1/2   022   UNCLASSIFIED   PROCESSING DATE--16OCT70
TITLE--COMPARATIVE SEROLOGICAL CHARACTERISTICS OF ANTIHEPATOCYTOTOXIC SERA
   OBTAINED BY MEANS OF IMMUNIZATION OF ANIMALS WITH ISOLATED MITOCHONDRIA
AUTHOR-(03)-SPASOKUKOTSKIY, YU.O., ALEKSEEVA, I.M., GALENKO, T.I.

COUNTRY OF INFO--USSR

SOURCE--FIZIOLOGICHNIY ZHURNAL, 1970, VOL 16, NR 3, PP 341-344

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--RABBIT, IMMUNOLOGY, LIVER, MITOCHONDRION, ANTIGEN, PROTEIN,
   IMMUNE SERUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1994/1137   STEP NO--UR/0238/70/016/003/0341/0344

CIRC ACCESSION NO--AP0115156
                         UNCLASSIFIED

CIRC ACCESSION NO--AP0115156
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DATA ARE CITED ON THE
COMPARATIVE SEROLOGICAL CHARACTERISTIC (ACCORDING TO THE COMPLEMENT
FIXATION TEST) OF HEPATOCYTOTOXIC SERA OBTAINED BY MEANS OF RABBIT
IMMUNIZATION WITH ISOLATED MITOCHONDRIA OF THE LIVER CELLS AND EXTRACTS
OF THE WHOLE LIVER TISSUE UNDER STRICTLY ANALOGOUS CONDITIONS BY SIMILAR
QUANTITIES OF ANTIGEN ACCORDING TO PROTEIN.   IT IS SHOWN, THAT
ANTIHEPATOCYTOTOXIC SERUM OBTAINED BY MEANS OF IMMUNIZATION WITH
ISOLATED MITOCHONDRIA OF THE LIVER CELLS IS LESS ORGANOSPECIFIC, THAN
THE SERUM OBTAINED BY IMMUNIZATION IWTH THE EXTRACT OF THE WHOLE LIVER
TISSUE AND ACCORDING TO IMMUNOLOGICAL ACTIVITY IN THE TEST OF COMPLEMENT
FIXATION WITH HOMOGENATE OF THE LIVER IT DOES NOT ESSENTIALLY DIFFER
FROM THE LATTER.   FACILITY: DEPARTMENT OF EXPERIMENTAL
THERAPEUTICS, THE A. A. BOGOMOLETZ INSTITUTE OF PHYSIOLOGY, ACADEMY OF
SCIENCES, UKRAINIAN SSR.

UNCLASSIFIED

USSR   UDC 632.951

GALETENKO, S. M., and OPANASENKO, G. S., Nikitskiy State Botanical Garden

"Systematic Control by Means of Chemical Agents of the Mite Tetranychus vienensis Zacher in Crimean Orchards"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 9, No 5, 1971, pp 26-28

Abstract: The mite Tetranychus vienensis is one of the most noxious pests damaging fruit crops in the Crimea. Organophosphorus compounds are effective in the control of fruit mites, but cannot be applied constantly and for a long time, because resistance to this and analogous compounds develops. It was established in tests conducted in apple orchards that the acaricides neoron, galecron, chloroethanol, milbex, acrex, acar-50, acar-338, "acaricide," and decachlor can be used to advantage instead of organophosphorus acaricides in controlling T. vienensis. The most effective acaricides of those tested were neoron and galecron, followed by milbex and, in the third place, by chloroethanol. The optimum time for the first spraying of apple trees with an acaricide in the Crimea is in the pink bud phenophase. The second spraying should be carried out at the time when the average number of adult mites amounts to 0.2-0.3 per leaf. This is followed by a number of sprayings that varies depending on the activity of the acaricide. If phthalophos, dipterex,

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USSR

GALETENKO, S. M., and OPANASENKO, G. S., Khimiya v Sel'skom Khozyaystve, Vol 9, No 5, 1971, pp 26-28

or metathion has been used instead of DDT or sevin for the control of the codling moth, the necessity for using an acaricide may substantially decrease.

2/2

GALETSKAYA, R. A.

economics

URGENT PROBLEMS OF POPULATION

Article by Candidate of Economic Sciences R. A. Galetskaya, Moscow, Vestnik Akademii Nauk SSSR, Russian, Vol 42, No 4, April 1972, pp 121-124]

Conference in Moscow

In solving the principal problem of the ninth five-year plan -- a considerable elevation of the material and cultural standard of living of the people, an important role is played by study of the socio-economic problems of population. Especially urgent in the given area is investigation of questions of demographic policy, population forecasting, and the development of the Marxist-Leninist theory of population. All these problems were examined at an expanded session of the Scientific Council for "Socio-economic problems of population" of the AS USSR, dedicated to discussion of problems of population of the USSR in the light of the decisions of the 24th Party Congress, held in Moscow on 19 November 1971.

In the various stages of development of our country, said the chairman of the Council, R. V. Ryabushkin, in his report, special measures have been carried out which have influenced the structure and movement of population. The new five-year plan provides for material help to the children of low-income families, concessions to working mothers, the increase of wages in the northern and eastern regions of the country, etc. However, in the opinion of the reporter, it is not completely clear now to what degree it is possible to control many complex demographic processes, for example, the reduction of the birthrate in different regions of the Soviet Union. The reduction of mortality and the considerable increase of length of life in our country are causing our society to become "older", as expressed in a sharp increase of the proportion of the aged, which in turn also requires implementation of a number of large socio-economic measures.

One of the most important problems of demography, continued T. V. Ryabushkin, is the elaboration of sufficiently precise methods of forecasting the numbers and structure of the population for the long term. Simple extrapolation of empirical regularities discovered in a certain segment of time, the reporter said, in determining the numbers and structure of the population

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Microbiology

USSR   G   UDC 619.9-092.9

GALETSKIY, P. K., Chair of Microbiology, Kishinev Medical Institute
and Department of Infectious Pathology and Experimental Therapy
of Infections, Institute of Epidemiology and Microbiology imeni
N. F. Gomaleya

"Experimental Infection Caused by Staphylococci Resistant to Anti-
bodies"

Kishinev, Zdravookhraneniye, No 2, Mar/Apr 70, pp 29-31

Abstract: Mice were injected intraperitoneally with similar doses
of pathogenic strains of Staphylococci sensitive to penicillin and
resistant to penicillin, and also with strains resistant to anti-
biotics. Every five days a few animals were sacrificed for study.
Animals infected with resistant strains showed definite macroscopic
changes, whereas those infected with sensitive strains and treated
were almost free of infection by that time. Infection with resis-
tant strains involved the lungs, liver, kidney, spleen and lymph
glands, in that given. Maximum dissemination of penicillin resis-
tant strains with production of suppurative loci occurred in 65 days,
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GALETSKIY, P. K., et al., Kishinev, Zdravookhraneniye, No 2, Mar/
Apr 70, pp 29-31

and with antibiotic resistant strains, in 120-140 days. Resistant
strains produced artificially were not as severe as those obtained
from patients, which were more difficult to eradicate. In cases
of natural immunity, the bacteria disappeared first from the lungs,
then from the liver, spleen, kidney and finally from the lymphatics.

