

USSR

BRICHKIN, A. V. et al., Nauch. tr. Kazakhsk. politekhn. in-t, Alma-Ata, 1971, pp 392-396

the mechanical load on the punch, and the size of the punch which give maximum productivity with minimum power expenditures. G. M. Lyakhov.

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USSR

UDC: 539.1.075

KOVNATSKIY, Ye. F., ROSLYY, Ye. I., SILANT'YEV, A. N.

"A Simple Two-Dimensional Analyzer of Beta-Gamma Coincidences for Analyzing Samples of Radioactive Fallout"

Tr. In-t eksperim. meteorol. Gl. upr. gidrometeorol. sluzhby pri Sov. min. SSSR (Works. Institute of Experimental Meteorology. Main Administration of the Hydrometeorological Service Affiliated With the Council of Ministers of the USSR), 1972, vyp. 25, pp 117-120 (from RZh-Metrologiya i Izmeritel'naya Tekhnika, No 6, Jun 72, Abstract No 6.32.1322)

Translation: The paper describes a two-dimensional β - γ coincidence analyzer based on two industrial AI-100 analyzers. A distinguishing feature of the unit is the possibility of registering the coincidence spectra on punched tape during measurement. The beta and gamma spectra taken in the single-crystal spectrometer mode are registered on the tape at the end of the experiment. A block diagram of the unit is given along with a schematic of the control module. Two illustrations, bibliography of four titles. Resumé.

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USSR

GONSOVSKIY, V. L., MESHKOV, S. I., ROSSIKHIN, Yu. A.

UDC 539.374

"Study of the Roots of the Characteristic Equation Associated With Damping Oscillations of Elastically Hereditary Systems"

V sb. Rasseyaniye energii pri kolebaniyakh mekh. sistem (Energy Scattering in the Oscillations of Mechanical Systems -- Collection of Works), Kiev, "Nauk. dumka", 1972, pp 101-107 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V509)

Translation: The roots of the characteristic equation

$$g(p) = p^{2+\gamma} + p^2 s_e^\gamma + p^\gamma \omega_{co}^2 + \omega_0^2 s_e^\gamma \dots 0$$

determining the displacement $x(t)$ associated with damping oscillations of an elastically hereditary oscillator with a relaxation nucleus of the form

$$R(t) = s_e^\gamma \Theta_\gamma(-1, t, s_e).$$

which completes its motion after an impulse action at time $t = 0$ are investigated. The displacement $x(t)$ in a Laplace space has the form

$$x_*(p) = F(p^\gamma + s_e^\gamma) / g(p)$$

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GONSOVSKIY, V. L., et al, Rasseyaniye energii pri kolebaniyakh mekh. sistem, Kiev, "Nauk. dumka", 1972, pp 101-107

where P is the amplitude of the force impulse, ω_∞ and ω_0 are the frequencies of elastic oscillations corresponding to nonrelaxation E_∞ and relaxation E_0 to values of the elastic modulus, $s_e = \tau_e^{-1}$ is the relaxation frequency and \mathfrak{D}_γ is a fractional exponential function of Yu. N. Rabotnov with the fractionality parameter γ . An appropriate formulation making it possible to reduce this equation to two equations facilitating the solution of the problem is applied to find the roots of the equations $g(p)$, where p is the parameter of the Laplace transformation. Various particular cases are discussed. It was established in particular that under appropriate conditions the quantity $x(t)$ represents the sum of two parts, one of which describes the changing equilibrium position with time and is associated with the retardation processes occurring in the dynamic system while the other describes damping harmonic oscillations around the equilibrium position. 8 ref. M. I. Rozovskiy.

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USSR

ROSSOLIMO, L. L., and SHIL'KROT, G. S., Institute of Geography, Academy of Sciences USSR

UDC 551.481.1

"The Effects of Induced Aeration of a Hypereutrophic Lake"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Geograficheskaya, No 4, Jul/Aug 71, pp 48-58

Abstract: A study was made of the effects of induced aeration on the regime of a hypereutrophic lake during freezing. To eliminate increasing stagnation, which interferes with the use of lake or reservoir water, destratification was achieved by induced mixing and agitation (circulation) of water, resulting in aeration which changed the chemical indices of stagnation and eliminated its undesirable effects. Two electrically-driven compressors pumped air into two perforated rubber hoses laid on the bottom of the lake, with several small-diameter pipe nozzles directed upward, thus keeping open air holes (polyn'ylas) in the ice cover. This produced continuous mixing and circulation of the entire water mass of the lake during the freezing, maintained an open water area, and decreased winter stagnation. A complete absence of hydrogen sulfide, a very important component of the winter regime of the lake, was observed, together with a disruption of the iron and

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Hydrobiology

USSR

ROSSOLIMO, L. L., Institute of Geography, Academy of Sciences USSR
"Anthropogenic Eutrophication of Water Basins, Its Essence and Problems of Investigation"
Kiev, Gidrobiologicheskii Zhurnal, Vol 7, No 3, 1971, pp 98-108

Abstract: The distinction is drawn between water pollution and anthropogenic eutrophication or "secondary pollution," the disruption by man of the natural biochemical balance in a water basin. Eutrophication is an overly swift, progressive rise in the level of nutritive biological processes due to the intensive introduction of eutrophic substances, generally nitrogen and, in particular, phosphorus compounds into urban, rural and industrial effluents. Some of the major questions in need of extensive study are: (1) the irreversibility of eutrophication (2) its spasmodic nature and the reasons for this (3) variations in eutrophication rate (4) the role of nitrogen and phosphorus as well as the possible role of certain as yet unidentified organic compounds which also over-stimulate the development of autotrophic hydrobionts including photoplankton, phytobenthos and periphyton. Existing biochemical eutrophication indices must be re-examined to allow the results of anthropogenic processes to be distinguished from the unique characteristics of a particular water basin and from seasonal variations in hydrological

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ROSSOLIMO, L. L., *Gidrobiologicheskii Zhurnal*, Vol 7, No 3, 1971, pp 98-108

conditions. The time factor is central to an understanding of any eutrogenic index: thus when an O_2 curve is obtained it is essential that an understanding be gained of the speed of O_2 absorption in the hypolimnion and of its transformation in the course of several years.

A new methodology is being developed demanding (1) the widest possible coverage of all factors and conditions contributing to the development of eutrophication (2) continuous monitoring of all stages of the annual hydrological cycle and (3) a total observation period as prolonged as possible. U.S. studies on the pollution of the Great Lakes are reviewed for the lessons they offer the rest of the world. Of particular interest is the material on the relationship between the large-scale dimensions of these major water basins and the rate of eutrophication occurring in them.

In the USSR investigation of anthropogenic eutrophication was initiated on a limited scale in 1963 by the Limnology Group of the Institute of Geography, Academy of Sciences USSR, which studied various stages of eutrophication at certain lakes in the central European section of the USSR and in the southern Urals. Currently two major tasks in the USSR include the compilation of

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USSR

ROSSOLIMO, L. L., *Gidrobiologicheskii Zhurnal*, Vol 7, No 3, pp 98-108

comparative data on the past and present state of specific water basins -- though often unfortunately on the basis of very limited past observations -- and, secondly, the complex analysis and regulation of anthropogenic eutrophication of water reservoirs. One of the signal studies in this area, undertaken by the Institute of Hydrobiology, Ukrainian Academy of Sciences, focused on conditions in the reservoirs along the Dnieper River during the period of major hydraulic construction there.

Hydro-engineering solutions to the problem of regulating water basin quality include the diversion of industrial and urban waste water to areas beyond drainage basin boundaries. However, removal of the principle eutrophic agents, nitrogen and phosphorus compounds, from all types of waste water is considered a more practical solution. At present in the USSR measures of a temporary, meliorative nature include the use of algicides and herbicides to combat bio-nutrient "efflorescence." Other crucial environment problems currently being confronted in the USSR are prevention of large-scale mineral fertilizer leaching from rural crop lands and preservation of the bionutritive balance in the littoral vegetative zone.

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UNCLASSIFIED
TITLE--EXPERIMENTAL STUDIES ON ANTITUMOR ACTIVITY OF SIBIROMYCIN -U-
AUTHOR--(02)-SHORIN, V.A., ROSSOLIMO, O.K.
PROCESSING DATE--18SEP70
COUNTRY OF INFO--USSR
SOURCE--ANTIBIOTIKI, 1970, VOL 15, NR 4, PP 300-304
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--ANTITUMOR DRUG EFFECT, TISSUE TRANSPLANT, MOUSE, DIGESTIVE
SYSTEM, ANTIBIOTIC DRUG EFFECT, SARCOMA, LYMPHATIC SYSTEM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1981/0750
GIRC ACCESSION NO--AP0052196
STEP NO--UR/0297/70/015/004/0300/0304
UNCLASSIFIED

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SIBIROMYCIN HAD A HIGH ANTITUMOR
ACTIVITY AGAINST 6 TRANSPLANTABLE TUMORS OF MICE. IT WAS MOST EFFECTIVE
IN THE TREATMENT OF MICE (LINE OZH SUB5) WITH TRANSPLANTED FLAT CELLULAR
CANCER OF THE GIZZARD. WHEN USED IN A MAXIMUM TOLERATED DOSE
ADMINISTERED TWICE, THE ANTIBIOTIC COMPLETELY SUPPRESSED THE TUMOR
GROWTH. THE DEVELOPMENT OF LYMPHOSARCOMA (STRAIN L10-1) WAS INHIBITED
BY SIBIROMYCIN USED IN A MAXIMUM TOLERATED DOSE BY 90 TO 97PERCENT AND
THAT OF THE ASCITIC FORMS OF TUMORS AND THE SOLID FORM OF SARCOMA L80
WAS INHIBITED BY 62 TO 66PERCENT. SIBIROMYCIN INDUCED ATROPHIC CHANGES
IN THE SPLEEN AND ITS WEIGHT IN TREATED ANIMALS WAS LOWER THAN IN THE
CONTROL ANIMALS. THE DECREASE IN THE SPLEEN WEIGHT WAS MAINLY DUE TO
THE ANTIBIOTIC DOSE: THE HIGHER WAS THE DOSE, THE LOWER WAS THE WEIGHT.

UNCLASSIFIED

PROCESSING DATE--18SEP70

UNCLASSIFIED

USSR

UDC 591.9(47)

ROSSOLIMO, O. L., and DOLGOV, V. A., Editors

Issledovaniya po Faune Sovetskogo Soyuza (Investigations of the Fauna of the Soviet Union), Moscow, Izdatel'stvo Moskovskogo Universiteta, 1972, 188 pp	Page
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USSR

UDC 621.791.89:534.1

KONOVALOV, YE. G., ROSSOSHINSKIY, A.A., GALKOV, V.S.

"Influence of Frequency Spectrum on Formation of Joints in Ultrasonic Welding"
Izv. AN BSSR, Ser. Fiz-tekhn. Nauk, No 2, Minsk, 1971, pp 93-96

Abstract: Studies were performed involving ultrasonic welding of aluminum foil to various materials, using both the frequencies ordinarily used for this purpose and much higher frequencies, up to 212 kHz. It was found that better joints were produced with the higher frequencies. Existing theories cannot explain this dependence of joint quality on frequency. The authors suggest that perhaps the best joints are produced at those frequencies at which the material being welded absorbs the maximum ultrasonic energy, but propose that broad-scale investigations be performed to determine the best welding frequencies for each type of material being welded.

Acc. Nr:

A70040576

Abstracting Service:
CHEMICAL ABST.

