USSR

BUSHUYEV, V. N., et al., Biofizika, Vol 18, Vyp 2, Mar/Apr 73, pp 216-222

their physiological activity are related to different interaction with cholino-receptors. Models suggested by other authors regarding the muscarine and nicotine cholinoreceptors are discussed.

AN0025221

UR0533

AUTHOR-- GOLOVANOV, L.

TITLE-- THE REALITY OF IONICS

NEWSPAPER-- SOTSIALISTICHESKAYA INDUSTRIYA, FEBRUARY 25, 1970, P 2, COLS 2-5

ABSTRACT-- THE ARTICLE REVIEWS THE ADVANTAGES OF COLD-CATHODE TUBES. THE AUTHOR URGES THE STATE COMMITTEE FOR SCIENCE AND TECHNOLOGY AND THE ACADEMY OF SCIENCES TO REVIEW THE FIELD OF IONICS AND TO ESTABLISH A BASIC IONICS RESEARCH CENTER.

IT IS CLAIMED THAT SOME OF THE L. KORABLEV PATENTS ARE MORE ADVANCED THAN THEIR WESTERN COUNTERPARTS.

THE RELIABILITY OF COLD-CATHODE TUBES IS ILLUSTRATED BY CITING A COMPUTER, "PLAZMA", DEVELOPED BY THE MOSCOW ENGINEERING. ECONOMICS INSTITUTE IMENI ORDZHONIKIDZE. THE TRAINING COMPUTER CONTAINS NEARLY 2,000 MTKH-90 TUBES NONE OF WHICH FAILED DURING FIVE YEARS OF OPERATIONS.

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1/2   026
TITLE--SPACE RECORDS -U-   UNCLASSIFIED   PROCESSING DATE--16OCT70

AUTHOR--GOLOVANOV, N.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, PRAVDA, 22 APRIL 1970

DATE PUBLISHED--22APR70

SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES

TOPIC TAGS--MANNED SPACECRAFT, HONORARY AWARD, INTERNATIONAL ORGANIZATION,
    FLIGHT CREW/(U)SOYUZ 8 MANNED SPACECRAFT, (U)SOYUZ 7 MANNED SPACECRAFT,
    (U)SOYUZ 6 MANNED SPACECRAFT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1993/1182   STEP NO--UR/9012/70/000/000/0008/0008

CIRC ACCESSION NO--AN0113906
                         UNCLASSIFIED

CIRC ACCESSION NO--AN0113906   UNCLASSIFIED   PROCESSING DATE--16OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE USSR FEDERATION OF AVIATION
SPORT RECEIVED OFFICIAL ANNOUNCEMENT FROM THE INTERNATIONAL AVIATION
FEDERATION ON THE AWARDING OF RECORDS ESTABLISHED IN OCTOBER 1969 BY
COSMONAUTS OF THE SOYUZ 6, SOYUZ 7, AND SOYUZ 8 SPACECRAFT. THE FIRST
WAS FOR FLIGHT DURATION AND DISTANCE BY TWO SPACECRAFT WITH FIVE
COSMONAUTS, ESTABLISHED BY FILIPCHENKO, VOLKOV, GORBATKO, SHATALOV AND
YELISEYEV (SOYUZ 7 AND SOYUZ 8), AND THE SECOND WAS FOR FLIGHT DURATION
AND DISTANCE BY THREE SPACECRAFT WITH SEVEN COSMONAUTS, ESTABLISHED BY
THE ABOVE NAMED COSMONAUTS PLUS SHONIN AND KUBASOV IN THE THREE SOYUZ
SPACECRAFT.

UNCLASSIFIED

USSR

UDC 621.396.67.001.5

GOLOVANOV, N. V., KUDRYAVITSKIY, L. S., ZVEREV, A. M.

"Device for Automatic Recording of the Directivity Characteristics of Antennas"

Translation: The operating principle and design of the basic elements of a device for automatic recording of the directional diagram and polarization characteristics of antennas are investigated.

1/1

- 19 -

USSR

UDC 68:66.012

GOLOVANOV, O. V., Candidate of Technical Sciences, MEL'NIKOV, B. N., Candidate
of Technical Sciences, SHAPIRO, Yu. Z., Candidate of Technical Sciences,
Central Scientific Research Institute of Large-Scale Automation

"A Practical Method of Controlling a Large Plant"

Abstract: Relatively simple control algorithms which can be realized by
present computer technology must be used for successful introduction of
systems to control complex production combines. One of the ways to intro-
duce such automated control systems consists in a two-stage solution of the
control problems: first, measures are carried out to limit the field of
variation and the number of variables (isolation of sets and assignment of
intervals), and then more "refined" control is implemented (optimization).
The appropriate models of the plant are utilized on each stage. The authors
present two methods to this approach as applied to control of a large-scale
ammonia plant. A simplified flow chart is used in which the plant is
represented as several series-parallel units connected by technological
flows. In the first method the target function is taken as the technological
component of plant expenditures for making a ton of ammonia. The second
method involves accounting for production structure by analyzing the state
of the principal technological equipment.
1/1

USSR

GOLOVANOV, V. A., KRASNOV, YE. S., MERKIN, E. I., OSNOVINA, G. O., POLYAK, N. M., PROKOPENKO, V. G., and ERLIKH, E. I.

"Adhesives for the Ferrites of Super-High Frequency Instruments"

Translation: The authors study problems associated with the selection of an adhesive for mounting ferrite inserts in high power level, super-high frequency instruments. Test results are also presented for various working conditions. Original article: one table and three bibliographic entries.   Resume.

1/1

Devices

USSR

UDC 621.3.049.7

GOLOVANOV, V. A., YEREMICHEVA, K. A., KRASNOV, Ye. S., MERKIN, E. I., OSNOVINA, G. C., POLYAK, N. M., and ERLIKH, I. M.

"Adhesive with Epoxy Base"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No. 33, 1971, p 200

Abstract: This adhesive is designed to improve the operation of ferrite UHF devices in the face of low and high powered signals as well as temperature variations. A recipe for its manufacture is given.

1/1

TITLE--THE FRUITS AND THE ROOTS OF THE ELECTRONICS TREE -U-

AUTHOR--GOLOVANOV, YA.

COUNTRY OF INFO--USSR

SOURCE--KOMSOMOL, SKAYA PRAVDA, JULY 28, 1970, P 2, COLS 1-6, AND P 3,
   COLS 1-6
DATE PUBLISHED--28JUL70

SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES

TOPIC TAGS--PERSONALITY, ELECTRIC ENGINEERING, ELECTRONIC ENGINEERING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1902   STEP NO--UR/9007/70/000/000/0002/0002

CIRC ACCESSION NO--AN0125500
                       UNCLASSIFIED

CIRC ACCESSION NO--AN0125500

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE GIVES THE ACCOUNT OF
THE CHAIR OF ENGINEERING ELECTRONICS OF THE KIYEV POLYTECHNIC INSTITUTE
AND ITS RELATIONSHIP WITH INDUSTRY. THE CHAIR, HEADED BY PROFESSOR V.
P. SIGORSKIY, HAS A STAFF OF 120 ASSOCIATES. IT DOES RESEARCH AND
DEVELOPMENT WORK ON CONTRACTUAL BASIS FOR INDUSTRIAL PLANTS AND RESEARCH
INSTITUTES. TO ATTRACT THE PARTICIPATION OF STUDENTS, THE CHAIR ASSIGNS
AN OBSERVER (KURATOR) TO EACH GROUP OF ITS STUDENTS. THE OBSERVER KEEPS
A FILE ON EVERY STUDENT IN HIS GROUP, AND INFLUENCES THE BRIGHTEST TO
TAKE PART IN THE CHAIR'S RESEARCH WORK. MOST OF THE THIRD YEAR STUDENTS
ARE TAKING PART IN THE CONTRACTUAL RESEARCH. SOME GROUPS SHOW
100PERCENT PARTICIPATION. NEARLY 50 SENIOR (FIFTH YEAR) STUDENTS OF THE
CHAIR ARE PAID 37 RUBLES A MONTH WHICH SUPPLEMENT THEIR STIPENDS.
BEGINNING WITH THE THIRD YEAR, THE STUDENTS ARE ATTACHED TO PROJECT
TEAMS (TEMATICHESKIYE GRUPPY) WHO DO THE CONTRACTUAL RESEARCH. THESE
TEAMS, AS A RULE, CONSIST OF 6-8 STUDENTS. THE FOLLOWING GRADUATE
STUDENTS, WHO PARTICIPATE IN THE RESEARCH AND DEVELOPMENT EFFORT OF THE
CHAIR, ARE MENTIONED, BORIS MEDVEDENKO, YURIY ZABOROVSKIY, ALEKSANDR
KOVTUN, ANATOLIY BUDNYAK, BORIS SHELKOVNIKOV, OLEG TSURIN, VITALIY
ARTYUKHOV, SLAVA GORDIYENKO, OLEG KAPSHUK, AND SVETLANA ZHADNOVA. THE
CHAIR'S CANDIDATES OF SCIENCES, DOCENTS, MENTIONED IN THE ARTICLE ARE:
VLADIMIR FESECHKO, VALENTIN ABAKUMOV, STANISLAV DENBNOVETSKIY (IS
EXPECTED TO DEFEND HIS DOCTORAL DISSERTATION SOMETIME IN 1970), AND
YURIY KALNIBOLOTSKIY (IS ALSO ABOUT TO BECOME A DOCTOR).

                            UNCLASSIFIED

CIRC ACCESSION NO--AN0125500   UNCLASSIFIED   PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--DOCTOR OF TECHNICAL SCIENCES ANATOLIY PETRENKO STUDIED
IN BRITAIN, WORKED IN INDIA, AND PUBLISHED 122 PAPERS AND 6 MONOGRAPHS.
ENGINEER NATAL'YA FYK, WHO WAS GRADUATED BY THE INSTITUTE IN 1969,
PARTICIPATES IN THE CHAIR'S WORK.

UNCLASSIFIED

1/4   050   UNCLASSIFIED   PROCESSING DATE--04DEC70

TITLE--WE ARE MAKING SPACE LIVABLE, FIRST PRESS CONFERENCE OF THE CREW OF
   SOYUZ 9, INTERVIEW WITH NIKOLAYEV AND SEVAST'YANOV -U-

AUTHOR--GOLOVANOV, YA.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, KOMSOMOL'SKAYA PRAVDA, 25 JUNE 1970, P 1.