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- 10 -

USSR

GALEYEV, A. A., LOMINADZE, D. G., PATARAYA, A. D., SAGDEYEV, R. Z., and
STEPANOV, K. N., Institute of High-Temperature Physics of the Academy of
Sciences USSR

"Anomalous Resistance of Plasma Due to Instability at Cyclotron Harmonics"

Abstract: An expression for the anomalous resistance arising due to buildup
of Bernstein modes is obtained and the nonlinear mechanism leading to satura-
tion of the growth of oscillations is explained. It is noted that high
anomalous resistance of plasma observed in many experiments is associated
with the appearance of ion-sound instability; but that ion-sound instability
can arise only for sufficiently strong nonisothermality $T_e \gg T_i$, and the
anomalous resistance occurs when this condition is not fulfilled. It is
observed that instability in electron cyclotron oscillations (Bernstein
modes) has recently been discussed in connection with the problem of anom-
alous resistance; Bernstein modes are oscillations with the wave vector
strictly or almost strictly perpendicular to the magnetic field and with
frequencies of the order $n\omega_{he}$. As distinct from ion-sound, this instability

USSR

GALEYEV, A. A., et al., Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy
Fiziki, Vol 15, No 7, 5 Apr 72, pp 417-420

develops from $T_i \geq T_e$. An expression is obtained for ν_{eff}, the frequency of
the oscillations at which electrons are scattered. The magnitude of ν_{eff} is
small due to the "Pitayevskiy factor" $\kappa^2 \rho_e^2$. The resistance given by this
expression is much less than the resistance due to ion-sound instability.
It is stated that when electron-sound instability due to smallness of the
increment of rise cannot develop and goes into a nonlinear mode such as in
collisionless shock waves, this anomalous resistance in Bernstein modes will
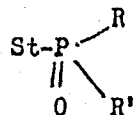play the major role.

2/2

- 21 -

USSR   UDC 547.341

GALEYEV, V. S., and LEVIN, YA. A.

" β -Chloroethyl and Some Unsaturated Derivatives of β -Styrylphosphonic,
-thiophosphonic, and -phosphonous Acids"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), No 8, 1972, pp 1714-1720

Abstract: Syntheses are described for the title compounds based on the
monostyrylation of PCl_5. Ten compounds were prepared having the general
formula

$$St-P\begin{smallmatrix}R\\ \parallel \\ O\end{smallmatrix}R'$$

for 1R and R' representing such groups as OC_2H_5, $OCH=CH_2$, $CH_2CH=CH_2$, OCH_2CH_2Cl,
and CH_2CH_2Cl,Cl. Several compounds of the types $StPR_2$, where R represents
$OCH_2CH=CH_2$, and OCH_2CH_2Cl and $StPS(R_2)$, where R represents OCH_2CH_2Cl, OCH_2
$CH=CH_2$, and Cl were also prepared. Elemental composition and physical data
are given for the above compounds.
1/1

USSR   UDC 547.341

GALEYEV, V. S., and LEVIN, YA. A.

"Some Conversions of Products of Di- and Tristyrylation of Phosphorus Penta-
chloride"

Abstract: The action of methyl dichlorophosphite on di- β -styryltrichloro-
phosphorus and its hydrochloride was studied, and it was found that the
principal product of the reaction is di- β -styrylphosphinic   acid chloride,
rather than di β -styrylchlorophosphine. In the case of the hydrochloride,
small quantities of monostyryl derivatives of phosphorus -- β -styryldichloro-
phosphine and its oxide -- are formed as well as the principal reaction
product. Di- β -styrylchlorophosphine was synthesized by disproportionation
of β -styryldichlorophosphine at 240-250°C.

1/1

Free Radicals

L.1

USSR   UDC 541.13+541.515+542.941+661.718.1

IL'YASOV, A. V., KARGIN, Yu. M., LEVIN, Ya. A., MOROZOVA, I. D., MEL'NIKOV,
B. V., VARINA, A. A., SOTNIKOVA, N. N., and GALEYEV, V. S., Institute of
Organic and Physical Chemistry imeni A. Ye. Arbuzov, USSR Acad. of Sciences

"Electrochemically Generated Free Radicals. 6. The Reduction Mechanism of
Certain Organophosphorus Compounds, and the Electron Paramagnetic Resonance
Spectra of the Anion Radicals Formed"

Abstract: A series of organophosphorus compounds was studied in connection
with their electrochemical reduction, using several methods. The electron
paramagnetic method was applied in the case of electrochemically generated
anion radicals of triphenylphosphine, its oxides, and the diethyl ester of
β-styrylphosphosphonic acid.

Graphical data accompanying the paper include classical and commutated
polarograms for the various compounds, and electron paramagnetic spectra
for free radicals; numerical electrochemical data are given for nine
organophosphorus compounds tested.
1/1

TITLE--SEPARATION OF A CONCENTRATE OF ORGANOSULFUR COMPOUNDS BY AN
   ADSORPTION METHOD -U-

AUTHOR-(04)-OBOLENTSEV, R.D., LYAPINA, N.K., GALEYEVA, G.V., GALEYEVA,
   V.N.

