

USSR

UDC 591.567

TAGIL'TSEV, A. A., Omsk Scientific Research Institute for Natural Focus Infections, Ministry of Health RSFSR

"Arthropods Collected From Owlets in the Zaisan Basin"

Leningrad, Parazitologiy, Vol 5, Vyp. No 4, Jul/Aug 71, pp 382-384

Abstract: *Myotis mistacinus* Kohl and *M. oxygnathus* Mont. were chosen to study the ecobiology of ectoparasites from the delta of the Chernyy Irtysh and the Monrak foothills, during 1962-1963. The predominance of males, females, and nymphs was studied with respect to other forms of development and with respect to the months of the year. The counts for various species are given in a Table. No differences were observed in the distribution of males, females, and nymphs of *S. myoti* with different moths. This is characteristic for epizoinal ectoparasites in vertebrate hosts. Among *S. myoti* females and nymphs were observed (30.7 and 42.0%, respectively). Approximately the same ratio was observed also in micropopulations of *I. granulosis* (53.4% females and 24.2% nymphs). The parasites found on the owlets were specific. If they can serve as disease carriers, it is only possible within a narrow range of host species.

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UDC 911.3:616.988.25(571.13)

TAGIL'TSEV, A. A., and TARASEVICH, L. N.

"The Possibility of Gamasid Ticks Participating in the Virus Cycle of Tickborne Encephalitis in Native Foci"

V sb. Vtoroye Acarologicheskoye soveshchaniye. Ch. 2. Tezisy dokl.  
(Second Acarological Conference. Part 2. Theses of Reports -- collection of works) Kiev, "Nauk. dumka," 1970, pp 159-160 (from RZh-Meditsinskaya Geografiya, No 4, Apr 71, Abstract No 4.36.60)

[No abstract]

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UNCLASSIFIED

PROCESSING DATE--04DEC70

1/2 033

TITLE--PURIFICATION OF NATURAL GAS USING THE VORTEX EFFECT -U-

AUTHOR--(05)--LEYTES, I.L., SEMENOV, V.P., POLOVINKIN, V.A., LURYE, B.I.,  
TAGINTSEV, B.G.

COUNTRY OF INFO--USSR

SOURCE--KHIM. PROM. (MOSCOW) 1970, 46(5), 345-50

DATE PUBLISHED-----70

SUBJECT AREAS--PROPULSION AND FUELS

TOPIC TAGS--NATURAL GAS, CHEMICAL SEPARATION, VORTEX

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3008/1734

STEP NO--UR/0064/70/046/005/0345/0350

CIRC ACCESSION NO--AP0138707

UNCLASSIFIED

2/2 033

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0138707

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EFFECTS OF LENGTH-HEIGHT RATIOS IN A JET VORTEX INTAKE OF 200 MM PRIME2 CROSS SECTION AND INPUT-OUTPUT PRESSURE RATIOS  $\beta$  EQUALS  $P_{SUB2}-P_{SUB4}$  ON THE COOLING EFFECT AND THE DEGREE OF REMOVAL OF C SUB6 POSITIVE HYDROCARBONS FROM NATURAL GAS WERE STUDIED. COOLING OF THE STARTING GAS BY THE COLD STREAM ISSUING FROM THE VORTEX WAS MAX. AT  $\mu$  VALUES (0.7-0.9) WHICH DECREASED AS  $\beta$  INCREASED. AT  $\mu$  EQUALS 0.75 AND  $\beta$  EQUALS E.R, THE HIGHEST  $\Delta T_{SUB1-4}$  (74DEGREES) WAS OBSD. COOLING BY BOTH THE COLD STREAM AND VORTEX WERE LOWER, THE HIGHER THE CONTENT OF IMPURITIES TO BE CONDENSED. C SUB6-8 HYDROCARBON CONTENT IN GAS ISSUING AT 4-9 ATM AND INITIALLY CONTG. 15 G-M PRIME3 C SUB6-8 HYDROCARBONS DROPPED FROM TO 12.7, 8.7, 4.1, 3.9, 2.9, AND 0.8 AS THE TEMP. OF THE COLD STREAM 0DEGREES TO MINUS 9DEGREES, MINUS 10DEGREES TO MINUS 19DEGREES, MINUS 20DEGREES TO MINUS 29DEGREES, MINUS 30DEGREES TO MINUS 39DEGREES, MINUS 40DEGREES TO MINUS 49DEGREES, AND MINUS 50DEGREES TO MINUS 60DEGREES.

UNCLASSIFIED

USSR

UDC 621.375.82

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GLAZER, A. A., NIKITINA, T. F., PANTELEYEV, V. I., PLOTNIKOV, A. F., POPOV, YU. M., POTAPOV, A. P., SELEZNEV, V. N., TAGIROV, R. I., and SHUR, YA. S.

"Using GaAs and Nd Lasers for Optical Writing on MnBi Film"

Kratkiye Soobshch. po fiz. (Brief Communications on Physics) No 12, 1972, pp 9-12 (from RZh-Fizika, No 7, 1973, Abstract No 7D1088)

Translation: The possibility of using a GaAs semiconductor laser for recording information on a ferromagnetic film of MnBi is experimentally investigated. MnBi film 700 Å thick, which has undergone condensation in a vacuum on glass substrates of 0.1-0.2 mm in thickness, is used. For recording information, a GaAs laser with a threshold current of 2 amp at 77° K and a p-n junction width of 400 μ is used. It is shown that the laser's minimum pumping current at which recording is possible is 80 amp, whereas the radiation power is 20 w. The energy density of the radiation on the film is then 6·10<sup>-9</sup> j/μ<sup>2</sup>. With a monopulse neodymium laser, an evaluation of an information recording density equal to 2500 lines/cm is made. It is noted that the use of a semiconductor laser with a junction width not exceeding 20 μ permits reducing the power to a fraction of a watt. Bibliography of four.

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UDC 538.221

GLAZER, A. A., POTAPOV, A. P., TAGIROV, R. I., and KONSTANTINOVA, I. YU.,  
Institute of the Physics of Metals, Ural Scientific Center, Academy of Sci-  
ences USSR

"Temperature Dependence of Magnetic Properties and Perpendicular Anisotropy  
of 'Transcritical' Films"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 36, No 6,  
1972, pp 1195-1198

Abstract: A detailed understanding of the physical nature of the "trans-  
critical" state requires a knowledge of the quantitative relation between  
 $I_S$  and  $K_{\perp}$ , on the one hand, and the hysteresis loop parameters and rotatable  
anisotropy, on the other. The article attempts to establish such a relation  
by studying the temperature dependence of  $K_{\perp}$ ,  $I_S$ ,  $H_S$ ,  $H_C$ ,  $I_T/I_S$ ;  
the "flaking" field; and the rotatable anisotropy constant in  
"transcritical"  $^{86}\text{Ni}-^{14}\text{Fe}$  alloy films  $2400 \text{ \AA}$  in width at temperatures from  
 $-196$  to  $+200^{\circ}$  C. The results are compared with theoretical results obtained  
from formulas based on the open stripe-domain structure model.

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1/2 037 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--IMPURITY STATES OF MERCURY IN GERMANIUM, SILICON ALLOYS -U-  
AUTHOR--(03)-AZHDAROV, G.KH., TAGIROV, V.I., TAIROV, S.I.  
COUNTRY OF INFO--USSR  
SOURCE--FIZIKA I TEKHN. POLUPROV., APR. 1970, 4, (4), 774-776  
DATE PUBLISHED----APR 70  
SUBJECT AREAS--MATERIALS  
TOPIC TAGS--GERMANIUM ALLOY, ELECTRICAL PROPERTY, SILICON ALLOY, METAL  
COATING, MERCURY, HALL EFFECT, ELECTRIC CONDUCTIVITY, LOW TEMPERATURE  
EFFECT, ELECTRON ACCEPTOR  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3003/0221 STEP NO--UR/0449/70/004/004/0774/0776  
CIRC ACCESSION NO--AP0129477  
UNCLASSIFIED

2/2 037

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0129477

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ELECTRICAL PROPERTIES (ELECTRICAL CONDUCTIVITY, HALL EFFECT, ETC.) OF HG-DOPED GE-SI ALLOYS WERE STUDIED WITH SPECIAL REF. TO THE PART PLAYED BY THE FIRST ACCEPTOR LEVEL OF HG AND ALSO POSSIBLE DONOR LEVELS. THE RISE IN THE HALL COEFF. AT LOW TEMP. (100DEGREESK) SUGGESTED THE PRESENCE OF ONE OR MORE DONOR CENTRES; ONE POSSIBILITY WAS THAT THESE GAVE THEIR ELECTRONS TO SHALLOW ACCEPTORS, WHILE THEY THEMSELVES ACTED AS PSEUDO ACCEPTOR LEVELS.

UNCLASSIFIED



1/2 012 UNCLASSIFIED PROCESSING DATE--16OCT70  
 TITLE--MODIFIED P TOLUENESULFONAMIDE, FORMALDEHYDE RESINS -U-  
 AUTHOR--(05)-MELNIKOVA, YE.P., KOROTKAYA, L.I., KHARIT, YA.A., KOROLEVA,  
 N.G., TAGIEV, B.A.  
 COUNTRY OF INFO--USSR  
 SOURCE--U.S.S.R. 260,884  
 REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970 47(4)  
 DATE PUBLISHED--06JAN70

SUBJECT AREAS--CHEMISTRY, MATERIALS  
 TOPIC TAGS--TOLUENE, SULFONAMIDE, FORMALDEHYDE, POLYCONDENSATION,  
 CYCLOHEXANONE, CHEMICAL PATENT, PLASTIC PRODUCTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
 PROXY REEL/FRAE--1995/1055

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

CIRC ACCESSION NO--AA0116521  
 UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AA0116521

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

ABSTRACT. HCHO RESINS ARE PREPD. BY  
COPOLYCONDENSATION OF HYDROXYMETHYL DERIVS. OF P TOLUENESULFONAMIDE,  
HCHO, AND A MODIFIER, SUCH AS CYCLOHEXANONE OR M SULFAMGYLBENZOIC ACID  
(I). FACILITY: INSTITUTE OF HIGH MOLECULAR WEIGHT COMPOUNDS,  
ACADENY OF SCIENCES, U.S.S.R.

UNCLASSIFIED

1/2 030

UNCLASSIFIED

PROCESSING DATE--04DEC70

TITLE--ELECTROABSORPTION OF GALLIUM SELENIDE -U-

AUTHOR--(04)--GADZHIYEV, V.A., SOKOLOV, V.I., SUBASHIYEV, V.K., TAGIYEV, B.K.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(5), 1350-4

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ABSORPTION SPECTRUM, GALLIUM SELENIDE, PHOTON, EXCITON, IONIZATION, LIQUID NITROGEN, FORBIDDEN BAND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3009/0113

STEP NO--UR/0181/70/012/005/1350/1354

CIRC ACCESSION NO--AP0138978

UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0138978

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ELECTROABSORPTION SPECTRUM OF GASE WAS INVESTIGATED AT 80, 295, 345, AND 395 DEGREES K IN FIELDS OF 5 TIMES 10 PRIME 3 - 2 TIMES 10 PRIME 4 V-CM. COMPARISON OF EXPTL. RESULTS WITH THE THEORETICAL EXPRESSION FOR THE 1ST HARMONIC ALPHA SUB 1 OF A COMPLETE VARIATION OF THE ABSORPTION COEFF.,  $\Delta D(H \Omega, F)$  EQUALS  $\alpha(H \Omega, F) - \alpha(H \Omega, 0)$  ( $H \Omega$  EQUALS PHOTON ENERGY,  $F$  EQUALS ELEC. FIELD) FOR THE CASE OF DIRECT ALLOWED TRANSITIONS WITHOUT ACCOUNTING FOR EXCITONS SHOWED A CONSIDERABLE DIFFERENCE BETWEEN THEM. THE EXPTL. DETD. ALPHA SUB 1 IS MORE DEPENDENT ON TEMP. AND IT DECREASES WITH INCREASING ENERGY OF THE QUANTUM MORE RAPIDLY THAN PREDICTED BY THE THEORY. EXPTL. DATA CAN BE EXPLAINED IF IT IS ASSUMED THAT THE MAIN CONTRIBUTION TO ELECTRO ABSORPTION COMES FROM DECOMP. OF EXCITONS IN THE 2-DIMENSIONAL CASE. AT ROOM TEMP. THE ENERGY OF IONIZATION OF EXCITON  $E_{SUBEX}$  EQUALS 67 MEV AND THE WIDTH OF THE FORBIDDEN BAND  $E_{SUBG}$  EQUALS 2.036 MEV. AT LIQ. N TEMP. THE OBSD. SPECTRUM OF ELECTROABSORPTION IS RELATED TO DECOMP. OF EXCITON PEAKS.  $E_{SUBEX}$  IS 70 MEV AND  $E_{SUBG}$  IS 2.131 MEV. FACILITY: INST. POLUPROV., LENINGRAD, USSR.