DATE PUBLISHED--25JUN70

SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES, BIOLOGICAL AND MEDICAL
   SCIENCES, SPACE TECHNOLOGY

TOPIC TAGS--COSMONAUT, MANNED SPACECRAFT, PHYSIOLOGIC ADAPTATION/(U)SOYUZ
   9 MANNED SPACECRAFT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO-----FD70/605026/F05 STEP NO--UR/9007/70/000/000/0001/0001

CIRC ACCESSION NO--AN0141547
                    UNCLASSIFIED

CIRC ACCESSION NO--AN0141547
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. QUESTION BY CORRESPONDENT OF
  KRASNAYA ZVEZDA: ANDRIYAN GRIGOR'YEVICH. FOR THE SECOND TIME YOU HAVE
  BEEN A SPACESHIP COMMAND. WAS THERE A DIFFERENCE IN YOUR REACTION TO
  ORBITAL FLIGHT? NIKOLAYEV: YES AND NO. ACTUALLY, NO. ON THE "VOSTOK"
  I WAS ALONE. ON THE "SOYUZ" THERE WERE TWO OF US. THE SHIP ENGINEER
  AND I WORKED FOR 18 DAYS. IT WAS PLEASANT TO WORK; WITH TWO OF US IT
  WAS MORE INTERESTING, MORE FUN. QUESTION BY CORRESPONDENT OF PRAVDA:
  ANDRIYAN GRIGOR'YEVICH. DID THE RATHER CONSIDERABLE EIGHT YEAR INTERVAL
  AFTER FLIGHT ON THE "VOSTOK" HAVE ANY EFFECT ON THE SECOND FLIGHT?
  NIKOLAYEV: NATURALLY, EIGHT YEARS IS A LONG TIME. DURING THAT TIME I
  GRADUATED FROM THE ACADEMY, STUDIED MUCH AND WORKED. THE FLIGHT
  PROGRAMS ON THE "VOSTOK" AND "SOYUZ" WERE EXTREMELY DIFFERENT. THE
  SECOND WAS INCOMPARABLY MORE COMPLEX. NEVERTHELESS, SPACEFLIGHT FACTORS
  HAD APPROXIMATELY THE SAME EFFECT ON ME AS EIGHT YEARS AGO. HOWEVER,
  AFTER LANDING I FELT THIS DIFFERENCE VERY GREATLY. AFTER LANDING I FELT
  FOR SOME TIME THE SAME AS I FELT WHEN SITTING IN A CENTRIFUGE WITH A
  SMALL ACCELERATION. QUESTION BY CORRESPONDENT OF KOSMOL'SKAYA PRAVDA:
  THE RESTRICTED SPACE IN THE SHIP, THE PECULIARITIES OF LIFE WITHIN IT,
  THE SPECIAL NATURE OF THE FOOD, YOU WERE EXPOSED TO ALL THIS FOR THE 18
  DAYS OF YOUR FLIGHT. DURING YOUR SPARE TIME WHAT DID YOU THINK ABOUT
  AND WHAT DID YOU SAY TO ONE ANOTHER? DID YOU DREAM ABOUT GRASS, BROOKS,
  DISHES OF HOT FOOD?

UNCLASSIFIED

CIRC ACCESSION NO--AN0141547
ABSTRACT/EXTRACT--SEVAST'YANOV: MY DIARY CONTAINS THE FOLLOWING NOTATION:
  "RIGHT NOW I WOULD LIKE TO BE SOMEWHERE IN A FOREST GLADE HUNGING
  MUSHROOMS AND I WISH THAT (MY DAUGHTER) NATASHKA WAS ON MY SHOULDERS.
  NIKOLAYEV (TO SEVAST'YANOV): DO YOU REMEMBER THAT YOU SAID: "BOY, IT
  WOULD BE GOOD TO HAVE SOME UKRAINIAN SOUP NOW? AND I WANTED TO WANDER
  ALONE THROUGH THE FOREST WITH MY GUN. WE MISSED THE EARTH. THE EARTH
  IN GENERAL. THERE IS SO MUCH WATER ON THE PLANET, 70 PERCENT, AND WHEN
  YOU LOOK OUT THE WINDOWS YOU INVOLUNTARILY FEEL GOOD.   QUESTION FROM
  THE EDITORS OF THE "LATEST NEWS" ON RADIO: YOU HAVE BEFORE YOU THE
  "SOYUZ 9" LOGBOOKS. OBVIOUSLY, YOU NOT ONLY RESTED ON THSE DAYS AFTER
  LANDING, BUT ALSO WORKED. WHAT DID YOU DO DURING THIS TIME?
  SEVAST'YANOV: THE SITUATION WAS AS FOLLOWS: ON THE ONE HAND, THE
  PHYSICIANS RESTRICTED US IN OUR WORK, AND ON THE OTHER HAND, WE HAD THE
  GREATEST DESIRE TO CONVEY TO THE SPECIALISTS THE FIRST RESULTS, DRAW
  CONCLUSIONS, AND COMPARE OUR DATA WITH GROUND DATA. WE WISHED TO
  DESCRIBE OUR SENSATIONS IN DETAIL WITH RESPECT TO DESCENT AND AFTER
  LANDING WHILE THEY WERE STILL FRESH IN OUR MEMORIES.   NIKOLAYEV: WE
  ARE PREPARING DETAILED REPORTS FOR DIFFERENT SPECIALISTS AND OBVIOUSLY
  WE WILL BEGIN REGULAR MEETINGS WITH THEM, LITERALLY BEGINNING TOMORROW.
  WE WANT TO DO THIS VERY MUCH, WE UNDERSTAND THAT THE PROCESS OF OUR
  ADAPTATION TO THE EARTH HAS STILL NOT BEEN COMPLETED.   FOR EXAMPLE,
  YESTERDAY BY EVENING WE FELT TIRED AND DID NOT WANT TO THINK OR WRITE.
  I DO NOT FEEL THAT WE HAVE YET ENTERED THE RHYTHM OF TERRESTRIAL LIFE,
  ALTHOUGH WE FEEL MORE SURE OF OURSELVES FROM DAY TO DAY.

                         UNCLASSIFIED

4/4.   050
CIRC ACCESSION NO--AN0141547   UNCLASSIFIED   PROCESSING DATE--04DEC70
ABSTRACT/EXTRACT--SEVAST'YANOV: WE WITHSTOOD THE FLIGHT WELL, BUT FRANKLY
SPEAKING WE DID NOT EXPECT THAT AFTER LANDING ALL THESE COMPLEXITIES OF
READAPTATION WOULD APPEAR. ALEKSANDR ALEKSANDROVICH VISHNEVSKIY, YOU
ALL KNOW HIM, THE FAMED SURGEON, VISITED US YESTERDAY. WE TOLD HIM OF
OUR SENSATIONS. HE SAID JOKINGLY: "MAYBE THE NORMAL STATE FOR MAN IS
WEIGHTLESSNESS AND MAN CAME TO EARTH FROM SPACE"? QUESTION OF TASS
CORRESPONDENT: WHAT WAS MOST UNEXPECTED FOR YOU AFTER RETURN TO THE
EARTH? NIKOLAYEV: IT WAS UNEXPECTEDLY DIFFICULT FOR US TO RISE FROM
OUR CHAIRS.

UNCLASSIFIED

1/2   022   UNCLASSIFIED   PROCESSING DATE--30OCT7(
TITLE--DIACETYLENE DERIVATIVES. 17. SPECTRAL STUDY OF THE MULTIPLE EFFECT
   OF HETEROATOMS AND MULTIPLE BONDS IN ENYNE SYSTEMS -U-
AUTHOR-(04)-SHERGINA, N.I., GOLOVANOVA, N.I., NIKOLSKAYA, A.N., VOLKOV,
   A.N.
CCUNTRY CF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (3), 546-9

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ACETYLENE HYDROCARBON, IR SPECTRUM, UV SPECTRUM, CONJUGATE
   BOND SYSTEM, CYCLIC GROUP

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0740   STEP NO--UR/0062/70/000/003/0546/0549

CIRC ACCESSICN NO--AP0124410
                              UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE—30OCT7(
CIRC ACCESSION NO—AP0124410
ABSTRACT/EXTRACT—(U) GP-0- ABSTRACT.   IR AND UV SPECTRA WERE REPORTED
    FOR. SHOWN ON MICROFICHE.   GENERALLY THE NATURE OF THE HETERO ATOM IN
    THESE COMPDS. IS REFLECTED IN THE ETHYLENE BANDS, INVOLVING BOTH
    ELECTRONIC CONJUGATION AND THE INDUCTIVE EFFECT.   FACILITY:
    IRKUTSK. INST. ORG. KHIM., IRKUTSK, USSR.

UNCLASSIFIED

TITLE--THE EFFECT OF ANTISPLENIC SERUM ON THE STEM CELLS OF THE
   HEMOPOIETIC TISSUE -U-

AUTHOR-(02)-KAULEN, D.R., GOLOVANOVA, T.A.

COUNTRY OF INFO--USSR

SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 69,
   NR 4, PP 85-88

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--RABBIT, MOUSE, HEMATOPOIESIS, SPLEEN, RADIATION CELLULAR
   EFFECT, TISSUE TRANSPLANT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1938/1578   STEP NO--UR/0219/70/069/004/0085/0088

CIRC ACCESSION NO--AP0106324
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0106324

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF THE RABBIT
ANTISPLENIC SERUM (ASS AGAINST MURINE CELLS) ON THE STEM CELLS OF THE
HEMOPOIETIC TISSUE WAS STUDIED. THE ASS IS SHOWN TO INHIBIT THE
DEVELOPMENT OF FOCI IN THE SPLEEN OF THE IRRADIATED (830 R) RECIPIENT
(SYNGENIC OR SEMI SYNGENIC) AFTER IN VITRO TREATMENT OF THE SPLENIC
CELLS TO BE TRANSPLANTED. THE ASS ACTS IN DILUTIONS WHICH SURPASS BY
TWO ORDERS THE CYTOTOXIC TITRES FIXED IN VITRO. THE ASS IS HIGHLY
EFFECTIVE BOTH AGAINST THE CELLS OF THE IMMUNIZING AND ALLOGENIC LINES
OF MICE. THE DURATION OF THE ASS CONTACT WITH THE CELLS (5-60 MINUTES)
DOES NOT PRACTICALLY AFFECT THE INHIBITING INFLUENCE.

UNCLASSIFIED

TITLE--PHASE DIAGRAMS OF BINARY SYSTEMS FROM ALKALI METAL METAVANADATES
   -U-

AUTHOR-(02)-BELYAYEV, I.N., GOLOVANOVA, T.G.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(4), 892-3 (RUSS)

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--THERMAL EFFECT, SOLID SOLUTION, PHASE DIAGRAM, THERMAL
   ANALYSIS, CHEMICAL DECOMPOSITION, LOW TEMPERATURE EFFECT, POTASSIUM
   COMPOUND, RUBIDIUM COMPOUND, CESIUM COMPOUND, VANADATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/0948   STEP NO--UR/0080/70/043/004/0892/0893

CIRC ACCESSION NO--AP0131533
                         UNCLASSIFIED

CIRC ACCESSION NO--AP0131553
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SYSTEMS KVO SUB2 RBVO SUB3,
KVO SUB3 CSVO SUB3, AND RBVO SUB3 CSVO SUB3 WERE STUDIED BY THERMAL
ANAL. THE M.PS. OF THE PARENT COMPDS. WERE 520, 560, AND 640DEGREES,
RESP. RBVO SUB3 AND CSVO SUB3 HAD A POLYMORPHOUS TRANSFORMATION AT 518
AND 402DEGREES, RESP. THE 1ST OF THESE SYSTEMS FORMED 2 SERIES OF SOLID
SOLNS., ONE OF WHICH WAS BASED ON THE HIGH TEMP. MODIFICATION OF RBVO
SUB3 AND THE OTHER ON THE LOW TEMP. MODIFICATION. THE TRANSITION OF ONE
INTO ANOTHER OCCURRED AT SIMILAR TO 500DEGREES. IN THE KVO SUB3 CSVO
SUB3 SYSTEM A CONTINUOUS SERIES OF SOLID SOLNS. OF KVO SUB3 AND THE
COMPD. 5KVO SUB3 4CSVO SUB3 WERE FORMED, HAVING A MIN. AT 450DEGREES AND
30 MOLE PERCENT CSVO SUB3. THE HIGH TEMP. MODIFICATIONS OF CSVO SUB3
AND 5KVO SUB3 4CSVO SUB3 FORMED LIMITED SOLID SOLN.S WITH A EUTECTIC AT
474DEGREES AND 47.5 MOLE PERCENT CSVO SUB3. THESE SOLID SOLNS. UPON
LOWERING THE TEMP. DECOMPD. BY MEANS OF A EUTECTOID REACTION WITH A
EUTECTOID POINT AT 392DEGREES AND 90 MOLE PERCENT CSVO SUB3. AT SMALLER
THAN 350DEGREES THE COMPD. KVO SUB3 2CSVO SUB3 WAS FORMED.   THE SYSTEM
RBVO SUB3 CSVO SUB3 FORMED 2 SERIES OF CONTINUOUS SOLID SOLNS. WITH
PRACTICALLY STRAIGHT TRANSITION LINES.   FACILITY:
ROSTOV.-NA-DONU GOS. UNIV., ROSTOV-ON-DON, USSR.