COUNTRY OF INFO--USSR

SOURCE--NEFTEKHIMIYA 1970, 10(1), 110-15

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--DISTILLATION, ORGANOSULFUR COMPOUND, KERSOSENE, CHEMICAL
   SEPARATION, POLYETHYLENE, ORGANOSILICON COMPOUND, PETROLEUM FRACTION,
   SULFIDE, THIOPHENE, HYDROCARBON, CHROMATOGRAPHIC SEPARATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0564   STEP NO--UR/0203/70/010/001/0110/0002

CIRC ACCESSION NO--AP0119482

UNCLASSIFIED

CIRC ACCESSION NO--AP0119482

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A COMBINATION OF RECTIFICATION AND
ADSORPTION CHROMATOG. WAS USED FOR SEPN. OF CONCS. CONTG. ORG. S COMPDS.
THESE CONCS. WERE OBTAINED BY EXTN. OF THE KEROSINE FRACTION
(150-250DEGREES) OF ARLAN NAPHTHA WITH H SUB2 SO SUB4. THE
RECTIFICATION WAS CARRIED OUT UNDER REDUCED PRESSURE IN STAINLESS STEEL
AND GLASS APP. A COLUMN OF 290 TIMES 8.8 CM SIZE WITH 34 THEORETICAL
PLATES AND 4 TIMES 5 MM LEVIN FILLING WAS USED. A 30 L. CONTAINER WAS
HEATED WITH POLY(PHENYLMETHYLSILOXANE) LIQ. NO. 4 TO 200DEGREES. THE
RECTIFICATION RATE WAS 200-50 ML-HR AND THE REFLUX RATIO 20-5:1.
FIFTEEN STRIPPINGS (10DEGREES FRACTIONS) WERE TAKEN AND FURTHER SEPD.
CHROMATOG. ON POLYETHYLENE COLUMNS PACKED WITH SILICA GEL (30-50 MESH:
HEATED 1ST FOR 6 HR TO 70-100DEGREES AND THEN FOR 30 HR TO
150-70DEGREES). TWO COLUMNS WERE USED: (A) 12 M TIMES 35 MM PACKED
WITH 12 1 ADSORBENT WITH 1.2-KG FRACTIONS AND 8 1. ME SUB2 CO ADDED WITH
0.5 HR.; AND (B) 12 M TIMES 18 MM PACKED WITH 3 1. ADSORBENT WITH 0.3-KG
FRACTIONS AND 3 L. ME SUB2 CO WERE USED THE ME SUB2 CO BEING EXPELLED
WITH H SUB2 O. FRACTIONS B. LESS THAN 200DEGREES NEED 1-2
CHROMATOGRAPHIC SEPNS.: HIGHER FRACTIONS REQUIRE SEVERAL REPETITIONS OF
THE PROCESS. THE CONDD. SAMPLES WERE SEPD. INTO SULFIDE, THIOPHENE, AND
HYDROCARBON FRACTIONS OF MOL. WT. 140-205.   FACILITY: INST. ORG.
KHIM., UFA, USSR.

UNCLASSIFIED

ISHMAYEVA, E. A., ZIMIN, M. G., GALEYEVA, R. M., and PUDOVIK, A. N., Kazan State University imeni V. I. Ul'Yanob-Lenin, Kazan

"The Dipole Moments of Organophosphorus Compounds. II. Benzoylphosphonates, Benzoylphosphinates, and Benzoylphosphine Oxides"

Abstract: The diethyl esters of benzoylphosphonic acids $X-C_6H_4COP(O)(OEt)_2$ (I) with X = p-Cl, M-Cl, M-Br, P-NO$_2$ (bp 150° at 2 mm, 146° at 2 mm, 164° at 2 mm; and bp 145° at 1 mm, m.p. 51.5°, respectively) and diethyl(diphenyl) benzoylphosphine oxides PhCOP(O)R$_2$ (II) with R = Et, Ph (bp 155-6° at 6 mm and 167-8° at 1.5 mm, respectively) were prepared. Compounds I were obtained by the reaction of $X-C_6H_4COCl$ with triethyl phosphite and compounds II by reacting diethyl- or diphenylphosphinous acid HP(O)R$_2$ with PhCOCl. The dipole moments of compounds I and II were determined experimentally and the spatial structure of these compounds was elucidated from the data obtained, that of ethyl esters of ethyl- and phenylbenzoylphosphinic acids from

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USSR

ISHMAYEVA, E. A., et al., Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 3, Mar 71, pp 538-543

available experimental data. Differences between the experimentally determined and calculated values of the dipole moments of I indicated an interaction between X and the $-P(O)(OEt)_2$ group.

2/2

1/2   016   UNCLASSIFIED   PROCESSING DATE--09OCT70
TITLE--SUBSTANTIATION OF THE MAXIMAL PERMISSIBLE CONCENTRATIONS OF
   AMMONIUM DIURANATE IN THE AIR OF INDUSTRIAL -U-
AUTHOR-(02)-GALIBIN, G.P., VLASOV, P.A.

COUNTRY OF INFO--USSR

SOURCE--GIGIYENA I SANITARIYA, 1970, NR 5, PP 26-32

DATE PUBLISHED--------70

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

TOPIC TAGS--AIR POLLUTION, AMMONIUM COMPOUND, TOXICITY, URANIUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1645   STEP NO--UR/0240/70/000/005/0026/0032

CIRC ACCESSION NO--AP0112639
                    UNCLASSIFIED

CIRC ACCESSION NO--AP0112639

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN A CHRONIC TEST CARRIED OUT ON RATS INHALATION OF AMMONIUM DIURANATE AT A CONCENTRATION OF 8 MG-M PRIME3 FOR FOUR HOURS DAILY FOR A PERIOD OF 4 MONTHS PROVED TO BE DEFINITELY TOXIC. THE CONCENTRATION OF THIS COMPOUND AMOUNTING TO 1 MG-M PRIME3 APPROACHED THE MINIMUM EFFECTIVE LEVEL OBTAINED IN THE CHRONIC INHALATION TEST. THE PAPER PRESENTS DATA OF CLINICAL BIOCHEMICAL AND PATHALOGOANATOMICAL INVESTIGATIONS AND THE AMOUNT OF SUBSTANCE ABSORBED BY SUCH TISSUES AS THE SKELETON, THE LUNGS, THE LIVER AND THE KIDNEYS. ON THE BASIS OF THE EXPERIMENTAL DATA OBTAINED THE MAXIMUM PERMISSIBLE CONCENTRATION OF AMMONIUM DIURANATE IN THE AIR OF INDUSTRIAL PREMISES IS RECOMMENDED TO BE SET AT A LEVEL OF 0.1 MG-M PRIME3 OF URANIUM (7 TIME 10 PRIME NEGATIVE14 CURIE-L FOR NATURAL URANIUM).

UNCLASSIFIED

1/2   008   UNCLASSIFIED   PROCESSING DATE--11SEP70
TITLE--ON THE METHOD OF CHEMICAL ANALYSIS OF SILICATES -U-

AUTHOR--GALIBIN, V.A., POTOTSKAYA, V.

