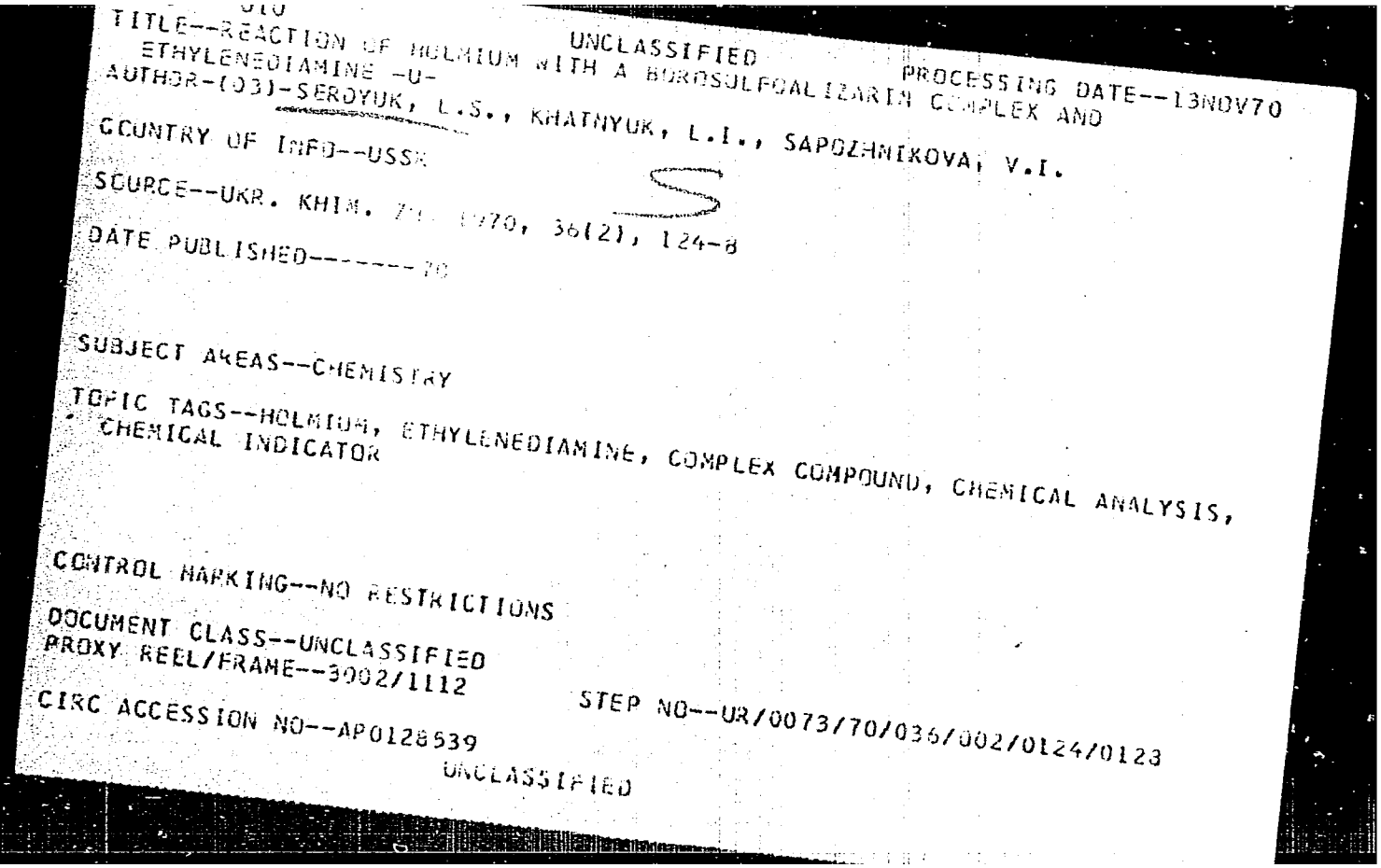


UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--REACTION OF HOLMIUM WITH A BORDSULFOALIZARIN COMPLEX AND ETHYLENEDIAMINE -U-

AUTHOR-(03)-SERDYUK, L.S., KHATNYUK, L.I., SAPOZHNIKOVA, V.I.

COUNTRY OF INFO--USSR

SOURCE--UKR. KHIM. ZH. 1970, 36(2), 124-8

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--HOLMIUM, ETHYLENEDIAMINE, COMPLEX COMPOUND, CHEMICAL ANALYSIS, CHEMICAL INDICATOR

CONTROL MARKING--NO RESTRICTIONS

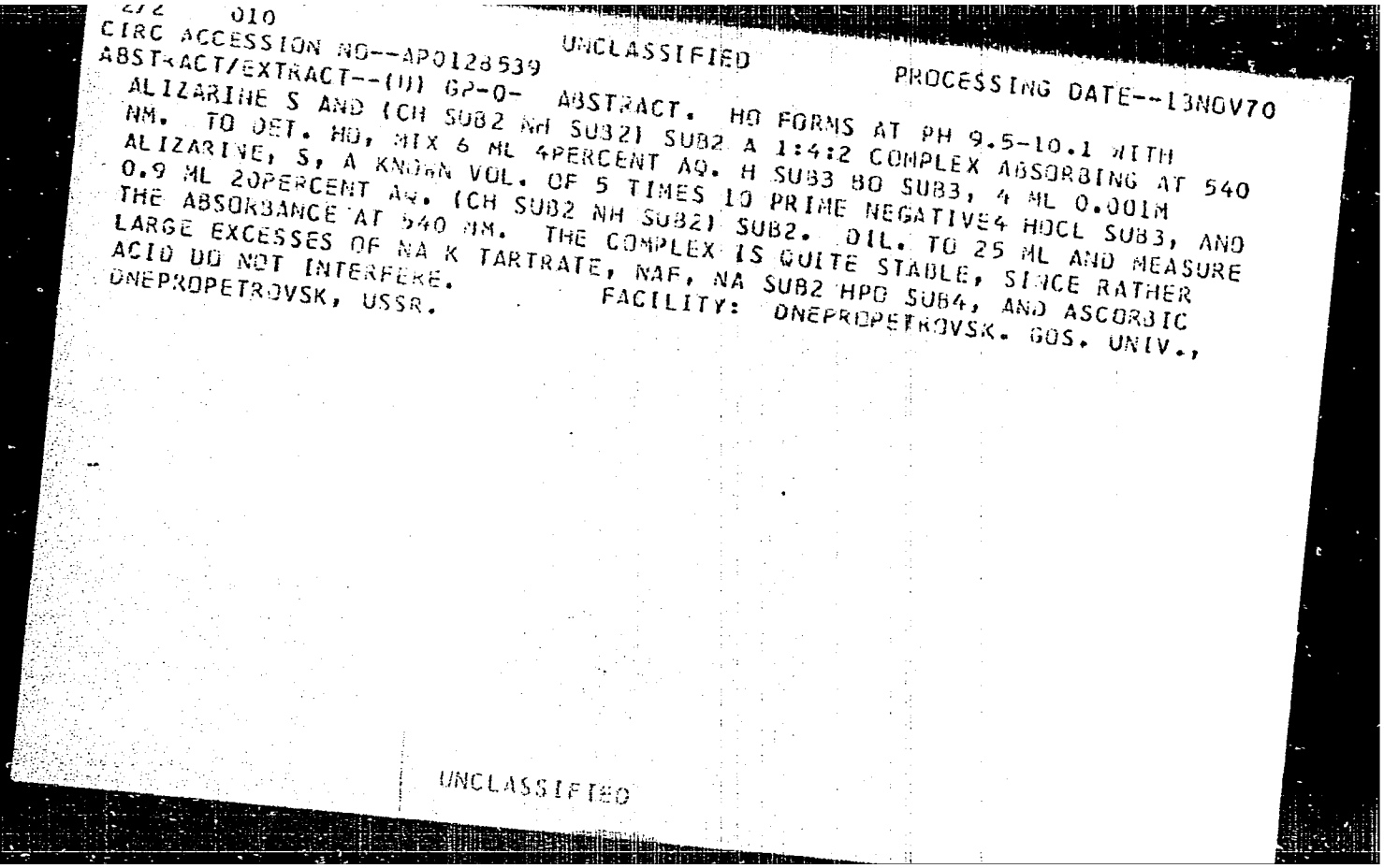
DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1112

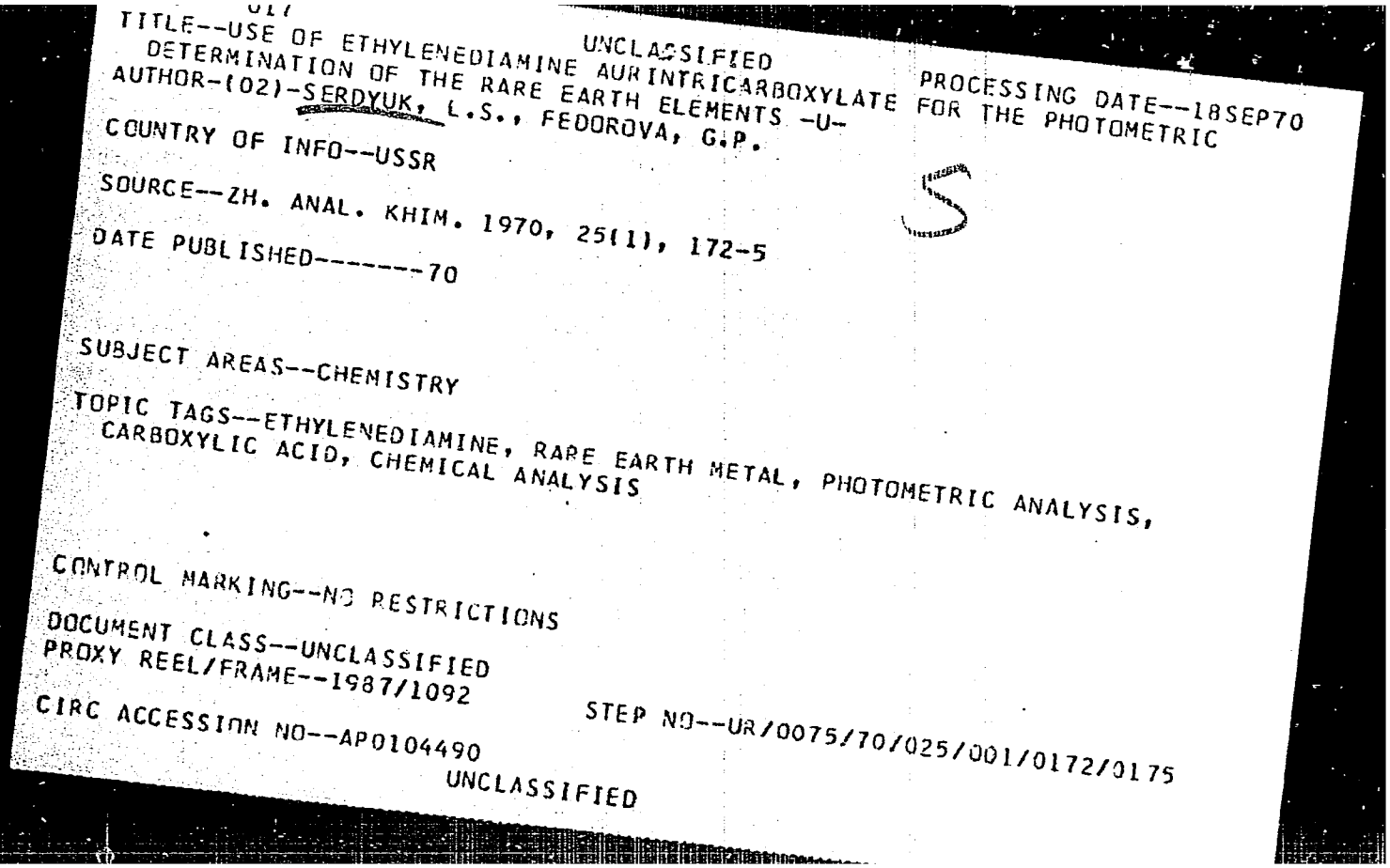
STEP NO--UR/0073/70/036/002/0124/0123

CIRC ACCESSION NO--AP0128539

UNCLASSIFIED



272 010
UNCLASSIFIED
CIRC ACCESSION NO--AP0128539 PROCESSING DATE--13NOV70
ABSTRACT/EXTRACT--(U) G2-0- ABSTRACT. HO FORMS AT PH 9.5-10.1 WITH ALIZARINE S AND (CH SUB2 NH SUB2) SUB2 A 1:4:2 COMPLEX ABSORBING AT 540 NM. TO DET. HO, MIX 6 ML 4PERCENT AQ. H SUB3 BO SUB3, 4 ML 0.001M ALIZARINE, S, A KNOWN VOL. OF 5 TIMES 10 PRIME NEGATIVE4 HOCL SUB3, AND 0.9 ML 20PERCENT AQ. (CH SUB2 NH SUB2) SUB2. DIL. TO 25 ML AND MEASURE THE ABSORBANCE AT 540 NM. THE COMPLEX IS QUITE STABLE, SINCE RATHER LARGE EXCESSES OF NA K TARTRATE, NAF, NA SUB2 HPO SUB4, AND ASCORBIC ACID DO NOT INTERFERE. FACILITY: DNEPROPETROVSK. GOS. UNIV., DNEPROPETROVSK, USSR.
UNCLASSIFIED



UCI

UNCLASSIFIED

TITLE--USE OF ETHYLENEDIAMINE AURINTRICARBOXYLATE FOR THE PHOTOMETRIC DETERMINATION OF THE RARE EARTH ELEMENTS -U-

PROCESSING DATE--18SEP70

AUTHOR-(02)-SERDYUK, L.S., FEDOROVA, G.P.