Ref. Code:

4-76 UR0020

R

83522g Formation of a eutectic phase during contact fusion. Khrenov, K. K.; Rossoshinski, A. A.; Kislitsyn, V. M. (Inst. Elektrosvarki im. Patona, Kiev, USSR). Dokl. Akad. Nauk SSSR 1970, 190(2), 402-3 [Chem Technol] (Russ). The process was studied by compressing a perfect single crystal of Si and a Au foil 100- μ thick. The 2 were compressed between 2 plungers preheated to 400°, which exceeds somewhat the temp. of the eutectic Au-Si. To follow the process, the plungers were moved apart periodically. The process then proceeded as follows. First, some defects appeared, such as dislocations, and microcracks were formed on the surface of the Si. These defective spots were satd. with Au up to stoichiometric compn. of the eutectic. These spots enlarged to a point where they formed nuclei of the liq. phase, and finally the eutectic spread over the contact area and inside the crystal. M. Hoseh

LD

REEL/FRAHE

19750097

18

1/2 021
TITLE—A SYNCHRONIC MICROELECTRIC DRIVE BASED ON A CONTACTLESS DIRECT
CURRENT MOTOR —U—
AUTHOR—RUSSOVSKIY, YE.L.
COUNTRY OF INFO—USSR
SOURCE—MOSCOW, ELEKTROTEKHNIKA, 1970, NR 2, PP 26-30
DATE PUBLISHED—70

SUBJECT AREAS—ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS—DIRECT CURRENT, ELECTRIC MOTOR, ELECTRONIC CIRCUIT, TRIGGER
CIRCUIT, ELECTRIC COMMUTATOR, ELECTRONIC OSCILLATOR

CONTROL MARKING—NO RESTRICTIONS

DOCUMENT CLASS—UNCLASSIFIED
PROXY REEL/FRAE—1999/1223

STEP NO—UR/0292/70/000/002/0026/0030

CIRC ACCESSION NO—AP0123187

UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0123187

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. USING A CONTACTLESS DIRECT CURRENT MOTOR AS A BASE, THE AUTHOR DEVELOPED A SYNCHRONIC MICROELECTRIC DRIVE WHICH HAS THE CHARACTERISTICS OF A CONTACTLESS DIRECT CURRENT MOTOR DURING STARTING TIME AND THOSE OF A SYNCHRONIC MOTOR UNDER STEADY CONDITIONS OF SYNCHRONIC ROTATION. SYNCHRONIZATION OF THE RATE OF ROTATION IS ACHIEVED BY INTRODUCING A SYNCHRONIZATION CIRCUIT INTO THE COMMUTATOR OF THE MOTOR. THE SYNCHRONIZATION CIRCUIT CONSISTS IN GENERAL OF THREE TRIGGERS WHICH ARE CONNECTED BY A GIVEN MEANS TO THE COMMUTATOR AND THE MASTER OSCILLATOR. ORIGINAL ARTICLE: FIVE ILLUSTRATIONS AND THREE BIBLIOGRAPHIC ENTRIES.

UNCLASSIFIED

1/5 043 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--NEIL ARMSTRONG INTERVIEWED BY SOVIET NEWSPAPERMEN -U-
AUTHOR--ROSTARCHUK, M.
COUNTRY OF INFO--USSR, UNITED STATES
SOURCE--MOSCOW, IZVESTIYA, 5 JUNE 1970, P 4
DATE PUBLISHED--05JUN70
SUBJECT AREAS--SPACE TECHNOLOGY
TOPIC TAGS--COSMONAUT, ASTRONAUT, SPACE FLIGHT, MANNED SPACECRAFT, LUNAR
LANDING/(U)SOYUZ 9 MANNED SPACECRAFT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/1642 STEP NO--UR/9003/70/000/000/0004/0004
CIRC ACCESSION NO--AN0131964
UNCLASSIFIED

2/5 043

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AN0131964

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MAN WHO WAS THE FIRST TO STEP ONTO THE MOON ENTERED THE WHITE MARBLE CONFERENCE HALL OF THE PRESIDUM OF THE ACADEMY OF SCIENCES USSR SURROUNDED BY OUTSTANDING SOVIET SCIENTISTS AND COSMONAUTS. HE WAS MET WITH APPLAUSE, RECOGNITION FOR THE ACHIEVEMENTS OF HIS CREW AND HIMSELF. NEIL ARMSTRONG WAS INTRODUCED BY ACADEMICIAN A. BLAGONRAVOV, WHO NOTED THE IMPORTANCE OF THE APOLLO 11 FLIGHT, THE KNOWLEDGE AND BRAVERY OF THE CREW. THE SUCCESSFUL FLIGHT OF APOLLO 11 FOR ARMSTRONG WAS NOT A MATTER OF CHANCE OR LUCK. HIS ROUTE TO THE MOON WAS COMPLEX AND THORNY. HE ENCOUNTERED THE WAYWARDNESS OF SPACE EQUIPMENT ALREADY DURING THE FLIGHT OF GEMINI 8; AT THAT TIME HE WAS ABLE TO TAME THE FLIGHTCRAFT WHEN IT SUDDENLY WENT OUT OF CONTROL. LATER IN A TRAINING FLIGHT IN A LUNAR TRAINER OVER THE EARTH ITSELF THE VEHICLE WENT OUT OF CONTROL AND ONLY A FRACTION OF A SECOND AND THE PRESENCE OF COURAGE SAVED HIS LIFE. ARMSTRONG WAS GIVEN THE PODIUM. HE SLOWLY APPROACHED THE SPEAKER'S STAND. HE HAS AN OPEN AND STRONG FACE. HIS MOVEMENTS REVEAL RESTRAINT AND MODESTY. HE SOMEWHAT RESEMBLES GAGARIN. ARMSTRONG THANKS A. N. KOSYGIN, CHAIRMAN OF THE COUNCIL OF MINISTERS USSR, FOR RECEIVING HIM AND FOR THEIR HEART TO HEART CONVERSATION, AND THE SOVIET GOVERNMENT FOR ENABLING HIM TO BECOME ACQUAINTED WITH OUR COUNTRY AND THE LIFE OF THE SOVIET PEOPLE. "I FIND IT PARTICULARLY PLEASING TO TELL OF THE RESULTS OF MY FLIGHT RIGHT NOW," SAID THE ASTRONAUT, "DURING THE FLIGHT OF 'SOYUZ-9'. I WOULD LIKE TO WISH ITS CREW THE BEST OF SUCCESS AND LUCK IN IMPLEMENTING ALL ITS ASSIGNED MISSIONS".

UNCLASSIFIED

3/5 043

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AN0131904

ABSTRACT/EXTRACT--"AS YOU RECALL, THE APOLLO 11 FLIGHT LASTED APPROXIMATELY EIGHT DAYS. WE HAD GOOD ENOUGH LUCK, EXPERIENCED NO SIGNIFICANT TECHNICAL MALFUNCTIONS, NONE OF US BECAME ILL OR EXPERIENCED UNPLEASANT SENSATIONS. FLIGHT TO THE MOON IS REALLY EXTREMELY AWE INSPIRING. THE APPEARANCE OF THE EARTH, GROWING INCREASINGLY SMALLER THROUGH THE PORT, IS UNFORGETTABLE. POSSIBLY THE MOST MEMORABLE SPECTACLE WAS THE MOON, BECOMING LARGER AND LARGER AS WE APPROACHED IT".

"IN MY OPINION THE MOST DIFFICULT STAGE IN THE FLIGHT WAS THE LANDING. BEFORE WE COULD SIT DOWN ON THE MOON WE HAD TO MAKE A WHOLE SERIES OF MANEUVERS. THE FINAL LANDING REQUIRED ABOUT ELEVEN MINUTES MANEUVERING. DURING THE LUNAR LANDING WE MET WITH THE FIRST SERIOUS DIFFICULTY; THE COMPUTERS MALFUNCTIONED, BUT THE FAILURES WERE NOT SO SERIOUS AS TO STOP THE LANDING". "DIRECTLY PRIOR TO THE LANDING WE DISCOVERED THAT THE AUTOMATIC SYSTEM WAS CARRYING US AWAY FROM THE INTENDED LANDING POINT TO A VERY UNEVEN TERRAIN NEAR ONE OF THE LUNAR CRATERS. THIS SITE WAS UNSUITABLE FOR A LANDING. WE SWITCHED OFF THE AUTOMATIC SYSTEM AND SHIFTED TO MANUAL CONTROL. APPROXIMATELY A KILOMETER TO THE WEST OF THE EARLIER PROPOSED LANDING SITE WE FOUND A LEVEL SITE AND SUCCESSFULLY SAT DOWN". (WE CAN INSERT HERE THAT THE SITUATION WAS BY NO MEANS SO FREE OF STRESS: NEIL ARMSTRONG, WITH HIS CHARACTERISTIC SELF COMMAND, SELECTED THE LANDING SITE AT THE RISK OF OVEREXPENDING HIS FUEL. "FIVE HOURS LATER WE EMERGED FROM THE LUNAR CABIN. FIRST IT SHOULD BE NOTED THAT THE MOON IS A PLEASANT PLACE TO WORK. LUNAR ATTRACTION IS QUITE FAVORABLE FOR WALKING.

UNCLASSIFIED

4/5 043

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AN0131964

ABSTRACT/EXTRACT--THE LUNAR SURFACE IS QUITE FIRM, GOOD ENOUGH TO HOLD OUR WEIGHT AND WE LEFT FOOTSTEPS. IT IS A MIXTURE, NINE TENTHS CONSISTING OF DUST AND ONE-TENTH OF ROCKS OF DIFFERENT SIZES AND SHAPES. THE DUST IS VERY FINE, SIMILAR TO FLOUR. ALTHOUGH THE GROUND MATERIAL IS OF DIFFERENT COLORS, THE GENERAL BACKGROUND OF THE SURFACE IS DARK. WE COLLECTED APPROXIMATELY 20 KG OF SAMPLES OF LUNAR ROCKS AND AFTER SPENDING THE NIGHT ON THE MOON, ON THE MORNING OF THE NEXT DAY WE LEFT ITS SURFACE". "THE TRIP BACK TOOK A LITTLE MORE THAN TWO DAYS. I CAN SAY THAT IT WAS A GREAT SATISFACTION TO SEE THE EARTH APPROACHING ONCE AGAIN". A MOUNTAIN OF NOTES IS RAPIDLY RISING IN FRONT OF ARMSTRONG. ALMOST EVERY ONE OF THEM IS A REQUEST TO TELL IN GREATER DETAIL ABOUT THE HOURS SPENT ON THE MOON. "WHAT MADE THE STRONGEST IMPRESSION ON YOU DURING THE TIME YOU SPENT ON THE MOON?" "THE VIEW OF THE EARTH. THE SAME OPINION WAS SHARED BY ALL THE ASTRONAUTS WHO WERE ON THE MOON". "WITH WHAT CAN YOU COMPARE THE SENSATION OF LUNAR ATTRACTION?" "THOSE WHO WERE ON THE MOON FEEL THAT IT IS VERY EASY TO WALK ON THE MOON; ONE GETS THE SENSATION OF LIGHT SWIMMING. INITIALLY THIS SEEMS UNUSUAL, BUT WITHIN TEN MINUTES YOU GROW ACCUSTOMED TO IT". "DID THE LUNAR LANDSCAPE CORRESPOND TO YOUR PRECONCEPTIONS?" "I FORMED MY GENERAL IDEAS CONCERNING THE LUNAR LANDSCAPE FROM PHOTOGRAPHS WHICH WERE TAKEN FROM LUNAR PROBES. NEVERTHELESS, I FOUND THE MOON TO BE COMPLETELY DIFFERENT FROM WHAT I EXPECTED. IN GENERAL, THE LUNAR SURFACE WAS MORE UNEVEN AND RUGGED, WITH CRATERS, ROCKS AND HILLS ALL ABOUT. THE SUNLIGHT WAS VERY BRIGHT, ALTHOUGH THE SKY, NATURALLY, WAS DARK.

UNCLASSIFIED

5/5 043

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AN0131964

ABSTRACT/EXTRACT--THE LIGHT SENSATION WAS LIKE THAT IN OUR STADIUMS WHEN GAMES ARE PLAYED UNDER THE LIGHTS. THE COLORS WERE PREDOMINANTLY BLACK, WHITE AND GRAY. BROWNISH TONES BECAME MORE CONSPICUOUS WHEN THE SUN ROSE HIGHER. "WAS YOUR HISTORIC PHRASE 'THIS IS A SMALL STEP FOR ONE MAN BUT A GIANT STEP FOR MANKIND AS A WHOLE' PREPARED AHEAD OF TIME, ON THE EARTH, OR DURING FLIGHT?" "EVIDENTLY I AM GUILTY OF THINKING UP THIS PHRASE WHILE ON THE MOON". (LAUGHTER IN THE HALL). "WHAT MOMENT DURING FLIGHT WAS MOST STRESSFUL FOR YOU?" "AWAITING THE OPENING OF THE PARACHUTE". "WHAT ARE YOUR FUTURE PLANS?" "I PROPOSE TO WORK IN THE FIELD OF AERONAUTICS AND AIRCRAFT CONSTRUCTION, BUT I THINK THAT THIS WILL BE AFTER A NEW FLIGHT INTO SPACE". "WHAT WOULD YOU ANSWER IF IT WAS PROPOSED THAT YOU HEAD A THREE YEAR TRIP TO MARS?" "I WOULD ASK, FIRST OF ALL, PERMISSION TO TAKE ALONG MY FAMILY." (APPROVING LAUGHTER IN THE HALL). WITH RESPECT TO THE CURRENT FLIGHT OF SOVIET COSMONAUTS, NEIL ARMSTRONG NOTED THAT AS FAR AS HE KNEW THE PRINCIPAL OBJECTIVE OF THE "SOYUZ-9" WAS A STUDY OF THE EARTH'S RESOURCES. THIS IS A VERY IMPORTANT OBJECTIVE AND WITHIN TWO YEARS SUCH INVESTIGATIONS WILL EVIDENTLY BE MADE IN THE UNITED STATES AS WELL. "WHAT WERE YOUR IMPRESSIONS UPON ARRIVAL IN THE SOVIET UNION?" "THE STRONGEST IMPRESSION REMAINED FROM MY VISIT TO ZVEZDNYI GORODOK AND A MEETING WITH THE WIVES OF GAGARIN AND KOMAROV. I WOULD LIKE TO COME HERE AGAIN".