UNCLASSIFIED

1/2 017

UNCLASSIFIED

PROCESSING DATE--18SEP70

TITLE--SULFURIC ACID TREATMENT OF ZAGLIK ALUNITES -U-

AUTHOR--(02)-LAYNER, A.I., TAGIYEV, E.I.

T

COUNTRY OF INFO--USSR

SOURCE--TSVET. METAL. 1970, 43(1), 44-7

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--POTASSIUM MINERAL, CRYSTAL HYDRATE, SULFATE, SULFURIC ACID, SOLUTION HEAT TREATMENT, SILICA, IRON OXIDE, ALUMINA, SODIUM OXIDE, POTASSIUM OXIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1986/0777

STEP NO--UR/0136/70/043/001/0044/0047

CIRC ACCESSION NO--AP0102740

UNCLASSIFIED

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CIRC ACCESSION NO--AP0102740  
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--18SEP70

ABSTRACT. AN ATTEMPT WAS MADE TO DET. THE OPTIMUM FIRING TEMP. OF ALUNITES. TO BE ABLE TO DO THIS, 40-G BATCHES OF THE ALUNITES WERE HEATED IN A MUFFLE FURNACE AT 460, 500, 540, 560, 580, AND 620DEGREES FOR 3 HR. THE BATCHES FIRED AT THESE TEMPS. WERE TREATED WITH H SUB2 SO SUB4 SOLN. UNDER VARIOUS CONDITIONS IN A GLASS VESSEL WHILE BEING STIRRED MECH. THE FILTRATE WAS ANALYZED FOR AL SUB2 O SUB3, FE SUB2 O SUB3, K SUB2 O, NA SUB2 O, AND SIO SUB2. THE HIGHEST EXTN. OF THE USEFUL COMPONENTS AT THE GIVEN TEMP. IS ACHIEVED AFTER 3-4 HR FIRING. IF THE FIRING TIME IS MORE OR LESS THAN THIS, LEACHING IS NOT AS SUCCESSFUL. WITH THE EXCESS OF H SUB2 SO SUB4 INCREASING, THE DEGREE OF DISSOLN. OF FE SUB2 O SUB3 INCREASES. IN ALL CASES, SIO SUB2 DISSOLVES IN ONLY SMALL AMTS. THE MAX. EXTN. OF SIO SUB2 IS ACHIEVED AFTER 45 MIN LEACHING OF ALUNITE. INCREASING THE H SUB2 SO SUB4 CONC. TO 40PERCENT HAS NO EFFECT ON THE EXTN. OF USEFUL COMPONENTS, AND DECREASES THE OUTPUT OF FE SUB2 O SUB3 ONLY SLIGHTLY. THE OPTIMUM CONDITIONS OF THE PROCESS WERE: FIRING AT 560DEGREES FOR 3 HR; LEACHING AT 80-90DEGREES FOR 45 MIN; H SUB2 SO SUB4 CONC. 30 PERCENT; AMT. OF H SUB2 SO SUB4 105PERCENT OF STOICHIOMETRIC. THE SOLID AND LIQ. PHASES CAN BE SUCCESSFULLY SEPD. BY ALLOWING THE PULP TO SETTLE AT 80DEGREES.

UNCLASSIFIED

USSR

UDC 624.07:534.1

TAGIYEV, I. G., TAGI-ZADE, A. G.

"Solving the Problem of the Stability of Longitudinally Compressed Hollow Flexible Cylindrical Shells"

Uch. zap. Azerb. in-t nefti i khimii (Scientific Notes of Azerbaijan Institute of Oil and Chemistry), 1972, Series 9, No. 3, pp 51-55 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V299)

Translation: The critical force of a longitudinally compressed hollow cylindrical shell with variable geometric characteristics under large bends is calculated. Nonlinear equations with variable coefficients are described by introducing dimensionless coordinates and the desired bending and force functions in the form of equations containing a small parameter by expansion in series in terms of powers of which the desired solution is constructed. The resulting system of differential equations relative to the functions in terms of powers of the small parameter is an infinite system of such linear equations which make it possible to obtain a solution of the problem with any accuracy desired. The first two equations of this system give a solution corresponding to the problem of the eigenfunctions

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TAGIYEV, I. G., TAGI-ZADE, A. G., Uch. zap. Azerb. in-t nefti i khimi, 1972, Series 9, No. 3, pp 51-55

of a longitudinally compressed hollow cylindrical shell of constant thickness and curvature in the linear formulation. The effect of variability of the geometric parameters of the shell and nonlinearity under large bends is taken into account by the solution of the remaining equations. An example of a hollow cylindrical panel of variable thickness and curvature is discussed in detail. The results are in good agreement with earlier known results in the limiting case for a panel with constant parameters. E. I. Sokolov.

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USSR

T  
TAGIYEV, R.

"Trials of Two New Vaccines"

Moscow, Vechernaya Moskva, 20 July 70, p 2

Abstract: A brief account is given of two new vaccines developed by the All Union Academy of Agricultural Sciences. One vaccine, available in different varieties for pasteurellosis in buffalo, sheep, cattle, swine, and poultry, has undergone successful trials on farms in the vicinity of Moscow and in Central Asia. It confers immunity for about 18 months. The other vaccine, swine fever vaccine, was administered to 300,000 swine and produced marked immunity to the disease without any significant side effects. Both preparations are now in mass production.

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6022

CJO: 1840-71

- 76 -

1/2 019 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--DISPLACEMENT OF DRILLING MUD FROM AN ANNULAR SPACE BY A POLYMER  
CEMENT MIXTURE -U-  
AUTHOR-(03)-MUSTAFAYEV, A.D., MUKHMUDOV, M.N., TAGIYEV, YU.B.  
COUNTRY OF INFO--USSR  
SOURCE--AZERB. NEFT. KHOZ. 1970, (2), 18-20  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS  
TOPIC TAGS--WELL DRILLING MACHINERY, MUD, CEMENT, POLYMER, DRILLING MUD  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3003/0142 STEP NO--UR/0487/70/000/002/0018/0020  
CIRC ACCESSION NO--AP0129398  
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0129398

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A POLYMER CEMENT MIXT. (COMPOSED OF A LIQ. POLYMER AND CEMENT MORTAR (A. D. MUSTAFAEV, 1968)) IS PROPOSED FOR THE DISPLACEMENT OF DRILLING MUD FROM THE ANNULAR SPACE AND REINFCRCEMENT OF OIL AND GAS WELLS.

UNCLASSIFIED

1/2 031 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--CORRELATION BETWEEN THE INTENSITY OF PROTEIN SYNTHESIS AND  
INTENSIFICATION OF GLYCOLYSIS OR RESPIRATION IN TUMOR CELLS -U-  
AUTHOR--TAGIZADE, S.B.  
COUNTRY OF INFO--USSR  
SOURCE--VOP. CNKOL. 1970, 16(4), 103-8  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--PROTEIN SYNTHESIS, RESPIRATION, SULFUR ISOTOPE, METHIONINE,  
RAT, CARCINOMA, REPRODUCTIVE SYSTEM, OXYGEN, GLUCOSE, AMINO ACID,  
RESPIRATION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PRGXY REEL/FRAME--3002/0437 STEP NO--UR/0506/70/016/004/0103/0108  
CIRC ACCESSION NO--AP0128007  
UNCLASSIFIED

2/2 031

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0128007

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INCORPORATION OF PRIME35 S, LABELED METHIONINE INTO PROTEINS WAS STIMULATED AND THAT OF ALANINE, 1, PRIME14 C INTO OVARIAN ASCITES CARCINOMA IN RATS WAS SOMEWHAT INHIBITED BY I.P. ADMINISTRATION OF G AND GLUCOSE. INCORPORATION OF THE CORRESPONDING AMINO ACIDS INTO LIVER PROTEINS WAS NOT EFFECTED BY CHANGES IN GLYCOLYSIS OR RESPIRATION. THE OBSD. EFFECTS WERE LESS SIGNIFICANT WHEN THE AMINO ACIDS WERE ADMINISTERED S.C. RATHER THAN I.P. AND WHEN THE G WAS INTRODUCED BY INHALATION RATHER THAN DIRECTLY INTO THE PERITONEAL CAVITY. FACILITY: RES. INST. ROENTGENOL., RADIOLOGICAL, BAKU, USSR.

UNCLASSIFIED

1/2 021 UNCLASSIFIED PROCESSING DATE--11SEP70  
TITLE--ENHANCEMENT IN S PRIME35 METHIONINE INCORPORATION INTO PROTEINS OF  
EXPERIMENTAL TUMORS OF RATS AND MICE AT THE INCREASED CONSUMPTION OF  
AUTHOR--TAGIZADE, S.B., SHAPOT, V.S.

COUNTRY OF INFO--USSR

SOURCE--VOPROSY MEDITSINSKOY KHIMII, 1970, VOL 16, NR 2 PP 142-147

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SULFUR, CHEMICAL LABELLING, METHIONINE, TUMOR, PROTEIN,  
BIOSYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1986/0792

STEP NO--UR/0301/70/016/002/0142/0147

CIRC ACCESSION NO--AP0102755

UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0102755

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. METHIONINE S PRIME35 INCORPORATION INTO PROTEINS OF LIVER AND TUMORS AT HYPERGLYCAEMIA (250-300 MGPERCENT) OR INCREASED CONSUMPTION WITH OXYGEN BY MEANS OF INHALATION (SOLID TUMORS) OR I. P. OXYGEN ADMINISTRATION (ASCITES) WAS STUDIED. 320 RATS AND MICE WITH FIVE DIFFERENT TRANSPLANTABLE TUMORS (SARCOMA M SUB1, GERENE CARCINOMA, KROCKER SARCOMA AND EHRlich CARCINOMA) WERE USED THROUGHOUT THE EXPERIMENTS. RADIOACTIVE MET IONINE WAS INJECTED IN AMOUNTS OF 3000-5000 CPM-G OF BODY WEIGHT. THE INCREASED CONSUMPTION OF ORGANISM WITH OXYGEN OR GLUCOSE STIMULATES METHIONINE S PRIME35 INCORPORATION INTO TUMOR PROTEINS EQUALLY. THIS EFFECT IS OF SELECTIVE NATURE IN TUMOR, BECAUSE OF STEADFASTNESS IN LABEL INCORPORATION INTO LIVER PROTEINS, AT THE SAME CONDITIONS. IT MAY BE CONCLUDED FROM THE DATA OBTAINED THAT IN THE BODY TUMORS EXIST IN THE STATE OF RELATIVELY GLUCOSE AND OXYGEN INSUFFICIENCY, AND MAY SPEND THE ADDITIONAL ENERGY FORMED BY STIMULATION OF GLYCOLYSIS OF OXYDATION FOR PROTEIN BIOSYNTHESIS.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--TO THE EFFECT OF TUMOR DEVELOPMENT IN GLYCOGEN DEPOSIT IN THE LIVER  
-U-  
AUTHOR--(02)-TAGIZADE, S.B., SHAPOT, V.S.  
COUNTRY OF INFO--USSR  
SOURCE--VOPROSY MEDITSINSKOY KHIMII, 1970, VOL 16, NR 3, PP 254-258  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--TUMOR, GLYCOGEN, LIVER, EPINEPHRINE, SARCOMA, CARCINOMA,  
MOUSE, RAT GLUCOSE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1998/0228 STEP NO--UR/0301/70/016/003/0254/0258  
CIRC ACCESSION NO--AP0120921  
UNCLASSIFIED



2/2 020  
CIRC ACCESSION NO--AP0120921

UNCLASSIFIED

PROCESSING DATE--16OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF TUMOR DEVELOPMENT ON GLYCOGEN DEPOSIT IN THE LIVER BY MEANS OF EPINEPHRINE TEST IN 5 STRAINS (SARCOMA H SUB1, GERENE AND OVARIAN CARCINOMA, AND CROCKER AND EHRlich MICE CARCINOMA) HAS BEEN STUDIED. THE EXPERIMENTS WERE CARRIED OUT ON 1176 MICE AND RATS. THREE SERIES OF EXPERIMENTS WERE MADE: THE ANIMALS OF THE FIRST GROUP WERE KEPT ON ORDINARY RATION, IN THE SECOND WERE SATURATED WITH GLUCOSE, AND IN THE THIRD WERE STARVED 24 H BEFORE THE EXPERIMENT. THE CONCLUSION WAS MADE: THE DECREASE IN LIVER GLYCOGEN SUPPLY DURING THE TUMOR DEVELOPMENT GOES INDEPENDENTLY ON THE STRAIN OF TUMOR. THE MORE IS THE INTENSITY OF TUMOR GROWTH, THE GREATER IS THE DECREASE. THE FALL IN LIVER GLYCOGEN SUPPLY IS NOT CONNECTED WITH THE DISORDERS IN GLYCOGEN SYNTHESIS. DURING THE APPRECIABLE SUPPLY OF ORGANISM OF TUMOR BEARING ANIMALS WITH GLUCOSE THE LIVER CAN DEPOSIT ITS SURPLUS AS GLYCOGEN. AFTER THE DEPLETION OF GLYCOGEN SUPPLY THE LIVER OF TUMOR BEARING ANIMALS CAN FORM GLYCOGEN FROM THE PROTEINS AND LIPIDS. IN THE COURSE OF TUMOR DEVELOPMENT THE ABILITY OF LIVER TO GLYCOGENOLYSIS DOES NOT CHANGE. THE DEPLETION OF LIVER GLYCOGEN SUPPLY DURING THE TUMOR DEVELOPMENT AND MAINTENANCE OF LIVER ABILITY TO GLYCOGEN SYNTHESIS IS CONNECTED WITH THE GLUCOSE CONSUMPTION BY THE MALIGNANT CELLS.