COUNTRY OF INFO--USSR

SOURCE--ZH. ANAL. KHIM. 1970, 25(1), 172-5

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ETHYLENEDIAMINE, RARE EARTH METAL, PHOTOMETRIC ANALYSIS, CARBOXYLIC ACID, CHEMICAL ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/1092

STEP NO--UR/0075/70/025/001/0172/0175

CIRC ACCESSION NO--AP0104490

UNCLASSIFIED

CIRC ACCESSION NO--AP0104490 UNCLASSIFIED PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AURINTRICARBOXYLIC ACID REACTS WITH ETHYLENEDIAMINE IN A 1:2 MOLAR RATIO TO FORM LIGHT YELLOW I WHICH CAN BE USED AS A REAGENT FOR THE PHOTOMETRIC DETN. OF RARE EARTHS. DISSOLVE 0.05 G SAMPLE IN 2-3 ML 1:1 HCL WITH MODERATE HEATING AND DIL. TO 100 ML WITH H SUB2 O. THEN DIL. 17.8 OF THIS SOLN. TO 50 ML IN A VOLUMETRIC FLASH. PLACE INTO A 25-ML VOLUMETRIC FLASH SEVERAL ML OF A PH 6.7 AMMONIACAL-ACETATE BUFFER, 0.5-0.9 OF THE DIL. SAMPLE, 1 ML 0.2PERCENT REAGENT AND DIL. TO VOL. WITH H SUB2 O. (PH OF THE SOLN. SHOULD BE 7.4). DET. THE ABSORBANCE COLORIMETRICALLY BY USING A GREEN FILTER AND FIND THE CONCN. OF TOTAL RARE EARTHS BY THE METHOD OF COMPARISON. A LACL SUB3 SOLN. IS SUED AS STD. SOLN. THE ERROR IN THE DETN. OF 2.4-3 5 TIMES 10 PRIME NEGATIVE5 M RARE EARTHS IS PLUS OR MINUS 3.4PERCENT.

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202820016-8"

USSR

UDC: 621.791.756

YUSHCHENKO, K.A., PONIZOVTSEV, A.M., FOMIN, V.V., POBOL', A.A., and SERDYUK, M.A.

"Increase in Electroslag Welding Efficiency"

Kiev, Avtomaticheskaya Svarka, No 5, May 70, pp 72-73

Abstract: A technique was described for increasing electroslag welding efficiency. Experiments were conducted on an A-535 commercial device with a modified neck. The electrode was preheated from a self-contained DC source. Heating was regulated by changing the current value of the source by lowering or increasing the resistance between the contacts of this current supply. The best results were attained by heating the wire to a temperature close to the melting point. In the experiments, 3-mm-diameter 06Kh19N9T welding wire and ANF-14 flux were used to weld plates made of Kh18N10T and Kh17N13M3T steels. The following advantages were established for electroslag welding with preheated electrode: the time for the transition from the arc process to the slag process is shortened considerably; the electrode wire melts in the upper part of the slag bath, even at a high feed rate; the volume of the slag bath can be decreased sharply without disturbing the stability of the process and worsening the seam-forming conditions; welding current can be reduced by 25-30%; and welding efficiency rises 1.5-2.0 times. Mechanical tests of the seam metal showed its high quality. A considerable rise can be expected in electroslag process efficiency upon complementary preheating of the electrode in arc

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USSR

YUSHCHENKO, K.A., et al, Avtomaticheskaya Svarka, No 5, May 70, pp 72-73

welding with forced forming under flux or in shielding gas, in welding with wire made of powdered material, and in electroslag or arc plasma remelting.

SERDYUK, N.F.

Control Sys. (Maritime Trans)

GLORIA

SO: JPRS 55352
6 MARCH 1972

PROBLEMS OF PLANNING IN AN AUTOMATED CONTROL SYSTEM FOR MARITIME TRANSPORTATION

[Article by Ye. N. Voyeudskiy, E. P. Gromova, [illegible] D. Levyy, G. [illegible] Makhnenko, N. F. Serdyuk, [illegible] Zarubova; Moscow, V [illegible], [illegible] po [illegible] Upravleniyu, Moscow, 1971, Referaty Dokladov, Russian, Part I, 1971, pp 93-95]

The results of studying the characteristics of the maritime transport economic system are discussed in this paper. The specifics of this system as a planning object are demonstrated, and the basic requirements on the creation of the planning subsystem of the Morflot [Maritime Fleet] Automatic Control System are formulated.

This has permitted establishment of the theoretical principles of functioning of optimal planning and the creation of a procedural base for the development of a set of models, algorithms and planning calculation procedures.

In the most general statement, the planning problem is formulated as finding the most advantageous law of motion of the economic system in a region of the phase space defined by the given resources.

It is proposed that the planning problem in the general statement be studied by means of a model of the space connecting the excitation in order to simulate the behavior of the economic system.

The report contains a description of the models and algorithms of calendar planning of the fleet operation. The general problems of calendar planning are studied, and some new ideas of its improvement are advanced, in particular [illegible] on the basis of adaptive automata. The methods of simulating calendar [illegible] and optimization of them are investigated.

A set of algorithms and programs for calculating the calendar schedule [illegible] of the fleet on a computer is described. It comprises three parts:

Processing the requests for freight transport operations and formation of all possible sections of future schemes for movement of the ships;

Formation of all possible movement schemes for each ship;

USSR

UDC: 519.2

ZARENIN, Yu. G. and SERDYUK, N. G.

"Distribution of the Number of Breakdowns of an Element in the Interval /0,t/ for Arbitrary Distribution of the Time of Faultless Operation and Distribution of the Restoration Time"

Kiev, v sb. Prikl. zadachi tekhn. kibernetiki (Applied Problems in Cybernetic Engineering--collection of works) "Nauk. dumka," 1972, pp 168-176 (from RZh--Matematika, No 6, 1972, Abstract No 6V200)

Translation: Ordinary recurrent formulas are written for the distribution of the number of events in an alternating restoration process in the interval (0,t). Tables are presented; under certain assumptions, the error of the consequence of replacing the gamma distribution for faultless operation time by an exponential distribution is estimated. I. Kovalenko.

1/1

USSR

CHICHENIN, P. I., MUKHAMEDOV, S. M., SEREDIN, V. G., INZHEVATOVA, M. V., and LI GVAN KHVA, V. T.

"Contribution to the Taxonomy of El Tor Vibrios"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 9, Sep 70, pp 42-46

Abstract: During the last 50 years, no agreement has been reached on the true cholera vibrio. Feeley, who studied 220 strains, divided them into five biotypes. However, since all were true cholera vibrios, he regarded the division into the classic cholera vibrios and the El Tor vibrios as invalid. The classification into lysogenic and nonlysogenic strains does not correspond to their virulence. The varying susceptibility of the vibrios to bacteriophages facilitated determination of the geographic distribution of lysogenic El Tor vibrios. Since no classification has been officially approved, it is apparent that there is only one cholera pathogen: Vibrio cholerae. The dissimilarities among its variants lie within the limits of genus variability. They all have one common property: they cause cholera in man. Vaccines made with the classic cholera vibrios are effective against El Tor vibrios. In addition to the dissimilarities, there are some biological dissimilarities between classical and El Tor vibrios. The El Tor vibrios survive longer in the external environment, especially in

USSR

CHICHENIN, P. I., et al, Meditsinskiy Zhurnal Uzbekistana, No 9, Sep 70, pp 42-46

water, and are more resistant to antibiotics. Contrary to the classic type, they are all prototrophic. The great vitality of the El Tor vibrios is manifested by their interaction with the classic type in vitro and in vivo. However, no explanation has yet been found for the fact that the El Tor cholera which developed in India in March-April 1964 almost completely displaced the classic cholera. People can carry El Tor vibrios for many years. The ability to produce endemic foci is greater for the El Tor than for classic vibrios. Staple endemic situations induced by El Tor vibrios have recently been observed in the Philippines, Vietnam, Thailand, and Indonesia.

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USSR UDC 51.330.115

ZARENIN, Yu. G. SERDYUK, N. G.

"Method of Calculation of Reliability of Homogeneous Redundant Systems with Repair"

Sistemy i Sredstva Avtomat. Upr. [Systems and Equipment for Automatic Control -- Collection of Works], Kiev, 1970, pp 96 to 102 (Translated from Referativnyy Zhurnal Kibernetika, No. 4, April, 1971, Abstract No. 4 V599).

No Abstract.

1/1

USSR

UDC 621.383.45

SERDYUK, N.YA.

"Phase-Sensitive Properties Of Electrooptical Elements Based on Glow-Discharge Devices"

Vestn. Kiyev. politekhn. in-ta. Ser. radioelektron. (Bulletin Of Kiev Polytechnical Institute. Radio Electronics Series), 1970, No 7, pp 17-19 (from RZh--Elektronika i yeye primeneniye, No 12, December 1970, Abstract No 12B292)

Translation: The possibility is considered of the use in phase-sensitive circuits of electrooptical pairs which consist of a glow-discharge device and a photoresistor. Modulation of the glow-discharge radiation is effected by a discharge current. The photo-sensitive properties of photoresistors connected into an a-c net make it possible to obtain a constant component of the photoresistor current which depends on a phase shift between the discharge current and the a-c voltage applied to the photoresistor. The effect of the intertia of the photoresistors which introduces phase distortion is taken into account by the initial phase shifts caused by the magnitude of the time constant of the photoresistor. 1 ill. 2 ref. Summary.

1/1

USSR

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

ZOTOV, V. V., and SERDYUK, V. V.

"Effects Caused by Appearance of Contact Barrier at Cadmium Sulfide-Indium Electrode Interface"

Elektron. tekhnika. Nauch.-tekhn. sb. Upr. kachestvom i standartiz. (Electronic Engineering. Collection of Scientific and Technical Works on Quality Control and Standardization), 1971, vyp. 4(10), pp 31-36 (from RZh-Fizika, No 1, Jan 72, Abstract No 1YE1364 by authors)

Translation: Usually an In electrode makes it possible to obtain ohmic contact with CdS. However, with prolonged propagation of large fluxes such a contact takes on barrier properties. This results in electric polarization of the crystal and the appearance of current instability when voltage is on. The phenomenon can be used to determine the parameters of free current carrier trapping in the volume of a semiconductor.

1/1

USSR

BOKUT', B. V.; SERDYUKOV, A. N.; FEDOROV, F. I. (Institute of Physics, Belorussian Academy of Sciences)

"Phenomenological Theory of Optically Active Crystals"

Moscow, Kristallografiya; September-October, 1970; pp 1002-6

ABSTRACT: The authors derive equations for an electromagnetic field in optically active crystals which are distinguished by the fact that from them is obtained the law for the conservation of energy, in which the energy density of the field has a form different from ED + HB, while the vector of the energy flow is expressed in the ordinary manner. The general equation of the normals for planar waves propagated in such media is derived, and several of its special forms are considered.

The article includes 24 equations. There are 10 bibliographic references.