UNCLASSIFIED

BURNEYKA, K. P., GOLOVANOVA, V. V., VASIL'YEV, YE. I., KANAVETS, V. I.,
LOPUKHIN, V. M.

"Bunching Quality Index and Electronic Efficiency of a Quadrupole-Resonator
Klystron"

Abstract: The processes in a quadrupole-resonator klystron with a beam of given
perveance are calculated considering the effect of coulomb forces and the return
movement of electrons in the output resonator. Approximation of the given field
and the one-dimensional disc model of the beam were used. The correspondence
between the magnitude of the bunching quality index and the electron efficiency
is investigated. When studying the relations between the bunching quality index
and the electron efficiency it is necessary to consider the optimizing effect
of the space charge on the processes of formation of the cluster and power take-
off. In the example of a four-resonator klystron it is demonstrated that when
selecting the optimal parameters of the buncher and output resonator the value
of the bunching quality index and the electron efficiency approximately coincide.
For nonoptimal parameters of the buncher the electron efficiency can be larger
than the bunching quality index. The two variables are plotted according to
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calculated values as a function of a variety of parameters: voltage on the next to the last resonator, width of the output gap for various amplitudes of the high-frequency field in the gap with optimal phase, for various phases with optimal amplitude, and for optimal phase and amplitude.

2/2

USSR

UDC 669.018.25:620.18

RYABTSEV, I. A., GOLOVASHCHUK, A. I., and FRUMIN, I. I., Electric Welding Institute imeni Ye. O. Paton

"Structure and Wear Resistance of High-Carbon Cr-Ti Alloys"

Abstract: The combined effect of carbon, titanium, and chromium on the abrasive wear resistance of alloys was studied for the purpose of selecting a highly wear-resistant deformable alloy for the cladding layer in a wear-resistant bimetallic sheet. The iron-base alloys studied were U25Kh6M, U25Kh6T2M, U25Kh6T4M, U25Kh6T8M, U25T8M, U20Kh6t4M, and U30Kh6T4M, containing about 6% Cr and 2-8% Ti with 1% Mo. The best combination of hardness and wear resistance properties was exhibited by alloys U20Kh6T4M and U25Kh6T4M because they had an austenite-carbide or austenite-martensite-carbide structure and more than 30% retained austenite. The other alloys either had less than 30% retained austenite and too large a quantity of titanium carbides with improper proportions of TiC in combination with complex carbides M_7C_3 and $M_{23}C_6$. Two figures, two tables, eight bibliographic references.
1/1

USSR
                                                    UDC: 537.312.62

GOLOVASHKIN, A. I., LEVCHENKO, I. S.

"Making Superconductive Alloys by the Method of Separate Sputtering in a
Vacuum"

Kratkiye soobshch. po fiz. (Brief Reports on Physics), 1972, No 6, pp 56-63
(from RZh-Radiotekhnika, No 12, Dec 72, abstract No 12T540 by V. O.)

Translation: V-In-Ge alloys were made by simultaneous vacuum sputtering of
vanadium with a mixture of indium and germanium from different atomizers.
The substrates were polished ruby plates and rods which were heated to $500°C$.
The rate of alloy condensation was 2 nm/s. The sputtered layers were an-
nealed in a vacuum of $2 \cdot 10^{-6}$ mm Hg for one hour at $600°C$. Increasing the
annealing temperature reduced the T_c of the specimens. Studies were made
of alloys in which the ratio of atomic concentrations of indium and ger-
manium was 4:1, since valence considerations suggest maximum T_c in the
compound $V_3In_{0.8}Ge_{0.2}$. The T_c was determined by the resistive method. The
T_c of alloys $V_xIn_{0.8}Ge_{0.2}$ with a reduction in vanadium concentration had a
maximum of $8.1°K$ for an alloy with x = 2 (the vanadium concentration being
equal to 45%). The thickness of the specimens was 0.25-1 μm. The thick-

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USSR

GOLOVASHKIN, A. I., LEVCHENKO, I. S., Kratkiye soobshch. po fiz., 1972, No 6, pp 56-61

ness of a specimen with maximum T_c was about 0.7 μm. The width of the transition interval was 0.1-1°K. A change in the ratio of concentrations of In and Ge in the alloy away from the quantity 4:1 led to a reduction in T_c. To determine the part played by germanium, V-In "alloy" specimens were also made. Most of these had $T_c = 3.2$-3.4°K, which is close to T_c for pure indium. Two illustrations, bibliography of 11 titles.

2/2

USSR   UDC: 537.312.62

GOLOVASHKIN, A. I., LEVCHENKO, I. S., MOTULEVICH, G. P.

"Electronic Characteristics of Sputtered Alloys of Indium With Gallium"

Moscow, Sverkhprovodyashchiye splavy i soyedin.--sbornik (Superconductive
Alloys and Compounds--collection of works), "Nauka", 1972, pp 20-29 (from
RZh-Radiotekhnika, No 12, Dec 72, abstract No 12D538 [résumé])

Translation: A new method is developed for making superconductive vanadium-
-gallium compounds with high critical parameters -- transition temperature T_c
and current density j_c -- which are practically independent of the alloy
composition over a wide range of concentrations. The following electronic
characteristics of the resultant alloys are measured by the optical method:
conduction electron concentration, total area of the Fermi surface, aver-
age velocity of electrons on the Fermi surface, effective frequency of
electron collisions, the Fourier components of the pseudopotential. A cer-
tain correlation is established between T_c on the one hand and the conduc-
tion electron concentration and frequency of electron-phonon collisions
on the other hand. Six illustrations, one table, bibliography of sixteen
titles.

1/1

USSR   UDC 535.393

GOLOVASHKIN, A. I., MOTULEVICH, G. P., and SHUBIN, A. A.

"Optical Properties and Electron Characteristics of Metals"

Alma-Ata, Izvestiya Akademii Nauk Kazakhskoy SSR, Seriya Fiziko-Matematiche-
skaya, No 4, Jul-Aug 71, pp 35-41

Abstract: This article was presented at the Second Republic Conference on
Questions of General and Applied Physics held in October 1969 at Alma-Ata.
The authors find that the electron characteristics obtained by the optical
method, mainly the Fourier components of the pseudopotential, define both
the zone structure and other properties that depend on the electron inter-
action. They are thus able to use the values obtained in this article for
interpretation of other data. They compare the characteristics revealed by
the optical method and those determined using the van Alphen-de Haas effect,
the anomalous skin effect, absorption of ultrasound in a magnetic field, and
study of the intensity of x-ray diffraction maxima as a function of tempera-
ture and find a good agreement. On the whole the experiment confirms the
metallo-optical phenomena developed in the article and indicates great
potentiality for metallo-optics that will permit obtaining significant infor-
mation on the electron properties of metals. The article contains 2 figures,
1 table, and a bibliography of 5 entries.
1/1

USSR   UDC: 539.2.01

GOLOVASHKIN, A. I., MOTULEVICH, G. P.

"Determination of Fourier Components of Pseudopotential by Optical
Method"

Kratk. Soobshcheniya Po Fiz [Brief Reports on Physics], No. 2, 1970, pp 69-
76, (Translated from Referativnyy Zhurnal Fizika, No. 8, 1970, Abstract
No. 8YE295, by G. L. Krasko).

Translation: A procedure for determination of the values of Fourier com-
ponents V_g of pseudopotentials of nontransition metals in the first few nodes
of the inverse lattice by an optical method is briefly described. A table
of values of V_g is presented for Pb, Sn, In, Al, Zn, and Nb, taken from
earlier works of the authors. Values of V_g produced by other methods
(the de Gaas-van Alphen effect, size effect, cyclotron resonance, etc.)
are also presented for comparison.

1/1

1/2   022   UNCLASSIFIED   PROCESSING DATE--04DEC7?
TITLE--NUCLEOTIDE POOL AND SOME FEATURES OF THE METABOLISM OF ENDOGENOUS
   NUCLEOTIDES IN HEART MUSCLE -U-
AUTHOR-(02)-GOLOVATSKIY, I.D., KRASNEVICH, A.YA.

COUNTRY OF INFO--USSR

SOURCE--BIOKHIMIYA 1970, 35(2), 296-302

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--NUCLEOTIDE, METABOLISM, HEART MUSCLE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3009/0195   STEP NO---UR/0208/70/035/002/0296/0302

CIRC ACCESSION NO--AP0139058
                    UNCLASSIFIED

CIRC ACCESSION NO--AP0139058

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN ADAPTATION OF ION EXCHANGE
  CHROMATOG. ON DOWEX 1 (CL PRIME NEGATIVE) AND DOWEX 50 (H PRIME
  POSITIVE) FOR SUCCESSIVE SEPN. OF NUCLEOTIDES AND NUCLEOSIDES WAS
  DEVELOPED.   IN AN EXT. OF COW HEART MUSCLE, PREPD. AT VARIOUS PERIODS
  AFTER THE DEATH OF THE ANIMAL, THE AMTS. OF ALL NUCLEOTIDES,
  NUCLEOSIDES, AND BASES WERE DETD.   DESTRUCTION OF A GREAT PART OF THE
  ATP INTO HYPOXANTHINE AND XANTHINE AND SOME OTHER CHANGES WERE OBSD. AS
  THE RESULT OF STORAGE OF THE TISSUE.   FACILITY: DEP. ORG. INORG.
  CHEM., L'VOV ZOOVET. INST., LVOV, USSR.

UNCLASSIFIED

USSR   UDC 621.375.145:621.382.8

GOLOVATSKIY, V.A., KONEV, YU.I., MASHUKOV, YE.V.

"Power Semiconductor Integrated Circuits"

V sb. Elektronnaya tekhnika v avtomatike (Electronics Techniques In Automation--
Collection Of Works), Moscow, Izd-vo "Sovetskoye Radio," No 2, 1971, pp 131-132

Abstract: Brief data are presented concerned with the development of power semi-
conductor integrated circuits with an output power up to 2000 watt. An exterior
view is shown of the integrated construction of a bridge transistorized switch-
ing device which contains 8 KT805A and 12KT803A n-p-n transistors mounted on a
60 x 70 x 8 mm metal plate. 1 fig. 4 ref.

1/1

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A70-23387   Propagation of elastic waves in the cylinder with longitudinal cavities (Rozpovsiudzhennia pruzhnikh khvil' u tsilindri z pozdovzhnimi porozhninami). V. T. Golovchan (Akademiia Nauk Ukrains'koi RSR, Institut Mekhaniki, Kiev, Ukrainian SSR). *Akademiia Nauk Ukrains'koi RSR, Dopovidi, Seriia A—Fiziko-Tekhnichni i Matematichni Nauki,* vol. 32, Jan. 1970, p. 45-47. 6 refs. In Ukrainian.