UNCLASSIFIED

1/2 032
TITLE--UNDERSEA MINING -U- UNCLASSIFIED PROCESSING DATE--04DEC70
AUTHOR--ROSTARCHUK, M. *R*
COUNTRY OF INFO--USSR
SOURCE--IZVESTIYA, SEPTEMBER 2, 1970, P 4, COLS 4-6
DATE PUBLISHED--02SEP70
SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, MATERIALS
TOPIC TAGS--MINING ENGINEERING, TITANIUM, MAGNETITE, IRON ORE, GEOLOGICAL
OCEANOGRAPHY, MINERAL, METALLURGIC RESEARCH FACILITY, ORE BENEFICIATION,
TIN, OCEAN BOTTOM, OCEANOGRAPHIC RESEARCH FACILITY, OCEANOGRAPHIC R AND
D, DREDGING MACHINERY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3008/1059 STEP NO--UR/9003/70/000/000/0004/0004
CIRC ACCESSION NO--AN0138081
UNCLASSIFIED

2/2 032

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AN0138081

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE DESCRIBES THE SOVIET UNDERSEA MINERAL RECOVERY PROGRAM. CREDIT FOR PROGRESS IN THIS AREA IS GIVEN TO V. RZHEVSKIY, HEAD OF A CHAIR AT THE MOSCOW MINING INSTITUTE (MGI) CORRESPONDING MEMBER OF THE ACADEMY OF SCIENCES, AND G. NUROK, PROFESSOR, SCIENCE DIRECTOR OF THE PROJECT LABORATORY OF THE MGI FOR UNDERSEA MINING OF MINERALS (PROBLEMNAYA LABORATORIYA PODVODNOY DOBYCHI POLEZNYKH ISKOPAYENYKH SO DNA OKEANDV I MOREY). THE PROJECT LABORATORY HAS 85 PERMANENT ASSOCIATES ON ITS STAFF AND, IN ESSENCE, IS A RESEARCH AND ORGANIZATIONAL CENTER FOR THIS NEW BRANCH OF TECHNOLOGY. THE SUCCESS OF THE LABORATORY RESEARCH IS ATTRIBUTED TO THE FACT THAT IT IS AIDED BY 13 CHAIRS OF THE MGI, AND THAT IT MAINTAINS CLOSE TIES WITH THE MINISTRY OF NONFERROUS METALLURGY, U.S.S.R., AND COLLABORATES WITH THE "GIREDMET" AND THE "VNIIPROZOLOTO" INSTITUTES, THE FAR EASTERN STATE UNIVERSITY, THE LENINGRAD MINING INSTITUTE, AND THE "IRGIREDMET" INSTITUTE. THE LABORATORY COLLABORATED WITH THE MINISTRY OF NONFERROUS METALLURGY IN DEVELOPING PLANS FOR A MARINE MINING ENTERPRISE WHICH IS SCHEDULED TO START OPERATIONS IN 1972. THIS PROJECT WAS PRECEDED BY THE PILOT MINING AND BENEFICIATION OF TITANIUM CONTAINING ORE IN THE BALTIC. ANOTHER PROJECT DEALING WITH MINING OF CASSITERITE WAS DEVELOPED JOINTLY WITH THE "VNIIPROZOLOTO" INSTITUTE. IT WILL BECOME OPERATIONAL IN 1971-1972. CURRENTLY, THE SB-245, A REFITTED SAND BARGE, IS USED AS A DREDGE AND ORE CONCENTRATING PLANT NEAR THE SHORES OF A CURILE ISLAND, THE ITURUP, IN AN EFFORT TO RECOVER TITANIUM AND MAGNETITE. OTHER VENTURES OF THE MGI ARE DESCRIBED BRIEFLY.

UNCLASSIFIED

1/3 008
TITLE--A VISIT WITH CHERNOMOR-2 -U- UNCLASSIFIED
PROCESSING DATE--27NOV70
AUTHOR--ROSTAUCHUK, M.
COUNTRY OF INFO--USSR
SOURCE--POSEIDON, 1970, NR 2 (98), PP 49-54 (IZVESTIYA, 11 OCT 69)
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, BEHAVIORAL AND SOCIAL SCIENCES
TOPIC TAGS--UNDERWATER RESEARCH LABORATORY, OCEANOGRAPHIC RESEARCH FACILITY, DIVER, AQUANAUT/(U)CHERNOMER 2 UNDERWATER LABORATORY, (U)CHERNOMER 1 UNDERWATER LABORATORY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3007/1355 STEP NO--GE/0077/70/000/002/0049/0054
CIRC ACCESSION NO--AP0136721
UNCLASSIFIED

2/3 008

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0136721

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHOR DESCRIBES THE VISIT HE MADE TO CHERNOMOR-2, THE NEW UNDERWATER LABORATORY FOR OCEANOGRAPHY OF THE U.S.S.R. ACADEMY OF SCIENCES. UNLIKE ITS PREDECESSOR, THE CHERNOMOR-1, IT HAS HYDRAULIC PILLARS. THE COMMANDER OF THE CREW IS VLADILEN NIKALAYEV, HEAD OF THE LABORATORY FOR UNDERWATER EXPERIMENTS OF THE SOUTHERN BRANCH OF THE INSTITUTE OF OCEANOGRAPHY. SHIPBOARD ENGINEER IS YURIY KALININ, WHO DESIGNED CHERNOMOR-2 AND IS A STAFF MEMBER OF THE LABORATORY OF TECHNOLOGY OF UNDERWATER STUDIES OF THE SAME INSTITUTE. ALEXANDER LOMOV AND VICTOR UZOL'TSEV ARE FIRST CLASS DIVERS.

CHERNOMOR-2 IS 12 TONS HEAVIER THAN CHERNOMOR-1. THIS EXTRA WEIGHT IS MADE UP OF ADDITIONAL, IMPROVED EQUIPMENT WHICH MAKES IT MORE DEPENDABLE AND SELFSUSTAINING. THE CAPACITY OF ELECTRIC BATTERIES INCREASED 100 TIMES, RESPIRATION GAS SUPPLY 50 TIMES, FRESH WATER SUPPLY SIX TIMES. THE AQUANAUTS BREATHE A NITROGEN OXYGEN MIXTURE UNDER AN ATMOSPHERIC PRESSURE OF 3.5 ATM. AN EFFICIENT HEATING SYSTEM MAINTAINS A CONSTANT TEMPERATURE ABOVE 24 C AT AN OUTSIDE WATER TEMPERATURE OF 14-16 C. A RADIO BUOY CONNECTS THE LAB WITH THE DEPOT SHIP AT ALL TIMES. CHERNOMOR-2 CAN WELL BE DESIGNATED AS THE PROTOTYPE OF AN UNDERWATER HOUSE TO BE BUILT IN MASS PRODUCTION. IN FACT, ALL ITS PARTS AND SYSTEMS EXCEPT THE HULL ARE PRODUCED IN SERIES. THE COST OF THE FIRST MODEL WILL COME CLOSE TO 100,000 RUBLES; THE FOLLOWING MODELS WILL COST ONE THIRD LESS. WITH THESE LABORATORIES, IT WILL BE POSSIBLE TO CONDUCT TECHNICAL AND SCIENTIFIC WORK UNDER WATER AT DEPTHS OF 35 TO 70 METERS.

UNCLASSIFIED

3/3 008

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0136721

ABSTRACT/EXTRACT--PROFESSOR A. MONIN, DIRECTOR OF THE INSTITUTE OF OCEANOGRAPHY, POINTED OUT THAT THE "DEPTH OF 30 METERS IS ONLY A TRANSITION STAGE: WE ARE THINKING OF REACHING DEPTHS OF 100-150 METERS WITHIN THE NEXT TWO YEARS; THIS IS AN UNAVOIDABLE STEP, A LOGICAL DEVELOPMENT OF THE WHOLE PROGRAM".

UNCLASSIFIED

USSR

UDC 576.858.095.383.612

ROSTOKA, A., and EGLITE, I. E., Institute of Microbiology imeni Avgust Kirchenstein, Academy of Sciences Latvian SSR

"In Vitro Interferon Formation by Peripheral Blood Leukocytes of Leukemic Children"

Riga, Izvestiya Akademii Nauk Latvyskoy SSR, No 4 (285), 1971, pp 144-145

Abstract: To clarify the correlation between leukemia and interferon production, an in vitro study was performed on blood samples obtained from 21 leukemic children aged 2-15 years. Newcastle disease virus was added to the blood samples to induce interferon production by leukocytes, and mean geometric titers were determined. A statistical analysis of the results revealed that in vitro interferon production by the leukocytes of lympholeukemic children is significantly greater (4.95 ± 0.52) than that of healthy children (3.2 ± 0.41). In a previous study, on the other hand, it was found that interferon titers in lympholeukemic adults are smaller than in healthy adults. This difference is probably due to age-associated properties.

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1/2 018
UNCLASSIFIED
TITLE--RADICAL EXCHANGE IN ORGANOMETALLIC COMPOUNDS. XII. MOLECULAR FORM
OF PHENYLLITHIUM IN RADICAL EXCHANGE REACTIONS -U-
AUTHOR--(02)-BATALOV, A.P., ROSTOKIN, G.A.
COUNTRY OF INFO--USSR
SOURCE--ZH. OBSHCH. KHIM. 1970, 40(4), 842-6
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--EXCHANGE REACTION, ORGANOLITHIUM COMPOUND, CHEMICAL KINETICS,
MONOMER, ISOTOPE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3006/1500
CIRC ACCESSION NO--AP0135161
STEP NO--UR/0079/70/040/004/0842/0846
UNCLASSIFIED

2/2 018

CIRC ACCESSION NO--AP0135161
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--27NOV70

ABSTRACT. KINETIC CURVES WERE SHOWN FOR REACTIONS OF "PRIME14 C SUB6 H SUB5 LI" WITH PHLI IN ET SUB2 O IN THE 20-34DEGREES INTERVAL. RADICAL EXCHANGE IN PHLI OCCURS IN THE MONOMERIC FORM OF PHLI RATHER THAN IN THE DIMER; THE DISSOCN. CONSTS. OF THE DIMER WERE CALCD. TO BE FROM 0.95 AT 20DEGREES TO 0.93 AT 34DEGREES. FACILITY: NAUCH.-ISSLED. INST. KHIM., GOR'K, FOS, UNIV. IM. LOBACHEVSKOGO, GORKI, USSR.

UNCLASSIFIED

USSR

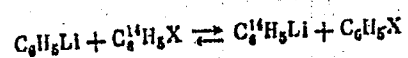
UDC: 547.353.4-541.127-4

BATALOV, A.P., and ROSTOKIN, G.A., Scientific Research Institute of Chemistry at Gor'kiy State University imeni N.I. Lobachevskiy, Gorkiy, Ministry of Higher and Secondary Specialized Education RSFSR

"Radical Exchange in Organometallic Compounds. XII. Molecular Form of Phenyllithium in Radical Exchange Reaction"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 4, Apr 70, pp 842-846

Abstract: The article considers the question of the molecular form of phenyllithium taking part in the following exchange reaction at the stage determining its kinetics:



(X=Cl, Br, I). It is shown that phenyllithium takes part in monomeric

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USSR

BATALOV, A. P., and ROSTOKIN, G. A., Zhurnal Obshchey Khimii, Vol 40, No 4, Apr 70, pp 842-846

form. This is confirmed by kinetic studies. A method is suggested for determining the dissociation constant of the dimer of phenyllithium, based on kinetic exchange reaction studies.