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1/2 029 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--MAINTENANCE OF ELECTROMAGNETIC RADIATION PULSE MOMENT IN OPTICALLY ACTIVE MEDIA -U-
AUTHOR-(02)-BOKUT, B.V., SEROYUKOV, A.N.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKLAD. SPEKTROSK, (USSR), VOL. 12, NO. 1, P. 139-41 (JAN. 1970)
DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--TENSOR, ELECTROMAGNETIC RADIATION, ELECTROMAGNETIC PULSE, MAGNETIC MOMENT, OPTIC MATERIAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1998/1730 STEP NO--UR/0368/70/012/001/0139/0141

CIRC ACCESSION NO--AP0122060
UNCLASSIFIED

2/2 029 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0122060

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. WITHIN THE FRAMES OF THE LANGRANGE FORMALISM, THE TENSOR OF ENERGY PULSE OF THE ELECTROMAGNETIC FIELD IN AN OPTICALLY ACTIVE MEDIUM IS OBTAINED. THIS ALLOWS THE EXPRESSION OF THE ROTATING MOMENT ACTING UPON THE ANALYSED MEDIUM TO BE GENERALIZED.

UNCLASSIFIED

USSR

UDC 621.375.82

MAKOGON, M. M., PONOMAREV, Yu. N., and SERDYUKOV, V. I.

"Neodymium Self-Q-Switched Laser"

V sb. Kvant. elektronika (Quantum Electronics -- Collection of Works), No 2(14), Moscow, "Sov. Radio," 1973, pp 59-61 (English summary) (from RZh-Fizika, No 10, Oct 73, Abstract No 10D836 from authors' abstract)

Translation: The article studies the oscillation of an Nd glass laser in an unstable resonator formed by a flat and a spherical reflector. The dependence of the threshold pumping energy, oscillation energy, and the spatial distribution of laser emission on the resonator length is determined. A close interrelationship is found between the emission parameters and the drift of the threshold curve. At a certain resonator length 1-to-2 megawatt monopulse oscillation is obtained. The value of this length is used to estimate the variation in the refractive index of the Nd glass according to the population inversion.

1/1

USSR UDC 661.183.6+549.623.5

SHMELEV, G. A., SERDYUKOV, V. I., and BOBR-SERGEYEV, A. A., Ivanovo Chemico-Technological Institute, Department of Silicate Technology

"Synthesis of Lithia Mica in Eutectic Fluoride Fusions"

Ivanovo, Izvestiya Vysshikh Uchebnykh Zavedeniy, Khimiya i Khimicheskaya Tekhnologiya, Vol XIII, No 10, 1970, pp 1,496-1,499

Abstract: Existing methods of synthesizing mica either yield an inadequate amount of high-quality crystals, or are too complex technologically.

To find new methods, the authors studied experimentally the synthesis of taeniolite ($KMg_2Li[Si_4O_{10}]F_2$) from solution in a fused mixture of fluorides. The initial charge consisted of quartz sand, periclase, MgF_2, LiF, K_2SO_3, to which were added large amounts (more than 12% by weight) of fused fluorides (double mixtures of eutectic composition).

Data on the composition of the mica obtained indicate that this is a very promising method of synthesis.

1/1

USSR UDC 669.293.5.296.537.312.62.539.374

SAVITSKIY, Ye. M., BARON, V. V., FROLOV, V. A., STARKOV, V. N., KORCHAGIN, P. A. ARKUSHA, T. I., OSIPOV, V. N., SERDYUKOV, Yu. A.

"Cathode-Ray Melting and Deformation of Superconducting Niobium-Zirconium Alloys Under Industrial Conditions"

Probl. Sverkhprovodyashch. Materialov [Problems of Superconducting Materials -- Collection of Works], Moscow, Nauka Press, 1970, pp.187-192. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 I785 by the authors).

Translation: Industrial modes of melting ingots 90 mm in diameter and weighing up to 45 kg in a cathode ray furnace by the method of double vacuum remelting, and modes of hot pressing of ingots into bars 50 mm in diameter and forging of pressed bars to 18-22 mm in diameter are developed for alloys of Nb with Zr. Bars produced by cathode ray melting, hot pressing,and forging are used to produce wire 0.2 mm in diameter, the mechanical and superconducting properties of which are measured. 2 figs; 16 biblio refs.

1/1

UDC: 537.312.62

USSR

SAVITSKIY, Ye. M., BARON, V. V., FROLOV, V. A., STARKOV, V. N., KORCHAGIN, P. A., ARKUSHA, T. I., OSIPOV, V. N., SERDYUKOV, Yu. A.

"Electron-Beam Melting and Deformation of Superconducting Niobium-Zirconium Alloys Under Industrial Conditions"

V sb. Probl. sverkhprovodyashch. materialov (Problems of Superconducting Materials--collection of works), Moscow, "Nauka", 1970, pp 187-192 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5D554)

Translation: Cycles for smelting ingots 90 mm in diameter weighing up to 45 kg in an electron-beam furnace by the method of double vacuum remelting, and schedules for hot-pressing the ingots into bars 50 mm in diameter and for forging the pressed bars to a diameter of 18-20 mm are worked out under industrial conditions for niobium-zirconium alloys. Wire 0.2 mm in diameter is made from the bars produced by the methods of electron-beam melting, hot-pressing and forging, and the mechanical and superconducting properties of this wire are measured. Two illustrations, bibliography of sixteen titles. Resumé.

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USSR

UDC 669.018.4.537.312.62

SAVITSKIY, Ye. M., BARON, V. V., FROLOV, V. A., STARKOV, V. N., KORCHAGIN, P. A., ARKUSHA, T. I., OSIPOV, V. N., and SERDYUKOV, Yu. A.

"Cathode Ray Melting and Deformation of Superconducting Niobium-Zirconium Alloys Under Industrial Conditions"

Problemy Sverkhprovodyashchikh Materialov [Problem of Superconducting Materials — Collection of Works], Moscow, Nauka Press, 1970, pp 187-192

Translation: Modes for production of ingots 90 mm in diameter weighing up to 45 kg in a cathode ray furnace by double vacuum remelting, and modes of hot pressing of ingots into bars 50 mm in diameter and forging of the pressed bars to diameters of 18-20 mm have been developed under industrial conditions for alloys of niobium with zirconium. Wire 0.2 mm in diameter has been produced from the bars manufactured by cathode ray melting, hot pressing, and forging; the mechanical and superconducting properties of the wires are measured.

2 figures, 16 biblio. refs.

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SERDYUKOVSKAYA, G.N.

MEDICINE

PRESENT STATUS AND URGENT PROBLEMS DEALING WITH HYGIENE OF SCHOOL CHILDREN

[Article by A.A. Mirkh, G.N. Serdyukovskaya (Moscow); Moscow, Vestnik Akademii Meditsinskikh Nauk SSSR, Russian, No 4, 1974, pp 13-22]

UDC: 613.955

Hygiene of children and adolescents which works on preventive problems concerning protection of the health of new generations became an independent branch of social hygiene in 1923, as a special course of instruction on the medical faculties of Moscow universities.

This was based on the fact that there was a significant scope to state measures regarding organization of the public education system and the major tasks concerning improvement of the health of children and adolescents which confronted public health agencies in the early years of Soviet power, as well as that there was need to broaden training of special physicians to provide medical care for the child population.

In the early years of the existence this discipline was called school hygiene, then, because of expansion of the area it dealt with and extension of its influence to different age groups, it was named hygiene of children and adolescents. In 1960, the special Institute of Hygiene of Children and Adolescents was founded and it coordinates scientific research in the field in the entire country.

Hygiene of children and adolescents deals chiefly with development of hygienic norms referrable to various aspects in the life of children, directed toward providing optimum environmental conditions that would not only preserve but also strengthen health. For this reason, the chief issues are hygiene of teaching and upbringing, industrial hygiene for working adolescents, hygiene of school and children's institution construction, investigation of health and physical development of children and adolescents, and hygiene of physical training.

Development and formation of the child depend in many respects on environmental conditions, upbringing, work and rest schedule, and conditioning of the organism. Here, the environment should not be interpreted in the narrow sense, but as a complex set of natural, living, and industrial factors without which man does not exist.

UDC 539.4

USSR

SULIMA, A. M., YEVSTIGNEYEV, M. I., SEREBRENNIKOV, G. Z., Moscow

"Study of Influence of Loading Frequency on Fatigue of Heat Resistant Steels and Alloys at Usage Temperatures"

Kiev, Problemy Prochnosti, No 5, May, 1971, pp 107-110.

Abstract: The influence of loading frequency on the fatigue strength of the alloys EI961, EI617, EI826, EI929, EI437B and titanium alloy VT9 was studied. The test data were statistically processed, constructing correlation equations and correlation dependences between σ and N and σ and T. These dependences were used to determine the mean probable values of fatigue resistance and cyclical durability at various loading frequencies. The results showed that as the loading frequency increases to a certain critical value, the fatigue resistance and cyclical durability of the steels and alloys studied increase, then further increases in loading frequency cause the fatigue strength of all steels and alloys studied to drop. The critical frequency depends on the test conditions, chemical composition and physical and mechanical properties of the steel or alloy. The results of testing thus showed that the repetition frequency of loading is an important parameter of cyclical loading, significantly influencing fatigue characteristics.

1/1

1/2 031 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--EVALUATING THE RESISTANCE OF TRANSPARENT PAINT AND VARNISH COATING TO COHESION AND ADHESION DEGRATION -U-

AUTHOR-(04)-AVILOV, G.V., LAVRENTYEV, V.V., SEREBRENNIKOV, A.I., UPENSKIY, V.I.

COUNTRY OF INFO--USSR

SOURCE--LAKOKRASOCH. MATER. IKH PRIMEN. 1970, (1), 52-4

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--PAINT, VARNISH, COHESION STRENGTH, PLASTIC FILM, METAL TO NONMETAL BONDING, POLYSTYRENE RESIN, POLYSILOXANE, SILICONE COATING, MATERIAL DEGRADATION, MECHANICAL FAILURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0426 STEP NO--UR/0303/70/000/001/0052/0054

CIRC ACCESSION NO--AP0119362

UNCLASSIFIED

2/2 031 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119362

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TRANSPARENT COATINGS WERE APPLIED TO A STRONG TRANSPARENT FILM. THE COATED FILM WAS DRAWN BACK AND FORTH UNDER TENSION OVER THE EDGE OF A STEEL BLOCK. THE APPEARANCE OF CRACKS IN THE COATING WAS RECORDED AUTOMATICALLY BY MEASURING THE RATIO OF TRANSMITTED TO REFLECTED LIGHT. THE NO. (N) OF PASSES WAS TAKEN AS THE FLEX DURABILITY. THE ADHESION DURABILITY WAS DETD. BY APPLYING PRESSURE ON THE FILM AT THE STEEL BLOCK EDGE WITH A DIAGONALLY PLACED RUBBER ROLLER. THIS REDUCED THE NO. OF PASSES TO N SUB1. THE DIFFERENCE (N MINUS N SUB1) WAS TAKEN AS THE COHESION STRENGTH OF THE COATING. THE FOLLOWING RESULTS ARE REPORTED (COATING N, N SUB1 GIVEN): POLYSTYRENE COTG. POLY(DIPHENYLSIOLANE), 44, 13; ORGANOSILICONE LACQUER (I) (UNPLASTICIZED), 9,4; PLASTICIZED I, 575, 125.

UNCLASSIFIED

USSR UDC 621.372.852.2

SEREBRENNIKOV, G. F.

"A Strip Phase Inverter Based on Ferroelectric Capacitors for a High Level of SHF Power"

Izv. Leningr. elektrotekhn. in-ta (News of the Leningrad Electrical Engineering Institute), 1971, vyp. 92, pp 55-58 (from RZh-Radiotekhnika, No 7, Jul 71, Abstract No 7B182)

Translation: The author considers a microwave phase shifter based on a network of controlled capacitors connected in series in a strip transmission line. The phase shifter is designed for pulses with a power of up to 10 kW, duration up to 100 μs and off-duty factor of at least 100 on a frequency of 3 GHz. The device is designed for use in phased antenna arrays. The capacitors are planar, based on VK-7 ferroelectric ceramic. The results of a test of an experimental model are presented. Four illustrations. K. S.

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AA0052403

UR 0482

Soviet Inventions Illustrated, Section III Mechanical and General, Derwent, 2-70

243408 FACING PANEL FIXING DEVICE for aircraft passenger cabins, comprising upper and lower longitudinal supports fixed to the fuselage, support elements and eccentric or screw locks for attaching the edges of the panel by tangential forces, differs in that the support element is in the form of flexible strips of the same length as the arc of the panel attached at the ends to the upper and lower longitudinal supports. This simplifies the design and gives a better fixture and finished

Solov'yev, Yu. P.; Serebrennikov, R. B.; Matus, A. I.