The solution is given of the problem on the propagation of elastic harmonic waves in the cylinder with multiply connected cross-section and in the space with cylindrical cavities. The series method is applied. As a result, continuous systems of algebraic equations with the determinant of a normal type are obtained.

(Author)

ACS

1/1   2/1

REEL/FRAME
19780039

TITLE--DIFFRACTION OF ELASTIC WAVES IN AN INFINITE SERIES OF CIRCULAR
  HOLES -U-
AUTHOR-(02)-GOLOVCHAN, V.T., GUZ, O.M.

CCUNTRY OF INFO--USSR

SOURCE--AKADEMIIS ANUK UKRAINS'KOI RSR, DOPOVIDI, SERIIA A FIZIKO
  TEKHNICHAI I MATEMATICHNI NAUKI, VOL. 32, FEB. 1970, P. 159-161
DATE PUBLISHED-----FEB70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--WAVE PROPAGATION, ELASTIC WAVE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/2031   STEP NO--UR/0441/70/032/000/0159/0161

CIRC ACCESSION NO--AT0112986
                         UNCLASSIFIED

CIRC ACCESSICN NO--AT0112986
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THEORETICAL STUDY OF THE
   DIFFRACTION CF ELASTIC WAVES PROPAGATING IN AN ELASTIC PLANE MEDIUM
   CONTAINING AN INFINITE SEQUENCE OF CIRCULAR HOLES WHOSE CENTERS ARE
   POSITIONED ON A SINGLE STRAIGHT LINE. A PROCEDURE FOR SOLVING THE
   PERTINENT PLANE PERIODIC DIFFRACTION PORBLEMS IS DERIVED. THE SOLUTIONS
   OBTAINEC ARE ANALYZED.   FACILITY: AKADEMIIA NAUK UKRAINS'KOI
   RSR, INSTITUT MEKHANIKI, KIEV, UKRAINIAN SSR.

UNCLASSIFIED

USSR

GOLOVCHAN, V.T. (Kiev), Institute of Mechanics, Academy of Sciences, Ukraine SSR

"The Diffraction of a Shear Wave on An Infinite Series of Cylindrical Cavities"

Abstract: Results of the solution of a periodic problem of the diffraction of a two-dimensional shear wave on round cylinders are presented for the following parameter values: $0.2 \leq \beta R \leq 1.0$; $3 \leq \frac{d}{R} \leq 10$, where β is the wave number, R is the radius of the cavity; d is the distance between the axes of two adjacent cavities. The results are presented in the form of graphs. 5 figures, 3 bibliographic entries.

1/1

A70-23296   ·   Oscillations of a half-plane with circular holes
(Kolebaniia poluploskosti s krugovymi otverstiiami). V. T.
Golovchan. (Akademiia Nauk Ukrainskoi SSR, Institut Mekhaniki,
Kiev, Ukrainian SSR). *Prikladnaia Mekhanika*, vol. 6, Jan. 1970, p.
113-115. In Russian.

Derivation of a solution to an equation describing the steady
harmonic oscillations of a half-space with circular holes. The
boundary value problem involved is characterized as one applicable
to the propagation of acoustic waves in a compressible fluid, the
oscillations of a membrane and the propagation of a
linearly-polarized transverse wave. A closed infinite system of
algebraic equations is derived in the process of solving this boundary
value problem.   V.Z.

1/1

REEL/FRAME
1977/1978

21

USSR   UDC: 621.793.3

GOLOVCHANSKAYA, R. G., GAVRILINA, L. P., SMIRNOVA, T. A., and KUDRYAVTSEV, N. T., Moscow Institute of Chemical Technology imeni D. I. Mendeleyev

"Chemical Nickel Plating of MA-8 Magnesium Alloy"

Abstract: A strong cohesion of nickel deposits (5-7 microns) with the base metal is attained after etching the MA-8 alloy in concentrated acetic acid for 0.5 - 1 minute followed by treatment with a sodium pyrophosphate solution (70 g/l) at 70°C for 1 hour. The flouine ion has been known to inhibit magnesium corrosion. This study has shown that ammonium fluoride at pH 8 increases the stability of the nickel plating solution; at 60-70°C the surface of the solution becomes covered with a dense deposit of metallic nickel. The buffer properties of the solution will be improved by substituting ammonium bifluoride for ammonium fluoride. In 15 minutes the maximum thickness of the nickel deposit will be 5-6 microns. A longer plating duration will restore the nickel in the solution. For the chemical plating of MA-8 alloy this study suggests the following formula-

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USSR

GOLOVCHANSKAYA, R. G., et al, Zashchita Metallov, Vol 6, No 5, Sep-Oct 70,
pp 614-615

tion of the solution (g/1): nickel sulfate, 30; sodium hypophosphite, 25;
ammonium bifluoride, 15; glycine, 15; pH, 8; temperature, 60-70°C;
deposition rate, 10 microns/hr. Glycine and ammonium bifluoride are dis-
solved in water, and nickel sulfate and sodium hypophosphite
are then added. A 20% NaOH solution is added gradually to pH 8.

2/2

USSR

UDC: 621.357.7

KUDRYAVTSEV, N. T., AND GOLOVCHANSKAYA, R. G., Moscow Institute of Chemical Technology imeni D. I. Mendeleyev.

"Electrolytic Deposition of Titanium Alloys"

Moscow, Zashchita Metallov, Vol. 6, no. 4, Jul-Aug 70, pp 481-482

Abstract: Earlier research indicates that metallic titanium alone or in combination with other metals cannot be deposited on a cathode from aqueous solution. The present study attempts to demonstrate that titanium can be deposited under specific conditions. A major difficult is the fact that titanium, which forms ions of different valance, may also appear in the solution in the form of various modifications, for example in acid solutions -- in the form of violet or green modifications. Unlike earlier research, this study made use of pure metallic VT-0 and VT-1 titanium. The electrolytic deposition of titanium on the cathode of another metal depends on promoting the discharge of titanium ions through the formation of alloys with the cathode material. In due course of the electrolysis, the titanium concentration in the surface layer increases and, as a result, the current yield of the metal drops and after saturation of the layer with titanium, the deposition of the latter ceases. The maximum thickness of such deposits is 3--4 microns. As proof that titanium can actually be

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USSR

KUDRYAVTSEV, N. T., et al, Zashchita Metallov, Vol. 6, no. 4, Jul-Aug 70, pp 481-482

deposited on a cathode of another metal, the study offers data on 1) the chemical analysis of the solution used to remove the deposit from the cathode (the cupferron method was used), and 2) x-ray diffraction data on the surface of copper after electrolytic deposition of titanium on it. The combined deposition of titanium with metals of the iron group yielded deposits of the corresponding alloys of Fe-Ti(Ti=5-9%); Ni-Ti(Ti=4-6%) and Co-Ti(Ti=4-10%). The new procedure of electrolytic deposition of titanium and its alloys from aqueous solutions was tested and effectively utilized at several establishments.

2/2

USSR   UDC 539.294

ZAVADOVSKAYA, YE. K., BORISOVSKIY, V. V., and GOLOVCHANSKIY, YE. N., Tomsk
Polytechnic Institute imeni S. M. Kirov

"Investigation of Stored Energy in Alkali Halide Crystals"

Abstract: Changes in the properties of a solid at the moment of irradiation
are determined by the amount of energy absorbed. Permanent changes in the
properties following irradiation are characterized by the amount of energy
stored, which in turn is determined by the concentration of radiation defects
and their energy of formation. Stored energy is a more complete characteristic
than are the changes in optical, electrical and other properties of the solid
which take place under the influence of radiation. Stored energy as a
characteristic of integral defects in a solid is of interest in the field of
large irradiation doses when the concentration of defects can not be deter-
mined, for example, from the spectra of optical absorption. Stored energy
has been most thoroughly studied in alkali-halide crystals, and considerable
attention has been given to investigating the kinetics of accumulating stored
energy in NaCl crystals. The kinetics of accumulating stored energy have
been obtained as a function of the chemical composition for crystals of NaCl.
1/2

USSR

KCl, KBr in a very narrow range of doses. The authors in this article study the kinetics of accumulating stored energy in these crystals as a function of chemical composition in a wider range of doses. They determined the stored energy using the method of diffusion. The authors describe their experiment and discuss it fully using graphs. They find that in the investigated crystals the rate of accumulating stored energy and its maximal value are greater as the energy of the lattice is greater, thus confirming the previous assumptions that the properties of solids are a function of the energy of the lattice. The article contains 2 figures and 11 bibliographic entries.

2/2

USSR

UDC 681.325.36

GOLOVCHENKO, A. I., and SHIRENKO, A. P.

"Device for Data Transmission in Digital Computers"

USSR Authors' Certificate No 363093, Cl. G 06f 13/00, filed 5 Apr 71, published 20 Dec 72 (from Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 3, 1973, p 99)

Abstract: The device is for data transmission in residue-system digital computers and contains a local control unit and supplemental data storage unit. A block of reading amplifiers, a number register, receiving register, and logic circuits are series-connected to the outputs in each of the data transmission channels. The unique feature of the device is that, to increase the carrying capacity, the first inputs of two coincidence circuits are connected to some of the outputs of the receiving registers in each of the data transmission channels; the outputs of the coincidence circuits are connected respectively to the output transmission lines for basic and supplemental information, while the second inputs are connected directly through the NOT circuit to the corresponding output of the local control unit, whose outputs are connected to the outputs of the high-order digits of the number registers.

1/1

Veterinary Medicine

GOLOVCHENKO, A. P., Candidate of Biological Sciences, and RATNER, L. S.,
Candidate of Veterinary Sciences, All-Union Institute of Experimental
Veterinary Science

"Investigation of Pathogenesis and Immunity in Foot-and-Mouth Disease With
the Use of a Chronic Fistula in the Tracheal Lymph Duct"

Abstract: The role of lymph in the pathogenesis and immunogenesis of foot-
and-mouth disease was studied. Young cattle which never had the disease nor
were ever vaccinated against it were used. After preliminary surgery in
which a tracheal fistula was introduced into the lymph duct, the animals were
infected intradermally in the tongue with foot-and-mouth disease virus A_{22} in
dose of 10^6 $LD_{50/ml}$. Within 3, 6, 12, 24, 47, 60, 72, and 96 hours after
infection, and 3, 4, 5, 6, 7, 10, 14, 21 and 60 days after the beginning of
convalescence, lymph from the tracheal lymph duct and blood from the jugular
were drawn and analyzed for the content of virus-neutralizing antibodies. It
was found that during viremia, the virus appeared in the lymph within 3-6 hr
1.2

USSR

GOLOVCHENKO, A. P., et al., Doklady Vsesoyuznoy Ordena Lenina   Akademii
Sel'skokhozyaystvennykh Nauk imeni V. I. Lenina, No 7, Jul 71, pp 38-39

and in the blood 6-12 hr after infection. Virus content continued to increase,
and the highest titer was recorded within 24 hr of infection. Virus titer
than began to decline, until within 72 and 96 hr after infection, no foot-
and-mouth disease virus could be found in either the lymph or the blood.
Specific virus-neutralizing antibodies appeared in the lymph and blood 3-4
days after infection, continued to increase during convalescence, and remained
in the blood and lymph for two months after infection -- (the observation
period). The experiments thus established that both lymph and blood play a
role in disseminating the virus and in building immunity. It was established
also that the method of introducing a tracheal fistual into the lymph duct
is one of the best methods of studying the role of the lymphatic system in
the pathogenesis and immunogenesis of a number of animal diseases.