COUNTRY OF INFO--USSR

SOURCE--VESTNIK LENINGRADSKOGO UNIVERSITETA, NO 6, GEOLOGIYA, GEOGRAFIYA,
   1970, NR 1, PP 160-163
DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SILICATE, SPECTROMETRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/1275   STEP NO--UR/0307/70/000/001/0160/0163

CIRC ACCESSION NO--AP0106056
                    UNCLASSIFIED

CIRC ACCESSION NO--AP0106056
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE IS DEVOTED TO THE
ANALYSIS OF SILICATE ROCKS AND MINERALS BY A COMBINED CHEMICAL
SPECTROCHEMICAL AND FLAME SPECTROMETRIC METHOD. SIO SUB2, FEC, H SUB2 O
PLUS, H SUB2 O MINUS, P SUB2 O SUB5 ARE ANALYSED BY THE RAPID CHEMICAL
METHOD. AL SUB2 O SUB3, FE SUB2 O SUB3 (TOTAL), TIO SUB2, MNO, MGO, CAO
ARE DETERMINATED BY THE SPECTROCHEMICAL METHOD. NA SUB2 O, K SUB2 O, LI
SUB2 O, RB SUB2 O, CS SUB2 O ARE ANALYSED BY THE FLAME SPECTROMETRIC
METHOD. THE CHEMICAL AND SPECTROCHEMICAL ANALYSIS ACCURACY IS COMPARED.

UNCLASSIFIED

ЛА0052682 *GALICHENKO*   UR 0482

A.N.

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

243166   WALL SUPPORT FOR MAST HOIST comprising
rod connected to the mast and resting on
the building wall, and clamps, differing in having a
flexible tie passed through a system of pulleys
mounted on the rod and clamps, connected to a
tensing device, and fixed on it -in the working
position by a clamping plate. This simplifies
assembly -of the support, and its design. In the
process of assembly the clamps are first attached
to the wall through apertures. They can be set up
independently of the rest of the support, since
they can be readily detached from it by taking tie
13 off diverting pulleys 11 and 12. Rod 1 is then
fixed first by some temporary method to the mast
so that it can move along its axis. After the
flexible tie has been threaded by rotating bush-
nut 5, the assembler tightens it. The tie with
its tensed branches is fixed by clamping plate 19.

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19821456

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AA0052682

This prevents the flexible tie running along the
pulleys in the working position. The tension in
the branches remains constant, and rod 1 is unable

to move in the plane perpendicular to the axis of
the mast. After tensing the tie, the rod is
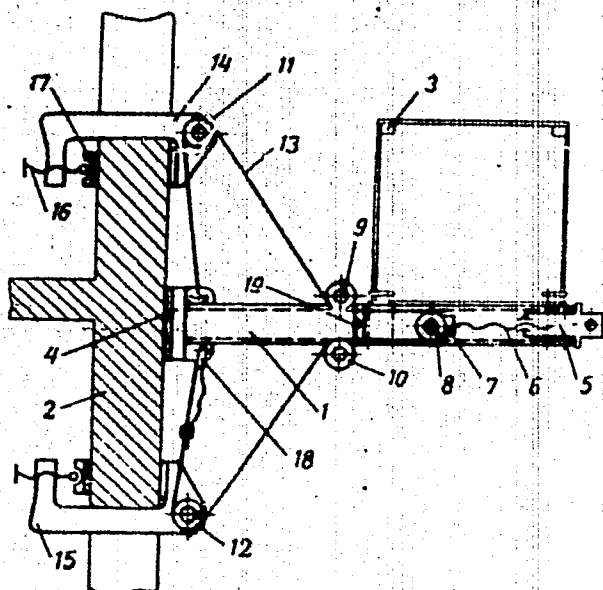finally fixed to the mast.
17.1.68. as 1210039/27-11, GALICHENKO, A.N. et al
Inst. For Building and Roadmaking Engineering.
(22.9.69) Bul. 16/5.5.69. Class 35d, Int. Cl.
B 66b.

Galichenko, A. N.; Mos'kin, A. N.; Feoktistov, G. N.; Gekht, A. Kh.
Usesoyuznyy Nauchno-Issledovatel'skiy Institut Stroitel'nogo i
Dorozhnogo Mashinostroyeniya

2/3

19821457

AA0052682

19821458

UNCLASSIFIED   PROCESSING DATE--20NOV70

1/3   029
TITLE--MORBIDITY AND MORTALITY OF MYOCARDIAL INFARCTION IN KHAR'KOV IN THE
1961-1967 PERIOD -U-
AUTHOR-(02)-GUREVICH, Z.A., GALICHEVA, N.A.

CCUNTRY CF INFO--USSR

SOURCE--MOSCOW, SOVETSKOYE ZDRAVOOKHRANENIYE, RUSSIAN, NO 3, 1970, PP
17-21
DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--MYOCARDIUM, PUBLIC HEALTH, DIAGNOSTIC METHODS, MEDICAL
FACILITY, MORTALITY RATE

CCNTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/0675   STEP NO--UR/0753/70/000/003/0017/0021

CIRC ACCESSICN NO--AP0132797
              UNCLASSIFIED

CIRC ACCESSION NO--AP0132797

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SUCCESS ACHIEVED IN RECENT YEARS
IN TREATING PATIENTS WITH MYOCARDIAL INFARCTION HAS UNDOUBTEDLY HAD AN
INFLUENCE ON THE DEFINITE STABILITY IN THE INDICES OF MORTALITY OF
MYOCARDIAL INFARCTION IN KHAR'KOV IN THE 1961-1967 PERIOD. AS KONIG
(1966, WEST GERMANY) WRITES, AT THE PRESENT TIME THE CHANCES THAT A MAN
WHO HAS CONTRACTED MYOCARDIAL INFARCTION WILL RECOVER AND RETURN TO
USEFUL ACTIVITY HAS INCREASED THREEFOLD OVER WHAT WAS OBSERVED 30 YEARS
AGO. IT IS ALSO BEYOND DISPUTE THAT BY SYSTEMATICALLY STUDYING THE
MORBIDITY AND MORTALITY RATES OF MYOCARDIAL INFARCTION IN KHAR'KOV YEAR
AFTER YEAR, WE HAVE IMPROVED THE METHOD OF GATHERING MATERIAL, AND TO A
CERTAIN EXTENT THIS HAS HELPED TO MAKE RECORDS MORE COMPLETE. RECORDS
ON PATIENTS WITH MYOCARDIAL INFARCTION IN KHAR'KOV, WHICH HAVE IMPROVED
YEAR AFTER YEAR, HAVE ALSO ENSURED MORE KNOWLEDGE ON THE PART OF
PHYSICIANS OF THE CLINICAL ASPECTS OF THIS ILLNESS AND EXPANDED
OPPORTUNITIES FOR RUNNING EKG, BIOCHEMICAL AND OTHER TESTS ON PATIENTS
AND THE PUBLIC, AND THIS HAS HELPED TO INCREASE THE QUALITY OF
DIAGNOSIS. HOSPITALIZATION OF PATIENTS WITH MYOCARDIAL INFARCTION HAS
THEREFORE BEEN EARLIER AND MORE FREQUENT. THIS FACT HAS ALSO BEEN
FAVORED BY THE INCREASE IN KHAR'KOV OF ESTABLISHMENTS SPECIALIZING IN
SERVICE TO PATIENTS WITH MYOCARDIAL INFARCTION (THE CITYCITY
CARDIORHEUMATOLOGY DISPENSARY WITH INFIRMARY, THE SPECIALIZED INFARCTION
DEPARTMENT OF HOSPITAL NO 27, SPECIALIZED EMERGENCY MEDICAL AID FOR
PATIENTS WITH MYOCARDIAL INFARCTION, ETC.).