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19821020

AA0052403

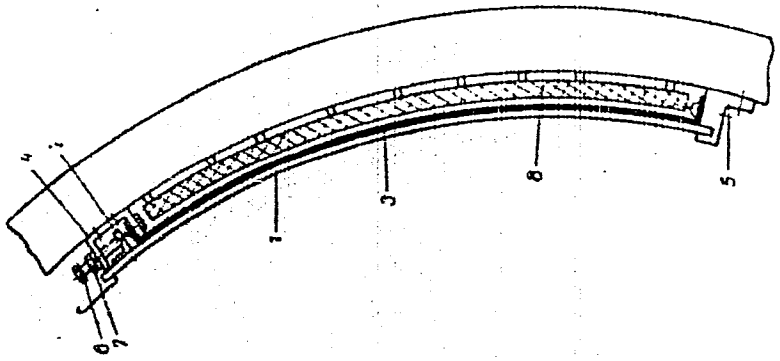
appearance. Facing panel 1 with projection 2 is pressed to support strip 3, attached at its ends to longitudinal supports 4 and 5. On upper support 4 is fixed a lock, consisting of screw clip 6 and self-locking nut 7. In the interval between the external panelling of the fuselage and the facing panels is thermal insulation 8. The panels are fitted one after the other. The facing panel is inserted into the slot of lower support 5. When clip 6 is turned, a tangential force is created in lock 7 giving compression along the side edge of the panel. The upper panel is laid on the edge of the adjacent panel which rests on the support strip.

28.6.67 as 1168475/40-23 SOLOV'EV IU.P. et al. (23.9.69) Bul. 16/5.5.69. Class 62b, 37b, Int. Cl. B 64c, E 04b.

3/3

19821021

AA0052403



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UDC 546.65'185

BIRYULINA, V. N., and SEREBRENNIKOV, V. V., Tomsk State University

"Rare-Earth Element Phenylhydroxyethylphosphonates"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 9, Sep 73, pp 1865-1868

Abstract: Phenylhydroxyethylphosphonates of the rare earth elements (REE) have the formula $Ln_2[C_6H_5(COH)\cdot(PO_3)CH_3]_3nH_2O$ where Ln stands for lantanides, excluding promethium. A series of such complexes was obtained by mixing concentrated aqueous solutions of REE salts and α-phenyl-α-hydroxyethylphosphonic acid (PHEPA) neutralized with KOH. It was shown that complexes with the formula $[LnC_6H_5C(OH)(PO_3H)CH_3]^{2+}$ where Ln = La^{3+}, Sm^{3+}, Gd^{3+}, Dy^{3+}, Ho^{3+}, Lu^{3+} exhibit stability constants of the order of 10^2-10^3 in the series La-Lu.

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Organophosphorous Compounds

USSR UDC 546.651. 547.58

BIRYULINA, V. N., and SEREBRENNIKOV, V. V., Tomsk State University

"Phosphonates of Rare Earth Elements"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), No 8, 1972, pp 1691-1694

Abstract: The preparation, composition, and some properties are given for the phenyl- (Ph) and α-phenylvinyl(PhV) phosphates of the rare earth elements (REE). The (Ph) have the general formula $Ln_2(C_6H_5PO_3)_3$ and the (PhV) have either the acidic form $Ln[C_6H_5C(PO_3H)CH_2]_3 \cdot nH_2O$ or the neutral $Ln_2[C_6H_5C(PO_3)CH_2]_3 \cdot nH_2O$, Ln being the series of elements Y through Lu. Phenylphosphonic or α-phenylvinylphosphonic acid is used as the starting material. The Ph salts are only slightly soluble in water; the acid PhV are about twice as soluble as the Ph. Both Ph and PhV are soluble in mineral acids; both are also practically nonsoluble in organic solvents. Density, optical rotation, and Ir maxima were determined. Based on the Data given, conclusions were made concerning the bonding in these phosphonates.

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1/2 028 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--KINETICS OF THE THERMAL DECOMPOSITION OF RARE EARTH AND YTTRIUM BROMATES -U-

AUTHOR-(03)-YAKUNINA, G.M., ALEKSEYENKO, L.A., SEREBRENNIKOV, V.V.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(1), 60-3

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--BROMATE, RARE EARTH COMPOUND, CHEMICAL REACTION KINETICS, THERMAL DECOMPOSITION, YTTRIUM COMPOUND, ACTIVATION ENERGY, MATHEMATIC EXPRESSION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/0896 STEP NO--UR/0057/70/044/001/0060/0063

CIRC ACCESSION NO--AP0131482

UNCLASSIFIED

2/2 028 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0131482

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. KINETICS OF LN(BRO SUB3) SUB3 (LN EQUALS LA, PR, ND, SM, CD, DY, HO, ER, YB, LU, AND Y) THERMAL DECOMPN. WAS STUDIED AT 160-280DEGREES IN A PURE N ATM. BY A SPRING BALLANCE METHOD. THE BROMATES WERE SYNTHETIZED FROM THE RESP. OXIDES AND HBRO SUB3. THE EXPTL. DATA WERE TREATED ACCORDING TO THE EQUATION ALPHA EQUALS 1 MINUS EXP(MINUS KTAU PRIMEN) WHERE ALPHA EQUALS FRACTION OF DECOMPD. BROMATE, TAU EQUALS TIME, K EQUALS REACTION RATE CONST., N EQUALS CONST.; THE ACTIVATION ENERGIES WERE COMPUTED. THE ACTIVATION ENERGIES OF BROMATE DECOMPN. DECREASE IN THE LA-LU SERIES; THIS DECREASE IS EXPLAINED BY THE INCREASING ROLE OF CATION POLARIZATION IN THE SAME SERIES. FACILITY: TOMSK. GOS. UNIV. IM. KUIBYSHEVA, TOMSK, USSR.

1/2 017 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--CHLORATES AND RARE EARTH ELEMENTS AND YTTRIUM -U-

AUTHOR-(02)-YAKUNINA, G.M., SEREBRENNIKOV, V.V.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(3), 879-80

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--RARE EARTH COMPOUND, CHLORATE, YTTRIUM COMPOUND, THERMAL STABILITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/1877 STEP NO--UR/0078/70/015/003/0879/0880

CIRC ACCESSION NO--AP0115696

UNCLASSIFIED

2/2 017 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0115696

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LN(CLO SUB3)SUB3.NH SUB2 O (LN EQUALS LA, ND, HO, ER, TM, YB, Y AND N EQUALS 4 OR 5) WERE PREPD. AND THEIR STABILITY WAS DETD. BY DTA. ON HEATING, THE COMPDS. DISPROPORTIONATED TO LNOCL, LNCL SUB3, CL, AND O.

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202820016-8"

1/2 013 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--STABILITY OF COMPLEXES OF THORIUM AND URANIUM IV WITH DICARBOXYLIC ACID ANIONS -U-

AUTHOR-(04)-MERKUSHEVA, S.A., KUMOK, V.N., SKORIK, N.A., SEREBRENNIKOV, V.V.

COUNTRY OF INFO--USSR

SOURCE--RADIO KHIMIYA 1970, 12(1), 175-8

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--COMPLEX COMPOUND, THORIUM COMPOUND, URANIUM COMPOUND, DICARBOXYLIC ACID, ADIPATE, SUCCINATE, STABILITY CONSTANT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1493 STEP NO--UR/0186/70/012/001/0175/0178

CIRC ACCESSION NO--AP0135154

UNCLASSIFIED

2/2 013 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0135154

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SOLY. DATA WERE USED TO CALC. THE STABILITY CONSTS. BETA SUB1 AND BETA SUB2 OF COMPLEXES OF THE MA PRIME2POSITIVE AND MA SUB2 TYPES, RESP., WHERE M STANDS FOR TETRAVALENT TH OR U AND A IS A DICARBOXYLIC ACID ANION. FOR TH SUCCINATE, TH GLUTARATE, TH ADIPATE, TH AZELAATE, U SUCCINATE, U GLUTARATE, U UDIPATE, AND U AZELAATE COMPLEXES, THE VALUES OF LOG BETA SUB1 (AT 25DEGREES) WERE 8.375, 8.765, 8.422, 9.604, 9.781, 8.812, 9.280, AND 9.078, RESP., AND THE VALUES OF LOG (BETA SUB2-BETA SUB1) WERE 8.434, 8.288, 6.616, 8.473, 8.818, 7.201, 5.867, AND 0.908, RESP.

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UDC 541.481+546.791.841

MERKUSHEVA, S. A., KUMOK, V. N., SKORIK, N. A., SEREBRENNIKOV, V. V.

"Stability of Complexes of Thorium and Uranium (IV) With Dicarboxylic Acid Anions"

Leningrad, Radiokhimiya, Vol 12, No 1, 1970, pp 175-178

Abstract: A previous article by the authors described methods for the synthesis of basic salts of dicarboxylic acids for cerium (IV), thorium and uranium (IV) and the solubility of these salts in 0.1 M solutions of (H, Na)ClO_4 at 25°C. Salts of succinic, glutaric, adipic and azolaic acids with the anion A^{2-} have the general formula $(MOH)_2A_3 \cdot nH_2O$. The present article makes an analysis of the solubility data with allowance for the formation of two complexes of the type MA^{2+} and MA_2 with stability constants β_1 and β_2 respectively. The values of β_1 and β_2 were calculated by searching for pairs of values of $\log\beta_1$ and $\log\beta_2$ such as would provide minimum variance of log SP of the salt in a given range, with the solubility product (SP) being 1/2

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MERKUSHEVA, S. A., et al., Radiokhimiya, Vol 12, No 1, 1970, pp 175-178

considered equal to $[M]^2[A]^3[OH]^2$. Rare-earth elements display a strong decrease in the stability of complexes of higher dicarboxylic acids as compared with oxalic acid. The same decrease in stability is observed in the case of throium and uranium (IV), with the exception of azelates. In all cases (except the azelates) $\log \beta_1$ is greater for U4+ than for thorium.

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UDC 546.779.1 + 547.466:541.49-74.8

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MERKUSHEVA, S. A., SKORIK, N. A. and SEREBRENNIKOV, V. V.

"Uranium (IV) Hexamethylenediaminetetraacetate"

Leningrad, Radiokhimiya, Vol XI, No 5, pp 600 - 601

Abstract: $U(H_{20}C_{14}O_8N_2)$ was synthesized, and its solubility in solutions of $(H, Ha)ClO_4$ at 25°C and ionic force 0.1 was studied.

The stability constant was found to be $(4.4 \pm 0.47)\cdot10^{24}$, and the solubility product $(3.3 \pm 0.02)\cdot10^{-28}$.

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1/2 022 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--THIYLATION OF VINYL ETHERS OF AMINOETHANOLS -U-

AUTHOR-(03)-SEREBRENNIKOVA, E.V., KOMAROV, N.V., KAYGORODOVA, V.I.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(4), 828-31

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANOSILICON COMPOUND, THIOL, NITRILE, ORGANIC SYNTHESIS, UV LIGHT, AMINE, ETHANOL, ETHER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1378 STEP NO--UR/0079/70/040/004/0828/0831

CIRC ACCESSION NO--AP0128778

UNCLASSIFIED

2/2 022 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0128778

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MICROFICHE OF ABSTRACT CONTAINS GRAPHIC INFORMATION.

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USSR UDC 547.953

VTOROV, I. B., SEREBRENNIKOVA, G. A., and YEVSTIGNEYEVA, R. P., Moscow Institute of Fine Chemical Technology imeni M. V. Lomonosov

"Studies of Complex Lipids. Synthesis and Structural Studies of cis-1-O-(hexadecen-1-yl)-2-stearoyl-sn-glyceryl-3-N,N-dimethylaminoethyl phosphate, phosphatidaldimethylethanolamine"

Leningrad, Zhurnal Organicheskoy Khimii, Vol 8, No 4, Apr 72, pp 721-725

Abstract: A synthesis is described for complex plasmologens with natural stereochemical configuration and tailored composition of fatty acids and aldehydes. Condensation of cis-1-O-(hexadecen-1-yl)-2-stearoyl-3-bromo-3-desoxy-sn-glycerine with the silver salt of dibenzylphosphate by refluxing in xylene yields cis-1-O-(hexadecen-1-yl)-2-stearoyl-sn-glyceryl-3-dibenzyl phosphate. The latter is debenzylated by refluxing with NaI in acetone in presence of nitrogen bases; the sodium salt obtained is converted to the silver salt and reacted with 2-chloroethyl-N,N-dimethylamine, yielding cis-1-O-(hexadecen-1-yl)-2-stearoyl-sn-glyceryl-3-(N,N-dimethylaminoethyl)-benzyl phosphate after chromatographic purification. Debenzylation of the last product yields phosphatidaldimethylethanolamine. Infrared spectra of the products are reported. The materials are optically pure.
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1/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--LIPIDS. SYNTHESIS AND STUDY OF THE STRUCTURE OF CIS,3,O,(OCTADECEN,1,YL),SN,GLYCIDOL -U-

AUTHOR-(03)-SEREBREENIKOVA, G.A., VTOROV, I.B., PREOBRAZHENSKIY, N.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(4), 669-74

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--LIPID, ORGANIC SYNTHESIS, GLYCEROL, IR SPECTRUM, EPR SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/2044 STEP NO--UR/0366/70/006/004/0669/0694

CIRC ACCESSION NO--AP0125632

UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125632

ABSTRAC1/EXTRACT--(U) GP-0- ABSTRACT.