2/2

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1/2 021
UNCLASSIFIED
PROCESSING DATE--20NOV70
TITLE--THE EMPLOYMENT OF SCANNING OF THE LIVER FOR THE EVALUATION OF THE
EFFECTIVENESS OF TREATMENT OF CHRONIC HEPATITIS AND LIVER CIRRHOSIS -U-
AUTHOR--(03)--BARAMIDZE, T.G., SAMADASHVILI, A.G., ROSTOMOVA, L.T.
COUNTRY OF INFO--USSR
SOURCE--MEDITSINSKAYA RADIOLOGIYA, 1970, VOL 15, NR 6, PP 49-54
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--BIOLOGIC STAIN, DIAGNOSTIC DRUG, HEPATITIS, CIRRHOSIS, LIVER
FUNCTION, IODINE ISOTOPE, GOLD ISOTOPE, CHEMICAL LABELLING
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3003/1020
CIRC ACCESSION NO--AP0130055
STEP NO--UR/0241/70/015/006/0049/0054
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0130055

ABSTRACT/EXTRACT--(U) CP-0- ABSTRACT. A TOTAL OF 32 PATIENTS WERE EXAMINED. SCANNING OF THE LIVER WAS PERFORMED WITH THE AID OF BENZAL ROSE LABELLED WITH I PRIME131 AND COLLOIDAL AU PRIME198. THE RESULTS DERIVED WERE COMPARED WITH DATA OF CLINICAL OBSERVATION AND FUNCTIONAL LIVER TESTS. REPEATED SCANNING OF THE LIVER REFLECTS THE DYNAMICS OF THE DISEASE AND MAY BE EMPLOYED AS AN OBJECTIVE CRITERION OF THE EFFECTIVENESS OF TREATMENT. FACILITY: NAUCHNO-ISSLED. INSTITUT ONKOLOGII I TERAPII MZ Gruzssr.

UNCLASSIFIED

USSR-

UDC 669.18:621.746.58

DOROKHOV, V. I., PALYANICHKA, V. A., KLEMESHOV, G. A., YEVTYUTOV, V. P.,
GLAZOV, V. I., PANASENKO, V. G., RYABININ, B. G., and BOSTORGUYEV, V. D.,
Ukrainian Scientific Research Institute of Metals

"Casting of Large Sheet Ingots of Low-Alloy Steel Under Protective Slag
Coating"

Moscow, Metallurg, No 3, Mar 72, pp 17-19

Abstract: Joint investigations of the Ukrainian Scientific Research Institute of Metals and the Zhdanov Plant imeni Il'ich, revealed that stratifications in sheets of silicomanganous steel can be caused by accumulations of macro-inclusions of endogenic origin or increased content of hydrogen. Experiments in casting sheet ingots of silicomanganous steel 09G2S, weighing 118-27.9 tons, under a protective coating of synthetic slag, are described. The experiments were conducted in order to decrease stratifications resulting from nonmetallic impurities. It was found that by using slag with optimum physico-chemical properties in casting steel, the content of oxide inclusions can be lowered by more than 30% and stratifications can be practically eliminated in thick sheets. The nonmetallic inclusions do not change

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USSR

DOROKHOV, V. I., et al., Metallurg, No 3, Mar 72, pp 17-19

character, but are merely redistributed, and a refining of metal from oxides, particularly from alumina, takes place. One illustration, two tables.

Alkaloids

USSR

UDC 615.31:582.675.347.074

NAYDOVICH, L. P., ROSTOTSKIY, B. K., and KIBAL'CHICH, P. N., All-Union Scientific Research Institute of Medicinal Plants, Moskovskaya Oblast, Ministry of Health USSR

"Alkaloids of Certain Cultivated Species of the Berberidaceae Family"

Moscow, Farmatsiya, Vol 91, No 5, Sep-Oct 70, pp 47-49

Abstract: Alcoholic extracts of the roots of *Lahonia aquifolia* Nutt (*Berberis aquifolia* Pursh.) from the berberidaceae family, which was cultivated in the All-Union Institute of Medicinal Plants Botanical Garden, yielded berbamine and berberine. The highest yield of berberine chloride was obtained from the roots, 1.5 g of the product from 100 g of the starting material; the stems gave 0.53 g and the leaves produced 0.35 g of the alkaloid. A crystalline fraction of reduced bases was obtained and according to chromatographic data consisted of four alkaloids. Berberine chloride was also obtained from the roots, leaves and stems of *Berberis vulgaris* L., -- 100 g of the starting material gave 0.64, 0.~ and 0.3 g of the alkaloid respectively.

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USSR

UDC 547.92

NAYDOVICH, L. P., FESENKO, D. A., and ROSTOTSKIY, B. K., All Union Scientific
Research Institute of Medicinal Plants

"On Alkaloids of Mahonia Aquafolia"

Tashkent, Khimiya Prirodnikh Soyedineniy, No 6, 1970, p 775

Abstract: Berberine and berbamine were isolated from the roots of the shrub Mahonia aquafolia. Zinc dust reduction of the quaternary alkaloid fraction in acid yielded one phenol base and two nonphenol bases. The phenol base is identified as tetrahydrojatrorrhizine (k,l-corypalmine), and one of the nonphenol bases is identified as d,l-canadine (tetrahydroberberine). The structure of the other nonphenol base is under investigation.

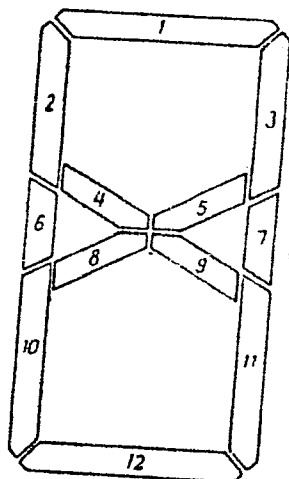
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Soviet Inventions Illustrated, Section II Electrical, Derwent,

UR 0482



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To facilitate the finding of an error when data is reduced, and to maintain the same figure or digit width, the side segments of the rectangle are each divided into three parts insulated from one another; four segments radiate from the centre of the indicator so that their outer ends adjoin the middle sections of the side segments.

9.10.67 as 1189504/26-25, V. I. ROSTOVSKIY & B. M. MYASIN
(18.9.69. Bul 16/5.5.69. Class 21F, 42k. Int. Cl. H 01J, G 011.

470

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USSR

Automatic Control: Instruments

UDC: 621.314.2

GERASIMOV, I. M., DEMIDOV, G. S., and ROSTOVTSSEV, A. M. [Moscow Higher Technical School]

"Device for Automatic Control of Switches"

Avt. sv. SSSR. kl. G 06 f 7/00, No 332458, zayavl. 27.03.70, opubl. 25.04.72
(Author's Certificate, USSR, class G 06 f 7/00, No 332458, claimed 27 March 1970
published 25 April 1972) (from RZh--Avtomatika, telemekhanika i vychislitel'-
naya tekhnika, No 2, 1973, Abstract No 2A408P)

Translation: A device is proposed for automatic control of switches which contains a shift-code converter, an activating device, a course recorder, and switching contacts. One illustration

1/1

Steels

USSR

UDC 669.187.2

KONOVALOV, K. N., DUBROVIN, A. K., ROSTOVITSEV, A. N., KISELEV, I. A., and
PASHCHENKO, V. YE., Kuznets Metallurgical Combine and Novokusnets State
Pedagogical Institute

"Melting Stainless Steel (0)Kh18N10T With Additions of Boron and Silico-
calcium"

Moscow, Stal', No 11, Nov 73, pp 1000-1011

Abstract: In the melting of Okh18N10T and Kh18N10T steels, the addition of
silicocalcium (1 kg/t) and microquantities of ferroboron (0.2 kg/t) signifi-
cantly improves the steel ductility at 1000-1050° C. Owing to improvement of
the surface quality of slabs and sheet, it was possible to reduce nickel
consumption by 2 kg/t and metal losses from the slab surface by 9 kg/t.
Results are presented from laboratory sampling of different additions of boron
(0.002-0.007% calculated) in 32-kg melts in an induction furnace. Results
are also presented for a large number of heats in 40-ton electric furnaces
at the Kuznets Metallurgical Combine. One figure, two tables, five biblio-
graphic references.

1/1

Instruments and Equipment

USSR

UDC 615.471:[615.835.3.099.07+615.916:546.21]-07

NABATOV, Yu. A., BEREZIN, I. P., BALDIN, V. P., and ROSTOVTSSEV, B. N., All
Union Scientific Research Institute of Surgical Equipment and Instruments,
Moscow

"An Apparatus That Signals Impending Toxicity of Oxygen"

Moscow, Meditsinskaya Tekhnika, No 4, 1971, pp 23-26

Abstract: A device that indicates when oxygen is about to become toxic during a session of hyperbaric oxygen therapy is described. The device automatically records the frequency of brain waves and appearance of "spike potentials" and acceleration of the respiratory and pulse rates after a period of relative slowing in the course of adaptation to high partial pressure of oxygen. When these physiological parameters reach certain values, the memory element is automatically triggered and a signal is sent to the system that controls oxygen pressure in the pressure chamber. The pressure is then automatically lowered to the required level. There is also an attachment for manual control of oxygen pressure.

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USSR

KRISHTAL, M. A., GOLOVIN, S. A., ARKHIPOV, I. K., ROSTOVTSEV, N. M.,
GORDON, V. A. UDC 624.07:534.1

"Determining Measures for Energy Scattering in the Excitation of Transverse
Resonance Vibrations"

V sb. Rasseyaniye energii pri kolebaniyakh mekh. sistem (Energy Scattering
Under Oscillations of Mechanical Systems -- Collection of Works), Kiev,
"Nauk. dumka", 1972, pp 191-195 (from RZh-Mekhanika, No 3, Mar 73,
Abstract No 3V269)

Translation: Semiempirical relationships are presented which make it possible
to determine on the basis of amplitude-time curves obtained from vibrograms
under the excitation of transverse resonance oscillations of the sample the
decrements in vibrations for a given material (for different stresses) without
specifying the mechanism for internal energy scattering. It is shown from the
processing of results for three samples (copper, nickel, titanium) that the
calculated decrements in vibrations under excitation of oscillations are con-
siderably different from decrements obtained experimentally in studying
damping of vibrations. Yu. G. Balakirev.

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USSR

UDC 669.046.46.001

CHIZHIKOV, D. M., and ROSTOVTSSEV, S. T., Editors

Termodinamika i Kinetika Protssessov Vosstanovleniya Metallov (Thermodynamics and Kinetics of the Reduction Processes of Metals), Izdatel'stvo Nauka, Moscow, 1972, 184 pp.

Translation of Annotation: This collection of works contains materials presented at the Conference on Thermodynamics and Kinetics of the Reduction Processes of Metal Oxides, held at the Institute of Metallurgy imeni A. A. Baykov, Academy of Sciences USSR, May 20-23, 1969.

Main problems of the theory of metallurgical processes were reviewed in some papers. Temperature applicability ranges of the reduction mechanisms, and the role of dissociation and contact phenomena in the reduction mechanism were presented. The reduction thermodynamics of metal oxides by gases of a complex composition (CH_4 , $\text{CH}_4 + \text{CO}_2$, $\text{CH}_4 + \text{H}_2\text{O}$) was also discussed. Considerable attention was paid to the kinetics of the gaseous reduction of non-ferrous and ferrous metals, particularly the application of natural gas in the reduction mixtures with CO_2 and H_2O . Characteristics of the carbothermal reduction and the reduction from melts were also discussed to some extent. The book also contains several articles on possible ways to accelerate the reduction processes by using catalytic additives, ultrasound, and other means.

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USSR

CHIZHIKOV, D. M and ROSTOVTSSEV, S. T., Izdatel'stvo Nauka, 1972, 184 pp

New research results on thermodynamics, kinetics, and mechanism of the reduction processes are summarized.

This book is intended for engineers, technicians, and scientists working in nonferrous and ferrous metallurgy. It can also be used by graduate and undergraduate students of chemical and metallurgical higher educational institutions.

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USSR

CHIZHIKOV, D. M., and ROSTOVITSEV, S. T., Izdatel'stvo Nauka, 1972, 184 pp	
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USSR

UDC 669.295.053.24

DENISOV, S. I., MOROZ, YU. A., and ROSTOVITSEV, S. T.

"Electric Conductivity of Iron-Titanium-Containing Materials in the Solid Phase"

Sb. Tr. Vses. n.-i i proyekt. in-t titana (Collection of Works of the All-Union Scientific Research and Design Institute of Titanium), 1970, 5, pp 14-22 (from RZH-Metallurgiya, No 11, Nov 70, Abstract No 11G154)

Translation: Laboratory experiments for the determination of the specific electric conductivity of oxides, chemical compounds of the system $\text{Fe}_2\text{O}_3\text{-FeO-TiO}_2$, and charge materials, used for smelting Ti-slag, are conducted. The electric conductivity of all the materials studied increases considerably with increasing temperature; at room temperature their magnitudes are variable, at 1300° they approach each other while reaching high magnitudes of $\sim 10 \text{ ohm}^{-1}\text{.cm}^{-1}$. 7 ill., 4 tables, 7 bibl. entries. Authors' abstract

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Measuring, Testing, Calibrating

USSR

UDC 621.391.832.4

ROSTOVTSEV, Yu. G., MASLOV, A. Ya., DOLGALEV, S. D., ZHIGORA, P. P.