FACILITY: RESEARCH INSTITUTE OF ROENTGENOLOGY, RADIOLOGY AND ONCOLOGY, AZERBAIDJAN SSR, BAKU.

UNCLASSIFIED

USSR

TAGI-ZADE, T. A., MARDANLY, A. S., and EFENDIYEV, S. S.

"Study of the Survival Time of Leptospira in the Environment in the Azerbaydzhan SSR"

Baku, Doklady Akademii Nauk Azerbaydzhanskoy SSR, No 7, 1971, pp 94-96

Abstract: Of great interest from the epidemiological standpoint is the survival time of Leptospira in the environment in the Azerbaydzhan SSR, specifically in the city of Baku, where Leptospira is found both in man and in animals.

The survival time of Leptospira in different kinds of water (tap, rain, and melted snow), and in human urine was studied under laboratory conditions. It was found that in artificially infected Baku tap water (pH 7.0) Leptospira remain viable about 34 to 38 days, in melted snow (pH 5.5) about 42 days, in rainwater (pH 6.8) 16 to 29 days, in human urine (pH 5.0) 10 to 15 days, and in tap water contaminated with urine 45 to 50 days. The morphological and pathogenic properties of the Leptospira were also studied.

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USSR

TAGI-ZADE, T. A., et al., Doklady Akademii Nauk Azerbaydzhanskoy SSR, No 7, 1971, pp 94-96

Thus, the survival of Leptospira in different kinds of water and in human urine suggests that these sources may play a role in the spread of leptospirosis in the Azerbaydzhan SSR, particularly in the city of Baku.

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USSR

TAGIZADE, T. A., EFENDIYEV, S. S., and MARDANLY, A. S.,

"Determination of Survival Period of Leptospira in Different Waters Under Conditions of the Azerbaydzhan SSR"

Baku, Azerbaydzhanaskiy Meditsinskiy Zhurnal, No 5, May 71, pp 53-59

Abstract: It has been established that sea water possesses therapeutic properties with respect to certain diseases. Undoubtedly, contamination of sea water by various waste products or waste waters reduces the therapeutic properties of sea water and also creates the hazard of spreading infections.

In this work the survival period of Leptospira was studied in different waters under conditions of the Azerbaydzhan SSR. The following conclusions were made. In the sea waters along the Shikhovo beach, Leptospira survive from 15 to 31 days, while in the sea waters of Buzovnov they live 10-31 days, after which they lose pathogenicity. Saprophytic microbes found in these waters affect survival of the Leptospira in sea water. In the rain, snow, and water supply system waters of Baku, Leptospira survive for a certain time without losing pathogenicity. The obtained results confirm the opinion held by a number of authors that Azerbaydzhan water conditions play a definite role in the spread of diseases caused by Leptospira.

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USSR

UDC 624.07:534.1

TAGIYEV, I. G., TAGI-ZADE, A. G.

"Solving the Problem of the Stability of Longitudinally Compressed Hollow Flexible Cylindrical Shells"

Uch. zap. Azerb. in-t nefti i khimii (Scientific Notes of Azerbaijan Institute of Oil and Chemistry), 1972, Series 9, No. 3, pp 51-55 (from EZh-Mekhanika, No 3, Mar 73, Abstract No 3V299)

Translation: The critical force of a longitudinally compressed hollow cylindrical shell with variable geometric characteristics under large bends is calculated. Nonlinear equations with variable coefficients are described by introducing dimensionless coordinates and the desired bending and force functions in the form of equations containing a small parameter by expansion in series in terms of powers of which the desired solution is constructed. The resulting system of differential equations relative to the functions in terms of powers of the small parameter is an infinite system of such linear equations which make it possible to obtain a solution of the problem with any accuracy desired. The first two equations of this system give a solution corresponding to the problem of the eigenfunctions

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TAGIYEV, I. G., TAGI-ZADE, A. G., Uch. zap. Azerb. in-t nefti i khimii, 1972, Series 9, No. 3, pp 51-55

of a longitudinally compressed hollow cylindrical shell of constant thickness and curvature in the linear formulation. The effect of variability of the geometric parameters of the shell and nonlinearity under large bends is taken into account by the solution of the remaining equations. An example of a hollow cylindrical panel of variable thickness and curvature is discussed in detail. The results are in good agreement with earlier known results in the limiting case for a panel with constant parameters. E. I. Sokolov.

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USSR

UDC 542.947+547.526.554

BABAYAN, A. T., ~~TAGMAZIAN, K. Ts.~~, TOROSYAN, G. O., Institute of Organic Chemistry of the Academy of Sciences of the Armenian SSR, Yerevan

"Cyclization-Cleavage of Quaternary Ammonium Salts"

Yerevan, Armyanskiy Khimicheskiy Zhurnal, Vol XXIV, No 12, 1971, pp 1077-1078

Abstract: Quaternary ammonium salts containing an allyl group [A. T. Babayan, et al., Arm. Khim. Zh., Vol 19, No 1, 678, 1966] or a propargyl group [A. T. Badayan, et al., DAN Arm. SSR, Vol 48, No 1, 54, 1969] along with the pent-4-en-2-yne group form dihydroisoindolinium and isoindolinium salts in an aqueous alkali. A scheme is proposed for this reaction by which ring formation is preceded by protropic isomerization of the pent-4-en-2-yne group with the formation of an  $\alpha$ -allene group. It was proposed that the catalytic effect of the alkali occurred in this stage. As a result of prolonged heating of a dimethylformamide solution of dimethylpropargylammonium bromide (melting point 103-104°) in boiling water, dimethyldihydroisoindolinium bromide was obtained in almost quantitative yield. The structure of the cyclic product was proved by alkaline cleavage.

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USSR

UDC 621.357.12

KOROSTYSHEVSKIY, N. B., TAGUNOV, A. A.

"Obtaining Sodium Amalgam by Electrolysis of a Solution of Caustic Soda in a Bath With a Mercury Cathode"

Kolyma, 1972, No 1, pp 24-25 (from RZh-Khimiya, No 12, Jun 72, Abstract No 121283)

Translation: The procedure and setup for electrolytic production of an Na-amalgam from Hg and an aqueous solution of NaOH are described. The setup is designed to obtain 50 kg of 2% Na amalgam in one charge. The electrolysis of the NaOH solution (300-400 g/liter) is carried out with a current of 185 a and a voltage of 3.5-4 volts for 7 hours. The cathode is a layer of Hg 20 mm high, and the anode is a steel grid. The power of the electrolyzer is 0.74 kilowatts. The consumption of electric power per kilogram of amalgam is 0.11 kilowatt-hours. The consumption of NaOH per kilogram of amalgam with repeated use of the electrolyte is 45-50 g. The device can be manufactured under local conditions and insures safe production of the required amount of Na-amalgam when it is operated two or three times a month.

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USSR

UDC 669.76:539.216.2:5317.311.3

PETROSYAN, V. I., MOLIN, V. N., DAGMAN, E. I., TAGVER, B. A., SKRIPKINA, P. A.,  
and ALEKSANDROV, L. N., Institute of Semiconductor Physics, Siberian Depart-  
ment of the Academy of Sciences USSR

"Characteristics of Quantum Size Effects in Thin Untextured Polycrystalline  
Films of Bismuth Produced by the Electric Explosion Method"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 31, No 4, Apr 71, pp 725-730

Abstract: Possibilities of the occurrence of quantum size effects (QSE),  
their peculiarities in untextured polycrystalline bismuth films, and the  
role of crystallographic anisotropy in QSE were investigated on the basis of  
oscillation (period  $\sim 200 \text{ \AA}$ ) dependences of the specific resistance  $\rho$  and  
the Hall constant  $R$  on the thickness in untextured polycrystalline foils.  
The foils were produced by the electric explosion method in the thickness  
interval of 50-700  $\text{ \AA}$ . In contrast to previous findings, the Hall constant  
was found to be negative. The experimental results are discussed by ref-  
erence to diagrams showing temperature dependences of  $\rho$  and  $R$  and densities  
of electron and hole conditions as functions of the film thickness. Control  
measurements made on the same films, annealed at 70°C, on which the texture  
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PETROSYAN, V. I., et al., Fizika Metallov i Metallovedeniye, Vol 31, No 4, Apr 71, pp 725-730

originated, demonstrated that the derived characteristics are related to a polycrystallinity. Three figures, six formulas, eight bibliographic refs.

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- 53 -

1/2 022 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--ACTUAL PROBLEMS OF THE ORGANIZATION AND EFFECTIVENESS OF  
PREHOSPITAL REANIMATION OF PATIENTS WITH MYOCARDIAL INFARCTION -U-  
AUTHOR-(03)-ZILBERMAN, D.B., TAIKH, YA.I., KAMINSKIY, V.G.

COUNTRY OF INFO--USSR

SOURCE--KARDIOLOGIYA 10(1): 37-44, 1970

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HEART DISEASE, RESUSCITATION, FIRST AID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/0547

STEP NO--UR/0495/70/010/001/0037/0044

CIRC ACCESSION NO--AP0131170

UNCLASSIFIED

2/2 022 UNCLASSIFIED PROCESSING DATE--13NOV70  
CIRC ACCESSION NO--AP0131170

ABSTRACT/EXTRACT--(U) CP-0- ABSTRACT. DATA RELATIVE TO THE EFFICACY OF PREHOSPITAL REANIMATION OF 139 PATIENTS SUFFERING FROM MYOCARDIAL INFARCTION WERE PRESENTED. SUCCESSFUL REANIMATION WAS EFFECTED IN 43 (30.9PERCENT) PATIENTS, OF WHOM 29 (20.9PERCENT) SURVIVED AND WERE DISCHARGED FROM THE HOSPITAL. ORGANIZATION OF PREHOSPITAL REANIMATION MEASURES WITH THE PARTICIPATION OF THE FOLLOWING GROUPS: PREMEDICAL, GENERAL FIRST AID AMBULANCE TEAM AND SPECIALIZED FOR FIRST AID CARDIOLOGICAL TEAM IS OUTLINED. THE EFFECTIVENESS OF REANIMATION DEPENDING UPON THE PATIENTS' AGE AND THE PRESENCE AND MARKEDNESS OF CIRCULATORY INSUFFICIENCY, PREVIOUS TO CLINICAL DEATH, IS ANALYZED. SUCCESSFUL REANIMATION IS ADVANCED AGE AND IN PRECEDING ACUTE CIRCULATORY INSUFFICIENCY OF MILD AND MODERATE DEGREE CAN BE CARRIED OUT. REANIMATION WAS NOT SUCCESSFUL IN PATIENTS WITH PRECEDING SEVERE CIRCULATORY INSUFFICIENCY. BLOOD ELECTROLYTES IN THE POSTREANIMATION PERIOD WERE STUDIED; THERE WAS SIGNIFICANT DECLINE IN THE BLOOD K LEVEL. K SHOULD BE INTRODUCED IN THE FORM OF A POLARIZING MIXTURE, ESPECIALLY TO PATIENTS WITH AN IRREGULAR CARDIAC THYRHM IN THE POSTREANIMATION PERIOD. PROBLEMS OF INTRACARDIAC INJECTION OF DRUGS AND INTUBATION IN PATIENTS WITH MYOCARDIAL INFARCTION DURING REANIMATION ARE DISCUSSED.  
FACILITY: KIEV STA. FIRST MED. AID., KIEV, USSR.