3,0,(2,TOSYLOXYOCTADECYL),SN,1,2,ISOPROPYLIDENEGLYCEROL WAS CONVERTED STEPWISE INTO ME(CH SUB2) SUB14 CH SUB2 CHXCH SUB2 OCH SUB2 CH(OH)CH SUB2 X (I) (X IS CONSECUTIVELY 4,MEC SUB6 H SUB4 SO SUB3, I, BR). THE TREATMENT OF I (X EQUALS BR) WITH TERT BUOK IN TERT BUOH OR WITH 1,5,DIAZABICYCLO(5.4.0), UNDEC,5,ENE IN ME SUB2 SO GAVE CIS AND TRANS ISOMERS OF 3,0,(1,OCTA, DECENYL),SN,GLYCIDOL, TOGETHER WITH SOME 3,0,(2,OCTADECENYL),SN, GLYCIDOL. IR AND EPR SPECTRA OF THESE GLYCIDOLS ARE DISCUSSED. FACILITY: MOSK. INST. TONKOI KHIM. TEKHNOL. IM. LOMONOSOVA, MOSCOW, USSR.

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202820016-8"

Acc. Nr. AP0034099 Abstracting Service: CHEMICAL ABST. 4-70 Ref. Code UR 0078

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74201d Thermal stability of alkali metal hexachlorotellurates. Allakhverdov, G. R.; [illegible]va, G. M.; Stepin, B. D. (USSR). *Zh. Neorg. Khim.* 1970, 15(1), 77–80 (Russ). Thermal dissocn. of $M_2[TeCl_6]$, where M = K, Rb, or Cs, was studied by DTA and by deriv. thermogravimetry. $Rb_2[TeCl_6]$ is thermally most stable but the temp. of max. rate of thermal decompn. increases with the cations in the order K < Rb < Cs. Decompn. of $[TeCl_6]^{2-}$ is very complex; it decomps. to $nTeCl_4 \cdot mTeO_2$. The final decompn. products are TeO_2 and MCl.

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REEL/FRAME 19710742

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UDC 591.1.15

SEREBRENNIKOVA, I. A.

"Renewal of Phosphorus in Adenosine Triphosphoric Acid in Erythrocytes During Radiation Sickness"

[Tr.] Tomsk. un-ta ([Works] of Tomsk University), 1971, 204, pp 45-46 (from RZh-Biologicheskaya Khimiya, No 2, 25 Jan 72, Abstract No 2F1282)

Translation: Processes of phosphorus metabolism change during the development of radiation sickness, which is apparent from the change in content of P^{32} in the ATP fraction. An intensification in processes of phosphorus metabolism is noted by the thirtieth day. Apparently this change in metabolism is due to an increase of reticulocytes in the blood -- cells characterized by more energetic metabolism. Résumé.

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SEREBRENIKOVA, T. P.

Biochemistry

UNCLASSIFIED

CO: SELECTED AEROSPACE MEDICAL FACILITIES
PCS-29
June 71

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SECTION II

Name: Institute of Evolutionary Physiology and Biochemistry imeni I. M. Sechenov (IEFIB), Leningrad

Description:

(U) During this quarterly reporting period, 14 new articles were located from the Institute of Evolutionary Physiology and Biochemistry imeni I. M. Sechenov (IEFIB). On the basis of these articles, it was possible to associate ten new persons with the institute. Given below is a list of these persons, the subjects of the articles and the dates:

Bagrov, Ya. Yu.	antidiuresis	1970 (3)
Fraiz, L.	phospholipids	1969 (4)
Gzgzyan, D. M.	digestion	1970 (5)
Lapin, A. V.	muscle physiology	1970 (6)
Mandel, P.	phospholipids	1969 (4)
Pivunin, I. I.	spectrophotometer	1970 (7)
Pomazanskaya, L. F.	phospholipids	1969 (4)
Shukolyukov, S. A.	nucleotides	1970 (8)
Serebrenikova, T. P.	muscle physiology	1969 (9)
Shetskova, M. N.	cholinesterase	1970 (10,11)

Five of the articles were coauthored by persons already identified with the institute. These articles dealt with nerve physiology (12), muscle physiology (13), and enzyme activity (14-16).

(U) A large number of persons have been identified with the institute during the preceding quarterly reporting periods. To provide a ready source of reference, given below is a list of all the IEFIB staff members identified to the present time.

UNCLASSIFIED

USSR

UDC 661.665.1

SAMSONOV, V. P., RAUTBORT, A. YE., VAL'YANO, G. YE., SEREBRENNIKOVA, V. YE., and PROKHOROVA, I. V., Institute of High Temperatures, Academy of Sciences USSR

"Filamentary Crystals in SiC-Base Ceramics Containing Chromium and Titanium"

Moscow, Neorganicheskiye Materialy, No 3, Mar 73, pp 492-493

Abstract: The structural features of filamentary crystals formed in SiC-base ceramics containing Cr and Ti were examined by x-ray diffraction and electron microscopy. The thickness of filamentary crystals fluctuated between 40 Å and 1000 Å, filaments 300-360 Å wide were most often encountered and, in many cases, their length exceeded 4 Å (their exact length could not be determined). In certain cases the crystal did not fully adhere to the basic phase but was found in the channel. Calculations based on measurements of channel and filament width showed that the difference between channel and filament radii is significantly greater than the minimum dimension (24 Å). This verifies that some filamentary crystals can be found in channels. On the basis of analysis of calculations from microdiffraction photographs, it was possible to identify the filaments as single crystals. Diffraction pictures obtained for ceramics

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SAMSONOV, V. P., et al., Neorganicheskiye Materialy, No 3, Mar 73, pp 492-493

with Cr and Ti were analogous. Indicated differences obtained in this work of filamentary single crystals α -Si_3N_4 from earlier known filaments makes it possible to hypothesize that the first ones are formed by a different method than the second which, strictly speaking, cannot be called filaments. Six bibiliographic references.

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USSR

VYSOTSKIY, D. A., PETROV, M. D., REKOV, A. I., ROMANOV, A. I., SEPP, V. A., SEREBRENNIKOVA, V. Ye., SMIRNOVA, L. G., KURTEPOVA, O. I., Institute of High Temperatures of the Academy of Sciences USSR

"Test Results on Installations and Electrode Materials in a Plasma Jet"

Moscow, Teplofizika vysokikh temperatur, No. 3, May/Jun 72, pp 635-639

Abstract: The characteristics of electrodes of silicon carbide with additives of alloying metals (Mo, Ti, Cr), interelectrode insulators of refractory concretes based on high-alumina VGB and AFB concretes and magnesian MB concrete and module insulation walls of MB concrete were investigated in a model of an MHD generator. The maximum electrode temperature during the experiments reached 2300°K, the interelectrode insulators reached 2100°K and the installation walls reached 1700°K. The electrode samples were prepared by pressing a mixture of SiC powders and the appropriate alloying additive (Mo, Ti, Cr) with organic binding and subsequent heat treatment at a temperature of 2100°C for 10-15 min. The experimental device in which the materials were tested consisted of the following elements: a plasmatron producing an air flow with a

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VYSOTSKIY, D. A., et al, Teplofizika vysokikh temperatur, No. 3, May/Jun 72, pp 635-639

temperature of 3000°K, a mixing chamber where an easily ionized additive was introduced into the air flow in the form of potassium or K_2CO_3 vapors, a nozzle, the MHD generator channel, and a system for evacuating the gas flow. The flow rate in the channel was approximately 500 m/sec. The advantages of a sectional structure for the channel are shown and it was established that the current density is determined by the conductivity of the films from the interaction products of the electrode and additive materials, independent of the type of alkali additive (potassium or potash vapor) at the temperature of its condensation on the electrode surface. At an electrode temperature of less than 900°K in supplying K-vapors and of 1200°K in supplying K_2CO_3 powder, the current density remains constant at 0.2 a/cm^2. At these temperatures the current density is evidently determined by the conductivity of the liquid film of the interaction products of the additive material, the working gas, and the electrode and of their emission properties. With an increase in electrode temperature above 900-1200°K the emission properties of the electrode material directly begin to play a basic role.

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1/2 013 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--SEPARATION OF HYDROGEN FROM A SUPERSATURATED SOLID SOLUTION IN THE ML12 ALLOY -U-

AUTHOR-(02)-MARTISHKIN, V.V., SEREBRIAKOV, V.V.

COUNTRY OF INFO--USSR

SOURCE--TSVETNAIA METALLURGIIA, VOL. 13, NO. 2, 1970, P. 134-136

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--HYDROGEN, SOLID SOLUTION, CHEMICAL SEPERATION, ZIRCONIUM ALLOY, ZINC ALLOY/(U)ML12 ALLOY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0196 STEP NO--UR/0136/70/013/002/0134/0136

CIRC ACCESSION NO--AP0123965

UNCLASSIFIED

2/2 013 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0123965

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DISCUSSION OF EXPERIMENTS IN WHICH THE DECOMPOSITION OF SUPERSATURATED HYDROGEN SOLUTIONS IN A ZINC ZIRCONIUM ALLOY WAS STUDIED BY FIXING THE HYDROGEN RELEASED AT ROOM TEMPERATURE WITH AN EUDIOMETER. IT IS FOUND THAT 60 PER CENT OF THE HYDROGEN SEPARATES DURING THE FIRST THREE HOURS, AND THAT SEPARATION IS DRASTICALLY REDUCED AFTER 5 TO 6 HR DUE TO THE DECREASE IN HYDROGEN CONCENTRATION IN THE SOLID SOLUTION. IT IS SHOWN THAT FOR A CERTAIN RANGE OF CONCENTRATIONS 30 TO 45 CU CM HYDROGEN PER 100 G OF METAL), ZIRCONIUM HYDRIDES FORM IN THE ALLOY. THIS REDUCES THE DEGREE OF SUPERSATURATION OF THE HYDROGEN SOLUTIONS. FACILITY: MOSKOVSKII AVIATSIONNYI TEKHOLOGICHESKII INSTITUT, MOSCOW, USSR.

UNCLASSIFIED

USSR

SEREBRINSKIY, V. V.

"A Device for Simulating Finite Automata"

Moscow, Otkrytiya izobreteniya promyshlennyye obraztsy tovarnyye znaki, No 23, 23 May 73, p 140

Translation: (11)383043(21)1375320/18-24(22)10.11.69(51)G 06f 7/38(53)681.332: 371.69

A device for simulating finite automata contains an adder modulo two and a control unit, connected by 2-way communication with the memory unit, the inputs of which are connected to the inputs of the apparatus; the outputs of the memory unit are connected through "AND" elements, the second inputs of which are connected to the corresponding outputs of a flipflop whose inputs are connected to the output of a service symbol decoder connected with the inputs of the function register and the argument register, with the output from the former connected, through an output function decoder and an excitation function decoder and corresponding third and fourth "AND" elements, to the inputs of the output function register and the state register. The outputs of the argument register are connected through the argument decoder to the inputs of a commutator, the second inputs of which are connected to the outputs of the state register, while the third inputs are connected through the argument selection register to the

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SEREBRINSKIY, V. V., Otkrytiya izobreteniya promyshlennyye obraztsy tovarnyye znaki, No 23, 23 May 73, p 140

inputs of the apparatus, the outputs of which are connected to the outputs of the output function and state registers. It is distinguished by the fact that the apparatus is simplified and contains a Boolean function calculation unit, some inputs of which are connected through the service symbol decoder to the memory unit, while others are connected to the outputs of the modulo two adder, one input of which is connected to the commutator output and the other in input of which is connected with one of the outputs of the memory unit. One of the outputs of the Boolean function computation unit is connected to the secondary inputs of the third and fourth "AND" elements, while its second output is connected to the third input of the third "AND" element.