2/2

USSR   UDC: 621.396.69

SEMENTSOV, V. I., GOLOVCHENKO, V. B.

"Calculation of Partial Capacitances in Multilayered Thin-Film and Printed Circuits"

Moscow, Radiotekhnika i Elektronika, Vol 17, No 1, Jan 72, pp 138-144

Abstract: An approximate method is given for calculating the potential coefficients and partial capacitances of conductors in multilayered microcircuits and micromodules. The method is illustrated in detail by the example of a five-layered microcircuit. Two figures, bibliography of seven titles.

1/1

TITLE--EFFECT OF LATTICE STRUCTURE ON THE PHOSPHORESCENCE OF PURE AND
   DOPED BENZOPHENONE CRYSTALS -U-

AUTHOR-(03)-GOLOVCHENKO, V.P., FAYDYSH, A.N., KOLCHINSKIY, M.Z.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(3), 589-93

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--CRYSTAL LATTICE STRUCTURE, PHOSPHORESCENCE, PHOSPHORESCENT
   MATERIAL, BENZENE DERIVATIVE, ABSORPTION BAND SPECTRUM, ENERGY BAND
   STRUCTURE, IMPURITY LEVEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/1809   STEP NO--UR/0048/70/034/003/0589/0593

CIRC ACCESSION NO--AP0118774
                         UNCLASSIFIED

CIRC ACCESSION NO--AP0118774

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PHOSPHORESCENCE SPECTRA, AND
THE DURATION AND QUANTUM YIELDS OF THE PHOSPHORESCENCE OF 5
MODIFICATIONS OF BOTH PURE AND DOPED BENZOPHENONE (I) CRYSTALS WERE
MEASURED AT DIFFERENT TEMPS., BUT MOSTLY AT 77DEGREESK.   THE CONDITIONS
OF THE PREPN. OF EACH MODIFICATION ARE GIVEN.   THREE MODIFICATIONS OF
PURE I SHOWED STRONG PHOSPHORESCENCE AT 77DEGREESK (MODIFICATION, M.P.,
FREQUENCY V SUB0 OF THE PRIMARY MAX., HALWIDTH OF THE BANDS, QUANTUM
YIELD, LIFETIME OF OVERALL AND RADIATION TRIPLET STATE GIVEN);   ALPHA,
322DEGREESK, 24,000 CM PRIME NEGATIVE1, 400, 0.09, 7 TIMES 10 PRIME
NEGATIVE4, 7.7 TIMES 10 PRIME NEGATIVE3; X, 205DEGREESK, 23,400 CM PRIME
NEGATIVE1, 700, 0.6-0.7, 3.4 TIMES 10 PRIME NEGATIVE3, 6 TIMES 10 PRIME
NEGATIVE3; Y, 220DEGREESK, 23,400 CM PRIME NEGATIVE1, 500, 0.08,-,-.
STRONG TRANSFER OF THE TRIPLET ECITATION ENERGY CAUSING THE ATTENUATION
OF PHOSPHORESCENCE OF I AND OCCURRENCE OF SENSITIZED IMPURITY
PHOSPHORESCENCE WAS OBSD. IN THE CRYSTALS OF THESE 3 MODIFICATIONS DOPED
WITH EITHER NAPHTHALENE OR ALPHA BROMONAPHTHALENE.   BOTH PURE AND DOPED
CRYSTALS OF THE FURTHER MODIFICATION (BETA, M. 299DEGREESK) SHOWED VERY
WEAK PHOSPHORESCENCE WHICH WAS SUPPOSED TO BE BOUND TO INCREASED
PROBABILITY OF RADIATIONLESS INTRAMOL. TRANSITION IN BETA I.   THE
PHOSPHORESCENCE SPECTRUM OF THE MODIFICATION Z I WAS ALSO VERY WEAK AND
DID NOT SHOW THE BAND STRUCTURE.   ALTHOUGH THE EXACT NATURE OF Z I WAS
NOT CLEAR, THE EFFECT OF IMPURITIES WHICH COULD BE FORMED IN THE
CONDITIONS OF PREPG. Z I, ON THE PHOSPHORESCENCE WAS CONSIDERED.

UNCLASSIFIED

3/3   028   UNCLASSIFIED   PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AP0118774
ABSTRACT/EXTRACT--THE OBSD. PHENOMENA WERE GENERALLY EXPLAINED BY THE
  CHANGES OF THE CRYSTAL LATTICE STRUCTURE EFFECTING THE INTERMOL.
 INTERACTION.   FACILITY: FIZ. FAK., KIEV. GOS. UNIV. IM.
  SHEVCHENKO, KIEV, USSR.

UNCLASSIFIED

USSR   UDC 669.822:621.039.5

GOLOVCHENKO, YU. M., VOROB'YEV, M. A., BYCHKOV, B. A., DAVIDENKO, A. S., PORT-
NOV, V. F.

"Mechanical Properties of Uranium Irradiated to 0.45 Atomic % Burn-up"

Radiatsion. fiz. tverd. tela i reaktornoye materialoved. -- V sb (Radiation
Solid State Physics and Reactor Material Science -- collection of works),
Moscow, Atomizdat Press, 1970, pp 185-191 (from RZh-Metallurgiya, No 4, Apr
71, Abstract No 41825)

Translation: Uranium samples containing $\leq$ 0.3 weight % of admixtures (Fe,
Si, Al, and C) were irradiated to 0.45 atomic % burn-up with a maximum tempera-
ture of 500°. Mechanical tensile, compressive, bending, and fatigue testing
was carried out at temperatures up to 500°. The properties of the irradiated
uranium depend essentially on the type ("rigidity") of the tests. This is
not only connected with the difference in the stress state but also the
characteristic features of accumulation of the defects. For uranium irradia-
ted at higher temperatures, σ_T is lower. This is explained by annealing the
defects of the first and second type. However, even at an irradiation tempera-
ture of 350 and 450°, σ_T is higher than for the unirradiated samples since
1/2

USSR

GOLOVCHENKO, YU. M., et al., Radiatsion. fiz. tverd. tela i reaktornoye materialoved., Moscow, Atomizdat Press, 1970, pp 185-191

defects of the third type are not annealed. At a test temperature of $20°$, σ_B is lowered with an increase in burn-up. This lowering is sharper for an irradiation temperature up to $360°$. There are 3 illustrations and a 5-entry bibliography.

2/2

USSR   UDC 621.039.543.4:621.039.544.57

VOLOSHCHUK, A. I., GAYDAMACHENKO, G. S., GOLOVCHENKO, YU. M.,
ZELENSKIY, V. F., IVANOV, V. YE., and KONOTOP, YU. F.

"Uranium Hardened With Beryllium Oxide Particles"

Moscow, Atomnaya Energiya, Vol 29, No 3, Sep 70, pp 178-183

Abstract: The article describes results of a study of uranium
hardened with beryllium oxide particles. Compositions were pre-
pared by mixing uranium hydride and beryllium oxide powders.
Several types of beryllium oxide powder were used, viz. ordinary
commercial BeO and BeO obtained from beryllium acetate by the
Funston method. The results indicate that the strengthening of
uranium with dispersed beryllium oxide particles significantly
increases its heat resistance. The creep rate declines with a
drop in the annealing temperature of beryllium oxide during its
preparation. The creep rate is highly sensitive to load. At
600° C the creep rate of precipitation-hardened uranium is the
same as or below that of unalloyed uranium at 500° C and under
the same stresses. The creep activation energies calculated

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USSR

VOLOSHCHUK, A. I., et al., Atomnaya Energiya, Vol 29, No 3, Sep 70, pp 178-183

from the slope of the curves $\ln \dot{\mathcal{E}} = f(\frac{1}{T})$ for the most heat-resistant compositions are considerably less than the self-diffusion activation energy and the creep activation energy of unalloyed commercial uranium. High-temperature softening in precipitation-hardened uranium is delayed 50-100° C as compared to unalloyed commercial uranium. Preliminary radiation test results indicate the high radiation resistance of precipitation-hardened uranium.

2/2

1/2   035   UNCLASSIFIED   PROCESSING DATE--23OCT7(
TITLE--MECHANICAL PROPERTIES OF IRRADIATED URANIUM -U-

AUTHOR-(04)-VOROBYEV, M.A., GOLOVCHENKO, YU.M., DAVIDENKO, A.S., BYCHKOV,
   B.A.
COUNTRY OF INFO--USSR

SOURCE--AT. ENERG. 1970, 28(2), 107-11

DATE PUBLISHED-------70

SUBJECT AREAS--NUCLEAR SCIENCE AND TECHNOLOGY, CHEMISTRY, MATERIALS

TOPIC TAGS--MECHANICAL PROPERTY, URANIUM, IRRADIATION, TENSILE STRENGTH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/1561   STEP NO--UR/0089/70/028/002/0107/0111

CIRC ACCESSION NO--AP0120340
                    UNCLASSIFIED

CIRC ACCESSION NO--AP0120340
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT.   THE TENSILE STRENGTH OF U SAMPLES
IRRADIATED TO 0.09-0.4PERCENT BURNUP AT 250-450DEGREES DECREASES WITH
INCREASING BURNUP, IN PARTICULAR FOR SAMPLES IRRADIATED AT
250-360DEGREES; E.G., THE STRENGTH OF SAMPLES IRRADIATED TO GREATER THA
0.3PERCENT BURNUP MAY BE LESS THAN 10 KG-MM PRIME2, WHILE THAT OF
NONIRRADIATED SAMPLES IS 60-70 KG-MM PRIME2.   THE COMPRESSIVE STRENGTH
OF IRRADIATED SAMPLES AT ROOM AND ELEVATED TEMPS. IS HIGHER THAN THAT O
NONIRRADIATED SAMPLES. THE IRRADN. REDUCES THE FATIGUE RESISTANCE OF U
E.G., IN A STD. TEST (AT ROOM TEMP.) UNDER A LOAD OF 12-15 KG-MM PRIME2
THE NO. OF CYCLES TO FAILURE RANGED FROM 1 TIMES 10 PRIME4 TO 4.5 TIMES
10 PRIME5 FOR IRRADIATED SAMPLES AND FROM 1.5 TIMES 10 PRIME6 TO 3.1
TIMES 10 PRIME6 FOR NONIRRADIATED SAMPLES.

UNCLASSIFIED

Acc. Nr: AP0044830   Ref. Code: UR0531

PRIMARY SOURCE: Khirurgiya, 1970, Nr 1 , pp 85-94

THE MECHANISM OF ETHER, BARBITURATE AND EPONTOL ANESTHESIA

Darbinyan, T. M.; Golovchinskiy, V. D.; Plekhotkina, S. I.

In experiments on 35 cats the authors studied the influence of intranarcon, ether and epontol on the excibility of the cortex of large hemispheres and reticular formation of the mid-brain. It was found that in intranarcon administration the transcallosal responses changed but little. Inhalation of ether caused an early inhibition of evoked responses in the reticular formation. The thresholds of desynchronization of EEG in electric stimulation of the reticular formation did not change. The marked reduction of the amplitude of transcallosal responses enables to conclude that ether anesthesia is associated with block of the cortex and not the reticular formation. Introduction of epontol caused a less marked inhibition of EEG desynchronization than in the action of intranarcon; reduction of the amplitude of evoked responses did not noticably differ from that after the administration of intranarcon. The amplitude

1/2   0 2

REEL/FRAME
19771684

USSR

UDC 615.31:547.857.4

GUTOROV, L. A., and GOLOVCHINSKAYA, YE. S., All Union Scientific Chemical-
Pharmaceutical Research Institute imeni S. Ordzhonikidze, Moscow

"Syntheses in the Purine Series. XXXIV. Conversion of N,N'-Dimethylxan-
thines in the Reaction with Phosphorus Oxychloride in Presence of Tertiary
Amines"

Abstract: Theobromine, in the presence of N,N-dimethylaniline (DMA is
converted to 2,6-dichloro-7-methylpurine (I) in 25% yield. When phosphorus
pentachloride is used instead of DMA, the yield is almost quantitative.
Theobromine reacts with $POCl_3$ in the presence of DMA to yield (I) and a
bright red para-condensation product of DMA and a molecule of purine; the
structure of this addition product was confirmed by PMR analysis. To avoid
this side reaction, it is recommended to use triethylamine hydrochloride
instead of DMA hydrochloride.