"A Device for Measuring Edge Distortions of Pulses"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 2, Jan 73, Author's Certificate No 362501, Division H, filed 5 Apr 71, published 13 Dec 72, p 142

Translation: This Author's Certificate introduces: 1. A device for measuring edge distortions of pulses in telegraph communications channels. At the input of the installation is an advancing pulse generator with decoder. One output of the decoder is connected through a switch to a display, and the output of the display is connected to the generator and to the decoder. As a distinguishing feature of the patent, measurements can be made without interrupting communications. For this purpose the input of the device is connected to a second input of the switch through an additional switch with delay in series with a pulse duration measurement device. The second output of the decoder is connected to a second input of the additional switch with delay. 2. A modification of this device distinguished by the fact that the outputs of all six digital places

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USSR

ROSTOVSKIY, Yu. G. et al., USSR Author's Certificate No 362501

of the shift register in the decoder are connected to a single AND circuit. Connection of the second digital place is through a NOT circuit, and the first four outputs are additionally connected to a second AND circuit, the outputs of the AND circuits being the outputs of the decoder.

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Acc. Nr.

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Abstracting Service:
CHEMICAL ABST. 5-70

Ref. Code:

SR 0138

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101590; Interaction of alkoxysilanes with Aerosil. Gusein-Zade, A. F.; Nudel'man, Z. N.; Garber, A. M.; Galil-Ogly, E. A.; Rostovtseva, E. E.; Malyshev, A. I. (Nauch.-Issled. Inst. Rezin. Prom., Moscow, USSR). *Kauch. Rezina* 1970, 29(1), 6-8 (Russ). The reaction of $\text{Me}_2\text{Si}(\text{OMe})_2$ (I) with Aerosil (II) was studied by ir spectroscopy at 2600-3000 cm^{-1} . The reaction of I with II involved condensation with SiOH groups of II to give MeOH (as an intermediate by-product), which further condensed with SiOH groups to give SiOMe groups. I inhibited the crosslinking of rubber; however, due to the formation of SiOMe groups on the surface of II, some crosslinking did occur.

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USSR

UDC 612.766.1:656.13.071.7

VAYSMAN, A. I., LASHCHENKO, N. S., IKSANOV, M. SH., DOROFEEVA, Ye. D.,
ROSTOVITSEVA, G. G., GOLOVA, I. A., CHANDAYEV, A. K., VOL'PER, G. I., and
E. I. KOGAN

"Physiological Characteristics of the Work of Bus and Truck Drivers in a Large
City"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 1, 1973, pp 13-16

Abstract: The results of various functional psychological and physiological tests (reflexes, reaction to a moving object, proof reading test, EKG, blood pressure, pulse, etc.) confirmed the conclusions drawn from questionnaires filled out by 8000 bus drivers that fatigue gradually sets in after 4 to 5 hours on the job and becomes pronounced after 7 to 8 hours of driving. Along with a deterioration in performance, many showed an "improvement" in some physiological indices at the end of the work shift (e.g., increase in number of correct reactions to a moving object, decrease in time of differential reactions). This "improvement" is regarded as the result of overstraining the compensatory mechanisms in order to preserve a level of activity sufficient to protect the life and health of the driver. The truck drivers, on the other hand, continued to function well even after 8 or 9 hours on the job because

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USSR

VAYSMAN, A. I., et al., Gigiyena Truda i Professional'nyye Zabolevaniya, No 1, 1973, pp 13-16 5

of the less strenuous nature of the work (less time spent in driving during the shift, fewer actions to control the vehicle per unit of time, and less emotional stress). Some suggestions are made for altering the work schedules of bus drivers to take into account the physiological factors uncovered in the study.

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USSR

UDC 621.315.592:546.19'681

KOVTONYUK, N. F., KURBATOV, L. N., NOZDRIN, V. V., ORLOV, V. S., RYABENKO, Ye. A.,
RASKIN, A. A., POSTISOVA, R. P., SOLOV'YEV, A. A., SEVAST'YANOV, V. G., UMYAGIN,
A. M., SHALIMOV, B. Z., and SHAULOV, Yu. Kh.

"Some Problems of a Technological Formulation of the Process of Obtaining
Epitaxial Films of Gallium Arsenide by the Gas Phase Method"

V sb. Protsessy rosta kristallov i plenok poluprovodn. (Procedures for the
Growth of Semiconductor Crystals and Films -- Collection of Works), Novosibirsk,
1970, pp 341-350 (from RZh-Elektronika i yeye primeneniye, No 7, July 1971,
Abstract No 7B130)

Translation: The epitaxial films of GaAs obtained were produced by the gas phase
method with the use of AsH_3 , Ga, and HCl. GaAs wafers served as substrates. The
surface of a wafer was subjected to chemical--mechanical processing and etching with
 $H_2SO_4:H_2O_2:H_2O$ in the ratio 3: 1: 1. Synthesis of the GaAs was conducted in a
reaction apparatus which was thoroughly scavenged by H_2 and etched by HCl at $950^\circ C$
for 30 minutes. After cooling, the Ga was loaded into the chamber. The chamber was
heated to a temperature of $850^\circ C$ for activation of the Ga surface. After reduction
of the temperature to $100-150^\circ C$, the GaAs substrate was introduced into the re-
action zone. After heating the Ga area and the GaAs area, etching of the GaS was
performed by HCl gas in a stream of AsH_3 and H_2 . The films were doped by Se.

1/2

JSSR

KOVTONYUK, N. F., et al., Protsessy rosta kristallov i plenok poluprovodn.
(Procedures for the Growth of Semiconductor Crystals and Films -- Collection
of Works), Novosibirsk, 1970, pp 341-350 (from RZh-Elektronika i yeye
primeneniye, No 7, July 1971, Abstract No 7B130)

The best specimens of film had n-type conductivity and a mobility of 4000--5000
 $\text{cm}^2/\text{v}.\text{sec}$. Films dopgd by Se had a concentration of $5 \cdot 10^{17}$ -- $5 \cdot 10^{18}$ at/cm^3 and
a mobility of 2000 $\text{cm}^2/\text{v}.\text{sec}$. 8 ref. V.B.

2/2

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USSR

UDC 632.95

BUROVA, M. S., KUKALENKO, S. S., SAKADYNSKIY, K. I., ROSTOV'TSEVA, YE. YE.,
MALYSHEV, A. I.

"Study of the Halogenation of α -Epichlorhydrine"

V sb. Khim. sredstva zashchity rast. (Chemical Means of Plant Protection --
collection of works), No 1, Moscow, 1970, pp 263-269 (from RZh-Khimiya, No 12,
Jun 72, Abstract No 12N415)

Translation: During chlorination of α -epichlorhydrine (I), β , γ -dichlorohydrine,
 α , α' , α' -trichloracetone and α , α' , α' -trichlorisopropyl alcohol are formed.
During bromination of I, α , γ -chlorobromohydrine is isolated as the primary
product. The process of halogenation of I in the presence of scattered light
and cooling, with heating and ultraviolet or radiation was investigated. A Cl_2
current flows into 207 grams of I at a rate of 0.2-0.4 liters/min at 10-15°;
after 84 hours the HCl and Cl_2 are blown off the solution, and it is fraction-
ated. Then 82.5 grams of Br_2 are added dropwise to 48 grams of I heated to 90-
100°, and kept at 100° for 5 hours and the HBr is blown off and fractionated by
gas chromatography.

1/1

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1/2 025 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--STIMULATED LUMINESCENCE AND M CENTRES IN KBr, TL CRYSTALS -U-
AUTHOR--(02)-NAGLI, L.YE., ROT, M.L.
COUNTRY OF INFO--USSR
SOURCE--LATV. PSR ZINAT. AKAD. VESTIS FIZ. TEHN. SER. (USSR), NO. 2, P.
38-9 (1970)
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, CHEMISTRY

TOPIC TAGS--LUMINESCENCE, POTASSIUM BROMIDE, THALLIUM, CRYSTAL, EXCITATION
ENERGY, ABSORPTION BAND SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3007/1732

STEP NO--UR/0371/70/000/002/0038/0039

CIRC ACCESSION NO--AP0136973

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--04DEC70

2/2 025

CIRC ACCESSION NO--AP0136973

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

ABSTRACT. IT HAS BEEN SHOWN THAT AT STATIONARY EXCITATION OF CRYSTALS IN THE F ABSORPTION BAND REGION THE OPTICAL BURST IS STIMULATED IN THE F, AS WELL AS IN THE M COLOUR CENTRES. AT PULSE EXCITATION A QUICK RESPONSE ENERGY TRANSFER IS STIMULATED IN THE F ABSORPTION BAND, APPARENTLY, ONLY BY THE M COLOUR CENTRES.

UNCLASSIFIED

UDC: 519.2:62-50

USSR

ROTACH, V. Ya., ARKHIPOV, N. V.

"Solution of the Pelegrin Problem for Objects With Delay in the Case of
Uncorrelated Input Signals"

Tr. NII upravl. mashin i sistem (Works of the Scientific Research Insti-
tute for Control Computers and Systems), 1971, vyp. 5, pp 127-131 (from
RZh-Kibernetika, No 9, Sep 71, Abstract No 9V306)

Translation: The Pelegrin problem in the statistical dynamics of auto-
matic systems is the name given to the generalization of the Wiener
problem to systems with a predetermined invariable section when, in
addition to the useful signal with superimposed interference, the system
is subjected to other disturbances whose point of application does not
coincide with that of the useful signal. In this paper, methods of
optimizing multidimensional systems are used to find a general solution
with regard to the limitations which are imposed by delay in the given
section of the system. From the author's resumé.

1/1

1/2 011 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--AN EXPERIMENT OF FREQUENCY SOUNDING OF THE EARTH ON THE BASIS OF
THE RESULTS OF A SPHERICAL ANALYSIS OF THE GEOMAGNETIC FIELD VARIATIONS
AUTHOR--(05)--BERDICHEVSKIY, M.N., VANYAN, L.L., LAGUTINSKAYA, L.P.,
ROTANOVA, N.M., FAYNBERG, E.B.
COUNTRY OF INFO--USSR

SOURCE--GEOMAGNETIZM I AERONOMIYA, VOL. 10, NO. 2, 1970, P. 374-377

DATE PUBLISHED--70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--GEOMAGNETIC FIELD, RESISTIVITY, MODEL

CONTROL MARKING--NC RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1997/0163

STEP NO--UR/0203/70/010/002/0374/0377

CIRC ACCESSION NO--AP0119159

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--20NOV70

2/2 011

CIRC ACCESSION NO--AP0119159

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

ABSTRACT. PRELIMINARY RESULTS OF A FREQUENCY SOUNDING OF THE EARTH BASED ON DATA FROM A SPHERICAL ANALYSIS OF SQ. DST, AND 27 DAY GEOMAGNETIC FIELD VARIATIONS. TABLES INCLUDE CALCULATED VALUES OF THE THICKNESS OF THE NONCONDUCTING SHELL, THE RESISTIVITY OF THE NUCLEUS, AND THE MODULI AND ARGUMENTS OF THE RATIO OF THE OUTER AND INNER PORTIONS OF THE MAGNETIC POTENTIAL. THE RESULTS OBTAINED ARE COMPARED WITH THE PARAMETERS OF THE LAMB MODEL.

FACILITY:

MOSKOVSKII GOSUDARSTVENNYI UNIVERSITET. FACILITY: AKADEMIIA NAUK SSSR, INSTITUT KOSMICHESKIKH ISSLEDOVANI, MOSCOW.

FACILITY: AKADEMIIA NAUK SSSR, INSTITUT ZEMNOGO MAGNETIZMA, IONOSFERY I RASPROSTRANENIYA RADIOVOLN, KRASNAYA PAKHRA, USSR. FACILITY: AKADEMIIA NAUK TURKMENSKOI SSR, INSTITUT FIZIKI ZEMLI I ATMOSFERY. ASHKHABAD, TURKMEN SSR.

UNCLASSIFIED

USSR

UDC: 51:330.115

ROTAR', G. V.

"Determining the Volume of Reserve Stock Under Conditions of Probabilistic Demand"

Tr. 3 Zimm. shkoly po mat. programmir. i smezhn. vopr., 1970, vyp. 3
(Works of the Third Winter School on Mathematical Programming and Related Problems, 1970, No 3), Moscow, 1970, pp 505-508 (from RZh-Kibernetika, No 9, Sep 71, Abstract No 9V522)

[No abstract]

1/1

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USSR

UDC 681.3

ROTAR', S. L.