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1/2 014 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--MEASUREMENT OF THE HYDROXYL TRANSFER NUMBER IN HIGHLY CONCENTRATED MIXED SOLUTIONS OF ALKALI AND SODIUM CHLORIDE -U-

AUTHOR-(02)-SEREBRITSKIY, V.M., KSENZHEK, O.S.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(1), 75-8

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ELECTROLYTIC CELL, ION DENSITY, HYDROXIDE, PARTICLE DIFFUSION, SODIUM CHLORIDE, ELECTRODE PROPERTY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0853 STEP NO--UR/0080/70/043/001/0075/0078

CIRC ACCESSION NO--AP0104289

UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0104289

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE APPARENT TRANSPORT NO. T (WITHOUT CORRECTING FOR THE HYDRATION OF IONS) OF OH PRIME NEGATIVE IONS IN NAOH PLUS NACL MIXTS. WAS OBTAINED AT 25DEGREES BY USING THE MOVING BOUNDARY METHOD WITH AN ACCURACY OF PLUS OR MINUS 2.5PERCENT. ELECTROLYTIC PROBES WERE USED FOR OBSERVING THE BOUNDARY MOVEMENT. THE CELL WAS PROVIDED WITH CLOSED ELECTRODE SPACE IN WHICH A CD ANODE WAS USED. T WAS CALCD. FROM THE OBSD. VALUES T PRIME1 BY APPLYING VOL. CORRECTIONS: T EQUALS T PRIME1 PLUS OR MINUS C DELTA V, WHERE C IS THE CONCN. AND V EQUALS ONE HALF BAR V CD(OH) SUB2 MINUS ONE HALF BAR V CD MINUS (1 MINUS T SUBOH NEGATIVE) BAR V SUBNAOH PLUS T SUBCL NEGATIVE BAR V SUBNACL (BAR V IS PARTIAL MOLAR VOL.). ELECTRODE PROCESSES AND MIGRATION OF COMPDS. LEADING TO ADDNL. BOUNDARY MOVEMENT NECESSITATES THE CORRECTION. THE FOLLOWING VALUES WERE OBTAINED (N NAOH, N NACL, AND T, RESP.): 1.1, 4.5, 0.275, 1.7, 4.0, 0.40; 2.4, 3.6, 0.505, 3.0, 3.0, 0.59; 3.7, 2.5, 0.67; 4.4, 1.9, 0.74; 5.2, 1.3, 0.80; 6.0, 0.6, 0.85; AND 6.8, 0, 0.90.

UNCLASSIFIED

USSR

UDC 669.71.41

SEREBRIYSKIY, E. I.

"Estimating Mass Transfer Factors of Hydrogen in Aluminum Melt"

Metallurgiya [Metallurgy -- Collection of Works], No 14, Leningrad, Sudostroyeniye Press, 1971, pp 10-21, (Translated from Referativnyy Zhurnal, Metallurgiya, No 5, 1972, Abstract No 5 G232 by the author).

Translation: The influence of Mg and Zn in liquid Al on the H_2 mass transfer factor in a furnace atmosphere and in the volume of liquid Al in bubbles of inert gas is studied under conditions of blowing of dried Ar through the Al at 700°. The mass transfer factors in Al melts are found to be lower than in pure Al. As a result of processing of the authors own and literature data on blowing of liquid Al, a dependence is established between the Nu criterian and the dimensionless In complex. 3 Figures; 3 Tables; 15 Biblio. Refs.

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USSR

GONCHAROVA, L. A., ZOLOTOREVSKIY, YU. S., RUDOMETOV, V. S., SEREBRIYSKIY, E. I.

UDC 669.71.018.9.4

"Experiment in Refining Aluminum Alloys"

V sb. Metallurgiya (Metallurgy -- collection of works), No 14, Leningrad, Sudostroyeniye Press, 1971, pp 35-42 (from RZh--Metallurgiya, No 4, Apr 72, Abstract No 4G197)

Translation: Laboratory experiments in refining the Al-alloys of the Al-Zn-Mg system by argon scavenging and also powdered hexachloroethane suspended in the Ar are described. The blowing parameters were investigated using an aqueous model. Results are presented from studying the contamination of the metal and determining its physical-mechanical and corrosion characteristics. 5 illustrations, 2 tables and a 9-entry bibliography.

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USSR

UDC 669.71.018.9

ZOLOTOREVSKIY, Yu. S., RUDOMETOV, V. S., SEREBRIYSKIY, E. I., SINYAVINA, N. P., TSAREGORODTSEVA, A. I.

"Study of the Relationship Between Structure of Ingots and Properties of Pressed Semifinished Goods of an Alloy in the System Al-Zn-Mg with $Zn/Mg \approx 0.5$"

Metallurgiya [Metallurgy -- Collection of Works], No. 13, Leningrad, Sudostroyeniye Press, 1970, pp. 121-127. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 G172 by the authors).

Translation: The influence of crystallization rates on the microstructure of an alloy in the system Al-Zn-Mg is demonstrated. The inherited nature of structural elements of the ingot is established. 3 figs; 4 tables; 7 biblio refs.

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USSR UDC 629.735.33.015.3.025.35

GADETSKIY, V. M., SEREBRIYSKIY, YA. M., FOMIN, V. M.

"Study of the Effect of Eddy Generators on Suppression of the Turbulent Boundary Layer"

Uch. zap. Tsentr. aero-gidrodinam. in-ta (Scientific Notes of the Central Institute of Aerodynamics), 1972, Vol 3, No 4, pp 22-28 (from RZh-Aviatsionnyye i raketnyye dvigateli, otdel'nyy vypusk, No 11, Nov 72, Abstract No 11.34.6)

Translation: Results are presented from an experimental study at nearsonic velocities of the effect of parallel and diffuser eddy generator systems on the separation of the boundary layer and the position of the shock on the half-section. There are 5 illustrations and a 2-entry bibliography.

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USSR

CHUBINSKIY, O. V., VAGANOV, P. A., GUSTOVA, L. V., GUSHCHIN, V. N., KUZ'MITSKIY, I. V., SEREBROV, A. P., Leningrad State University

"Proton Polarization in Elastic and Inelastic Scattering by Mg-25 at E_p = 6.08 Mev"

Moscow, Yadernaya Fizika, Vol 11, No 1, 1970, pp 29-32

Abstract: Continuing their study of proton polarization in elastic and inelastic scattering by magnesium isotopes, the authors describe results of measurements of the angular dependence of the polarization of 6.08 Mev protons in elastic scattering on Mg-25 in an angle range of from 30° to 150° (laboratory system). This is the first time that results have been obtained for the proton energy range considered. The double scattering method was used for the measurements. At certain angles (θ = 60°, 70°, 80°, 90°, 100°, and 140°) it was possible to obtain the value of the polarization of inelastically scattered protons corresponding to the states 1.614 Mev ($7/2^+$) and 1.960 Mev ($5/2^+$). Since in future the authors intend to make a combined analysis of the data obtained by them on the polarization of 6-Mev protons in elastic and inelastic scattering by the isotopes Mg-24, Mg-25, and Mg-26, including the results of

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USSR

CHUBINSKIY, O. V., et al., Yadernaya Fizika, Vol 11, No 1, 1970, pp 29-32

recent measurements of variation with energy of proton polarization in scattering by Mg-24, the present article is limited to a comparison of experimental results for Mg-25 with calculations according to the optical method.

The authors thank the operations group of the Cyclotron Laboratory of the Scientific Research Institute of Physics, Leningrad State University.

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72 033 UNCLASSIFIED PROCESSING DATE--27NOV70
TLE--DETERMINATION OF THE TUNGSTEN CONTENT IN THE BINDING PHASE OF HARD SINTERED ALLOYS -U-
THOR-(05)-TUMANOV, V.I., SHCHETILINA, YE.A., CHEREDINOV, A.A., VELMAKOVA, S.M., SEREBROVA, O.I.
UNTRY OF INFO--USSR

URCE--U.S.S.R. 262,483
FERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970, 47(6)
TE PUBLISHED--26JAN70

BJECT AREAS--MATERIALS, CHEMISTRY

PIC TAGS--METAL CHEMICAL ANALYSIS, HARD ALLOY, TUNGSTEN CONTAINING ALLOY, MAGNETIC PERMEABILITY, CURIE TEMPERATURE, METALLURGIC RESEARCH FACILITY, FERROMAGNETISM, PATENT

NTROL MARKING--NO RESTRICTIONS

CUMENT CLASS--UNCLASSIFIED
OXY REEL/FRAME--3001/1463 STEP NO--UR/0482/70/000/000/0000/0000

RC ACCESSION NO--AA0126994
UNCLASSIFIED

/2 Q33 UNCLASSIFIED PROCESSING DATE--27NOV70
RC ACCESSION NO--AA0126994
STRACT/EXTRACT--(U) GP-0- ABSTRACT. THE W CONTENT IS DETD. BY HEATING THE SAMPLE, MEASURING WITH A MAGNETOMETRIC APP. THE CHANGE OF THE MAGNETIC PERMEABILITY OF THE ALLOY, AND DETG. THE CURIE TEMP. ACCORDING TO THE LOSS OF FERROMAGNETIC PROPERTIES. FACILITY: VSESOYUZNYY NAUCHNO-ISSLEDOVATEL'SKIY INSTITUT TVERDYKH SPLAVOV.

USSR

UDC: 8.74

SEREBROVSKIY, L. A., SIBIRYAKOV, P. G., LINETS, N. Ye., PANOVA, L. A.

"A System for Automating Programming and Output of Technical Documentation into a Program for Digital Control Computers (YaUZA-1)"

V sb. Tsifr. vychisl. tekhnika i programmir. (Digital Computer Technology and Programming--collection of works), vyp. 7, Moscow, "Sov. radio", 1972, pp 126-133 (from RZh-Kibernetika, No 8, Aug 72, Abstract No 8V635)

Translation: The structure and principal technical operational and technical characteristics are given for a programming automation system whose input language is the YaUZA universal command autocode. The system can be used to prepare programs for an extensive class of digital control computers. The system is adapted to a specific digital computer by specifying its parameters and command system.

The system is realized on the M-220 computer. It automatically joins programs into a single large-volume program

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USSR

SEREBROVSKIY, L. A. et al., Tsifr. vychisl. tekhnika i programmir., vyp. 7, Moscow, "Sov. radio", 1972, pp 126-133

(of the order of hundreds of thousands of commands). Preparation of the program is accompanied by automatic output of all technical documentation, which is formulated with regard to YeSKD requirements. Authors' abstract.

USSR

UDC 621.384.634

ALEKSANDROV, I. A., FRACHEV, M. I., GUBRIYENKO, K. I., YEMENKO, YE. V., KOTOV, V. I., NEKRASOV, A. N., PRILEPIN, A. A., PICHUGIN, V. A., RSAYEV, R. A., SAMOYLOV, A. V., SELEZNEV, V. S., SEREBRSAKOV, B. A., KHANAMIRYAN, A. YE., and KHODYREV, YU. S.

"Negative Particle Channel With Momentum up to 60 Gigaelectron Volts/Second"

Moscow, Atomnaya Energiya, Vol 29, No 1, Jul 70, pp 29-34

Abstract: This article contains a description of a channel for transporting negative particles generated in an internal accelerator target with momentum up to 60 fifaelectron volts/second and an accelerated proton energy of 70 gigaelectron volts. The channel is designed so that for an accelerated proton energy of 70 gigaelectron volts it can be adjusted to momentum in the range of 40-60 gigaelectron volts/second. On reducing the energy of the accelerated protons, the channel can be adjusted to lower momentum. The lower limit corresponds to an accelerated proton energy of 20 gigaelectron volts and is equal to 11.4 gigaelectron volts/second.

The optical system of the channel and its characteristics

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ALEKSANDROV, I. A., et al., Atomnaya Energoya, Vol 29, No 1, Jul 70, pp 29-34

are presented. The limiting solid capture angle of the secondary particles by the channel is 32 microsteradians. The best resolution with respect to momentum is 0.3 percent without decreasing the pacture angle. The channel was investigated primarily using a secondary beam with a momentum of p = 50 giga-electron volts/second. The procedure for adjusting the channel and the calculated data are described. The differences between the calculated operating conditions of the elements and the conditions after adjustment together do not exceed the errors of the fringing field of the accelerator, the magnetization curve, and the curve for calibrating the bypasses of the magnet. On the whole, the beam parameters agree well with the calculated data.

A detailed diagram of the channel layout is presented, and graphs are presented for the radial position of the targets and the production angle as functions of the momentum of the secondary particles, the optical system of the channel and path of the beams in the horizontal and vertical planes, the momentum

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USSR

ALEKSANDROV, I. A., et al., Atomnaya Energiya, Vol 29, No 1, Jul 70, pp 29-34

resolution of the channel, the beam profile with momentum of 50 gigaelectron volts/second in the parallel section and slit width of the aperture collimators of ±20 mm and the pulse collimator ±6mm, the beam profile with momentum of 50 gigaelectron volts/second in the final representation on including the lens doublet, and the beam profile with momentum of 50 gigaelectron volts/second in the final representation on including a lens triplet.