UNCLASSIFIED

SO: 3023 54/65  
31 May 1973

(1)

MISMANAGEMENT IN FERTILIZER PRODUCTION SCORED

[Article by G. Nikolayev, head of the republic people's control committee department, A. Kulish, senior engineer of the Chirchik branch of the State Institute of the Nitrogen Industry, L. Larina, Group Supervisor for Standards and Measuring Equipment of the State Surveillance Committee people's control group of the Samarkand China Fertilizer Plant in Keshikent, Samarkand Province, and A. Galimov, chairman of the State Control Group of the Samarkand China Fertilizer Plant in Keshikent, Samarkand Province, 27 March 1973, p 2]

Has checking of the production, transportation, and storage of mineral fertilizer by the people's control patrols, specialists, and workers and rural correspondents are taking part in unexpected inspections at enterprises and warehouses and on the roads of Uzbekistan. Today, the newspaper publishes the communique from the inspection team which visited the Samarkand Superphosphate Plant.

We encountered many facts of serious losses in fertilizer and in the raw materials for its production in the shops of the enterprises and on its broad territory. One could only be amazed at such mismanagement, along the outside walls of one of the warehouses. These "deposits" are the result of an overfilling of the warehouse.

Because of mismanagement and violations of technical methods, the plant has lost thousands of tons of iron pyrites. In the final count, this amount of raw material is sufficient for the production of a large amount of superphosphate.

Some 200 tons of phosphoric flour was spoiled at the plant as a result of careless storage and contamination. The transport gallery is in an unsafe state and organizational-technical conditions are violated in the superphosphate and ammoniation shops. All of this also leads to large losses in products as they wind disperses it over the territory of the enterprise.

TAIROV, A.

Shortcomings are permitted in the technological process of fertilizer production. For example, as it was learned, complete decomposition of the raw material is not carried out in the superphosphate chamber and the portions of its aging are not followed. The result -- a drop in fertilizer quality. According to the data of the Samarkandskaya Oblast Agricultural Laboratory, the content of assimilable elements in all fertilizer samples of ammoniated superphosphate was considerably below the norm. The consumers are often supplied with water-forged and deteriorated fertilizer. It has to be pulverized at the farms which leads to additional expenditures and the quality of the fertilizer is also reduced.

An efficient release of product is not organized at the enterprise. The fertilizer is bulk loaded into railroad cars and into vehicle and tractor carts which have not been adapted for carrying it. A large amount of fertilizer is lost as a result and blown away by the wind. The cars are filled, as they say, by eye and later they have to be returned several times from the railroad scales to the shop for additional filling. Valuable time is spent and labor and means are expended. Last year alone the plant paid a fine of 438,000 rubles for railroad car demurrage.

In the final tally, all of these shortcomings broke down the fertilizer production schedule and led to a disruption of the fertilizer delivery plan and to nonproductive expenditures and losses.

The shops are undergoing modernization at the Samarkand plant and the capacities for ammonos production are being increased. The construction schedule is constantly being violated. The construction and installation work plan during 2 months of this year was fulfilled by only 57 percent. Technical documents are not available at a number of below-grade construction sites.

The mass checking of mineral fertilizer production, storage, and transportation is the republic is continuing. The party, soviet, and administrative organs are taking immediate measures based on the materials of the people's controllers. It is important that this be done universally.

11,841  
CSO, 1821-3

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1/2 027 UNCLASSIFIED PROCESSING DATE---23OCT70  
TITLE--TOLUENE VISCOSITY AT HIGH PRESSURES AND TEMPERATURES -U-  
AUTHOR--(03)-AKHUNDOV, T.S., ISMAILZADE, SH.M., TAIROV, A.D.  
COUNTRY OF INFO--USSR  
SOURCE--IZV. VYSSH. UCHEB. ZAVED., NEFT GAZ 1970; 13(2), 79-82  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--FLUID VISCOSITY, TOLUENE, HIGH PRESSURE, ISOTHERM  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1997/1026 STEP NO--UR/0152/70/013/002/0079/0082  
CIRC ACCESSION NO--AT0119893  
UNCLASSIFIED

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PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AT0119893

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

ABSTRACT. THE VISCOSITY OF 99.96PERCENT  
TOLUENE WAS DETD. (A. M. MAMEDOV, ET AL., 1966) ON 11 ISOTHERMS AT  
23.76-275DEGREES AND PRESSURES SMALLER THAN 400 BARS. THE VISCOSITY  
WAS ALSO CALCD. IN THE SAME RANGE FOR EACH 10DEGREES AND 10 BARS BY  
MEANS OF AN EQUATION. THE DETN. ERROR WAS LESS THAN 1.2PERCENT.  
EXPTL. AND CALCD. DATA ARE PRESENTED. FACILITY: AZERB. INST.  
NEFTI KHIM. IM. AZIZBEKOVA, BAKU, USSR.

UNCLASSIFIED



1/2 040 UNCLASSIFIED PROCESSING DATE--18SEP70  
TITLE--AUTOMATIC MACHINE CURES WITH COLD -U-  
AUTHOR--TAIROV, L.  
COUNTRY OF INFO--USSR  
SOURCE--MOSCOW, PRAVDA, 8 FEB 70, P. 2  
DATE PUBLISHED--08FEB70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--REFRIGERATION EQUIPMENT, HYPOTHERMIA, BRAIN, FIRST AID,  
SURGERY, UROLOGY, GYNECOLOGY, GLAND, PLASTIC SURGERY, TISSUE TRANSPLANT,  
REFRIGERATING SYSTEM/(U)GIPOTERM 4 REFRIGERATING SYSTEM, (U)GIPOTERM 3  
REFRIGERATING SYSTEM, (U)GIPOTERM 2 REFRIGERATING SYSTEM, (U)GIPOTERM 1  
REFRIGERATING SYSTEM  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FAME--1985/0050 STEP NO--UR/9012/70/000/000/0002/0002  
CIRC ACCESSION NO--AN0100617  
UNCLASSIFIED

2/2 040

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AN0100617

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THERMOELECTRIC MEDICAL COOLING DEVICES OF THE GIPOTERM SERIES ARE A NEW INVENTION AT THE INSTITUTE OF PHYSIOLOGY, ACADEMY OF SCIENCES AZERBAIDZHAN SSR. THESE DEVICES, WHICH PERMIT LOCAL AND GENERALIZED COOLING AND REWARMING OF THE HUMAN BODY, CONSIST OF A CONTROL PANEL AND A HEAT ACTUATING ELEMENT WHICH IS ELASTIC AND FLEXIBLE. CHANGING CURRENT DIRECTION, IT IS POSSIBLE IN A FEW MINUTES TO CONVERT FROM COOLING TO REWARMING AND BACK, WHICH IS ESPECIALLY VALUABLE IN MEDICAL PRACTICE. A SERIES OF SUCH DEVICES HAS BEEN CREATED AT THE INSTITUTE. SOME OF THEM ARE CALLED GIPOTERM-1, DESIGNED FOR COOLING OF THE HEAD DURING SKULL TRAUMA, AND ALSO FOR STUDY OF THE EFFECT OF LOW TEMPERATURES ON THE HUMAN AND ANIMAL BRAIN. THE DEVICE IS IRREPLACEABLE FOR FIRST AID MACHINES AND SANITATION AVIATION. GIPOTERM-2 SUCCESSFULLY REPLACES ICE PACKS, HOT WATER BOTTLES, AND CAN BE USED AS A COMPRESS: IT IS USED IN SURGERY, TRAUMATOLOGY, UROLOGY AND GYNECOLOGY DEPARTMENTS. GIPOTERMS-3 AND 4 ARE DESIGNED FOR COOLING OF GLANDS DURING TONSILLECTOMY, AND ARE USED IN PLASTIC SURGERY FOR LOCAL HYPOTHERMIA OF TRANSPLANTED TISSUE, ETC. MANY EXPERIMENTS HAVE SHOWN THE HIGH DEGREE OF EFFICIENCY OF THE INVENTION. THE DEVICES ARE SIMPLE TO USE, AND DO NOT CAUSE DISCOMFORT TO THE PATIENT. WITH THE USE OF THE CONTROL PANEL, ANY TEMPERATURE FROM MINUS 20 DEGREESC TO PLUS 50DEGREESC CAN BE ESTABLISHED AND MAINTAINED FOR A LONG TIME ON THE OPERATING SURFACE.

UNCLASSIFIED

Acc. Nr.: AN0045494

7 Ref. Code: UB9012  
JPRS 50052

New Seismic Station Will Work on Earthquake Predictions

(Complete translation: "Station Near a Volcano," by L. Tairov; Moscow, Pravda, 6 February 1970, p. 6)

A geophysical station has been established at the site of a recently erupted mud volcano in the Baku suburb of Lokbatan. It will study problems of earth currents and seismology. The chief task of the scientists at the station will be to master the forecasting of earthquakes.

As is well known, Baku is located in a clearly pronounced seismic zone. But why was the station established at the edge of a crater? First of all, as explained by specialists at the republic's Institute of Geology, it will permit a direct investigation of mud ejecta, and secondly, volcanoes and earthquakes are the results of tectonic processes. Another such station will soon be operating on Bulla Island. [4]

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Instruments and Equipment

TAIROV, L.  
USSR

~~TAIROV, B.~~, Pravda Correspondent

"Automatic Machine Cures With Cold"

Moscow, Pravda, 8 Feb 70, p 2

Baku, 7. Thermoelectric medical cooling devices of the Gipoterm series are a new invention at the Institute of Physiology, Academy of Sciences Azerbaydhan SSR. These devices, which permit local and generalized cooling and rewarming of the human body, consist of a control panel and a heat-actuating element which is elastic and flexible. Changing current direction, it is possible in a few minutes to convert from cooling to rewarming and back, which is especially valuable in medical practice.

A series of such devices has been created at the institute. Some of them are called Gipoterm-1, designed for cooling of the head during skull trauma, and also for study of the effect of low temperatures on the human and animal brain. The device is irreplaceable for first aid machines and sanitation aviation.

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USSR

TAIROV, L., Pravda, 8 Feb 70, p 2

Gipoterm-2 successfully replaces ice packs, hot water bottles, and can be used as a compress: it is used in surgery, traumatology, urology and gynecology departments. Gipoterms-3 and 4 are designed for cooling of glands during tonsillectomy, and are used in plastic surgery for local hypothermia of transplanted tissue, etc. Many experiments have shown the high degree of efficiency of the invention. The devices are simple to use, and do not cause discomfort to the patient. With the use of the control panel, any temperature from minus 20°C to plus 50°C can be established and maintained for a long time on the operating surface.

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1/2 024 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--EFFECT OF TEMPERATURE ON THE ADSORPTION AND DESORPTION OF OIL  
SOLUBLE SURFACE ACTIVE AGENTS IN QUARTZ SAND UNDER DYNAMIC CONDITIONS  
AUTHOR--(04)--MUSAYEV, R.A., TAIROV, N.D., KHALILOV, E.G., ABUTALYBOVA, R.N.  
COUNTRY OF INFO--USSR  
SOURCE--AZERB. NEFT. KHDZ. 1970, (1), 28-9  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--TEMPERATURE DEPENDENCE, ADSORPTION, DESORPTION, SURFACE ACTIVE  
AGENT, SAND, KEROSENE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3003/0139 STEP NO--UR/0487/70/000/001/0028/0029  
CIRC ACCESSION NO--AP0129395  
UNCLASSIFIED

2/2 024

CIRC ACCESSION NU--A0129395

UNCLASSIFIED

PROCESSING DATE--30OCT70

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

ABSTRACT. NONIONIC AND CATIONIC COMPOS. OF UNSTATED STRUCTURE WERE STUDIED IN KEROSENE SOLN. FROM 25 TO 100DEGREES. THE LATTER TYPE WAS MORE READILY ADSORBED AND LESS READILY DESORBED. THE DEGREE OF ADSORPTION OF THE COMPOS. SHOWED A VARYING RESPONSE TO INCREASE IN TEMP.; DESORPTION INCREASED. IN THE PRESENCE O H SUB2 O, ADSORPTION DECREASED AND DESORPTION INCREASED.