1/1

USSR   UDC 615.31:547.857.012.1:542.9

OVCHAROVA, I. M., and GOLOVCHINSKAYA, YE. S.

"Synthesis in a Series of Purine Derivatives. XXXIII. Some New Type Diethyl-enidophosphimidopurines"

Moscow, Khimik-Farmatsevtcheskiy Zhurnal, No 4, 1973, pp 17-19

Abstract: The synthesis of a series of derivatives of 2- and 6-iminopurines substituted on the imino groups by diethylenimidophosphanide group is described. Their synthesis was undertaken to compare the biological activity of these compounds with the activity of the previously synthesized diethyleni-midophosphamidopurines obtained from the corresponding aminopurines not containing the N-methyl group in the pyrimidine ring. Some differences in the interaction of the amino- and iminopurines with phosphorous oxychloride are described. The biological investigation of 2- and 6-deithylenimidophos-phimidopurines revealed that their anticancerous activity is significantly inferior to the activity of 2-,6- and 8-diethylenimidophosphamidopurines.

1/1

USSR   UDC 615.277.3:547.857].012.1

KORSUNSKIY, V. S., and GOLOVCHINSKAYA, YE. S., All Union Scientific Chemical
Pharmaceutical Research Institute Imeni S. Ordzhonikidze, Moscow

"Syntheses in the Purine Series. XXIX. 8- and 2-Diethyleneimidophosphamido-
purines"

Abstract: A series of 8-diethyleneimidophosphamidopurines was synthesized by
heating 2,6-dichloro-8-amino-7-methylpurine (I) with excess dimethylamine to
yield an intermediate product -- 2-chloro-6-dimethylamino-8-amino-7-methyl-
purine (II), m.p. 249-252°. (I) could be obtained from 2,6,8-trichloro-7-
methylpurine, which in turn was synthesized in high yield from theobromine
and PCl₃. Reaction of (II) with phosphorus oxychloride followed by condensa-
tion with ethyleneimine in presence of triethylamine gave the following deriva-
tives: 8-diethyleneimidophosphamido-7-methylpurine (III), dec. > 270°,
2-chloro-6-dimethylamino derivative of (III), dec. > 300°, 2-chloro-6-morpholino
derivative of (III), dec. > 300°, 6-morpholino derivative, and 6-piperidino
analogue of (III), m.p. 242-246°. 2-Diethyleneimidophosphamido-6-methylamino-
7-methlpurine, m.p. 150-152° was obtained from 7-methylguanine in a similar
fashion. None of these compounds showed any significant antitumor activity.

1/1

USSR   UDC 615.31:547.857].012.1:541.9

GUTOROV, L. A., and GOLOVCHINSKAYA, YE. S., All-Union Scientific Chemical-
Pharmaceutical Research Institute Imeni S. Ordzhonikidze, Moscow

"Syntheses in the Purine Series. XXVII. Addition Products of Phosphorus
Oxychloride and 2-Chloro-3,7-dimethylhypoxanthine"

Moscow, Khimiko-Farmatsevtcheskiy Zhurnal, Vol 6, No 4, Apr 72, pp 26-61

Abstract: Heating 1 g of 2-chlorotheobromine in 2 ml of phosphorus oxychloride
at 60-80° for several minutes yields 85% of a crystalline addition product,
m.p. 93-102°. To obtain 2,6-dichloro-3,7-dimethylpurinium hydrochloride, m.p.
165-172°, 5 g of theobromine is dissolved in 30 ml of phosphorus oxychloride
with heating, and dry HCl is passed through the solution. After cooling, the
product is filtered off, washed with petroleum ether and dried. Its IR spectrum
shows bands at: 577, 620, 658, 723, 760, 787, 895, 1035, 1127, 1161, 1184, 1104,
1232, 1292, 1352, 1415, 1470, 1558, 1585, 1623, and 1715 cm^{-1}.

1/1

USSR   UDC 615.221:547.857.4J.011.5

GUTOROV, L. A., NIKOLAYEVA, L. A. and GOLOVCHINSKAYA, YE. S., All-Union
Scientific Research Chemical and Pharmaceutical Institute imeni Sergo
Ordzhonikidze, Moscow

"Syntheses in the Purine Series. Report 28. The Role of Phosphorus Penta-
chloride in the Transformation Reaction of Theobromine or 8-Chlorotheobromine
into Respective 2,6-Dichloropurines.

Abstract: This study concerns the transformations of adducts (I, II) which
were formed in the reaction of theobromine (III) or 8-chlorotheobromine (IV)
with phosphorus oxychloride when treated with phosphorus pentachloride. It
is noteworthy that 2,8-dichlotheobromine (V) is capable of addition of not
only phosphorus oxychloride or phosphorus pentachloride to form adducts II
or a new adduct -- a,6,8-trichloro-3,7-dimethyldihydropurine tetrachlor-
phosphate (VII) but also phosphorus pentachloride. In this case a new
adduct is formed in which $OSbCl_4$ (IX) is the anion. It reacts with alcohol
and is transformed to the ethoxyderivative (X). The position of the ethoxy-
group is confirmed by the formation of 6-ethoxy-8-chlorotheobromine as a
result of hydrolysis. The basic transformational stages of III and IV to

1/3

- 7 1 -

USSR

GUTOROV, L. A., et al, Khimiko-farmatsevticheskiy zhurnal, Vol 5, No 12,
Dec 71, pp 17-20
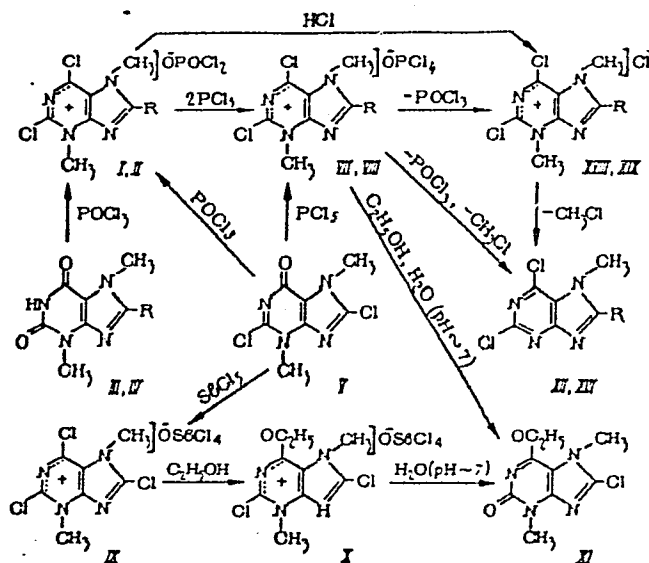
2/3

I, III, VIII, XIII, XIX: R = H II, IV, VII, XII, XVIII: R = CL

USSR

GUTOROV, L. A., et al, Khimiko-farmatsevticheskiy zhurnal, Vol 5, No 12,
Dec 71, pp 17-20

their respective 2,6-dichloropurines are detailed and the intermediate com-
pounds identified. The experimental results are believed to have significant
potentials for the synthesis of new purine derivatives. (3 biblio. refer-
ence)

3/3

USSR   UDC 617-089.5-092

DARBINYAN, T. M. and GOLOVCHINSKIY, V. B.

Mekhanizmy Narkoza (Mechanisms of Anesthesia), Moscow, 1972, 264 pp

Translation: Contents

1/2

USSR

DARBINYAN, T. M. and GOLOVCHINSKIY, V. B., Mekhanizmy Narkoza, 1972, 264 pp

2/2

USSR   UDC: 621.372.86(088.8)

MARIN, V. P., ZAKHAROV, V. P., GOLOVENKOV, V. E., YEROSHEV, V. K.

"A Waveguide Port for Tapping Energy"

USSR Author's Certificate No 265294, filed 11 Dec 67, published 26 Jun 70
(from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11B176 P)

Translation: The proposed waveguide energy-tapping port for electronic in-
struments in the SHF range contains a flat ceramic insulator. To reduce
dielectric losses, improve the reliability of the metal-to-ceramic seal and
simplify the process of manufacture, the port contains a metal ring support
flange with reinforcing ribs spaced at equal angles along the radii. The
dielectric ceramic insulator is made up of several sectors in a number equal
to the number of ribs. Each ceramic sector is vacuum tight against two
adjacent ribs and against the part of the support flange between them. To
improve heat transfer, the radial reinforcement ribs have internal channels
for liquid coolant. Two illustrations. Resumé.

1/1

Water Treatment

USSR

UDC 628.3 + 663.631

RODZILLER, I. D., and GOLOVENKOV, Yu. N.

"Purification of Sewage by the Reverse Osmosis Method"

Moscow, Zhurnal Vsesoyuznogo Khimicheskogo Obshchestva Imeni D. I. Mendeleyev, Vol 17, No 2, 1972, pp 184-188

Abstract: A review type analysis of the literature data [64 references] on sewage purification by the reverse osmosis method -- hyperfiltration through semipermeable membrane under pressure exceeding the osmotic pressure -- is reported. Available data are insufficient as yet for the design of large scale equipment for sewage purification. The need is stressed for more studies of the membrane process itself and development of new membranes. A conclusion is reached that after the developmental difficulties have been mastered, this reverse osmosis purification may be by far the method of choice for concentration of expensive materials normally lost with sewage, for re-cycling of water in water poor areas, for removal of mineral impurities, re-moval of biologically inert organic materials, et.

1/1

UDC 532

USSR

YUKHNOVSKIY, I. R., VYSOCHANSKIY, V. S., GOLOVKO, M. F.

"Study of Group Expansion for Binary Distribution Functions of Systems of Particles With Electrostatic Interaction. I. Third Virial Coefficient"

In-t teor. fiz. AN USSR. Preprint. ITF-72-1R (Institute of Theoretical Physics. Academy of Sciences UkrSSR. Preprint, ITF-72-1R), Kiev, 1972, 29 pp, ill., 8 kop. (from RZh-Fizika, No 1, Jan 73, Abstract No 1Ye87)

Translation: The curves of the binary distribution function of three-variety ion-dipole systems were obtained in the approximation of the third virial coefficient. The density of the dipole particles corresponds to their concentration in the liquid. It is shown that the effect of higher virial coefficients intensifies with a decrease in the ion concentration, and the value of the first approximation of the binary function rises unnaturally. It is also shown that one must replace the pair interaction potential by the active force potential under infinite dilution to account for the dipole subsystem in the region of small ion concentrations. The ion subsystem at small concentrations should be taken into account by expansion of the distribution functions in powers of the plasma parameter.

1/1

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

GOLOVEY, M. I., PERESH, Ye. Yu., LADA, A. V., POTORIY, M. V.