CIRC ACCESSION NO--AP0132797
ABSTRACT/EXTRACT--FACILITY: CHAIR OF SOCIAL HYGIENE AND PUBLIC HEALTH
ORGANIZATION, HEAD, PROFESSOR Z. A. GUREVICH, OF KHAR'KOV MEDICAL
INSTITUTE.

UNCLASSIFIED

USSR   UDC 591.1

SHIPOV, A. A., GALICHIY, V. A., and EPSHTEYN, Ye. L., Institute of Biomedical
Problems, Ministry of Health USSR

"Changes in the Speed of the Process of Vestibular Compensation as a Function of
the Position of the Head"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya, No 5, 1970, pp 673-
678

Abstract: The effects of head position on the rate of compensation after impair-
ment of vestibular function were studied in rabbits by means of unilateral laby-
rinthectomy. The dynamics of the compensatory process was assessed from the re-
sulting nystagmus. Nystagmus is one of the first symptoms to appear in uni-
laterally labyrinthectomized rabbits; it is clear-cut, lasts several days, and can
be described quantitatively. Following destruction of a labyrinth, nystagmus
directed toward the intact side appeared. The average number of nystagmic move-
ments in experimental animals with the head forcibly maintained in a horizontal
position was 54.4 ± 5.5, as compared to 59 ± 3.6 in controls. After 24 hours, the
movements decreased to 34.6 ± 4.5 and 17.5 ± 3.4, respectively, i.e., they were 34.5
and 72% below the initial level. The compensatory process was thus significantly
slower in the animals whose heads were kept on a horizontal plane, a fact which is

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USSR

SHIPOV, A. A., et al, Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya, No 5, 1970, pp 673-673

ascribed chiefly to the characteristic redistribution of proprioceptive impulses from the neck muscles to the vestibular nuclei.

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UNCLASSIFIED   PROCESSING DATE--20NOV70

1/2   023
TITLE--QUANTITATIVE DESCRIPTION OF THE DYNAMICS OF THE COMPENSATORY
PROCESS IN THE CENTRAL NERVOUS SYSTEM -U-
AUTHOR-(02)-GALICHIY, V.A., SHIPOV, A.A.

COUNTRY OF INFO--USSR

SOURCE--IZVESTIYA AKADEMII NAUK SSSR, SERIYA BIOLOGICHESKAYA, 1970, NR 1,
PP 114-119
DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--NYSTAGMUS, CENTRAL NERVOUS SYSTEM, RABBIT, VESTIBULAR FUNCTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/0382   STEP NO--UR/0216/70/000/001/0114/0119

CIRC ACCESSION NO--AP0132611
                    UNCLASSIFIED

2/2   023
CIRC ACCESSION NO--AP0132611

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DYNAMICS OF THE VARIATION OF
SPONTANEOUS NYSTAGMUS WHICH SERVED AS A CRITERION FOR THE EVALUATION OF
A COMPENSATORY PROCESS IN THE CENTRAL NERVOUS SYSTEM WAS STUDIED IN
UNILATERALLY DELABYRINTHED RABBITS. IT WAS ESTABLISHED THAT THE
DEVELOPMENT OF A TEMPORAL COMPENSATORY PROCESS IN EXPRESSED BY AN
EXPONENTIAL FUNCTION. THE BASIC RECOVERY MECHANISMS OF A DESTROYED
VESTIBULAR FUNCTION ARE DISCUSSED.   FACILITY: INSTITUTE OF
MEDICO-BIOLOGICAL PROBLEMS, USSR MINISTRY OF HEALTH.

USSR

UDC 632.95

PARSHUTIN, S. M., STONOV, L. D., ZABALUYEV, I. T., BATYROVA, M. SH., GALIFANOV, G. G., MULLIYEV, K. M., PAVLOVA, G. N., SHOSAH, S. M., KIRIPKO, T. V., KUR'YANOV, V. A., and KIRIPKO, V. G.

"Control of Overgrowth of Sewers and Drains in Turkmeniya"

V sb. Khim. sredstva zashchity rast. (Chemical Plant Protectants -- collection of works), vyp 1, Moscow, 1970, pp 225-241 (from RZh-Khimiya, No 13, 10 Jul 72, Abstract No 13H533 by T. A. Belyayeva)

Translation: The article compares the effectiveness and profitability of mechanical, manual, thermal biological and chemical methods of removing vegetation from drains. Data are given on results of herbicide tests and applications. To kill reeds, cattails and other weeds in sewers during the second and subsequent years of service, dalapon shows the greatest promise in doses of 24-30 kg/ha with the addition of wetting agent OP-7 or OP-10.

1/1

UDC 519.21

USSR

GALIGUZOV, A. S.

"Extrapolation of One Type of Unstable Random Process and the Applicability of the Ergodic Theorem"

Sovrem. Probl. Kibernet. [Modern Problems of Cybernetics -- Collection of Works], Moscow, Nauka Press, 1970, pp 15-25, (Translated from Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract No 6 V122 by V. Makovskiy).

Translation: The extrapolation of unstable random processes $\xi(t)$, the nth increments of which are stable or near stable, is studied. The methods of the spectral theory, applicable to stable processes, allow the best approximation (in the sense of the mean square criterion) of the nth increment $\Delta_{\tau_1}^{(n)} \xi(t + s)$, $s > 0$, $t > 0$,

to be found by the structural function

$$D(t, \tau_1, \tau_2) = E\left\{\Delta_{\tau_1}^{(n)} \xi(s+t) \Delta_{\tau_2}^{(n)} \xi(s)\right\}.$$

The basic problem consists in applying the ergodic theory to the structural function D (t, τ_1, τ_2) of the nth stable increments of the unstable process. It is established in this work that:

1) If $E\{\Delta_\tau^{(n)} \xi(t)\} = 0$, then in order for $\Delta_\tau^{(n)} \xi(t)$ to converge to zero on the average, it is necessary and sufficient that $\frac{1}{m} \sum_{t=1}^{m-1} D(t, \tau, \tau)$ converge to zero.