UNCLASSIFIED

USSR

UDC 612.822.3.08

BATUYEV, A. S., VASILEVSKIY, N. N., ZIMENKO, N. V., ZAIROV, O. P., and KARAMYAN, L. A., Laboratory of the Physiology of the Motor Analysor, Physiological Institute imeni A. A. Ukhtomskiy, Leningrad University, and Department of Ecological Physiology, Institute of Experimental Medicine, Academy of Medical Sciences USSR

"A Simple Method of Recording Cerebral Neuronal Activity in Alert Animals"

Leningrad, Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenov, Vol 58, No 11, 1972, pp 1774-1776

Abstract: In preliminary surgery performed on the anesthetized animal, the head is held in a standard stereotaxic apparatus, the frontal bones (if the frontal cerebral lobes are to be investigated) are opened and the periosteum is removed, two screws are firmly implanted in each temporal bone, and the edges of the wounds are sealed with protacrylon. Penicillin is administered, and a certain period is allowed for recovery from surgery. Prior to the actual experiments, the animal is trained for several days to become accustomed to the motionless position in the modified stereotaxic instrument SEZh-1 or SEZh-2. During the test, the head is affixed to the stereotaxic instrument by means of the implanted screws. Holes are drilled in the frontal bones (painless  
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USSR

BATUYEV, A. S., et al., Fiziologicheskii Zhurnal SSSR imeni I. M. Sechenov,  
Vol 58, No 11, 1972, pp 1774-1776

because of absence of periosteum), a local anaesthetic is applied to the dura mater, the meninges are pierced, the recording electrode is inserted into the brain (with one of the implanted screws serving as the indifferent electrode), and the edges of the wound are covered with warm vaseline or agar. After completion of the test and withdrawal of the electrode, the opening is sealed with wax or dental cement. If proper antiseptic measures are taken, one chronic animal can be used for over 2 months, with three experiments performed each week.

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Acc. Nr: **AP0037001**

Ref. Code: UR 0239

PRIMARY SOURCE: Fiziologicheskii Zhurnal SSSR, 1970, Vol 56,  
Nr 2, pp 144-149

INTERACTION OF ASSOCIATIVE RESPONSES TO THE POLYMODAL STIMULI  
IN THE CAT'S PARIETAL CORTEX

O. P. Tairov

Dept. of Physiology of the Higher Nervous Activity, Leningrad State University,  
Leningrad

In cats under chloralose anesthesia, interaction of the associative responses to the visual, auditory and somatic stimuli was investigated. Type of interaction did not depend on the modalities of two simultaneous stimuli. The period of initial facilitation was followed by the period of suppression of the second response. The second response increased to the normal level when the interval between conditioning and testing stimuli had been more than 400 msec. Duration of these two periods depended on the stimuli modalities. In the facilitation period, a new long-latency and very sensitive to physical and chemical influences negative-positive wave complex would occur. Rhythmic simultaneous stimulation with two stimuli increased the top frequency of the driving phenomenon more than the monomodal stimulation.

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1/2 037  
UNCLASSIFIED  
PROCESSING DATE--27NOV70  
TITLE--IMPURITY STATES OF MERCURY IN GERMANIUM, SILICON ALLOYS -U-  
AUTHOR--(03)-AZHDAROV, G.KH., TAGIROV, V.I., TAIROV, S.I.  
COUNTRY OF INFO--USSR  
SOURCE--FIZIKA I TEKHN. POLUPROV., APR. 1970, 4, (4), 774-776  
DATE PUBLISHED---APR70  
SUBJECT AREAS--MATERIALS  
TOPIC TAGS--GERMANIUM ALLOY, ELECTRICAL PROPERTY, SILICON ALLOY, METAL COATING, MERCURY, HALL EFFECT, ELECTRIC CONDUCTIVITY, LOW TEMPERATURE EFFECT, ELECTRON ACCEPTOR  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3003/0221  
STEP NO--UR/0449/70/004/004/0774/0776  
CIRC ACCESSION NO--AP0129477  
UNCLASSIFIED

2/2 037

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0129477

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ELECTRICAL PROPERTIES (ELECTRICAL CONDUCTIVITY, HALL EFFECT, ETC.) OF HG-DOPED GE-SI ALLOYS WERE STUDIED WITH SPECIAL REF. TO THE PART PLAYED BY THE FIRST ACCEPTOR LEVEL OF HG AND ALSO POSSIBLE DONOR LEVELS. THE RISE IN THE HALL COEFF. AT LOW TEMP. (100DEGREEK) SUGGESTED THE PRESENCE OF ONE OR MORE DONOR CENTRES; ONE POSSIBILITY WAS THAT THESE GAVE THEIR ELECTRONS TO SHALLOW ACCEPTORS, WHILE THEY THEMSELVES ACTED AS PSEUDO ACCEPTOR LEVELS.

UNCLASSIFIED

USSR

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

PASYNKOV, V. V., SEYSYAN, Ye. L., TAIROVA, D. A., and ~~TAIROV, V. N.~~

"Process of Electret Formation in Some Organic Films"

Elektron. tekhnika. Nauchn-tekhn. sb., Radiodetali (Electronics Engineering, Scientific-Technical Collection, Radio Parts-- collection of works) No. 1(22), 1971, pp 57-65 (from RZh-Fizika, No. 11, 1971, Abstract No. 11E883)

Translation: The average surface charge density in electrets made of polyethylene terephthalate, polycarbonate, and polytetrafluoroethylene as a function of the maximum temperature of polarization and polarization intensity (field intensity) is investigated. The investigations were made by setting up the electret state by the contact method and polarization in an air gap. It is shown that in films made of organic polymers, it is possible to obtain a stable electret state without short-circuiting the charged surfaces of the electret. It is established that film electrets of polytetrafluoroethylene (teflon), the surface charge density of which varies only slightly for more than one and a half years even under conditions of high relative humidity, are the most stable of the specimens investigated.

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USSR

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

PASYNKOV, V. V., SEYSYAN, Ye. L., ~~TAIROVA, D. A.~~ and TAIROV, V. N.

"Process of Electret Formation in Some Organic Films":

Elektron. tekhnika, Nauchn-tekhn. sb.. Radiodetali (Electronics Engineering, Scientific-Technical Collection, Radio Parts-- collection of works) No. 1(22), 1971, pp 57-65 (from RZh-Fizika, No. 11, 1971, Abstract No. 11E383)

Translation: The average surface charge density in electrets made of polyethylene terephthalate, polycarbonate, and polytetrafluoroethylene as a function of the maximum temperature of polarization and polarization intensity (field intensity) is investigated. The investigations were made by setting up the electret state by the contact method and polarization in an air gap. It is shown that in films made of organic polymers, it is possible to obtain a stable electret state without short-circuiting the charged surfaces of the electret. It is established that film electrets of polytetrafluoroethylene (teflon), the surface charge density of which varies only slightly for more than one and a half years even under conditions of high relative humidity, are the most stable of the specimens investigated.

USSR

TAIROVA, Zh. I. (Institute of Mathematics and Mechanics)

"Thick-Walled Pipe of Reinforced, Incompressible Material under the Action of a Pulsating Pressure and Variable Twisting Moment"

Baku, Izvestiya Akademii Nauk Azerbaydzhanskoy SSR: Seriya Fiziko-Tekhnicheskikh i Matematicheskikh Nauk; July-August, 1970; pp 3-7

ABSTRACT: The article concerns a study that was made of:

- (1) the stressed (deformed) state of a pipe under the action of a pressure  $p' > 0$  and a twisting moment  $M' > 0$  during an initial stress;
- (2) the stressed state when the stress is removed, for the cases of the existence and absence of secondary plastic deformation;
- (3) the stressed state after complete removal of the pressure and the application of a negative moment  $M' < 0$ ;

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USSR

TAIROVA, Zh. I., Izvestiya Akademii Nauk Azerbaydzhanskoy SSR: Seriya Fiziko-Tekhnicheskikh i Matematicheskikh Nauk; July-August, 1970; pp 3-7

(4) the stressed state occurring with the  $n$ th cyclic stress caused by the moment  $M^{(n)}$  and pressure  $p^{(n)}$ .

The problem was solved within the framework of the theory of small elastic-plastic deformations. The necessary and sufficient conditions were found for the existence of wholly elastic, elastic-plastic, and wholly plastic deformation of the pipe.

The article includes 4 equations, 3 figures, and one table. There are 3 bibliographic references.

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USSR

UDC: 51:621.391

OGANESYAN, S. Sh., YAGDZHYAN, V. G., TAIRYAN, V. I.

"Weight Spectra of Some Classes of Cyclic Codes"

Moscow, Vesovyye spektry nekotorykh klassov tsiklicheskikh kodov. Nauch. sovet po kompleksn. probl. "Kibernetika" AN SSSR (Cf. English above. Scientific Council on the Complex Problem of Cybernetics, Academy of Sciences of the USSR), 1972, 32 pp, bibl. of 8 titles (manuscript deposited in VINITI, No 5372-73 from 8 Jan 73) (from RZh-Kibernetika, No 5, May 73, abstract No 5V584 DEP by the authors)

Translation: Up to the present attempts have been made to find cyclic representatives for arbitrary cyclic codes over  $GF(q)$  where  $(n,q) = 1$  ( $q$  is the power of the simple number  $p$ ). In this paper formulas are presented for expressing not only cyclic representatives, but also at the same time formulas are presented for representatives (so-called  $p$ -nary representatives) which unite cyclic representatives in accordance with identical weights by means of the operation of involution

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USSR

OGANESYAN, S. Sh. et al., Vesovyye spektry nekotorykh klassov tsiklicheskikh kodov, 1972, No 5372-73 Dep.

of  $p$  for arbitrary cyclic codes over  $GF(q)$  when  $(n,p) = 1$ . On the basis of these results and coupling equations stemming from the MacWilliams relation for weight spectra of orthogonal ideals (codes), weight spectra are found for some classes of cyclic codes.

2/2

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Acc. Nr:

AP0049953

Abstracting Service:  
CHEMICAL ABST. 5-70

Ref. Code:  
UR0467

102443a Preparation of novolak coal-phenol resins based on low-temperature hydrogenation products of bituminous coal and lignite. Bronovets, T. M.; Taitz, E. M. (Inst. Goryuch. Iskop. Moscow, USSR). *Khim. Tverd. Topl.* 1970, (1), 86-94 (Russ). The synthesis of thermosetting polymers by mild hydrogenation of slightly modified bituminous coals (I) and lignite (II) was studied. Plasticized I and II were brought into a reaction with PhOH in an acidic medium and then condensed with HCHO to give new infusible and insol. polymers, characterized by high coke nos. and gelation rates. The polymers prep'd. met all the requirements of novolak phenolic resins and were thus suitable binders for molding materials.

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USSR

TAKABAYEV, M. K.

UDC: 519.3:62-50

"Optimization of a Second-Order Nonlinear System"

V sb. Differents. uravneniya i ikh primeneniye (Differential Equations and Their Application--collection of works) Alma-Ata, "Nauka" 1970, pp 126-131 (from RZh-Matematika, No. 3, March 71, Abstract No. 3B367)

Translation: The author considers the problem of finding a control  $u(t)$ ,  $0 \leq u \leq 1$ , acting on a second-order object of the form

$$y' = g(y, z) + b(y, z)u,$$

$$z' = h(y, z) + c(y, z)u$$

such that the object would be transformed from the given initial state to a specified final state; the functional

$$\int_{t_0}^{t_1} [f(y, z) + a(y, z)u] d\tau$$

would then take its least value. An existence and uniqueness theorem of optimal control is obtained. R. Rzov

USSR

UDC 669.71.053.24

LAPPO, S. I., MEDVEDEV, G. V., and TAKENOV, T. D.

"Investigation of the Possibility Using Bauxites From Arkalyk (Turgay Ore Administration) and YuUSR (South Ural Bauxite Mine) Deposits for the Extraction of High-Alumina Intermediate"

Tr. Khim.-metallurg. in-ta. AN KazSSR (Works of Chemicometallurgical Institute of Academy of Sciences Kazakh SSR), 1970, 14, pp 107-116 (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 3 G144 by authors)

Translation: The article presents results of a thermodynamic analysis of the possible chemical reactions during the production of high-alumina intermediate in order to obtain lime-alumina slag for steel refining. Thermographic analyses determine the temperature conditions for dehydration of bauxites from Arkalyk (Turgay Ore Administration) and South Ural Bauxite Mine deposits. The apparent and true specific gravities, fractional composition, bulk weight, porosity, and drum samples of the above-indicated bauxites are determined. High-alumina intermediate is obtained  
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USSR

LAPPO, S. I., et al., Tr. Khim.-metallurg. in-ta. AN KazSSR ,  
1970, 14, pp 107-116 (from RZh-Metallurgiya, No 3, Mar 71,  
Abstract No 3 G144 by authors)

from lump bauxite of Turgay Ore Administration by ore thermal melting in an 80-kilovolt-ampere two-electrode single-phase tilting electric furnace. It is advisable to carry on the melting process in the electric furnace without addition of lime to the charge. The resultant intermediate is standard with regard of all indicators except FeO and S content. Results of theoretical investigations and study of the physical properties of bauxites and large-scale laboratory melts permit recommendation of the process of producing high-alumina intermediate from the raw material under study. Four tables. Bibliography with 16 titles.