USSR UDC 619:576.809.8:576.851.55:636.51

RAKHMANINA, I. A., TRISHKINA, Ye. T., LYAUSHKIN, A. V., and SEREBRYAKOV, A. S., All-Union Institute of Experimental Veterinary Science

"Properties of Cl. perfringens of Type A Isolated From Chickens"

Moscow, Veterinariya, No 6, Jun 73, pp 99-100

Abstract: Cl. perfringens of type A was found to be present in clinically healthy chickens and chicks. Cultures of this microorganism were isolated in 5% of cases from the intestine and liver of healthy chickens and in 56 and 43% of cases, respectively, from the intestine and liver of chickens with gastrointestinal diseases. On peroral administration to chickens, Cl. perfringens was preserved in the gastrointestinal tract for at least 30 days. On intramuscular administration, it was present in the blood and parenchymatous organs for at least 10 days. The Cl. perfringens strains isolated from healthy and sick chickens were identical. They killed chick embryos, mice, guinea pigs, and chicks and produced disease in adult chickens. One may assume that Cl. perfringens of type A present in healthy chickens multiply and produce complications when the chickens become infected with diseases of the gastrointestinal tract, specifically 1/2

USSR

RAKHMANINA, I. A., et al., Veterinariya, No 6, Jun 73, pp 99-100

those of virus etiology. The strains isolated were sensitive to penicillin, erythromycin, and ampicillin. These antibiotics should be applied on an experimental basis at poultry farms in the case of infections complicated by Cl. perfringens.

UDC 621.384.664

USSR

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

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

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

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

USSR

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

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

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1/2 006 UNCLASSIFIED PROCESSING DATE--11DEC70

TITLE--THIOCYANATION OF DELTA PRIME4 CYCLENE,1,2,DICARBOXYLIC ACIDS AND THEIR DIESTERS: NATURE OF THE SUPRAANNULAR EFFECT -U-

AUTHOR-(02)-SEREBRYAKOV, E.P., KUCHEROV, V.F.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(5), 950-5

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--DICARBOXYLIC ACID, ESTER, THIOL, LACTONE, ISOMER, MOLECULAR STRUCTURE, CYANATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1329 STEP NO--UR/0366/70/006/005/0950/0955

CIRC ACCESSION NO--AP0135003

UNCLASSIFIED

2/2 008 UNCLASSIFIED PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0135003

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REACTION OF SYN,CIS DELTA PRIME4 OCTALIN,1,2,DICARBOXYLIC ACID (I) WITH (SCN) SUB2 (FORMED BY THE ACTION OF BR ON PN(SCN) SUB2) GAVE IN 20 MIN 43PERCENT 4 ALPHA THIOCYANATO,10 BETA HYDROXY,(9 ALPHA H),DECALIN,1 BETA,2 BETA,DICARBOXYLIC ACID 1,10,LACTONE (II). THE SYN,TRANS AND ANTI TRANS ISOMERS OF I DID NOT REACT. THE REACTION OF DI,ME ESTER OF I WITH (SCN) SUB2 GAVE 2 ISOMERS OF DI,ME 4,10,DICYANATO,DECALIN,1,2,DICARBOXYLATE AND THE ME ESTER OF II. THE SYN,TRANS AND ANTI,TRANS DIESTER ISOMERS OF I DID NOT REACT WITH (SCN) SUB2. THESE REACTIONS DO NOT REQUIRE THE EXISTANCE OF SUPRAANNULAR EFFECT. (G. P. KAGATOVA SHEMIAKINA, ET AL. 1967). FACILITY: INST. ORG. KHIM. IM. ZELINSKOGO, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 669.713.72

SEREBRYAKOV, G. A., NICHKOV, I. F., RASPOPIN, S. P., NOVIKOV, Ye. A.

"Cathode Processes in Electrolytic Separation of Aluminum From Halide Salt Melts"

Tsvetnye Metally, No 1, 1971, pp 34-37.

Abstract: The polarization of liquid zinc and solid tantalum cathodes was studied during electrolytic separation of aluminum from chloride-fluoride melts. It is demonstrated that at low current densities, the separation of aluminum on zinc involves some depolarization due to the formation of liquid metal solutions. It is impossible to establish the magnitude of depolarization, since the sector corresponding to melt formation on the curves cannot be separated. The cathode yield per current during separation of aluminum on zinc may reach 81-100%, depending on electrolysis conditions.

USSR

UDC: 537.56:539.196:541.183:541.128

SEREBRYAKOV, G. A., POLYAKOV, I. T. and KOSTROV, V. V., Ivanovo Chemical Technological Institute, Ivanovo, Ministry of Higher and Secondary Specialized Education RSFSR

"Interaction Between Gas Molecules and the Surface of a Solid Adsorbent"

Ivanovo, Khimiya i Khimicheskaya Tekhnologiya, Vol XIII, No 3, 1970, pp 435-7

Abstract: On a theoretical basis, the authors show that a solid adsorbent produces excitation of the energy state of the chemo-adsorbed molecule, and that this state can be estimated on the basis of the energy of the molecule - adsorbent bond.

Some suggestions are made for computing the energy of activation and the temperature in the case of dissociation of a gas on the surface of an adsorbent.

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1/2 012 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--PRESSURE TUBE LOCK -U-

AUTHOR-(02)-SEREBRYAKOV, G.M., VILNER, G.A.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 240536

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI, NR 12

DATE PUBLISHED--04AUG69

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--MECHANICAL PATENT, METAL TUBE, PATENT, MECHANICAL FASTENER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1991/1615 STEP NO--UR/0482/69/000/000/0000/0000

CIRC ACCESSION NO--AA0111020

UNCLASSIFIED

2/2 012 UNCLASSIFIED

CIRC ACCESSION NO--AA0111020 PROCESSING DATE--020CT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MICROFICHE OF ABSTRACT CONTAINS GRAPHIC INFORMATION. PRESSURE TUBE LOCK CONSISTS OF BODY 1 WITH SADDLE 3 AND MOVING LOCKING NEEDLE 6 JOINED TO PISTON ROD 13. IT IS DISTINGUISHED BY PROVIDING THE SADDLE WITH VALVE 16 AND PIPES WHICH ARE CONNECTED TO THE PRESSURE SIDE OF THE TUBE. WHEREAS THE PISTON ROD IS PROVIDED WITH SPHERICAL HINGES FROM BOTH SIDES. THIS INCREASES THE TIGHTNESS OF THE NEEDLE INTO THE SADDLE. FACILITY: TSENTRAL'NYY NAUCHNO-ISSLEDOVATEL'SKIY I PROYEKTNO-KONSTRUKTORSKIY KOTLOTURBINNYY INSTITUT IM. I.I. POLZUNOVA.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--INTENSIFICATION OF THE PICKLING OF TRANSFORMER STEEL -U-

AUTHOR-(04)-AKSENOV, V.I., SEREBRYAKOV, G.V., MESYANEV, YU.R., KAPLAN, N.I.

COUNTRY OF INFO--USSR

SOURCE--METALLURG, MAR. 1970, (3), 30

DATE PUBLISHED----MAR70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--TRANSFORMER STEEL, PICKLING, METAL CLEANING, HYDROFLUORIC ACID, SULFURIC ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0922 STEP NO--UR/0130/70/000/003/0030/0030

CIRC ACCESSION NO--AP0124583

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--13NOV70

2/2 014

CIRC ACCESSION NO--AP0124583

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A NEW AND IMPROVED METHOD OF PICKLING TRANSFORMER STEEL WHICH ELIMINATES SI DEPOSITS IS DESCRIBED. THE METAL IS TREATED IN AN HF-H SUB2 SO SUB4 MIXTURE FOR 10-20 MIN AT 55-60DEGREESC. THIS PROCESS ENTIRELY ELIMINATES THE LOSS OF METAL PREVIOUSLY SUFFERED AS A RESULT OF THE DEPOSITS AND IMPROVES THE OUTPUT OF THE METAL FINISHING DEPARTMENTS AS A WHOLE. POSSIBLE FURTHER REFINEMENTS TO THE PROCESS ARE CONSIDERED.

UNCLASSIFIED

UDC: 621.375.82

USSR

VANYUKOV, M. P., MITKIN, V. M., SEREBRYAKOV, V. A., SOKOLOV, D. V., and STARIKOV, A. D.

"Monopulse Lasers Using Neodymium Glass With Diffraction Divergence of Radiation"

Moscow, V sb. Kvant. elektronika (Quantum Electronics--collection of works) "Sov. radio," No 1(13), 1973, pp 85-89 (from RZh--Fizika, No 7, 1973, Abstract No 7D985)

Translation: An investigation is made of a number of monopulse lasers using neodymium glass with various optical resonator configurations for the purpose of determining the optimal variant of the master oscillator in a power laser device with intense brightness. The basic physical requirements for designing a stable monopulse oscillator with diffraction angular divergence of the radiation are formulated. Bibliography of 12. Authors' abstract

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UDC 621.378.325

USSR

VANYUKOV, M. P., KRYZHANOVSKIY, V. I., SEREBRYAKOV, V. A., STARIKOV, A. D.

"Laser Systems for Generating High-Intensity Picosecond Light Pulses"

Moscow, Kvantovaya Elektronika, No. 5, 1971, pp 69-76

Abstract: A laser system with a radiation energy of 60-80 joules in a pulse of duration $(2-5)\cdot10^{-11}$ sec was developed, and the energy densities of total surface and internal breakdown of active elements by pulses of various durations were determined. The authors note that a high-intensity laser system is required to heat a plasma up to thermonuclear temperatures and that the system should incorporate the possibility of producing radiation pulses of great power at a low divergence of the light beam. This paper is devoted to problems arising in developing the following: (1) a master generator of picosecond pulses with a radiation divergence close to the diffraction limit; (2) a multicascade amplifier system with minimum distortion of the wave front of the beam; (3) a nonaberrational optical system to concentrate radiation on the target. A multipass amplifier with an amplification coefficient of up to 10^3 was designed with which it was possible to obtain an output energy of 0.6 joule for a pulse length of $(5-10)\cdot10^{-12}$ sec at an angle close to the diffraction limit while using the low-power master generator. Further amplification of the light beam raised the radiation energy up to 40 joules and provided a brightness in the diffraction core of the beam of $(4-5)\cdot10^{19}$ w/sterad$\cdot$cm^2 and an axial brightness of more

USSR

VANYUKOV, M. P., et al, Kvantovaya Elektronika, No. 5, 1971, pp 69-76

than 10^{20} w/sterad·cm^2. The authors claim that this is higher than the known values of brightness obtained in powerful laser systems by an order of magnitude. Studies also showed that the energy density in a pulse at which the active elements of the amplifier cascades begin to breakdown intensively is 5-6 joule/cm^2 and changes very little with a change in the duration of the laser pulse in the range $5 \cdot 10^{-9}$ - $5 \cdot 10^{-11}$ sec. Upon achieving these energy densities there was a light breakdown causing total dulling of the surface after only 4-5 bursts on the surface of the output end. In the opinion of the authors intensive self-focusing arising in the rods of the output amplifier cascades is primarily responsible for breakdown of the ends of the active elements. In neodymium glass there arise multiple intensive nets of self-focusing, a considerable portion of which end at the output face of the active element, and this determines the appearance of light breakdown at the face. In rods with a platinum admixture there were local breakdowns with the formation of bubbles, which in the case of self-focusing led to strong scattering of the radiation. The authors conclude that a further rise in the energy and power of the output radiation of solid state lasers will involve increasing the resistance of active elements to the action of the intense light field and the fabrication of active elements of greater cross section with higher optical homogeneity.

UDC 621.375.82

USSR

VANYUKOV, M. P., ISAYENKO, V. I., PASHININ, P. P., SEREBRYAKOV, V. A. SIZOV, V. N., STARIKOV, A. D.

"Formation of Powerful Pulses With a Steep Leading Front in a Laser System With Passive Nonlinear Elements"

V sb. Kvant. elektronika (Quantum Electronics -- Collection of Works), No. 1, Moscow, 1971, pp 35-41 (from RZh-Fizika, No 7, Jul 71, Abstract No 7D1147)

Translation: The change in the length of light pulses in passage through an illuminating medium of varying transparency was investigated. A nonmonotonic shortening of the length of the trailing pulse was observed under a change in the density of the light load. There was established a dependence of the region of maximum contraction of the light pulse on the magnitude of the light load for various concentrations of the illuminating solutions. There was also established an anomalous change in the process of illumination of a metallized film under its illumination by powerful light radiation. It is proposed that the effects observed be used for the formation of short pulses with a steep leading front. A neodymium glass laser system with a pulse length of 5-7 nsec, a steepness of the leading front of ~ 1 nsec, and a radiation power of 20 Gw was developed. 10 ref. Authors abstract

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USSR

UDC: 621.378.325

AVDEYEVA, V. I., AL'PEROVICH, M. A., VANYUKOV, M. P., ISAYENKO, V. I., LEVKOYEV, I. I., SEREBRYAKOV, V. A., STARIKOV, A. D.