"Problems of Selection of a System of Notation for a Device with "Card" Logic"

Tr. Mosk. Aviats. In-ta [Works of Moscow Aviation Institute], No 194, 1970, pp 161-168, (Translated from Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract No 6 V572 by O. Belkin).

Translation: A comparison is presented of several known systems of a notation in order to determine the possibilities of these systems for use in card logic digital computers. Based on the specifics of organization of computation for card logic computers, the most preferable systems of notations are those in which there either are no connections between digit positions, or these connections are weakly expressed. These systems include systems of notation in residual classes and system of notations with representation of numbers with signs. Tables are presented comparing systems of notation on the basis of: a) range of representation of numbers, b) difficulty of determining the sign of a number and an overflow, c) complexity of performance of arithmetic and positional operations, d) number of bits required to represent a fixed range of numbers. The results of comparison show the sign-digit representation of numbers is preferable for card logic computers; although this representation requires redundancy, it allows completely parallel addition and subtraction of masses of numbers, facilitates sign and overflow determination.

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USSR

UDC 681.3.001:51

ROTAR', S.L., PALADIY, M.V.

"Number System Suitable for a Digital Computer with 'Pictorial' Logic"

V sb. Elektroenerg. i Avtomatika (Electric Power Engineering and Automation -- Collection of Works), vyp. 7, Kishinev, Moldavian SSR Academy of Sciences, 1970, pp 76-82 (from RZh-Avtomatika, Telenekhanika i Vychislitel'naya Tekhnika, No 2, Feb 71, Abstract No 2B19)

Translation: The advantages and disadvantages of position and nonposition number systems -- in particular, the construction of nonposition number systems in residual classes -- are investigated. The number systems are evaluated from the point of view of using them in information processing devices based on the principles of "pictorial" logic. There is one illustration, one table, and a 7-entry bibliography.

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USSR

UDC 681.3.001.51

ROTAR', S.L.

"Problems of Selection of a System of Notation for Devices with 'Picture' Logic"

Tr. Mosk. Aviats. In-ta [Works of Moscow Aviation Institute], No. 194, 1970, pp 161-168 (Translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No. 4, 1971, Abstract No. 4B32 by VR)

Translation: The author analyzes the possibilities of using certain systems of notation (SN) in computers with "picture logic": that is, when the information is represented by entire pictures, consisting of a large number of elementary words. This allows simultaneous performance of identical operations on large files of numbers, without sequential inspection. The requirement of absence of any logical connections of words with each other in the plane of a picture is essential. Therefore, in selecting systems of notation, preference is given to a system in which the connections between positions are absent or weak. Such SN, residual class SN, and positional redundant SN considering signs (so-called sign-digit representation) are compared. A number of advantages of sign-digit representation over SN in residual classes are noted, as well as the significant excess of equipment which may be available, for example, in optical computers. Formulas are presented for selection of the base of an SN in order to provide the necessary

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UDC 681.3.001.51

ROTAR', S. L., Tr. Mosk. Aviats. In-ta, No. 194, 1970, pp 161-168.

range of representation of numbers and convenience of conversion of numbers from the ordinary binary SN. It is stated that the use of SN in residual classes represents significant difficulties for computers with "picture" logic. 2 tables; 7 biblio refs.

2/2

USSR

UDC 547.666

ROTBERG, Yu. T., CHEPUKA, L. Ya., and OSHKAYA, V. P., Latvian State University
imeni P. Stuchka

"Condensation of Dicarboxylic Acid Anhydrides With Compounds Containing Active
Methylene Groups. XII. Direct Synthesis of Halogen-Substituted 2-Phenyl-1,3-
-indandiones"

Riga, Izvestiya Akademii Nauk Latviiskii SSR, Seriya Khimicheskaya, No 4, 1970,
pp 471-474

Abstract: Condensation of 3-bromo-, 4-bromo-, 3-iodo-, or 4-iodophthalic an-
hydrides with p-bromo- or (p-iodophenyl)acetic acids in acetic anhydride and
triethylamine yielded the corresponding dihalo derivatives of 2-phenyl-1, 3-
-indandione in good yields. Analogously, 3-bromo- or 4-bromophthalic anhydrides
condensed with (m-bromophenyl)acetic acid yielded 4-bromo-2-(m-bromophenyl)-1,3-
-indandione and 5-bromo-2-(m-bromophenyl)-1,3-indandione, respectively. A mix-
ture of 5-bromo-2-(o-bromophenyl)-1,3-indandione and 5-(or 6-)-bromo-3-(o-bromo-
benzylidenephthalide) was obtained from the condensation of 4-bromophthalic
anhydride with (o-bromophenyl)acetic acid. Some 14 dihalo-2-phenyl-1,3-in-
dandiones were prepared. All compounds were brominated to the 2-bromo deriva-
tives by dibromodioxane. The infrared spectra of the latter were recorded in
the 1500-1800 cm^{-1} region.

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UDC 547.665

USSR

ROTBERG, Yu. T., and OSHKAYA, V. P., Latvian State University imeni P. Stuchka

"Condensation of Dicarboxylic Acid Anhydrides With Compounds Containing Active Methylene Groups. XI. Some 2-Phenyl-1,3-indandione Derivatives Containing Nitro Groups"

Riga, Izvestiya Akademii Nauk Latviiskoi SSR, Seriya Khimicheskaya, No 4, 1970, pp 464-470

Abstract: A systematic study of using substituted phenylacetic acids for the direct synthesis of 2-phenyl-1,3-indandiones was undertaken. Condensation of (o-nitrophenyl)acetic acid with phthalic anhydride yielded 2-(o-nitrophenyl)-1,3-indandione in 31.5% yield. When 3-nitro- and 4-nitrophthalic anhydrides were used instead of phthalic anhydride, 4-nitro-2-(o-nitrophenyl)-1,3-indandione and 5-nitro-2-(o-nitrophenyl)-1,3-indandione were obtained in higher yields. Condensation of 3-nitro- and 4-nitrophthalic anhydrides with (m-nitrophenyl)acetic acid in acetic anhydride and triethylamine proceeded quite smoothly: intensely red crystals of 4-nitro-2-(m-nitrophenyl)-1,3-indandione and 5-nitro-2-(m-nitrophenyl)-1,3-indandione were obtained. The infrared spectra of the compounds were recorded in the absorption region of carboxyl groups. The diketone structure of the compounds could be established.

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USSR

ROTBERG, Yu. T., and OSHKAYA, V. P., Izvestiya Akademii Nauk Latvinskoi SSR, Seriya Khimicheskaya, No 4, 1970, pp 467-470

Nevertheless, 4-(and 5-)-nitro-2-(m-nitrophenyl)-1,3-indandione are easily brominated.

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USSR

UDC 621.391.1.62-507

ROTENBERG, A. R.

"Asymptotic Extension of States of Some Stochastic Automata"

Moscow, Problemy Peredachi Informatsii, Vol 9, No 4, Oct/Nov/Dec 73, pp 66 - 70

Abstract: Let a homogeneous Markov chain with a finite number of states, describing a stochastic automaton, be a function of a parameter ϵ , such that the transition probabilities are continuous functions of ϵ for $\epsilon = \epsilon_0$, while the set of states of the chain for $\epsilon = \epsilon_0$ are broken down into a

union of $k \geq 1$ ergodic sets X_1, \dots, X_k . A family of Markov processes describing the path of the initial Markov process through the set X_1, \dots, X_k , $\epsilon \rightarrow \epsilon_0$, is constructed.

$\xi_\epsilon(t)$ is the sequence of random values in X related to the Markov chain with discrete time intervals. The expansion of this process is the sequence of random values $\eta_\epsilon(t)$, describing a "walk" through the set X_1, \dots, X_k . The probability of a change of state of $\eta_\epsilon(t)$ in one step is low for small values of ϵ . It is therefore expedient to consider $\eta_\epsilon[n(\epsilon)t]$, where $n(\epsilon)$ increases without limit as $\epsilon \rightarrow 0$. This process is, in general, not Markov. It is shown that there exist

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ROTENBERG, A. R., Moscow, Problemy Peredachi Informatsii, Vol 9, No 4, Oct/Nov/Dec/73, pp 66 - 70

homogeneous Markov processes $\xi^i(t)$ with continuous time, such that $\eta_{\epsilon}[n(\epsilon)t]$ in some sense reduces to one of these processes for a given choice of $n(\epsilon)$ and $\epsilon \rightarrow 0$. The theorem is stated as follows: for every $i = 1, \dots, m+1$ there exists a homogeneous Markov process $\xi^i(t)$ with continuous transition probabilities, to the finite dimensional partitions of which the finite dimensional partitions of the process $\xi_{\epsilon}^i(t)$ uniformly converge over any interval $(0, T)$; the expansion $\eta^i(t)$ of the process $\xi^i(t)$ is again a homogeneous Markov process. An analogous theorem is given for homogenous Markov processes with continuous time and a finite set X of states.

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Navigation Aids

USSR

UDC: 621.396.983

SOLOMONIK, M. Ye., ROTENBERG, M. I., IL'IN, G. B., RASIN, A. M., SHESTAKOV, A. V., Members of the Scientific and Technical Society of Radio Engineering, Electronics and Communications imeni A. S. Popov

"A High-Precision Radio Direction Finder With Steerable Antenna"

Moscow, Radiotekhnika, Vol 27, No 8, Aug 72, pp 1-6

Abstract: The errors in radio direction finding due to distortions of the phase front of the received signal increase with a reduction in wavelength. One way to reduce these errors is to take a "sample" of the electromagnetic field from as large a region of space as possible. A new way to realize this method on meter wavelengths is considered which combines simplicity of the direction finder circuit with short-base antennas and reduced sensitivity to local distortions of the phase front. The antenna is steerable about the vertical axis. The motion of the antenna results in a change in the errors of the instrument in accordance with a periodic law, with the result that time averaging considerably reduces error. The authors discuss the theory of operation of such a direction finder with an antenna which moves in a closed curve.

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1/2 024 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--ON THE TOXICOLOGICAL EVALUATION OF CHLORAL IN THE PROCESS OF ITS
LIBERATION DURING FILLING AND POURING OF FOAM POLYURETHANS -U-
AUTHOR-(03)-BOYTSOV, A.N., ROTENBERG, YU.S., MULENKOVA, Y.G.

COUNTRY OF INFO--USSR

SOURCE--GIGIYENA TRUDA I PROFESSIONAL'NYYE ZABOLEVANIYA, 1970, NR 6, PP
26-29
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CHLORINATED ORGANIC COMPOUND, ALDEHYDE, POLYURETHANE RESIN,
TOXICITY, FOAM PLASTIC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3003/1129

STEP NO--UR/0391/70/000/006/0026/0029

CIRC ACCESSION NO--AP0130161

UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0130161

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CHLORAL (TRICHLOROETHANAL) IS WIDELY USED IN VARIOUS BRANCHES OF INDUSTRY (DDT SYNTHESIS, PRODUCTION OF SOLID FOAM POLYURETHANS FPU ETC.) WHILE FILLING AND POURING FPU OF THE 244H AND 100-66 GRADES THE RELEASE OF CHLORAL FUMES INTO THE ATMOSPHERE IS THE BASIC SOURCE OF ENVIRONMENTAL POLLUTION. BY READILY INCORPORATING WATER CHLORAL FUMES BECOME PRACTICALLY INSTANTANEOUSLY TRANSFORMED INTO CHLORAL HYDRATE (CH) WHICH IS A COMPOUND OF MODERATE TOXICITY (WITH ITS INTRAGASTRIC INTRODUCTION TO ALBINO MICE THE LD SUB50 EQUALS 710 MG-KG AND LC SUB50 MINUS 32 MG-1). IN CHRONIC TESTS THE CH FUMES CONCENTRATION OF 0.66 MG-1 PRODUCES RETARDED WEIGHT GAIN, PHASIC CHANGES IN THE CNS EXCITABILITY AND IN THE ARTERIAL PRESSURE, LEUCOCYTOSIS AND DIMINUATION OF THE ALBUMIN GLOBULIN RATIO IN THE ANIMALS. CH FUMES CONCENTRATION OF 0.22 MG-1 PROVOKED IN THEM BUT A TENDENCY TOWARDS A SHIFT OF THE SAME VALUES. A CONCENTRATION OF 10 MG-M PRIME3 (CALCULATED TO THE VALUE OF CHLORAL) HAS BEEN APPROVED AS A MAXIMUM PERMISSIBLE ONE FOR CHLORAL FUMES AND CH. FACILITY: TSENTRAL'NYI INSTITUT USOVERSHENSTVOVANIYA VRACHEY, MOSKVA GORODSKAYA SANEPIOSTANTSIIYA.