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USSR

UDC 669.721.053.4.068

ILLYUVIYEVA, G. V., TATARSKAYA, M. G., TAKHAFUAD, A.

"Composition and Certain Properties of Magnesium Naphthenate"

Zap. Leningr. gorn. in-ta [Writings of Leningrad Mining Institute], Vol 50, No 3, 1970, pp 101-108 (Translated from Referativnyy Zhurnal-Metallurgiya, No 2, 1971, Abstract No 2 G183 by the authors)

Translation: A study of the influence of solvents on the extraction of Mg from aqueous solutions of naphthenic acid indicates that with sufficient solubility of the compound being extracted, its composition and the completeness of extraction are independent of the properties of the solvent. The determining factor is the pH. Acid or solvated neutral Mg naphthenates cause the formation of strong flakes of non-sulfide Ca, Ba,  $MgCO_3$  and dolomite minerals, making their flotation difficult. Basic Mg naphthenates do not have these properties and therefore practically do not change the flotation indicators. 3 figures; 2 tables; 10 biblio. refs.

1/1

USSR

TAKHIROV, N. T., Institute of General and Communal Hygiene, Academy of Medical Sciences USSR, and Tashkent Medical Institute

"The Condition of Some Immunobiological and Biochemical Reactions of Organisms of Children Exposed to Atmospheric Air Pollution"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 7, Jul 70, pp 21-22

Abstract: Phagocytic activity of blood leucocytes was studied in 461 students, 261 of whom lived close to sources of industrial air pollution and 200 from an area with clean air. No significant differences between sexes were noted in the indices of phagocytic activity. The group exposed to air pollution showed a lower phagocytic number ( $37.3 \pm 0.55$  vs.  $59.8 \pm 0.76$ ) and a lower phagocytic index ( $4.5 \pm 0.065$  vs.  $5.1 \pm 0.081$ ). The cholinesterase activity of children living in the industrial area was 20.5% higher than that of the controls. The number of microbes in the deep autmicroflora of the skin was also significantly higher.

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USSR

UDC 591.1.05

ABDUSAMATOVA, M. V., and TAKHIROVA, M., Division of Physiology, Academy of Sciences Uzbek SSR

"Effects of Heat of Various Intensities on the Bioelectric Activity of Nuclei of the Hypothalamus"

Tashkent, Uzbekskiy Biologicheskii Zhurnal, Vol 16, No 3, 1972, pp 34-38

Abstract: The effects of exposure of cats to elevated temperatures (35, 40, 45, and 50°) on the bioelectric activity of nuclei of the hypothalamus were studied. Under the effect of the high temperatures, the number of low-frequency waves recorded on an electroencephalograph increased while the action potentials decreased. A maximum increase in the number of low-frequency waves was observed at 45° in the posterior division of the hypothalamus and at 50° in the anterior and lateral divisions. The number of high-frequency waves decreased in some nuclei. At 40° there was an increase in the number of high-frequency waves in the posterior region of the hypothalamus, which indicated that this region was activated at the temperature in question. With increasing temperatures to which the animals were exposed, the biopotentials of all nuclei except the supraoptic dropped significantly. The most pronounced decrease of action potentials, particularly of those with high frequencies, took place at 45-50°.

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USSR

UDC 612.82/83

TURSUNOV, Z. T., ABDUSAMATOVA, M. V., and TAKHIROVA, N., Physiology Division,  
Academy of Sciences, Uzbek SSR

"Changes in the Bioelectrical Activity of the Cerebral Cortex After Repeated  
Exposure to Heat Temperatures"

Tashkent, Uzbekskiy Biologicheskij Zhurnal, No 6, 1972, pp 42-46

Abstract: The bioelectrical activity of various cortical regions (frontal, temporal, parietal, occipital) was studied in adult cats exposed 2 hours a day for 15 days on a sunny platform to temperatures ranging from 33 to 40° C. EEG's were taken on the 1st, 5th, 10th, and 15th days of the experiment. Insolation plus high temperature altered the number of high- and low-frequency waves and their amplitude. On day 1 the slow waves were depressed and the beta-like rhythm increased. On day 5 there was a general slowing and inhibition of spontaneous electrical activity in all the cortical regions studied. The slow- and high-frequency oscillations decreased and their voltage was reduced. On day 10 the EEG changes generally stabilized, but by day 15 they had become less distinct and approached the original levels, an indication of adaptation by the central nervous system to heat stress.

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USSR

UDC 519.24

PORTNOY, N. Ya., TAKHO-GODI, A. Z.

"Simplified Method of Determining Parameters of Correlation and Spectral Functions of a Certain Class of Random Processes"

Tr. Novocherkas Politekhn. In-ta [Works of Novocherkassk Polytechnical Institute], Vol 22, 1970, pp 63-67, (Translated from Referativnyy Zhurnal, Kibernetika, No 10, 1971, Abstract No 10 V394 by V. Alekseyev).

Translation: A number of approaches are described, allowing comparatively simple estimation of the parameters of correlation functions and spectral densities for certain classes of stable random processes. Investigation of the statistical processes of the estimates suggested is not performed. It is noted that the approaches described in the article can be realized using analog computers.

USSR

UDC 536.587

TAKHTUYEV, S. P.

"Electrical Thermostat of the Type DTP-1"

Sb. tr. Proyechn. i n.-i. in-t. Ural'skiy Promstroyniprojekt  
(Collection of Works of the Design and Scientific Research Insti-  
tute. Ural Promstroyniprojekt), 1970, No 25, pp 156-163 (from  
RZh-Metrologiya i Izmeritel'naya Tekhnika, No 8, Aug 70, Abstract  
8.32.635)

Translation: Description is given of the purpose, the principal  
of work of a range thermostat using semiconducting thermoresistance  
pickup units; the electrical circuit, and design of the apparatus  
and pickup units. The method of designing the principal circuit  
of the thermostat is considered and the basic technical character-  
istics of the thermostat are presented and recommendations made  
regarding its calibration. 4 ill., 3 bibl. entries.

Resume

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USSR

TAKIBAYEV, ZH. S., and BEKNUKHAMBETOV, YE. S., et al.

"Thermionic Converter Life Tests"

Moscow, Atomnaya Energiya, Dec 73, pp 387-390

Abstract: An ES-6-3 six-element thermionic assembly with tungsten-rhenium emitters, niobium collectors, and interelectrode gaps of 0.3 mm was tested in a reactor for 2670 hours. The assembly was tested at an average electrical power density of about 7 W/cm<sup>2</sup>. In the course of life tests at constant reactor thermal power the electrical power decreased discretely after each decrease in reactor power. Changes in output performance are caused by short-circuits in individual elements and increases in the collector temperature due to stratification of the collector pile. The article includes five figures. There are three references.

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USSR

UDC 539.12

TAKIBAYEV, Zh. S., and YEMEL'YANOV, Yu. A.

"Experiment in the Superhigh-Energy Range With a Target of Dense Material"  
Alma-Ata, Izvestiya Akademii Nauk Kazakhskoy SSR, No 2, 1973, pp 16-20

Abstract: An experiment in the superhigh-energy range with a dense target is described. The target is placed at a height of several tens of meters above the X-ray camera. The target thickness is no more than one-half the nuclear path so that the secondary interactions will not distort the picture of the first interaction. A thin target (on the order of 1/10 of the path) is also inadmissible. The solution is to use a laminated target. The total thickness of the target can be on the order of 1/3 of the interaction half, but the individual layers must be at some distance from each other. The proposed experiment with a fixed target has the following advantages: 1) there is a reliable criterion for visual selection of the target interactions (the area of the "limiting" circle for the target interactions in the range  $E_0 = 10^{14}-10^{15}$  electron volts is several square centimeters), and therefore there is no necessity for processing background spots; 2) for the target events, the height of the interaction point is known with an accuracy of 3-5 percent, significantly improving the reliability of the results; 3) 1/2

USSR

TAKIBAYEV, Zh. S., and YEMEL'YANOV, Yu. A., Izvestiya Akademii Nauk  
Kazakhskoy SSR, No 2, 1973, pp 16-20

exact knowledge of the point of interaction permits combination of families of gamma-quanta into the corresponding interaction (if several meson clusters are generated in the interaction) and determination of the transverse pulses with respect to the direction of the primary particles; 4) this analysis offers the possibility of discovering the true angular and energy distributions of the secondary particles in the individual acts of the interaction.

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USSR

UDG: 539.12

YEMEL'YANOV, Yu. A., YEREMENKO, Yu. A., and TAKIBAYEV, Zh. S.,  
Academician of the Kazakh Academy of Sciences

"Possible Redistribution of Energy Among Generated Particles  
in the Range of Several Hundred KEV"

Moscow, Doklady Akademii Nauk SSSR, vol 204, No 4, 1972, pp 814-816

Abstract: In earlier work, the authors proposed study of the behavior of various angular and energy characteristics as functions of the energy given to all generated particles, since they felt that such an approach helps in the direct study of the process of generating secondary particles and may give additional information on meson bunchings or fireballs. The present paper is devoted to investigating the distribution of the energy given to all secondary particles, among charged and neutral mesons. For the analysis, the data obtained from earlier experimental papers was used (M. I. Ali-bekov, et al, Reprint IYaF AN KazSSR, Alma-Ata, 1969; N. L. Gri-gorov, et al, Reprint NIIYaF MGU, Moscow, 1969). Curves are plotted for the energy of charged and neutral ions as a function of the total generated particle energy and for the complete and partial inelasticity coefficients as functions of the primary  
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USSR

UDC: 539.12  
YEMEL'YANOV, Yu. A., et al, Doklady Akademii Nauk SSSR, vol 204,  
No 4, 1972, pp 814-816

particle energy. The authors are associated with the Institute of  
High-Energy Physics, Kazakh Academy of Sciences, Alma-Ata.

2/2

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USSR

TAKIBAYEV, Zh. S.

UDC 539.125.4

"Nuclear Interaction Regions According to Inelastic Collision Data, I"

Alma-Ata, Izvestiya Akademii Nauk Kazakhskoy SSR, No 2, March-April 1972, pp 1-9

Abstract: Partly a review of the general research done so far on the structure of the atomic nucleus, this paper also describes investigations into inelastic pion-nucleon and nucleon-nucleon interactions for the purpose of obtaining information regarding nuclear structure in the region of the interactions. In order to clarify the angular distribution of nucleons in the  $\pi$  system after collisions in pion-nucleon inelastic interactions, the author gives the results of an analysis of the interaction of negative pions with energies of 10 Gev with protons. A plot of this angular distribution is shown. Nucleons which always reverse their direction are also discussed. This paper is only the first part of the article whose title is given above; in the second part, the author proposes to explain the dependence of the dimensions of the interaction region on the energy and nature of the bombarding particles.

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Nuclear Physics

USSR

UDC  $\Delta 539.1.073/.074$

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BOOS, E. G., MOSIYENKO, A. M., SAN'KO, L. A., TAKTBAEV, ZH. S. and  
TEMPRALIYEV, T. T., Institute of Nuclear Physics, Kazakh SSR Academy of  
Sciences, Alma-Ata

"Determination of the Nature of Charged Particles by Delta-Electrons in a  
Hydrogen Bubble Chamber"

Pribery 1 Tekh Eksper, No 4, 1971, pp 64-66

Abstract: The authors discuss the results of a new method of identifying high-energy charged particles by using delta-electrons. The delta-electrons were registered on secondary tracks of four-beam pp-interactions in an 81-cm hydrogen bubble chamber with a primary impulse of 10 GeV/sec. The effectiveness of the method is 4% of the total number of secondary particles; in principle it makes it possible to determine the nature of the particles in the region of impulses greater than 2 GeV/sec where it is practically impossible to make identification by measuring the ionization losses. The authors support their findings with equations and schematics. Figure 1 depicts the impulse spectrum for positive particles and delta-electrons. Figure 2 describes the distribution by the square of the mass for negative and positive particles. Figure 3 shows the impulse spectrum  
1/2

USSR

BOOS, E. G., et al., Pribory i Tekh Eksper, No 4, 1971, pp 64-66  
of particles with an impulse greater than 2 GeV/sec. The article contains  
3 figures and 3 bibliographic entries.