"Some Electrophysical Characteristics of Metathiobismutite and Metaselenobismutite of the Alkali Metals"

Uzhgorod, V sb. Nekotor. vopr. khimii i fiz. poluprovodnikov slozhn. sostava (Some Problems of the Chemistry and Physics of Complex Semiconductors -- collection of works), 1970, pp 150-157 (from RZh-Fizika, No 11, 1971, Abstract No 11E952)

Translation: $XBiSe_2$ and $YBiS_2$ where X is Na, K, Rb, Cs; and Y is Li, Na, K, Rb, Cs are synthesized. Aquadag or Pt contacts are applied for measuring the electrical conductivity σ and the thermal emf α of the specimens. All synthesized materials are impure p-semiconductors. The thermal activation energy found in the natural conductance region increases with increasing ion radius of the alkali metals. The growth in α is apparently the result of the increase in mobility of the charge carriers. With the attainment of the natural conductivity temperature, α begins to fall off.

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2   049   UNCLASSIFIED   PROCESSING DATE--04DEC70
TLE--ELECTROPHYSICAL PROPERTIES OF ALKALI METAL METASELENOARSENITES -U-

THOR-(05)-DOVGOSHEY, N.I., NIKOLYUK, V.I., GEMRAD, YE.YE., CHEPUR, D.V.,
SOLOVEY, M.I.
UNTRY OF INFO--USSR

JRCE--IZV. VYSSH. UCHEB. ZAVED., FIS. 1970, 13(3), 138-9

TE PUBLISHED-------70

BJECT AREAS--CHEMISTRY, PHYSICS

PIC TAGS--ACTIVATION ENERGY, IR RADIATION, SEMICONDUCTOR MATERIAL,
PHYSICAL CHEMISTRY PROPERTY, SODIUM COMPOUND, POTASSIUM COMPOUND,
ARSENIDE, SELENIDE, CESIUM COMPOUND, LITHIUM COMPOUND, RUBIDIUM COMPOUND

NTROL MARKING--NO RESTRICTIONS

CUMENT CLASS--UNCLASSIFIED
OXY REEL/FRAME--3003/1504   STEP NO--UR/0139/70/013/003/0138/....

RC ACCESSION NO--AT0130433
                    UNCLASSIFIED

RC ACCESSION NO--AT0130433
STRACT/EXTRACT--(U) GP-0-- ABSTRACT. THE COND. SIGMA, OF MASSE SUB2, M
EQUALS LI, NA, K, RB, AND CS, WAS DETD. FROM MINUS 50 TO 190DEGREES.
THE ACTIVATION ENERGY OBTAINED FROM LOG SIGMA VS. 1-T CURVES INCREASED
FROM 1.10 FOR LIASSE SUB2 TO 2.00 EV FOR CSASSE SUB2. ALL MASSE SUB2
EXHIBITED A SLIGHT PHOTOSENSITIVITY AT ROOM TEMP. LIASSE SUB2 WAS
SENSITIVE TO IR RADIATION. ALL OTHERS WERE SENSITIVE TO VISIBLE LIGHT.
THE HIGHEST PHOTOSENSITIVITY WAS EXHIBITED BY NA AND K COMPDS.   THAT OF
NAASSE SUB2 INCREASED SHARPLY AS THE TEMP. DECREASED. ALL MASSE SUB2
COMPDS. ARE SEMICONDUCTORS.   FACILITY: UZHGOROD. GOSUNIV.,
UZHGOROD, USSR.

UNCLASSIFIED

USSR   UDC: 629.7.036:536.46

GOLOVICHEV, V. I., DIMITROV, V. I.

"Composition and Thermodynamic Properties of Combustion Products of Hydrogen in Air"

Aerofiz. Issledovaniya [Aerophysical Research -- Collection of Works], Novosibirsk, 1972, pp 83-85 (Translated from Referativnyy Zhurnal Aviatsionnyye i Raketnyye Dvigateli, No 5, 1973, Abstract No 5.34.90, from the Resume).

Translation: The problem of determining the values of equilibrium compositions and properties of the products of combustion of hydrogen in air is solved numerically. The following quantities were defined: the values of $T_{comb.\ prod.}$, enthalpy, entropy, frozen and equilibrium heat capacities C_p and C_v, frozen and equilibrium values of adiabatic index, molecular weight of combustion products. The solution is produced by a linearized version of the Newton-Rafson method. Results are presented in the parameter ranges $P = 0.5\text{-}10$ atm, $\alpha = 0.5\text{-}10$, $T_0 = 300\text{-}1200°$ K. 1 figure.

1/1

USSR

UDC: 662.58

GOLOVICHEV, V. I.,DIMITROV, V. I., SOLOUKHIN, R. I., Novosibirsk

"Numerical Analysis of Kinetic Models of Hydrogen Combustion"

Novosibirsk, Fizika Goreniya i Vzryva, Vol 9, No 1, Jan/Feb 73, pp 95-101

Abstract: The paper presents a numerical integration of the system of kinetic equations which describe the reaction of ignition and combustion of hydrogen, for various initial states and kinetic models of the system (introduction of additives, change in the initial level of concentration of active centers, addition of water vapor). These calculations are done to determine the sensitivity of the kinetic model to the effect of changes in small initial concentrations of active centers, and to define the part played by nonisothermality of the combustion process. A comparison is made with experimental data on ignition delays.

1/1

USSR

GOLOVIKHINA, V. P., YELISEYEV, V. A., and ZOLOTAREV, V. F.

"Minimum Cascaded Capacitance of Neuristors"

Abstract: The purpose of this paper is to compute the minimum capacitance of the load determining the minimum dimensions of a neuristor stage, and to derive the general conditions for propagating a pulse along the neuristor. To do this, the minimum value of the cascaded neuristor must be computed as a function of the distance between thyristor stage and the lower base point. This paper, which shows how the computation is done, is the sequel to an earlier paper of the two last-named authors above (Poluprovodnikovaya model' neyrona -- A Semiconductor Model of the Neuron -- Uch. zap. DVGU, Vladivostok, Ser. fiz.-mat. nauk, 1969, 17, p 152) in which it was shown that the excitation, formation, and propagation of a pulse in a neuristor line using partially distributed, quasi-matrix, planar epitaxial thyristors connected at the lower base are possible because of the above-mentioned capacitance and its ability to store energy.

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USSR

GOLOVIKHINA, V.P., ZOLOTAREV, V.F.

"Analysis Of Nonvacuum Methods Of Television Image Conversion With Stored Charge"

Abstract: The problems are considered of further development of methods of evaluating the characteristics of the quality of image conversion and the information characteristics of solid-state methods of television image conversion. The principal circuit of a nonvacuum method of television image conversion and the equivalent circuit of a solid-state image converter are shown. Relation- ships are developed for the signal-to-noise ratio, responsiveness, transmission frequency of frames, video signal amplitude, and others, and also for performance, information responsiveness and the percentage of information which is admitted. The number of lost frames because of photoelectric and commutation time lags is estimated. The dependences are cited of responsiveness, performance, trans- mission frequency of frames, information and relative responsiveness of known methods of image conversion in a video signal, on the resolution. It is con- cluded that the most promising methods of television image conversion are methods which use commutation by electrical setting [taktovyy] pulses and by a neuristor pulse. 5 fig. 12 ref.

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GOLOVIKHINA, V. P., ZOLOTAREV, V. F.

"Analysis of Nonvacuum Methods of Television Conversion of Images with
Charge Storage"

Translation: Problems are considered of the further development of methods
of evaluation of the characteristics of the quality of image conversion and
the information characteristics of solid-state methods of TV image conver-
sion. Relations are derived for the signal-to-noise ratio, sensitivity,
frame transfer frequency, the amplitude of the video signal and others, and
also for the output, information sensitivity and percent of information
passed. The number of lost frames because of photoelectric and commutation
inertia is evaluated. The dependence of the sensitivity, output, frame
transfer frequency, information and comparative sensitivity of known
methods of converting images into a video signal upon resolving power is
considered. 5 ill. 12 ref. Author's Abstract.
1/1

1/2   036   UNCLASSIFIED   PROCESSING DATE--04DEC70
TITLE--MATRIX PHOTOELECTRIC IMAGE CONVERTER -U-

AUTHOR-(03)-GOLOVIKHINA, V.P., ZOLOTAREV, V.F., SUKHANOV, S.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK TURKM. SSR, SER. FIZ.-TEKH., KHIM. GEOL. NAUK
  1970, (2), 84-92
DATE PUBLISHED-------70

SUBJECT AREAS--NAVIGATION

TOPIC TAGS--PHOTOELECTRIC METHOD, CADMIUM SULFIDE, CADMIUM TELLURIDE,
  IMAGE CONVERTER, PHOTORESISTOR, TV CAMERA

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/1229   STEP NO--UR/0202/70/000/002/0084/0092

CIRC ACCESSION NO--AP0136640
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0136640
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. METHODS WERE DEVELOPED TO DESIGN
   THE MATRIX PHOTOELEC. CONVERTER TO BE USED AS A SOURCE OF VIDEO SIGNALS
   IN A TELEVISION CAMERA WITHOUT ANY VACUUM SYSTEM. THE MATRIX IS ASSUMED
   TO COMPRISE CONDUCTIVE RAILS OF TE, PERPENDICULAR TO AL RAILS, AND COS
   PHOTORESISTORS, N,COS,P,CDTE JUNCTIONS BEING PRODUCED AT THE CONTACTS OF
   TE AND COS. HORIZONTAL AND VERTICAL SWEEP GENERATORS OF SIMILAR
   ELEMENTS ARE PROPOSED. CIRCUIT SCHEMES ARE GIVEN. THE RELATION BETWEEN
   THE MATRIX AND INDIVIDUAL ELEMENT PARAMETERS WAS DERIVED. AS AN
   EXAMPLE, A CAMERA WAS DESIGNED WHICH HAD A SENSITIVITY OF 1.5 TIMES 10
   PRIME NEGATIVE3 LX, VIDEO SIGNAL VOLTAGE 4 MV, AND 625 LINES.
   HORIZONTAL AND VERTICAL SWEEP GENERATOR PARAMETERS ARE TABULATED.
   FACILITY: FIZ.-TEKH. INST., ASHKHABAD, USSR.

UNCLASSIFIED

USSR   UDC 669.15.018.8

LEVIN, F. L., KONDRAT'YEV, A. I., BABAKOV, A. A., GOLOVIN, A. I., and
KLIMOV, S. V.

"Effect of Alloying Elements on Structure and Properties of Chromium-Manganese
Steel"

Sb. tr. TsNII chern. metallurgii (Collection of Works of Central Scientific
Research Institute of Ferrous Metallurgy), 1970, vyp. 77, pp 119-124 (from
RZh-Metallurgiya, No 3, Mar 71, Abstract No 31609 by authors)

Translation: During the start-up of the industrial production of N-containing
stainless steel Kh17AG14 (EP213) it was found that the steel is susceptible
to the formation of porosity caused by the evolution of N_2 during the crystal-
lization of ingots. Peculiarities of the effect of Ti, C, Ni, and N on the
Steel's structure and properties were studied and rational alloying limits
assuring the complete elimination of ingot porosity were established. The
quality of the metal was improved without any impairment of its physico-
mechanical properties. One illustration. One table. Bibliography with two
titles.

1/1

USSR

UDC 669.14.018.584.001.6

BABAKOV, A. A., LEVIN, F. L., KONDRAT'YEV, A. I., GOLOVIN, A. I., KUL'KOVA, M. N., DANILYUK, YE. B., PEVZNER, A. YE., OPANEVICH, G. A., and KRAVCHENKO, I. D.