UNCLASSIFIED

1/2 034 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--CHANGES IN THE AMOUNT OF ERYTHROCYTES AND THEIR FUNCTION IN ACUTE
PERITONITIS -U-
AUTHOR--(04)-ROTENBERG, D.L., NEYKO, YE.M., KRYZHANOVSKIY, N.A.,
KRYZHANOVSKIY, G.A.
COUNTRY OF INFO--USSR

SOURCE--VESTNIK KHIRURGII IMENI I. I. GREKOVA, 1970, VOL 104, NR 2 PP
57-59
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ERYTHROCYTE, RESPIRATION, BLOOD CHEMISTRY, DOG, PERITONEUM,
HEMOGLOBIN, HEMATOCRIT, HYPGXIA

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1985/1731

STEP NO--UR/0589/70/104/002/0057/0059

CIRC ACCESSION NO--AP0101784

UNCLASSIFIED

2/2 034

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0101784

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DYNAMICS OF CHANGES IN A QUANTITATIVE CORRELATION OF VARIOUS VOLUMES OF ERYTHROCYTES WAS OBSERVED, SIMULTANEOUSLY THE DEGREE OF DISTURBANCES IN RESPIRATORY PROPERTIES OF BLOOD WAS STUDIED ON THE MODEL OF ACUTE PERITONITIS IN DOGS. THESE STUDIES WERE MADE WITH THE AID OF A CONDUCTOMETRIC METHOD OF DRAWING THE ERYTHROCYTES VOLUME DISTRIBUTION CURVES, AND ALSO USING THE VAN SLAKE APPARATUS WITH AN ION MAGNETIC MIXER FOR QUANTITATIVE DETERMINATION OF BLOOD GASES AND STUDYING THE OXYHEMOGLOBIN DISSOCIATION PROCESS. IN ADDITION, HEMOGLOBIN AND HEMATOCRIT INDICES WERE RECORDED. THESE STUDIES HAVE DEMONSTRATED THAT IN ACUTE PERITONITIS ALONG WITH INTENSIFICATION OF THE INFLAMMATORY PROCESS RELATIVE POLYCYTHEMIA, ANICYTOSIS WITH A PREDOMINANCE OF ENLARGED FORMS OF ERYTHROCYTES ARE INCREASED, AND ALSO DISTURBANCES IN THE BLOOD RESPIRATORY FUNCTION WITH TYPICAL SIGNS OF CIRCULATORY HYPOXIA ARE ENHANCED.

UNCLASSIFIED

USSR

UDC 669.715'782:620.186

KUZNETSOV, G. M., ROTENBERG, V. A., GERSHMAN, G. B., KHRUSHCHOVA, K. M., and ZIL'BERG, Yu. Ya., State Union Scientific Research Tractor Institute; Moscow Institute of Steel and Alloys

"Methods and Theories of the Modification of Hypereutectic Silumins"

V sb. Modifitsir. siluminov (Modification of Silumins -- Collection of Works), Kiev, 1970, pp 5-19 (from RZh-Metallurgiya, No 12, Dec 70, Abstract No 12 1746 by I. NABATOVA)

Translation: The authors consider in detail substances creating the effect of modification of hypereutectic Silumins and methods of introducing them. Modifiers of primary Si are P, copper phosphide (eutectic), reaction mixtures "alphosite," "phoral," a mixture of 52% Li_3PO_4 + 40% Al + 8% P, a mixture of Al_3PO_4 + $\text{Mg}_2\text{P}_2\text{O}_7$ + ethane C_2Cl_6 + copper phosphide, polytetrafluoroethylene + P + AlP; Be, Cu, Ag, Zn, Cd, Hg, Se, Te, Ca, Cd, Ge, Ti, S, P, and Na, as well as a mixture of eutectic Silumin with Al shavings in combination with Na, break up the Si and the eutectic simultaneously. The following hypothesis explaining the modification mechanism are discussed: 1) formation of nuclei of the AlP type; 2) connection with Al-Si-modifying-element phase diagrams;
1/2

USSR

KUZNETSOV, G. M., et al., V sb. Modifitsir. siluminov (Modification of Silumins — Collection of Works), Kiev, 1970, pp 5-19 (from RZh-Metallurgiya, No 12, Dec 70, Abstract No 12 1746 by I. NABATOVA)

3) limitation of the growth of Si crystals. The last hypothesis gives a fuller explanation of the experimental data. Two tables. Bibliography of 59 titles.

2/2

USSR

UDC 612.821.7

ROTENBERG, V. S. and BINIATURISHVILI, R. G., Department of Clinical Neurophysiology, Central Scientific Research Laboratory, First Moscow Medical Institute

"Psychophysiological Investigations in Night Sleep"

Moscow, Zhurnal Vysshey Nervnoy Deyatel'nosti imeni I. P. Pavlov, Vol 23, Vyp 4, Jul/Aug 73, pp 864-871

Abstract: In order to study the interconnections between various parameters of rapid sleep and subjective reports on awakening from it, as well as the psychic activity in rapid and delta sleep 6 healthy and 24 disturbed-sleep subjects were studied pulsographically while awake and sleeping, awakened during rapid and delta sleep and questioned as to sleep perception and dreams. The ability to give detailed reports of dreams was found to correlate with a faster pulse rate in rapid sleep than delta sleep and with awareness of sleep in delta sleep, but not with rapid eye movement (REM) intensity. In disturbed patients the lack of ability to report dreams or their negation was correlated with lack of faster pulse in rapid sleep together with low REM intensity. Negation of previous sleep in disturbed

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USSR

ROTENBERG, V. S. and BINIAURISHVILI, R. G., Zhurnal Vysshey Nervnoy Deyatel'nosti imeni I. P. Pavlov, Vol 23, Vyp 4, Jul/Aug 73, pp 864-871

subjects was more common in delta sleep. A longer period of alertness was observed after awakening from rapid sleep, than delta. The lack of ability to describe dreams seen in the disturbed patients is suggested to have two causes, either a paucity and insignificance of dream content or dream repression. The first cause, characterized by slower pulse and less REM, indicates a functional insufficiency of rapid sleep suggested to be related to neurotic defense mechanisms, while the second would be accompanied by normal characteristics.

2/2

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1/2 012 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--DEPENDENCE OF PHOTODIFFUSION CURRENT IN SOLUTIONS ON THE
CONCENTRATION OF ELECTRON ACCEPTORS -U-
AUTHOR-(04)-LAKONOV, V.I., YELETSKIY, V.V., ROTENBERG, Z.A., PLESKOV,
YU.V.
COUNTRY OF INFO--USSR
SOURCE--ELEKTRKHIMIYA 1970, 6(3), 415-17
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--PHOTOCHEMISTRY, ELECTRODE POTENTIAL, PHOTOELECTRON
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1994/1940 STEP NO--UR/0364/70/006/003/0415/0417
CIRC ACCESSION NO--AP0115748
UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0115748

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

UNCLASSIFIED

172 026 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--EFFECT OF THE ADSORPTION OF IONS AND MOLECULES ON THE PHOTOEMISSION
OF ELECTRONS AT THE METAL ELECTROLYTE INTERFACE --U-
AUTHOR--(02)--ROTENBERG, Z.A., PLESKOV, YU.V.
COUNTRY OF INFO--USSR
SOURCE--ELEKTROKHIMIYA 1970, 6(3), 418-20
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ELECTROLYTE, ADSORPTION, MERCURY, IODINE, METAL ELECTRODE,
PHOTOCHEMISTRY, ELECTRON EMISSION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1994/1941 STEP NO--UR/0364/70/006/003/0418/0420
CIRC ACCESSION NO--AP0115749
UNCLASSIFIED

272 026

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0115749

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EFFECT OF THE ADSORPTION OF I IONS AND LONG CHAIN ORG. MOLLS. ON THE PHOTOEMISSION FROM HG INTO THE ELECTROLYTE SOLN. IS STUDIED. IODINE, BEING ADSORBED ON THE HG ELECTRODE, SHIFTS THE PSI SUB1 POTENTIAL TOWARDS THE NEG. SIDE. THE POTENTIAL SHIFT IN THE DIFFUSION PART OF THE DOUBLE LAYER HAS A CONSIDERABLE EFFECT ON THE PHOTOCURRENT, PROVIDED ITS THICKNESS IS GREATER THAN THE ELECTRON WAVELENGTH. FOR 0.3-1 EV ELECTRONS, WHICH ARE PRODUCED CN IRRADN. WITH LIGHT OF 365 NM OVER THE POTENTIAL RANGE MINUS 0.6 TO MINUS 1.3 V, THE ELECTRON WAVELENGTH CHANGES FROM 12 TO 24 ANGSTROM. FOR THE DISTORTION OF THE THRESHOLD APPROXN. IT WAS NECESSARY THAT THE EXPTS. WERE CARRIED OUT IN A DIL. ELECTROLYTE SOLN. THE 0.01M KF AND KI SOLNS. WITH N SUB2 O (ACCEPTOR OF EMITTED ELECTRONS) ARE USED IN THE EXPT. DECREASE OF PHOTOCURRENT IN THE KI SOLN. AT MINUS 0.6 TO MINUS 0.9 V APPEARS TO BE THE RESULT OF THE STRUCTURE CHANGE OF THE ELEC. DOUBLE LAYER. ADSORPTION OF I IS ACCOMPANIED BY AN INCREASE IN THE NEG. VALUE OF PSI SUB1 AND LEADS TO A DECREASE OF PHOTOCURRENT. THE EFFECT OF LARGE ORG. MOLLS. SUCH AS CETYL ALC. AND PALMITIC AND MYRISTIC ACIDS AS WELL AS DIMETHYDIDODECYLAMMONIUM ION ON THE PHOTOEMISSION OF ELECTRONS AT THE HG SOLN. INTERFACE MAY BE EXPLAINED BY ASSUMING THAT A NEW PHASE IS PRODUCED. FACILITY: INST. ELEKTROKHM., MOSCOV, USSR.

UNCLASSIFIED

USSR

UDC 621.785.5:537.525

TETERSKIY, V. A., STEFYUK, T. YU., ~~ROTER, YE. A.~~, Physical-Mechanical Institute
of the Ukrainian SSR Academy of Sciences, ~~L'VOV~~

"Device for Determining the Physical-Mechanical Characteristics of Metals
Saturated with Gases in Glow Discharge"

Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 8, No 2, 1972, pp 90-91

Abstract: A device is introduced which was designed and manufactured to perform studies of the mechanical properties of metal in the case of saturation of them with gases in a broad temperature-time interval. The basic assemblies include the operating chamber, a vacuum system, a loading device, instruments for automatic recording of the stress-strain diagram, an electric temperature measurement and regulation system, and an electric system for measuring and regulating the basic parameters of electric discharge. The device permits ionization of the gas medium both by radioactive isotopes of α and β radiation and by electric discharge. Electric currents from 10^{-6} to 10^{-1} amps can be obtained, and the magnitude of the currents predetermines the degree of ionization and, consequently, the concentration of active gas particles on the surface of the specimen. The electrical resistance can be measured during the strain process and by the electrical conductivity as a function of the degree of strain [I. A. Odina, et al., *Izv. AN SSSR, Metallurgiya gornoye delo*, Nos 1 and 1/2

USSR

TETERSKIY, V. A., et al., Fiziko-Khimicheskaya Mekhanika Materialov, Vol 8, No 2, 1972, pp 90-91

2, 1964], it is possible to judge the rupture kinetics and the nature of the interaction of the crystal lattice defects with interstitial admixtures. The device has demonstrated high reproducibility of the results in the case of saturation and deformation of specimens in ionized gases.

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USSR

UDC: 543.544.25:537.084.2

BRAYDE, A. YU. and ROTIN, V. A.

"Detecting Electrically Negative Substances in a Unipolar Discharge"

Tr. Vses. n.-i. i proyekt.-konstrukt. in-t kompleks. avtomatiz. nef. i gaz. prom-sti (Works of the All-Union Scientific-Research and Design-Planning Institute for the Complex Automation of the Petroleum and Gas Industry), 1972, vyp. 4, pp 174-179 (from RZh-32. Metrologiya i Izmeritel'naya Tekhnika, No 5, 1973, Abstract No 5.32.839)

Translation: Experimental study results are presented on the possibility of detecting the electrically negative components of a gas mixture in a unipolar discharge using a newly developed detector. The detector was tested on a chromatographic device designated for the eluent analysis of CCl_4 vapor in air. The stabilized BS-26 (0-30v) rectifier was used for warming up the cathode. A loading resistance made from nichrome was sequentially to vary the voltage from 0 to 10v. The unit makes possible parallel study under identical conditions using the unipolar discharge detector and an electron-capture detector with a radioactive source. The obtained results show that detection in a unipolar discharge is characterized by the same regularities

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USSR

BRAYDE, A. YU. and ROTIN, V. A., Tr. Vses. n.-i. i proyekt.-konstrukt. in-t kompleks. avtomatiz. neft. i gaz. prom-sti, 1972, vyp 4, pp 174-179

as in electron capture, i.e. electron-capture detection can be accomplished both in a unipolar and in a bipolar discharge at 100°C and higher. Original article: two illustrations and three bibliographic entries. V.S.K.