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USSR

UDC 539.126 1

SAN'KO, L. A., RUS'KINA, G. Ya., MUKHORDOVA, T. I., TAKIBAYEV,  
Zh. S., BOOS, E. G.

"Methods of Determining Background Noise"

Alma-Ata, Izvestiya AN Kazakhskoy SSR -- Seriya Fiziko-Matemati-  
cheskaya, No 6, Nov-Dec 71, pp 6-12

Abstract: An important problem in the analysis of interactions in high-energy situations is the determination of background noise distributions of the effective masses of the particles involved. This paper discusses a method for computing noise distributions, based on experimental data for the angles and impulses of the particles, and demonstrates the possibility of determining the noise by various methods of particle combinations and the formation of known nonresonance combinations. Also examined is the effect of small dip angles of the particles on the form of the noise distribution, information which is essential in the study of particle interactions in nuclear photoemulsions. To investigate all aspects of the method, the authors used random stars modeled at energy levels of 10 Gev and experimental  
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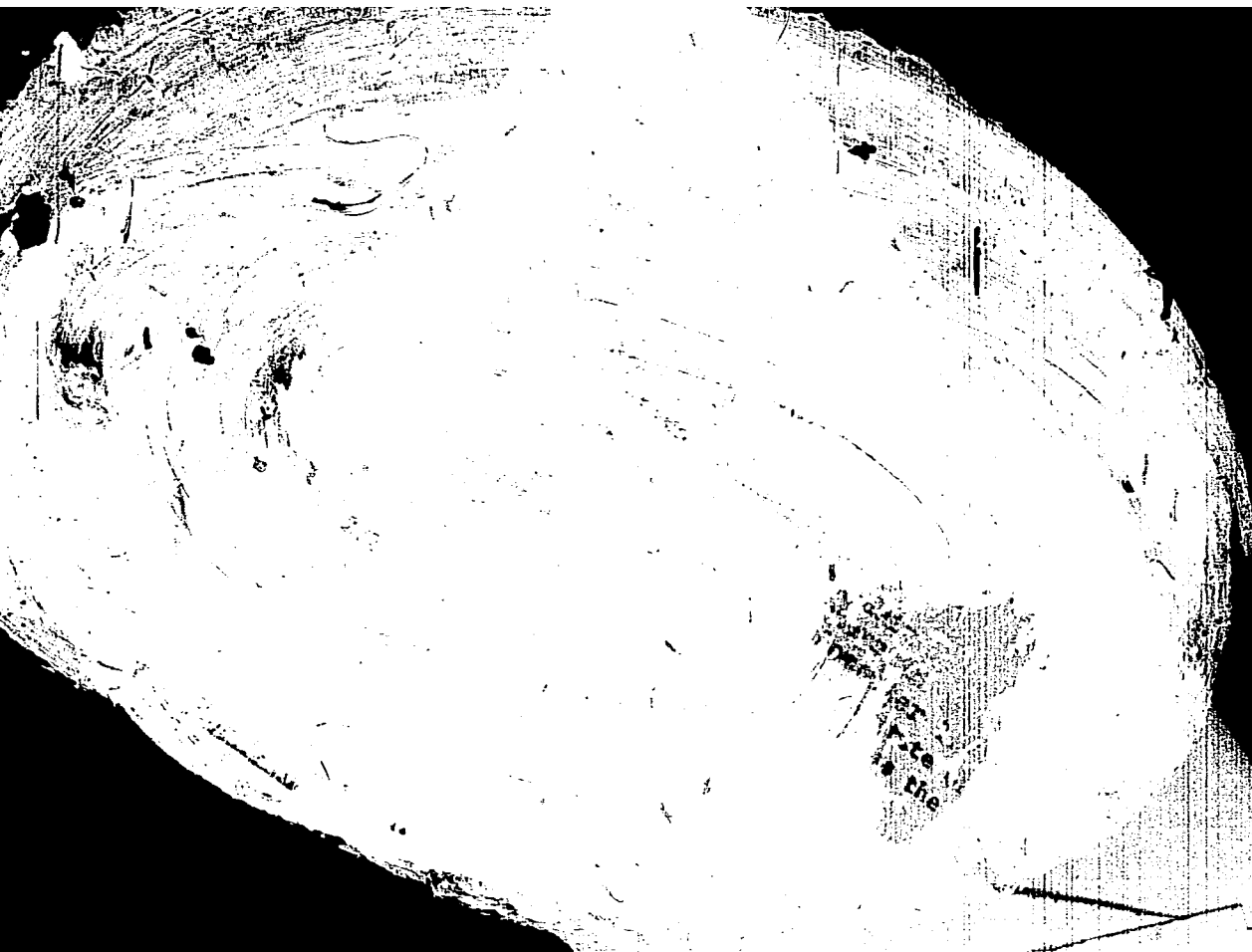
USSR

SANIKO, L. A., Izvestiya AN Kazakhskoy SSR -- Seriya Fiziko-  
Matematicheskaya, No 6, Nov-Dec 71, pp 6-12

data of particle angles and energies from four-ray events recorded  
in nuclear emulsion at an energy level of 20 Gev.

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CIA-RDP86-00513R002203220017-2"

USSR

TAKIBAYEV, Zh. S., BOOS, E. G., SAN'KO, L. A., MUKHORLOVA, T. I.,  
MOSIYENKO, A. M., ZAYTSEV, K. G., and SHARAPOV, K. V., Institute  
of High-Energy Physics, Kazakhstan Academy of Sciences

"Studying Four-Beam pp-Interactions at pulses of 19.1 GeV/s"  
Moscow, Yadernaya Fizika, vol 16, No 5, 1972, pp 974-982

Abstract: The purpose of the present paper is to study the general  
dynamic characteristics of secondary particles from four-beam pro-  
ton-proton interactions, such as pulse and angle distributions,  
inelasticity, and correlation between nucleons, at primary pulses  
of 19.1 GeV/s. A comparison of the experimental and theoretical  
results is also made. The difference between the approach taken  
by the experiments of this paper and that of earlier work in the  
same direction regarding the nature of the ionization loss density  
direct measurements of the charged particles obtained by  
chamber irradiated by protons in a two-meter waveguide. The experi-  
ments involved observations with a pulse of 19.1 ± 0.1 GeV/s,  
in which 17,700 events were recorded and 11,000 interactions were

USSR

TAKIBAYEV, Zh. S.; BOOS, E. G.; et al

"Determination of Partial Cross Sections of Inelastic pp-Interactions during a 10-Bev/sec Pulse"

Alma-Ata, Izvestiya Akademii Nauk Kazakhskoy SSR: Seriya Fiziko-Matematicheskaya; March-April, 1972; pp 20-4

ABSTRACT: The article describes a method of isolating events and the method used to determine the partial cross sections in pp-interactions during a primary proton pulse of 10 Bev/sec. Identification of the events was made with respect to the magnitude of the deficiencies of the mass  $M_0^2$  and the confidence level of the observed  $\chi^2$  hypothesis.

Data on the nature of secondary charged particles were taken into account during the isolation of events by reaction channel. Transitions between reaction channels were taken into account in the determination of the cross section of a reaction. This problem was solved by the method of mathematical simulation of the reactions studied.

The article includes three tables, two figures. There are nine bibliographic references.

1/1



USSR

UDC 621.039.50

TAKIBAYEV, ZH. S. and IBRAGIMOV, SH. SH., Members of the Academy of Sciences Kazakh SSR, BATYRBEKOV, G. A. and OKOLOVICH, V. N., Candidates of Physico-Mathematical Sciences

"The Modernized VVR-K Reactor and Its Contribution to the National Economy of Kazakhstan"

Alma-Ata, Vestnik Akademii Nauk Kazakhskoy SSR, No 2 (322), 1972, pp 15-26

Abstract: The VVR-K nuclear research reactor was put in operation in 1967. The modernization of the reactor core, control system, and safety devices resulted in:

1. Creation of 140-mm-diameter channel in the center of the core with a neutron flux of  $3 \times 10^{14}$  neutron/cm<sup>2</sup> x sec.
2. Increase of reactivity reserve which allows tests to continue for 1.5-2 months without shutdown.

The following research work has been conducted:

1. Determination of neutron-physics characteristics.
2. Research on radiation physics and chemistry. The effect of nuclear radiation on properties of absorbents and catalysts was investigated.

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USSR

TAKIBAYEV, ZH. S., et al., Vestnik Akademii Nauk Kazakhskoy SSR, No 2 (322), 1972, pp 15-26

3. Nuclear physics research. Nuclear and gamma-resonant scattering with short-life isotopes was investigated.

4. Activation analysis and production of isotopes.

The following research work is proposed for the future:

1. Effect of radiation on materials and processes. Radiation causes an increase of strength of many metals. Examples are given.

2. Use of radiation and radioactive isotopes in the national economy of Kazakhstan. About 90 isotopes used in USSR are obtained by radiation in the reactors. Radioactive method is the most sensitive for detecting impurities in materials.

3. Nuclear physics.

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USSR

UDC 539.107.2

TAKIBAYEV, Zh. S., BOOS, E. G., LUKIN, Ye. S.

"Usefulness of the Maximum Pulse Method in Analyzing Double-Particle Reactions"

Alma-Ata, Izvestiya, AN Kazakhskoy SSR -- Seriya Fiziko-Matematicheskaya, No 6, Nov-Dec 71, pp 53-57

Abstract: This brief communication is the continuation of an earlier article by the second of the authors named above, published in the same journal (No 4, 1970, p 73), in which he disputed the use of the maximum pulse method first proposed by Brandt, et al (Phys. Letters, Vol 12, 1964, p 57). The current communication also quarrels with Brandt's assertion that this method is even more useful with reductions in the effective masses of bodies A and B or with an increase of energy of the primary particle  $P_{01}$  in the two-particle reaction  $P_{01} + P_{02} \rightarrow A + B$ . The authors prove their point by computing these two factors through the kinematics of the two-particle reaction  $PP \rightarrow N_1^* + N_2^*$ . They

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USSR.

TAKIBAYEV, Zh. S. et al, Izvestiya, AN Kazakhskoy SSR -- Seriya Fiziko-Matematicheskaya, No 6, Nov-Dec 71, pp 53-57.

conclude with the caveat that the method leads to the suppression of a number of background combinations in  $(N\pi)$  particle sets but recommend its use for the analysis of PP interactions when the multiplicity of events is limited and the change in background distribution for three-particle sets is taken into account.

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USSR

UDC 539.171.017

GAYTINOV, A. SH., TAKIBAYEV, ZH. S., and CHASNIKOV, I. YA.

"Inelastic Coefficient of Pion-Nucleon Interactions"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 35, No 10,  
Oct 71, pp 2083-2087

Abstract: Contrary to the case of proton-nucleon interaction in which the inelastic coefficient (part of the energy used in strong interactions for the formation of new particles) is found relatively easily, it is more difficult to determine in the case of pion-nucleon interaction, mainly because of the difficulty in recognizing a primary pion among the new particles.

With the non-symmetrical pion-nucleon collisions, inelastic coefficients are different in different systems of co-ordinates. Determining the coefficient from one recoil nucleon, or from a "preserved" primary particle, is unreliable -- it does not give the true picture of interaction.

The purpose of the present work is to provide the clarification of this problem in the light of the multiplicity and charge exchange by colliding particles in a pion-proton interaction with an impulse of 10.2 gev/sec.

Distribution of the inelastic coefficient was obtained on the basis of the total energy of the colliding particles; energy of nucleon and primary

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USSR

GAYTINOV, A. SH., et al., Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 35, No 10, Oct 71, pp 2083-2087

(leading) pion before and after interaction; energy, impulse, and angle of recoil of the nucleon; masses of both nucleon and pion. Particles with 30 percent or more of the energy of the primary pion were considered as "leading". Utilization of such particles for further computations produced reasonable results.

Particular cases examined were: number of generated particles was greater than three; "leading" pion took more than 50% of the energy of a primary particle; comparative distribution of inelastic coefficient with and without charge exchange of the target proton. Final data are presented for events with the observable "leading" pion, which events are further subdivided into three groups: 1) "leading" pion is charged; 2) "leading" pion is neutral; 3) all remaining events.

Fractional energy carried away by a single pion is presented graphically as a function of the number of new particles, from which it follows that this energy is independent of the nature of the colliding particles and decreases slightly with an increase in the number of new pions.

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USSR

SAN'KO, L. A., Izvestiya AN Kazakhskoy SSR -- Seriya Fiziko-  
Matematicheskaya, No 6, Nov-Dec 71, pp 6-12

data of particle angles and energies from four-ray events recorded  
in nuclear emulsion at an energy level of 20 Gev.

