance system of the oscillator makes it possible to change the coupling factor of the varactor. The results of the experimental study of varactor retuning of a tunnel-diode oscillator agree well with calculated data. 2 ill. 2 ref. Received, 7 December 1971.

1/1

USSR

UDC 621.385.632:621.372

KOVALEV, I. S., Corresponding Member of the Academy of Sciences BSSR,  
KURAYEV, A. A., DEMIDOVICH, YE. M., SHEVCHENKO, F. G., Minsk Radio Engineering  
Institute

"Efficiency-Optimized Section Gyroamplifiers of the Resonator Type"

Minsk, Doklady Akademii nauk BSSR, No. 12, Dec 71, pp 1082-1084

Abstract: Cascade groupings of electrons in sectioned gyroresonance amplifiers is used to achieve high electron efficiency and ensure at the same time high stability of the amplifier. It is noted that in ordinary two-resonator designs of gyroamplifiers consisting of a modulator, a grouping region and an energy selector, the conditions for achieving high efficiencies and the conditions for ensuring a high stability reserve are incompatible. Effective grouping of electrons in the selector is required to achieve high efficiencies in two-resonator designs but it is achieved only for a large length or a high Q of the resonator of the selector; calculations have shown that efficiency-optimal regimes of a two-resonator design are in the generation region and therefore it is necessary to introduce into the amplifier circuit an additional resonator to provide additional grouping of the electron flow. The Rosenbrock method of

1/2

- 139 -

USSR

KOVALEV, I. S., et al, Doklady Akademii nauk BSSR, No. 12, Dec 71, pp 1082-1084

seeking the extremum of a multidimensional function was used to optimize the circuit of the sectioned resonator-type gyroamplifier, since it is most suitable for this class of problems. The results show that efficiencies of 80% are achieved with a doubled stability reserve in the optimized circuit of the gyroamplifier with autonomous pregrouping.