"Use of Translucent Liquid and Thin-film Gates in the GOS-1000 Laser"

Moscow, Kvantovaya Elektronika, No 2, 1971, pp 69-73

Abstract: The authors present data on a translucent laser gate based on a thin polymer film to which polymethyne dye has been added, and it is shown that such a film gate can be used along with a liquid gate to obtain high-power monopulse emission in the GOS-1000 laser. It is found that film and liquid gates can be used for Q-switching neodymium glass lasers with a large output beam aperture (45 mm or more). The described gates are fairly simple and can be used in serially produced industrial lasers type GOS-1000, in the analogous type GOS-300 unit and others without any appreciable change in the construction of the device or in the power supply circuit. The highest energy and emission power on the GOS-1000 laser in the monopulse mode (80 J and 2.5 GW) can be attained by using a gate which is a cell filled

USSR

AVDEYEVA, V. I. et al., Kvantovaya Elektronika, No 2, 1971, pp 69-73

with polymethyne dye solution. The new film gate described in this paper, which is a thin polymer film with polymethyne dye added to the film base, is most simple in use and provides comparatively high emission parameters in the GOS-1000 laser (50 J and 1.5 GW), has no optical components in its design, is suitable for use for long periods (8-10 months), and can be used repeatedly at comparatively low energies in the monopulse (20 J).

USSR UDC 621.373:539.145.6

AVDEYEVA, V. I., AL'PEROVICH, M. A., VANYUKOV, M. P., ISAYENKO, V. I., LEVKOYEV, I. I., SEVERYAKOV, V. A., STARIKOV, A. D.

"Use of Liquid and Film Transmission Gates in a GOS-1000 Laser"

V sb. Kvant. elektronika (Quantum Electronics--collection of works), No 2, Moscow, 1971, pp 69-73 (from RZh-Radiotekhnika, No 7, Jul 71, Abstract No 7D114)

Translation: Data are presented on a transmission gate based on a thin polymer film into which polymethyne dye is introduced, and on the use of this gate in a GOS-1000 laser as a Q-switch. Four illustrations, bibliography of five titles. Resumé.

USSR UDC 621.373.826

VANYUKOV, M. P., KRYZHANOVSKIY, V. I., SEREBRYAKOV, V. A., STARIKOV, A. D.

"Laser Systems for Generation of Picosecond High-Brightness Light Pulses"

V sb. Kvant. elektronika (Quantum Electronics--collection of works), Moscow, No 5, 1971, pp 69-76 (from RZh-Radiotekhnika, No 1, 1972, Abstract No 1D346)

Translation: A laser system with a radiation energy of 60-80 joules in a pulse of duration $(2-5)\cdot10^{-11}$ seconds was developed, and the energy densities of the total surface and internal destruction of the active elements by pulses of different duration were determined. A multipass amplifier circuit with an amplification coefficient up to 10^3 was created, which, on using a low-power master oscillator, permitted an output energy of 0.6 joules to be obtained with a pulse duration of $(5-10)\cdot10^{-12}$ seconds at an angle close to the diffraction limit. Further amplification of the light beam permitted an increase in the radiation energy to 40 joules. This insured a brightness in the diffraction core of the beam of $(4-5)\cdot10^{19}$ watts/steradian-cm^2 and an axial brightness of more than 10^{20} watts/steradian-cm^2. There are 6 illustrations and an 18-entry bibliography.

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USSR UDC 8.74

GRISHINA, T. M., PIRIN, S. I., SEREBRYAKOV, V. A.

"YaRUS Expanded Programming System"

V sb. Teoriya yazykov i metody postroyeniya sistem programmir. (Language Theory and Methods of Constructing Programming Systems--collection of works), Kiev-Alushta, 1972, pp 181-189 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V462)

Translation: A programming system is described which offers the possibility for the user to have the expansions he requires by introducing new syntactic structures, defining new data structures and new operations. The base for the system is the so-called expanded language the construction of which is an iterative process. Its origin is a language λ_0. In the k + 1 step of the process, the language λ_{k+1} described by means of the language λ_k is generated.

The process continues until the language is obtained with the required means of expression. In the initial state the YaRUS system comprises two languages: the TsYeNTR and the process control language. The TsYeNTR language is the base language: from this language the expansion process begins. Its base is the BCL language developed at the London Institute of Computer Engineering. The program in the TsYeNTR language comprises a series of procedures each of which includes a heading and a body. The heading, in turn, comprises the names and

GRISHINA, T. M., et al., Teoriya yazykov i metody postroyeniya sistem programmir., Kiev-Alushta, 1973, pp 181-189

attributes of the name. The attributes of the name are the descriptor of the title procedure and the list of formal parameters. The body of the procedure is the module comprising the sequence of tagged elements separated by the symbol ";." The element can be a module, an alternative, a controller, the procedure call, the operator and the description. The control language is used to control the processes taking place in the system. The instructions of this language are divided into the general instructions of the TEST type and the instructions giving the operating mode of the system. The general instructions are used to initiate the problem in the system, completion of operation of the system, control of the communications channels, and calling the archive. The instructions of the TEST type are traditional instructions of the operation with an archive. The operating mode instructions provide for operation of the system in one of three modes: expansion, compilation and execution.

USSR UDC 621.378.325

VANYUKOV, M. P., Doctor of Sciences, Deceased, KRYZHANOVSKIY, V. I., SEREBRYAKOV, V. A., SIZOV, V. N., STARIKOV, A. D.

"Multichannel Neodymium Glass Laser System with Picosecond Radiation Pulse Length"

Optiko Mekhanicheskaya Promyshlennost', No 12, 1972, pp 31-32.

Abstract: A powerful three-channel laser system made with neodimium glass with picosecond pulse length and an angular divergence near the diffraction limit is described. The output radiation energy of the device reaches 1,000 j with a pulse power of 10^{14} w.

USSR

UDC 669.721.5'5'296:620.186:669.788

SEREBRYAKOV, V. V., and MARTISHKIN, V. V.

"Investigation of the Kinetics of the Hydrogenation Mechanism of Alloy ML12"

Tr. Mosk. aviats. tekhnol. in-ta (Works of the Moscow Aviation Technological Institute), 1970, vyp. 71, pp 74-81 (from RZh-Metallurgiya, No 12, Dec 70, Abstract No 12 I768 by the authors)

Translation: An investigation of the kinetics of zirconium hydrogenation in alloy ML12 established a temperature dependence of the rate constant of the process and revealed two components of the rate (autogenesis and autocatalysis) of the hydrogenation process, which assure a unified process of transition from an unstable to a stable state. It was shown that surface and diffusion phenomena have an important influence on the hydrogenation rate with respect to volume. Four illustrations. One table. Bibliography of nine titles.

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1/2 024 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--EVOLUTION OF HYDROGEN FROM THE SUPERSATURATED SOLID SOLUTION IN MAGNESIUM, ALUMINUM ALLOY ML12 -U-

AUTHOR-(02)-MARTISHKIN, V.V., SEREBRYAKOV, V.V.

COUNTRY OF INFO--USSR

SOURCE--IZVEST. V.U.Z. TSVETNAYA MET., 1970, (2), 134-136.

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CHEMICAL REACTION KINETICS, SOLID SOLUTION, MAGNESIUM ALLOY, ALUMINUM ALLOY, HYDROGEN/(U)ML12 ALUMINUM MAGNESIUM ALLOY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/1500 STEP NO--UR/0149/70/000/002/0134/0136

CIRC ACCESSION NO--AT0130429

UNCLASSIFIED

2/2 024 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0130429

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE KINETICS OF H EVOLUTION FROM THE SOLID SOLUTION OF AN ALLOY OF THE MG,AL SYSTEM (ML12) WERE STUDIED AND COMPARED WITH EXISTING DATA RELATING TO OTHER ALLOYS OF THE SAME SYSTEM. AT ROOM TEMP. 60PERCENT OF THE ORIGINAL H CONTENT WAS LOST IN THE FIRST 2 H; AFTER 6 H THE RATE OF EVOLUTION BECAME VERY SLOW, OWING TO THE FALL IN H CONCENTRATION IN THE SOLID SOLUTION. CORRESPONDINGLY THE RATE OF EVOLUTION VARIED WITH INITIAL H CONTENT. IN THE CASE OF ML12, IN CONTRAST TO THAT OF OTHER ALLOYS OF THE SAME SYSTEM, THE RATE OF H EVOLUTION PASSED THROUGH A MAX. FOR AN INITIAL CONTENT OF 30 CM PRIME3-100 G.

UNCLASSIFIED

1/2 033 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--EFFECT OF HYDROGEN ON THE CORROSION PROPERTIES OF A MAGNESIUM ALLOY CONTAINING ZIRCONIUM -U-

AUTHOR-(02)-SEREBRYAKOV, V.V., MARTISHKIN, V.V.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., KHIM. KHIM. TEKHNOL. 1970, 13(1), 51-4

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--MAGNESIUM ALLOY, ZIRCONIUM CONTAINING ALLOY, ALLOY ADDITIVE, HYDROGEN, SEA WATER CORROSION, CORROSION RESISTANCE, GRAIN REFINEMENT, INTERMETALLIC COMPOUND, ALLOY HEAT TREATMENT, ZINC CONTAINING ALLOY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1994/1797 STEP NO--UR/0153/70/013/001/0051/0054

CIRC ACCESSION NO--AT0115626

UNCLASSIFIED

2/2 033 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AT0115626

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TREATMENT OF A MOLTEN MG ALLOY CONTG. 4.08PERCENT ZN AND 0.42-0.50PERCENT ZR WITH H TO PRODUCE AN ALLOY CONTG. 20-45 CM PRIME3 H-100G, IN BOTH SOLID SOLN. AND HYDRIDE FORM, REDUCES THE CORROSION BY A 3PERCENT NACL SOLN. TO SIMILAR TO 5 CM PRIME3 H-CM PRIME2 IN 1 MIN. HEAT TREATMENT OF THE ALLOY AFTER H TREATMENT, FOR 6 HR AT 300DEGREES OR FOR 2 HR AT 400DEGREES, FOLLOWED BY 3 HR AT 490DEGREES AND AGING FOR 50 HR AT 150DEGREES, FURTHER REDUCES THE CORROSION TO 3-4 CM PRIME3 H-CM PRIME2 IN 1 MIN. THE BENEFICIAL EFFECT IS ATTRIBUTED TO THE DECREASED SEPN. OF COMPDS., SUCH AS MG SUB2 ZN SUB3, AND SMALLER GRAIN SIZE. THE FINER THE GRAIN SIZE, AND THE BETTER THE DISPERSION, THE STRONGER IS THE MECH. BOND AMONG THE ANODIC GRAINS AND THE LESS DESTRUCTION OCCURS BY TRANSFER OF THE CATHODIC PHASE COMPONENTS TO THE SOLN. PHASE.

UNCLASSIFIED

USSR

UDC: 669.721.5

SEREBRYAKOV, V.V., MARTISHKIN, V.V., Moscow Aviation Technological Institute, Moscow, Ministry of Higher and Secondary Specialized Education RSFSR

"Effect of Hydrogen on the Corrosion Properties of a Magnesium Alloy Containing Zirconium"

Ivanovo, Khimiya i Khimicheskya Tekhnologiya, Vol 12, No 1, 70, pp 51-54

Abstract: The study concerns the role of hydrogen in changes in the corrosion properties of a Mg--4.0% Zn alloy containing zirconium. Preparation of the alloy and its saturation with hydrogen are described in great detail and changes in the chemical composition of the alloy Mg+4.08% Zn+0.50% Zr, as a function of hydrogen saturation, are presented tabularly. Hydrogen treatment greatly induces the formation of zirconium hydrides, which is confirmed by a decrease in zirconium content in the solid solution, while the total amount of zirconium in the alloy remains constant. An increase in the amount of hydride precipitation raises the mechanical properties and reduces the grain size. It also reduces the precipitation of Mg_2Zn_3 type compounds, which is favorable to the higher corrosion resistance of alloys. The finer the grain and the more dispersive the precipitations, the greater the mechanical bond between the grain-anodes and the less destructive the transition of the cathode phase components to solution.

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