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USSR

UDC: None

TAKIBAYEV, Zh. S., BOOS, E. G., SAN'KO, L. A., MUKHORDOVA, T. I.,  
MOSIYENKO, A. M., ZAYTSEV, K. G., and SHARAPOV, K. V., Institute  
of High-Energy Physics, Kazakhstan Academy of Sciences

"Studying Four-Beam pp-Interactions at pulses of 19.1 Gev/s"

Moscow, Yadernaya fizika, vol 16, No 5, 1972, pp 974-982

Abstract: The purpose of the present paper is to study the general dynamic characteristics of secondary particles from four-beam proton-proton interactions, such as pulse and angle distributions, inelasticity, and correlation between nucleons, at primary pulses of 19.1 Gev/s. A comparison of the experimental and theoretical results is also made. The difference between the approach taken by the experiments of this paper and that of earlier work in the same direction is that the present paper takes into account information regarding the nature of the charged particles obtained by direct measurements of the ionization loss density. The experiments involved observations in a two-meter waveguide of a bubble chamber irradiated by protons with a pulse of  $19.1 \pm 0.1$  Gev/s, in which 17,700 events were recorded and 11,000 interactions were

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USSR

UDC: None

TAKIBAYEV, Zh. S., et al, Yadernaya fizika, vol 16, No 5, 1972,  
pp 974-982

selected for measurement. A table is given of various methods of obtaining experimental data and the corresponding results. Comparison of the theoretical and experimental results indicates that the multiperipheral model on which the former is based shows closer agreement with the experimental distribution of inelastic pp interaction, depending on the number of secondary charged particles. The authors express their appreciation to the Committee on Track Chambers of CERN, workers in the Laboratory of Elementary Particles, the Division of Computer Techniques, and the Mathematical Physics Laboratory of the IFVE [Institute of High-Energy Physics] of the Kazakhstan Academy of Sciences, as well as the LVTA Laboratory of the Joint Institute of Nuclear Research.

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TAKIBAYEV, Zh. S.; BOOS, E. G.; et al

"Determination of Partial Cross Sections of Inelastic pp-Interactions during a 10-Bev/sec Pulse"

Alma-Ata, Izvestiya Akademii Nauk Kazakhskoy SSR: Seriya Fiziko-Matematicheskaya; March-April, 1972; pp 20-4

ABSTRACT: The article describes a method of isolating events and the method used to determine the partial cross sections in pp-interactions during a primary proton pulse of 10 Bev/sec. Identification of the events was made with respect to the magnitude of the deficiencies of the mass  $M_G^2$  and the confidence level of the observed  $\chi^2$  hypothesis.

Data on the nature of secondary charged particles were taken into account during the isolation of events by reaction channel. Transitions between reaction channels were taken into account in the determination of the cross section of a reaction. This problem was solved by the method of mathematical simulation of the reactions studied.

The article includes three tables, two figures. There are nine bibliographic references.

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USSR

UDC 621.039.50

TAKTAYEV, ZH. S. and IBRAGIMOV, SH. SH., Members of the Academy of Sciences  
Kazakh SSR, BATYRBEKOV, G. A. and OKOLOVICH, V. N., Candidates of Physico-  
Mathematical Sciences

"The Modernized VVR-K Reactor and Its Contribution to the National Economy  
of Kazakhstan"

Alma-Ata, Vestnik Akademii Nauk Kazakhskoy SSR, No 2 (322), 1972, pp 15-26

Abstract: The VVR-K nuclear research reactor was put in operation in 1967.  
The modernization of the reactor core, control system, and safety devices  
resulted in:

1. Creation of 140-mm-diameter channel in the center of the core with a  
neutron flux of  $3 \times 10^{14}$  neutron/cm<sup>2</sup> x sec.
2. Increase of reactivity reserve which allows tests to continue for  
1.5-2 months without shutdown.

The following research work has been conducted:

1. Determination of neutron-physics characteristics.
2. Research on radiation physics and chemistry. The effect of nuclear  
radiation on properties of absorbents and catalysts was investigated.

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TAKIBAYEV, ZH. S., et al., Vestnik Akademii Nauk Kazakhskoy SSR, No 2 (322), 1972, pp 15-26

3. Nuclear physics research. Nuclear and gamma-resonant scattering with short-life isotopes was investigated.

4. Activation analysis and production of isotopes.

The following research work is proposed for the future:

1. Effect of radiation on materials and processes. Radiation causes an increase of strength of many metals. Examples are given.

2. Use of radiation and radioactive isotopes in the national economy of Kazakhstan. About 90 isotopes used in USSR are obtained by radiation in the reactors. Radioactive method is the most sensitive for detecting impurities in materials.

3. Nuclear physics.

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USSR-

UDC 539.107.2

TAKIBAYEV, Zh. S., BOOS, E. G., LUKIN, Ye. S.

"Usefulness of the Maximum Pulse Method in Analyzing Double-Particle Reactions"

Alma-Ata, Izvestiya, AN Kazakhskoy SSR -- Seriya Fiziko-Matematicheskaya, No 6, Nov-Dec 71, pp 53-57

Abstract: This brief communication is the continuation of an earlier article by the second of the authors named above, published in the same journal (No 4, 1970, p 73), in which he disputed the use of the maximum pulse method first proposed by Brandt, et al (Phys. Letters, Vol 12, 1964, p 57). The current communication also quarrels with Brandt's assertion that this method is even more useful with reductions in the effective masses of bodies A and B or with an increase of energy of the primary particle  $P_{01}$  in the two-particle reaction  $P_{01} + P_{02} \rightarrow A + B$ . The authors prove their point by computing these two factors through the kinematics of the two-particle reaction  $PP \rightarrow N_1^* + N_2^*$ . They

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TAKIBAYEV, Zh. S. et al, Izvestiya, AN Kazakhskoy SSR -- Seriya  
Fiziko-Matematicheskaya, No 6, Nov-Dec 71, pp 53-57.

conclude with the caveat that the method leads to the suppression of a number of background combinations in  $(N\pi)$  particle sets but recommend its use for the analysis of PP interactions when the multiplicity of events is limited and the change in background distribution for three-particle sets is taken into account.

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USSR

UDC 539.171.017

GAYTINOV, A. SH., TAKIBAYEV, ZH. S., and CHASNIKOV, I. YA.

"Inelastic Coefficient of Pion-Nucleon Interactions"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 35, No 10,  
Oct 71, pp 2083-2087

Abstract: Contrary to the case of proton-nucleon interaction in which the inelastic coefficient (part of the energy used in strong interactions for the formation of new particles) is found relatively easily, it is more difficult to determine in the case of pion-nucleon interaction, mainly because of the difficulty in recognizing a primary pion among the new particles.

With the non-symmetrical pion-nucleon collisions, inelastic coefficients are different in different systems of co-ordinates. Determining the coefficient from one recoil nucleon, or from a "preserved" primary particle, is unreliable -- it does not give the true picture of interaction.

The purpose of the present work is to provide the clarification of this problem in the light of the multiplicity and charge exchange by colliding particles in a pion-proton interaction with an impulse of 10.2 gev/sec.

Distribution of the inelastic coefficient was obtained on the basis of the total energy of the colliding particles; energy of nucleon and primary  
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GAYTINOV, A. SH., et al., Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 35, No 10, Oct 71, pp 2083-2087

(leading) pion before and after interaction; energy, impulse, and angle of recoil of the nucleon; masses of both nucleon and pion. Particles with 30 percent or more of the energy of the primary pion were considered as "leading". Utilization of such particles for further computations produced reasonable results.

Particular cases examined were: number of generated particles was greater than three; "leading" pion took more than 50% of the energy of a primary particle; comparative distribution of inelastic coefficient with and without charge exchange of the target proton. Final data are presented for events with the observable "leading" pion, which events are further subdivided into three groups: 1) "leading" pion is charged; 2) "leading" pion is neutral; 3) all remaining events.

Fractional energy carried away by a single pion is presented graphically as a function of the number of new particles, from which it follows that this energy is independent of the nature of the colliding particles and decreases slightly with an increase in the number of new pions.

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USSR

UDC: 539.171.017

BABAYEV, M. K., YEREMENKO, YU. A., LUKIN, YU. T., and TAKIBAYEV, ZH. S.,  
Institute of High-Energy Physics, Academy of Sciences Kazakh SSR

"Concerning Angular Distribution Asymmetry of Secondary Particles in the  
Center-of-Mass System and Azimuthal Plane With Energies of Several Hundred Gev"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 35, No 10,  
Oct 71, pp 2036-2039

Abstract: Asymmetry in the center-of-mass system of a cosmic-ray shower of charged particles is usually measured by comparing the number of secondary particles moving in the forward direction to the number of secondary particles moving in the reverse direction along the collision axis. This measurement (alpha) may be augmented by considering two new analogous measurements (beta and gamma) that may be taken along the mutually perpendicular axis in the azimuthal plane perpendicular to the collision axis. Several measurements, comparing alpha and beta, were made of a variety of emissions. The results show that beta is sufficiently sensitive in 25 to 50 percent of the cases to provide an indication of asymmetry in emissions based on the single-fireball model. Beta measurements have the additional advantage of verifying the direction of the fireball-primary-particle collision axis.

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USSR

GORYACHIKH, A. A., TAKIBAYEV, Zh. S., TITOVA, N. S., and SHALAGINA, Ye. v.,  
Kazakh State University

"Angular Distribution of Star Tracks Formed by  $\pi$ -Mesons Having an Energy of  
60 GeV on Heavy Nuclei of a Photoemulsion"

Moscow, Yadernaya Fizika, Vol 13, No 6, Jun 71, pp 1267-1269

Abstract: The authors study the angular distributions of thin, gray, and black tracks in spallations formed by Ag and Br  $\pi$ -mesons having an energy of 60 GeV. The distributions obtained are compared with the angular distributions of star tracks formed by protons having an energy of 2.26 and 19.5 GeV. The investigation involved 170 stars formed by the interaction with heavy nuclei of an ion photoemulsion having an energy of 60 GeV. With the aid of schematics the authors depict the angular distribution of the thin and gray tracks of these spallations. They find that the angular characteristics of the gray tracks are independent of energy and nature of the primary particle. The research is supported by equations as well as the tables and figures. The article contains two tables, two figures, and a bibliography of two titles.

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UDC  $\Delta 539.1.073/.074$

USSR

SAN'KO, L. A., TAKIBAYEV, ZH. S., BOCS, E. G., VOLKOVA, O. I., MOSIYENKO, A. M., ZAYTSEV, K. G., TEMIRALIYEV, T. T., and KHOLMETS KAYA, A. V.,  
Institute of Nuclear Physics, Kazakh SSR Academy of Sciences, Alma-Ata

"Identification of Secondary Particles From the Ionization Losses in a Hydrogen Bubble Chamber"

Pribery 1 Tekh Eksper, No 4, 1971, pp 67-69

Abstract: The authors give the results of identifying secondary charged particles forming in the interactions of protons at an empulse of 10 GeV/sec in an 81-cm hydrogen bubble chamber. They show that by using the method of average length of discontinuities they can determine the nature of 30% of all positive particles in a certain range. Graphs are used to illustrate the authors' results. Figure 1 shows the relative error in density as a function of track length. Figure 2 shows the ionization curves computed for various types of particles. Figure 3 shows the distribution of data points relative to the ionization curves for positive and negative particles. Analysis of the authors' results shows that the method described herein will allow identification of 90% of all the particles measured. The article contains 3 figures and 4 bibliographic entries.

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USSR

TAKIBAYEV, ZH. S., Academician, Academy of Sciences, Kazakh SSR

"Beam of Fast Neutral Atoms"

Alma-Ata, Vestnik Akademii Nauk Kazakhskoy SSR, No 5, May 71, pp 41-42

Abstract: It is a rather difficult task to obtain neutral particles or atoms with an energy in the range of MeV or higher. As far as the author knows, this has never been done. However, the author discusses the theoretical for use beams of energetic atoms. One example would be the use of fast deuterium atoms to obtain or intensify controlled thermonuclear reactions; thus, with sufficiently intense neutral particles their use in plasma physics is obvious. A second example would be the use of a beam of light elements; for example, anti-hydrogen and anti-helium. In this article the author suggests one method for obtaining fast neutral atoms and anti-atoms that is worthy of attention. Through this described process the author concludes that it is possible to construct special storage rings for the purpose of increasing the joint lifetime of positive ions (anti-ions) and electrons (positrons) in a single beam. The article contains 1 figure and 2 bibliographic entries.

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