2) If the process $\eta_{\tau_1,\tau_2,t}^{(n)}(s) = \Delta_{\tau_1}^{(n)}\xi(s+t)\Delta_{\tau_2}^{(n)}\xi(s)$ is stable in the broad sense

and $E\{\eta_{\tau_1,\tau_2,t}^{(n)}(s)\} = D(t,\tau_1,\tau_2),$ then

$$D^*(t,\tau_1,\tau_2) = \frac{1}{m}\sum_{s=1}^{m}\Delta_{\tau_1}^{(n)}\xi(s+t)\Delta_{\tau_2}^{(n)}\xi(s)$$

is a consistant estimate of D (t, τ_1, τ_2) when and only when

$$\frac{1}{m}\sum_{j=1}^{m-1}E\left[\Delta_{\tau_1}^{(n)}(s+t)\Delta_{\tau_2}^{(n)}\xi(s)\Delta_{\tau_1}^{(n)}\xi(t)\Delta_{\tau_2}^{(n)}\xi(0)\right]_{n\to\infty} \to D^*(t,\tau_1,\tau_2). \qquad (1)$$

3) If the representation

$$\Delta_{\tau}^{(n)}\xi(t) = \int_0^\infty c(p,t)\,d\zeta(t-p),$$

obtains, where $\zeta(t)$ is a random process with independent stable increments such that $E\{\Delta_\tau\zeta(t)\} = 0,$ $E\{|\Delta_\tau\zeta(t)|^2\} = |\tau|$ and the 4th comulant $\Delta_\tau\zeta(t)$ is finite and equal to $k_4^0\tau,$ then in order for (1) to be fulfilled, it is necessary and sufficient that

$$\frac{1}{m}\sum_{s_0=0}^{m-1}D^2(s_0,\tau_1,\tau_2) \to 0.$$

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UDC 519.21

USSR

GALIGUZOV, A. S., Sovrem. Probl. Kibernet., Moscow, Nauka Press, 1970, pp 15-25.

4) Formulas are produced for the limiting expressions of dispersion and covariation of the estimate D^* (t, τ_1, τ_2), when the conditions formulated in 3) are fulfilled, and the spectral function of the process $\Lambda_t^{(n)} \xi(t)$ is absolutely continuous.

Also, a formulation of similar results is presented for the continuous case. Misprints are encountered.

USSR

UDC 614.72-074-78:621.431.73

GALIKEYEV, Kh. L., Semipalatinsk Medical Institute

"Use of an Automobile Engine for Sampling of Atmospheric Air by Means of an Aspirator"

Moscow, Gigiyena i Sanitariya, No 10, Oct 1970, pp 55-57

Abstract: An automobile engine with a windshield wiper motor connected with the exhaust chamber can be successfully used to obtain samples of atmospheric air by means of an aspirator, either where the car is parked or by remote control. Whenever the automobile engine is turned on, air is drawn through the device. Atmospheric air samples were collected in both of these modes of operation. Spores of various types of fungi, many of which have allergenic activity, were determined in the air samples so collected.

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Abstracting Service: Ref. Code:
CHEMICAL ABST. 5-70   4R 0138

101590j Interaction of alkoxysilanes with Aerosil. Gusein-Zade, A. F.; Nudel'man, Z. N.; Garber, A. M.; Galil-Orly, F. 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 Me$_3$Si(OMe), (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.   CKJR

REEL/FRAME
19801728

7

1/2   020   UNCLASSIFIED   PROCESSING DATE--04DEC70
TITLE--POSSIBLE IDENTIFICATION OF INTERACTION IN A POLYMER PLASTICIZER
  SYSTEM USING NUCLEAR MAGNETIC RESONANCE -U-
AUTHOR-(03)-NOVIKOV, N.A., SHASHKOV, A.S., GALILOGLY, F.A.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. B 1970, 12(5), 323-4

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--PLASTICIZER, SYNTHETIC RUBBER, FLUORINATED ORGANIC COMPOUND,
  NITRILE RUBBER, STYRENE, NUCLEAR MAGNETIC RESONANCE,
  CHLOROPRENE/(U)SKF32 FLUORINATED RUBBER, (U)SKN26 NITRILE RUBBER,
  (U)SKS30 STYRENE RUBBER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/1012   STEP NO--UR/0460/70/012/005/0323/0324

CIRC ACCESSION NO--AP0136439
                     UNCLASSIFIED

CIRC ACCESSION NO--AP0136439
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN SKF-32 PLASTICIZED WITH DI-BU
  SEBACATE (I), PHCOME, OR PH SUB2 O, OR NEOPRENE S-40 AND SKN-26
  PLASTICIZED WITH I (INTRAMOL. PLASTICIZATION), THERE WAS A POS.
  DEVIATION OF THE SECOND MOMENT (DELTA H SUB2 PRIME2 GREATER THAN 0) AND
  THE PLOT OF DELTA H SUB2 PRIME2 VS. PLASTICIZER CONCN. HAD A MAX. ON
  THE OTHER HAND, IN SKF-32 PLASTICIZED WITH PH SUB2 OF SKS-30 PLASTICIZED
  WITH MINERAL OIL (INTERMOL. PLASTICIZATION) THERE WAS NO DEVIATION OF
  DELTA H SUB2 PRIME2 FROM THE ADDITIVE FORMULA (DELTA H SUB2 PRIME2
  EQUALS 0).

UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--16OCT70

TITLE--X RAY DIFFRACTION STUDIES OF SECONDARY CRYSTALLIZATION IN A SERIES
OF SILOXANE RUBBERS -U-

AUTHOR-(03)-MOSKALENKO, V.A., TSVANKIN, D.YA., GALILOGLY, F.A.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN. SER. A 1970, 12(3), 548-52

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--X RAY DIFFRACTION STUDY, CRYSTALLIZATION, SILOXANE, SYNTHETIC
RUBBER/(U)SKTV POLYSILOXANE RUBBER, (U)SKT POLYSILOXANE RUBBER, (U)SKTE
POLYSILOXANE RUBBER, (U)SKTVF 803 POLYSILOXANE RUBBER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/1200   STEP NO--UR/0459/70/012/003/0548/0552

CIRC ACCESSION NO--AP0116665
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0116665
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SECONDARY CRYSTN. OF 5
POLYSILOXANE RUBBERS, E.G. SKTV-1, SKTV, SKT, SKTE, AND SKTVF-803, WAS
STUDIED BY AN X RAY DIFFRACTION MEHOD (V. A. MOSKALENKO, 1969).
SECONDARY CRYSTNS. MAY BE EXPRESSED IN TERMS OF AVRAHMI'S EQUATION
(HAVING N EQUAL 1).   AT TEMPS. CORRESPONDING TO MAX. CRYSTN. RATE,
PRIMARY AND SECONDARY CRYSTNS. OCCURRED SIMULTANEOUSLY, THE FORMER BEING
COMPLETED IN 2-5 MIN.   THE SECONDARY CRYSTN. RATE CONSTS. WERE EQUAL TO
0.2-0.6 HR..PRIME1. MAX. CRYSTALLINITY (SIMILAR TO 40-75PERCENT) WAS
REACHED DURING A 1 DAY CRYSTN. OR SLIGHTLY LONGER.   FACILITY:
INST. ELEMENTOORG. SOEDIN., MOSCOW, USSR.

UNCLASSIFIED

STARXHENKO, V. I., and GALILGKIY, N. V.

"Thermal Analysis of the Titanium Tetrachloride and Silicon Tetrachloride Systems With Hexachlorodisiloxane and Octachlorotrisiloxane"

Translation: A low-temperature thermal analysis installation is used to study the binary fusibility diagrams of the system $TiCl_4-Si_2OCl_6$;

$SiCl_4-Si_2OCl_6$; $TiCl_4-Si_3O_2Cl_8$, and $SiCl_4-Si_3O_2Cl_8$. The eutectic point in the system $TiCl_4 \cdot Si_2OCl_6$ at $-47.5°$ and a content of 50.5% (molar) Si_2OCl_6; in the system $SiCl_4-Si_2OCl_6$ at 9.7% (molar) Si_2OCl_6 $(-77.5°)$. On the fusibility diagram of the $TiCl_4-Si_3O_2Cl_8$ system, the eutectic point is located at a content of 59.5% (molar) $Si_3O_2Cl_8$ and a temperature of

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USSR   UDC 669.295.046.43

STARKHIENKO. V. I., and GALILGKIY, N. V.

Sb. tr. Vses. n.-i. i proyektn. in-t titana, [Collected works of All-Union
Scientific-Research and Planning Institute for Titanium], 6, 1970, 37-41,
Translated from Referativnyy Zhurnal-Metallurgiya, No. 1, 1970, Abstract
No. 1G178 by the authors).

- 59.5°. At - 105.5°, a compound is formed in the solid state with molar
relationship of the initial components 1:1. In the system $SiCl_4$-$Si_3O_2Cl_8$,

there is a eutectic point at - 83.9° (34.6% (mol) $Si_3O_2Cl_8$), a monotectic

at - 63.9°, and a solid compound of $SiCl_4$-$Si_3O_2Cl_8$ at - 115.0°. 3 figures;

1 table; 7 biblio.refs.

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USSR

UDC 539.194

GALIMOV, D. G., YUDIN, D. M., and YAFAYEV, N. R.

"The Problem of Iron Coordination in Glasses"

Minsk, Zhurnal Prikladnoy Spektroskopii, Vol 19, No 2 1973, pp 364-366

Abstract: In glasses containing three-valent iron, lines for $g=4.27$ are observed along with electron paramagnetic resonance lines with $g=2.00$. The authors of the present paper offer new data regarding the nature of the center causing the appearance of lines with g factors of 2.00 and 4.27 which they obtained by studying the tendency of the iron ions to the capture of charge carriers in a gamma radiation field. The measurements were made with the RE-1301 radio spectrometer at room temperature. Electron paramagnetic resonance spectra were obtained under identical conditions from various glass specimens identical in weight and shape. A type K-60000 gamma-ray source with a power output of 300 roentgens/sec, and a maximum dosage of 10^9 roentgens was used for the irradiation. The EPR spectra for the various types of glasses are plotted.

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1/2   029   UNCLASSIFIED   PROCESSING DATE--13NOV70
TITLE--STRUCTURE AND COLOR OF ALUMOCALCIUM TYPES OF GLASS -U-

AUTHOR-(04)-VEYNBERG, T.I., GALIMOV, D.G., LUNKIN, S.P., YUDIN, D.M.

COUNTRY OF INFO--USSR

SOURCE--LENINGRAD, OPTIKO MEKHANICHESKAYA PROMYSHLENNOST', NO 1, 1970, PP
42-47
DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--IR SPECTROSCOPY, GLASS STRUCTURE, ALUMINUM OXIDE, CALCIUM
GLASS, SILICATE GLASS, PHOSPHATE GLASS, CHROMIUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/1343   STEP NO--UR/0237/70/000/001/0042/0047

CIRC ACCESSION NO--AP0123301
                    UNCLASSIFIED

CIRC ACCESSION NO--AP0123301
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INFRARED SPECTROSCOPY, OPTICAL,
AND PARAMAGNETIC INDICATOR METHODS ARE USED IN STUDYING THE STRUCTURE OF
ALUMOCALCIUM TYPES OF GLASS. IT IS SHOWN THAT THE PRESENCE OF TWO TYPES
OF STRUCTURAL UNITS CHARACTERIZE THE INVESTIGATED VITREOUS MATRIX: (ALO
SUB) AND (ALO SUB6). ON THE BASIS OF RESULTS OBTAINED FROM STUDYING THE
ABSORPTION SPECTRA OF ALUMOCALCIUM TYPES OF GLASS COLORED BY IONS OF
RARE EARTH METALS AND VARIABLE VALENCY METALS, IT IS SHOWN THAT THE
DEGREE OF COVALENCY OF THE CHEMICAL ACTIVATOR LIGAND BONDS AND FIELD
FORCE ARE HIGHER FOR ALUMOCALCIUM TYPES OF GLASS THAN THEY ARE IN
CILICATE AND PHOSPHATE GLASS. NEW VALENCE STATES ARE OBTAINED AND
STUDIED FOR CHROMIUM (TETRAVALENT AND PENTAVALENT CHROMIUM).

UNCLASSIFIED

USSR

YEVSTROP'YEV, K. S., KRUPKIN, YU. S., GALIMOV, D. T., TARLAKOV, YU. P., SHEVYAKOV, A. M.