"Experience in Production of Sheet From 25Kh17N4G15AF2 Steel"

Spetsial'nyye Stali i Splavy [Special Steels and Alloys--Collection of Works], No 77, Metallurgiya Press, 1970, pp 124-131

Translation: The first experimental group of 40-mm sheets of type 25Kh17N4G15AF2 high-strength nonmagnetic steel has been manufactured. Based on studies of the specifics of the production of the steel during various stages of the technological process and study of the properties of the metal produced, practical recommendations are given for the production of sheet. 3 figures; 3 tables.

1/1

USSR

UDC 669.017.1:669.14.018.8

LEVIN, F. L., KONDRAT'YEV, A. I., BABAKOV, A. A., GOLOVIN, A. I., and KLIMOV, S. V.

"Influence of Alloying Elements on Structure and Properties of Chrome-Manganese Steel"

Spetsial'nyye Stali i Splavy (Special Steels and Alloys -- Collection of Works), No 77, Metallurgiya Press, 1970, pp 119-124

Translation: During the process of industrial production of nitrogen-containing Kh17AG14 (EP213) stainless steel, a tendency of the steel to formation of pores resulting from separation of nitrogen during crystallization of ingots, was noted.

The specifics of the influence of titanium, carbon, nickel, and nitrogen on the structure and properties of the steel are studied and effective limits of alloying are determined, providing for complete elimination of porosity of ingots. The quality of the metal was increased without decreasing the physical and mechanical properties of the steel. 1 figures; 1 table; 2 biblio. refs.

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Translation of Annotation: The book discusses the thermodynamic theory of sol-
utions of gas impurities in metals, the phenomenological theory of their
diffusion in solids and melts, principles of measuring thermodynamic and
kinetic parameters in gas-metal systems, and mathematical description of degas-
sing solids and melts. The monograph also covers problems comprising the
theoretical basis for studying and determining gas contents in metals. The
book is intended for scientists, engineers, and graduate students and students
of senior courses specializing in physical chemistry, as well as for specialists
of other areas of science and technology in which the problems of mass transfer
of gas contaminants are of fundamental importance.

Translation of Table of Contents:

1/8

USSR

KUNIN, L. L. et al., Problemy degazatsii metallov. Fenomenologicheskaya
teoriya, Moscow, "Nauka" Press, 1972.

USSR

KUNIN, L. L. et al., Problemy degazatsii metallov. Fenomenologicheskaya
teoriya, Moscow, "Nauka" Press, 1972.

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USSR
KUNIN, L. L. et al., Problemy degazatsii metallov. Fenomenologicheskaya
teoriya, Moscow, "Nauka" Press, 1972.

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USSR

KUNIN, L. L. et al., Problemy degazatsii metallov. Fenomenologicheskaya teoriya, Moscow, "Nauka" Press, 1972.

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USSR
KUNIN, L. L. et al., Problemy degazatsii metallov. Fenomenologicheskaya
teoriya, Moscow, "Nauka" Press, 1972.

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USSR
KUNIN, L. L. et al., Problemy degazatsii metallov. Fenomenologicheskaya
teoriya, Moscow, "Nauka" Press, 1972.

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USSR
KUNIN, L. L. et al., Problemy degazatsii metallov, Fenomenologicheskaya
teoriya, Moscow, "Nauka" Press, 1972.

PART FOUR   EXPERIMENTAL DATA AND ANALYTICAL METHODS

8/8

USSR   UDC 536.22+536.252

VOINOV, O. V., GOLOVIN, A. M., PETROV, A. G., Moscow

"Transfer of Energy from an Evaporating Drop into the Vapor Medium"

Zhurnal Prikladnoy Mekhaniki i Tekhnicheskoy Fiziki, No 1, 1972, pp 74-78.

Abstract: The distribution of temperature around an evaporating drop in
a vapor medium is studied. The transfer of energy occurs by molecular
heat conductivity, convection and radiation. The mean free path length
of radiation is significantly greater than the characteristic distance
over which the temperature changes. The times of relaxation of temperature
to its stable value and characteristic distances over which temperature
distribution changes are determined.

1/1

USSR

GOLOVIN, A.M., SERGIYEVSKIY, E.D.

UDC 532.517:536.3

"Flow in Laminar Boundary Layer During Intensive Injection and Radiant Heat Exchange"

Abstract: An asymptotic solution is obtained to the system of boundary layer equations with intense injection of foreign ray-absorbing substance for optically thick and thin boundary layers with account for the magnetic field effect. Analytical formulae are obtained which allow calculation of temperature profiles and concentration. The results of temperature calculation agree well with those obtained earlier by the numerical method. A heat flux to the wall for an optically thick boundary layer asymptotically tends to zero with increasing injection parameter and Prandtl number.

1/1

A70-23868 #   Approximate solution of the equations of the boundary layer with injection (Priblizhennoe reshenie uravnenii pogranichnogo sloia pri vduve). A. M. Golovin and E. D. Sergievskii (Moskovskii Gosudarstvennyi Universitet, Moscow, USSR). *Inzhenerno-Fizicheskii Zhurnal*, vol. 18, Jan. 1970, p. 110-117. 11 refs. In Russian.

Considered is the system of equations for a laminar boundary layer with blowing through the surface of a wedge with top angles of pi and one-half pi. Analytic solution of the linearized motion equation yields results which are in a fine agreement with the numerical methods. Simple analytic expressions are presented for calculation of the concentration and temperature fields at large and small Prandtl and Schmidt numbers.

(Author)

REEL/FRAME
19810439

TITLE--THERMAL AND DIFFUSION RELAXATION OF AN EVAPORATING DROP WITH
   INTERNAL HEAT EMISSION -U-
AUTHOR-(02)-VOLKOV, F.G., GOLOVIN, A.M.

COUNTRY OF INFO--USSR

SOURCE--NOVOSIBIRSK, AKADEMIYA NAUK SSSR, SIBIRSKOYE OTDELENIYE ZHURNAL
   PRIKLADNOY MEKHANIKI I TEKHNICHESKOY FIZIKI, NO 1, JAN-FEB 70, PP 78-87
DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--REYNOLDS NUMBER, MATHEMATIC ANALYSIS, HEAT FLUX PICKUP, HEAT
   DIFFUSION, GAS RELAXATION, RELAXATION PROCESS, EVAPORATION, HEAT OF
   VAPORIZATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/0962   STEP NO--UR/0207/70/000/001/0078/0087

CIRC ACCESSION NO--AP0126609
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0126609

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PROBLEMS OF THE NONSTATIONARY
EVAPORATION OF A HEAT EMITTING DROP WITH A UNIFORM DISTRIBUTION OF
INTERNAL HEAT SOURCES IS CONSIDERED. THE ASSUMPTION ON THE SMALLNESS OF
THE REYNOLDS (R EQUALS UA-V SMALLER THAN 1) AND PECLET (P SUBD EQUALS
US-D SMALLER THAN 1) NUMBERS, WHERE A IS THE DROP RADIUS, U IS THE
RELATIVE SPEED OF MOTION, AND V, D, X ARE THE VISCOSITY, DIFFUSION AND
TEMPERATURE CONDUCTIVITY COEFFICIENTS OF THE VAPOR GAS MEDIUM, MAKES IT
POSSIBLE TO NEGLECT CONVECTIVE VAPOR AND HEAT TRANSFER, AND TO CONSIDER
THE CONCENTRATION AND TEMPERATURE FIELDS AS SPHERICALLY SYMMETRICAL.
SINCE THE DENSITY OF THE SATURATED VAPOR IS SMALLER THAN THAT OF THE
LIQUID, CONVECTIVE FLOW RESULTING FROM VARIATION OF THE DROP RADIUS IS
NOT TAKEN INTO ACCOUNT. BASIC EQUATIONS ARE ESTABLISHED FOR THE
PROBLEM OF THE DIFFUSION AND THERMAL RELAXATION OF A DROP AT TEMPERATURE
T SUBO WITH INTERNAL HEAT SOURCES WHICH, SUDDENLY FINDS ITSELF IN A
MEDIUM WITH TEMPERATURE T SUBINFINITY. FROM THESE EQUATIONS THE
TEMPERATURE DISTRIBUTION IS DETERMINED, ASSUMING THAT ENERGY TRANSFER
FROM THE DROP TO THE GAS IS ACCOMPLISHED BY RADIATION, DIFFUSION,
THERMAL CONDUCTIVITY, AND THE DIFFUSION THERMAL EFFECT. THE DIFFUSION
AND HEAT FLOWS RESULTING FROM THE MOLECULAR HEAT CONDUCTIVITY ARE
SUBSEQUENTLY DETERMINED.

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ABSTRACT/EXTRACT--IT IS SHOWN THAT UNDER CERTAIN CONDITIONS A
QUASISTATIONARY REGIME OF DROP EVAPORATION IN THE TIME PERIOD TAU SUB0
IS SMALLER THAN T IS SMALLER THAN OR SIMILAR TO TAU EXISTS, IF THE HEAT
QUANTITY, ABSORBED OR EMITTED BY THE UNIT OF DROP VOLUME IN THE PROCESS
OF TEMPERATURE RELAXATION, SUBSTANTIALLY EXCEEDS THE HEAT EXPENDITURES
ON THE UNIT OF VOLUME OF THE VAPOR GAS MEDIUM RELATED TO THE PHASE
TRANSITION WITH THE VARIATION OF VAPOR CONCENTRATION EQUAL TO (P S
INFINITY MINUS P 1 INFINITY). EXPRESSIONS ARE DERIVED FOR DIFFUSION AND
HEAT FLUX VARIATIONS WITH LARGE TIME PERIODS.

UNCLASSIFIED

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INVULNERABILITY TO JAMMING IS
  DETERMINED FOR THE RECEPTION OF CODED SIGNALS (AS A WHOLE) IN A SYSTEM
  WITH QUANTIZATION. THIS FORM OF RECEPTION IS SHOWN TO BE MUST
  INVULNERABLE TO JAMMING UNDER CONDITIONS OF FLUCTUATING INTERFERENCE.

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USSR

CHUDAREV, P. F., GOLOVIN, D. L.

"Model of Description of Shape of Parts for Input of Geometric Information to a Computer"

Tr. Mosk. Aviats. In-ta. [Works of Moscow Aviation Institute], 1972, No 243, pp 23-25 (Translated from Referativnyy Zhurnal, Kibernetika, No 3, Moscow, 1973, Abstract No 3 V717 by V. Mikheyev).

Translation: The possbility is studied of tabular definition of the shape of a part limited by flat "terminal" and cylindrical circular surfaces, all axes of which are parallel to the X direction. The mathematical model of the problem is as follows: suppose S is the set of surfaces F_i limiting part D_i. For each point $m_{i0} \in F_i$, linear trajectories of examination n_j are fixed, over which points m_{i0} can move in direction i. The trajectories of examination n_j pass through points $m_{i0} \in F_i$ parallel to the X axis. The trajectories of examination n_2 pass through points $m_{i0} \in F_i$ originating at points (or a point) on the X axis and perpendicular to the X axis.

Theorem. If the surfaces of identical limitation F_{ik} and F_{ip} are such

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CHUDAREV, P. F., GOLOVIN, D. L., Tr. Mosk. Aviats. In-ta., 1972, No 243, pp 23-25.

that $F_{ik} \subset F_i$ and $F_{ip} \notin F_i$, then $F_{ik} \cap F_{ip} = \Phi$ and the surfaces F_{ik} and F_{ip} contain no common points m_i.

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