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USSR

UDC 543.544.25:621.059.83

ROTIN, V. A.

"Radioisotope Methods of Detecting and Detection Devices for Gas Chromatography"

Radioizotop. Sredstva Kontrolya i Avtomatiz. Tekhnol. Protsessov v Prom-sti [Radioisotope Means of Testing and Automation of the Technology of Processes in Industry -- Collection of Works], Moscow, Atomizdat Press, 1972, pp 194-199, (Translated from Referativnyy Zhurnal, Metrologiya i Izmeritel'naya Tekhnika, No 7, 1972, Abstract No 7.32.858, by V.S.K.).

Translation: A review is presented of radioisotope methods of detection and the possibilities of their use for gas chromatography are discussed. The technical characteristics of detectors are presented for ionization cross section, helium, argon and electron capture detectors, developed by the special design bureau of the All-Union Scientific Research Planning and Design Institute of Complex Automation in the Petroleum and Gas Industry and the Dzerzhinsk Affiliate of the Experimental Design Office for Automation. The use of radioactive detectors allows universal analysis

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USSR

ROTIN, V. A., Radioizotop. Sredstva Kontrolya i Avtomatiz. Tekhnol.
Protsessov v Promsti, 1972, pp 194-199

of substances (use of ionization cross-section detectors), analysis of
microconcentrations (argon and helium detectors), selective analysis of
oxygen-and halogen-containing compounds and qualitative analysis (electron
capture detectors). 6 Biblio. Refs.

2/2

USSR

UDC 543.544.25:621.039.83

ROTIN, V. A.

"Radioisotope Methods of Detecting and Detection Devices for Gas Chromatography"

Radioizotop. Sredstva Kontrolya i Avtomatiz. Tekhnol. Protsessov v Prom-sti [Radioisotope Means of Testing and Automation of the Technology of Processes in Industry -- Collection of Works], Moscow, Atomizdat Press, 1972, pp 194-199, (Translated from Referativnyy Zhurnal, Metrologiya i Izmeritel'naya Tekhnika, No 7, 1972, Abstract No 7.32.858, by V.S.K.).

Translation: A review is presented of radioisotope methods of detection and the possibilities of their use for gas chromatography are discussed. The technical characteristics of detectors are presented for ionization cross section, helium, argon and electron capture detectors, developed by the special design bureau of the All-Union Scientific Research Planning and Design Institute of Complex Automation in the Petroleum and Gas Industry and the Dzerzhinsk Affiliate of the Experimental Design Office for Automation. The use of radioactive detectors allows universal analysis

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USSR

ROTIN, V. A., Radioizotop. Sredstva Kontrolya i Avtomatiz. Tekhnol.
Protsessov v Promsti, 1972, pp 194-199

of substances (use of ionization cross-section detectors), analysis of
microconcentrations (argon and helium detectors), selective analysis of
oxygen-and halogen-containing compounds and qualitative analysis (electron
capture detectors). 6 Biblio. Refs.

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USSR

UDC: 623.78:523.38

RODINA, V. Yu.

"Some Problems of Statistical Optimization of Gyroscopic Systems From the Results of Indirect Measurements"

V sb. Nelineyn. i optimal'n. sistemy (Nonlinear and Optimum Systems--collection of works), Moscow, "Nauka", 1971, pp 215-223 (from RZh-Raketo-stroyeniye, No 7, Jul 71, Abstract No 7.41.248)

Translation: The paper presents the results of a study of the dynamics of a ball gyroscope treated as an automatic control system operating under the influence of random perturbations. It is shown that it is possible in principle to determine the optimum structure of the device with respect to the criterion of minimum rms value of the absolute angular rate of "drift". In this connection, the controlling quantities are the measurable relative angles between the ball and inner frame of the gyroscope rather than the deviations of quantities being regulated from their required values (as is typical for presently known automatic control systems). A single-channel system is taken as an example for solution of a specific problem of finding optimum control of the tracking system of the gyroscope for perturbations inherent in real objects on which the device could be installed. Comparative estimates are given for precision with respect to rms deviations in devices with optimum and non-optimum tracking systems. Three illustrations, bibliography of four titles. Resumé
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1/2 013 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--OVERVOLTAGE OF THE SEPARATION OF HYDROGEN ON SILVER -U-
AUTHOR--(02)-KILIMNIK, A.B., ROTINYAN, A.L.
COUNTRY OF INFO--USSR
SOURCE--ELEKTROKHIMIYA 1970, 6(3), 330-1
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--HYDROGEN, SILVER, CHEMICAL SEPARATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1998/1132 STEP NO--UR/0364/70/006/003/0330/0331
CIRC ACCESSION NO--AP0121691
UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0121691

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE H SEPN. VOLTAGE FOR THE POS. CHARGED AG SURFACE WAS OBTAINED AS 0.93 PLUS OR MINUS 0.02 V, AND FOR NEG. CHARGED SURFACE 1.32 PLUS OR MINUS 0.02 V. THE MEASUREMENTS WERE TAKEN IN 2N H SUB2 SO SUB4 AT 25DEGREES. FACILITY: LENINGRAD. TEKHNOL. INST. IM. LENSOVETA, LENINGRAD, USSR.

UNCLASSIFIED

1/2 016
UNCLASSIFIED
TITLE--OVERVOLTAGE OF THE SEPARATION OF HYDROGEN ON INDIUM -U-
PROCESSING DATE--30OCT70
AUTHOR--(02)-ROTINYAN, A.L., LEVIN, E.D.
COUNTRY OF INFO--USSR
SOURCE--ELEKTROKIMIYA 1970, 6(3), 328-30
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--LEAD, INDIUM, CADMIUM, TELLURIUM, CHEMICAL SEPARATION,
HYDROGEN, ELECTRODE POTENTIAL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1998/1133
STEP NO--UR/0364/70/006/003/0328/0330
CIRC ACCESSION NO--AP0121692
UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0121692

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE OVERVOLTAGE-LOG C.D. CURVE COMPRISES 3 SECTIONS, 2 LINEAR AND ONE WITH SHARPLY FALLING POTENTIAL IN THE NARROW RANGE OF C.D.S. 10 PRIME NEGATIVE 3 -10 PRIME NEGATIVE 2 A-CM PRIME2 AROUND THE ZERO CHARGE POTENTIAL, CHARACTERISTIC ALSO OF P8, CD, AND TE. THE ZERO CHARGE POTENTIAL FOR METALLIC IN IS SIMILAR TO -0.8 V, AND FOR ELECTROLYTICALLY DEPOSITED IN -0.64 TO -0.67 V. THE STRAIGHT SECTION OF THE CURVE IS SLIGHTLY HIGHER FOR ELECTROLYTIC IN THAN METALLIC, ATTRIBUTABLE TO GREATER ROUGHNESS OF THE ELECTROLYTIC METAL.

UNCLASSIFIED

USSR

UDC: 577.4

ZAKREVSKIY, A. D., POTTOSIN, Yu. V., ROTKO, V. F., TOROPOV, N. R., YAN-KOVSKIY, A. Ye.

"Systems and Programs for Synthesizing Discrete Devices. A System for Automatic Synthesis of Discrete Automata"

Inform. materialy. Nauch. sovet po kompleks. probl. "Kibernetika" AN SSSR
(Informational Materials. Scientific Council on the Complex Problem of Cybernetics, Academy of Sciences of the USSR), 1971, No 7(54) pp 42-62
(from RZh-Kibernetika, No 5, May 72, Abstract No 5V327)

[No abstract]

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USSR

UDC 628.16.08+628.322+682.162.8

GLOBA, L. I., LASTOVETS', L. M., ~~ROTMISTROV, M. M.~~, GOLUB, M. F., and RADOLITS-
'KA, L. S., Institute of Colloid Chemistry and Chemistry of Water, Academy
of Sciences UKSSR, and Institute of Infectious Diseases, Ministry of Health,
UKSSR

"Removing Water from Viruses with Some Materials With Adsorption and Adhesive
Properties"

Kiev, Doklady Akademii Nauk Ukrain's'koy SSR, Seriya B. Geologiya, Geofizika,
Khimiya i Biologiya, Vol 33, No 11, 1971, pp 1036-1038

Abstract: The problem of water decontamination to a degree adequate for
complete prevention of spread of contagious diseases has not yet been fully
resolved. This is particularly true with respect to contamination with
pathogenic microorganisms, which are present in water in the form of suspensions
or colloids (usually as a mixture of both). An attempt was made to convert
finely dispersed mixtures into coarse ones, to facilitate removal from the
medium. Various clay-like materials were studied as catalysts of the process.
First, virus cultures were introduced into tap water. Then samples of
infected water were treated with 800 mg/l of each of the materials tested,
with the addition of 50 mg/l of aluminum sulfate. Samples were left to stand
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USSR"

GLOBA, L. I., et al., Doklady Akademii Nauk Ukrain's'koy SSR, Seriya B. Geologiya, Geofizika, Khimiya i Biologiya, Vol 33, No 11, Nov 71, pp 1036-1038

for 2 hours. During that time, the adsorbents precipitated. The liquid left above the precipitate was then filtered and tested for virus content. Tests indicated that viruses were removed to the extent of 90.0 to 99.9%. This was taken as a positive proof of the effectiveness of the method; the use of highly dispersed materials for water purification.

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USSR

UDC 621.762.002.5

MOKSHANTSEV, G. F., BULANOV, V. Ya., MIKHAYLICHENKO, A. V., and
ROTMISTROVA, V. P.

"Experience in the Production of a Reducing Atmosphere From Compressed
Propane-Butane Mixture and Its Utilization in Powder Metallurgy"

Nauka i proiz-vo [Science and Production -- collection of works], No. 4,
Chelyabinsk, 1970, pp. 47-52, (Translated from Referativnyy Zhurnal—
Metallurgiya, No. 1, 1971, Abstract No.1 G501 by G. Derkacheva).

Translation: A compact laboratory gas reactor has been produced which can be
used to perform various processes involved in the conversion of compressed
propane-butane mixtures and their application for reduction and sintering
of various metal powders. The operating principle of the reactor is
described. Optimal modes are determined for complete conversion of the
propane-butane mixture. The mixture produced is also recommended for
heat treatment processes during heating of metals and alloys in controlled
atmospheres. 4 figures; 6 tables.

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ROTN OV, S. V.

Microelectronics

MICROELECTRONICS

Excerpts from Russian-language book edited by F. V. Lukin:
Mikroelektronika, No 5, 1972, Sovetskoye Radio Publishing House,
Moscow, UDC 621.382.621.396.6-18.5.

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JPRS 57313

25 October 1972

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[X - USSR - F]

The article analyzes the coefficients of voltage transfer function, the coefficient of superposition of the local feedback component, the working mode, and the initial voltage of disturbance of differential amplifying cascades, done completely on RDP transistors.

The expressions obtained may be used for computation and planning of such cascades both in the discrete and in the integrated variations.

The article contains 1 figure and 2 bibliographic references.

UDC 621.382.31

Equivalent Circuits of an Integrated Transistor for Practical Computations of the Frequency Characteristics of Semiconductor Integrated Circuits. Golubev, A.P. and Malyshev, I.V. In the Collection Microelectronics, edited by I.V. Lukin. No 5, p 201. Sovetskoye Radio Publishing House, 1972.

On the basis of the previously suggested undetermined matrix of the conductivities of an integrated transistor the authors show the limited applicability of the ordinary rectangular equivalent circuit. A method is given for determining the components of a complex rectangular equivalent circuit of an integrated transistor through the coefficients of its matrix of conductivities. The experimental and computed frequency characteristics are cited for amplifiers in which the transistors are connected according to the following circuits: common collector - common base and common emitter - common base.

The article contains 3 figures, 2 tables, and 4 bibliographic references.

UDC 621.382.8

Difference Control Element for Sequential Integrated TTL Structures. Aleksenko, A.G., Kamolrasy, V.Y. and Shkurin, I.I. In the Collection Microelectronics, edited by I.V. Lukin, No 5, p 211. Sovetskoye Radio Publishing House, 1972.

The article cites the structural circuits of typical sequential circuits (triggers, counters, registers), the control of which is accomplished on the basis of a difference element shaping the impulse by switching of the cyclic signal and satisfaction of certain logic conditions on functional inputs. A variation is suggested for a difference control element, made on the basis of a transistor-transistor