"On the Structural Features of R_2O - B_2O_2 - GeO_2 System Glasses from IR and EPR Spectroscopic Data"

Abstract: A UR-10 spectrograph was used to take ir spectra in the range of 1600 to 400 cm^{-1}. The glass samples, made of chemically pure materials, were heated to 80°C and pressed into potassium bromide. A $CO60$ gamma source of 10^4r/hr was used to irradiate the samples for the EPR tests. The dose was 2×10^6 roentgens at room temperature. The spectra were recorded with an RE 1301 radiospectrometer at 300°K.

Ir spectra of sodium glass samples with varying content (10, 20, and 30 mole %) of alkali oxide and of lithium and potassium borogermanate glasses were taken. As the Na_2O content is increased,

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USSR

YEVSTROP'YEV, K. S., Zhurnal Prikladnoy Spektroskopii, Vol 13, No 4, Oct 70, pp 655-661

the spectral curves become simpler and the principal absorption band of Ge - O - Ge at 900 cm^{-1} progressively shifts in the long wave direction. This behavior holds also for Li_2O, Na_2O, and K_2O.

Introduction of boric anhydride into the sample greatly alters the nature of the spectra of alkali germanate glasses. The principal absorption band shifts toward the higher frequencies. The band at 1100 cm^{-1} attributed to BO_4 tetrahedra, increases in intensity. The deformation vibration band at 600 to 400 cm^{-1} decreases gradually and in borate glasses degenerates. The effect of the boric anhydride is the same for sodium, lithium, and potassium glasses.

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USSR

YEVSTROP'YEV, K. S., Zhurnal Prikladnoy Spektroskopii, Vol 13, No 4, Oct 70, pp 655-661

The shifting of the absorption bands and changes in intensity with variation in the composition and content of the glasses is related to changes in lattice structures in the samples.

Epr spectra excited by gamma radiation were taken for the same samples, and similar analyses and interpretations are made as for the ir spectra. Variation in the signals and their intensities as a function of the quantity of B_2O_3 correlates well with the results of the ir spectra.

It is concluded that there is a range of compositions of alkali borogermanate glasses in which part of the germanium exists in sixfold coordination (in the form of GeO_6 octahedra). The range expands as the concentration of the alkali oxide increases. For 10, 20, and 30 mole % of Na_2O, the limiting concentration of B_2O_3 is 10, 25, and 30 to 40 mole %. In potassium and lithium glasses the maximum is 30 to 40 mole % of B_2O_3.

Orig. article has 4 figures, 1 table, and 10 references.

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USSR   UDC 549.211:549.07:532.528

GALIMOV, E. M., Moscow Institute of the Petrochemical and Gas Industry imeni
I. M. Gubkin, Moscow

"Cavitation as a Method of the Synthesis of Natural Diamonds"

Abstract: The central question of the origin of diamonds is ascertainment of
the mechanism of their synthesis under natural conditions. This signifies the
creation of a model of the process that would correspond with the known data
on the thermodynamic conditions of diamond crystallization, and would be in
agreement with geological observations. The literature on the subject is
surveyed. Analysis of the mineral equilibria shows that in rock accessible
to study, the pressures do not exceed 25 kbar, and the temperatures do not
exceed 1000-1100°C. This fact cannot be reconciled with the existing hypo-
theses concerning the P-T conditions of diamond crystallization in the region
of their thermodynamic stability. The author proposes caviation as a leading
factor in the mechanism of the synthesis of natural diamonds. 49 references.

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USSR

FEDOSEYEV, D. V., GALIMOV, E. M., VARNIN, V. P., PROKHOROV, V. S., and DERYAGIN, B. V., Corresponding Member Academy of Sciences USSR, Institute of Physical Chemistry, Academy of Sciences USSR, Moscow, Moscow Gas and Oil Institute

"Fractionation of Carbon Isotopes During the Physical-Chemical Synthesis of Diamond From Gas"

Abstract: In the synthesis of diamond from gas by deposition, a highly dispersed diamond powder was used as the primer. Methane pressure was 0.2 - 0.5 torr at 1000 - 1050°. The isotopic composition of the deposited carbon was studied by mass spectrometry. From the results obtained it was concluded that assumptions on the thermodynamic isotopic effect can be eliminated since the value of the distribution coefficient in the methane-diamond system at 1050°C is negligible. Probably the fractionation of the isotopes of carbon during the synthesis of diamond is determined by a kinetic effect together with a formation process and the growth of a new phase.

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USSR   UDC: 539.3

GALIMOV, N. K.

"On Deformation Boundary Conditions in the Nonlinear Theory of Shallow
Sandwich Shells"

V sb. Issled. po teorii plastin i obolochek. Vyp. 6-7 (Studies in the
Theory of Plates and Shells--collection of works. No 6-7), Kazan', Kazan'
University, 1970, pp 130-143 (from RZh-Mekhanika, No 4, Apr 71, Abstract
No 4V128)

Translation: Deformation boundary conditions are derived in the nonlinear
theory of thin filled shallow sandwich shells compressed in the transverse
direction in functions of forces and moments. The fundamental relations
are found by eliminating unknown tangential displacements and their deriva-
tives from the components of tangential deformations and shear deformations
of the filler. The case where all quantities which determine the stressed
and deformed state of the shell are reduced to the middle surfaces of the
outside layers is considered as well as the case where the equations are
formulated for the middle surface of the filler. Specific forms of boun-
dary conditions are analyzed. Bibliography of ten titles. V. Ye. Chepiga.

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UDC 77

USSR

GOROKHOVSKIY, V. M., LEVIN, YA. A., SOTNIKOVA, I. P., BAKOVA, N. F.,
KARUNINA, V. V., GALIMOVA, A. M.

"Certain Photographic and Physicochemical Properties of 2- and 5-n-alkyl
Homologs of 4-oxo-6-methyl-1,2,4-triazole-(2,3a)-pyrimidine"

Uspekhi nauchn. fotogr. (Advances in Scientific Photography), 1970, Vol. 14,
pp 24-29 (from RZh-Fizika, No 12(I), Dec 70, Abstract No 12D1340)

Translation: Photographic and physicochemical properties of 2- and 5-n-alkyl
derivatives of sta-salt with substitutes before C_7H_{15} in the second position
and before C_9H_{19} in the fifth position. All these substances effectively stopped
aging of the emulsion; their stabilizing activity decreased with concentration
and there was also observed a greater dilution for a longer alkyl radical. The
action of these substances on the emulsion at the time of introduction varied:
an increase and a lowering of sensitivity or fogging were encountered, but with
an increase in the length of the substitute the predominant effect became desen-
sitization in combination with defogging, a property absent in sta-salt. A

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study of the adsorption of sta-salt homologs on the Hg electrode by the oscillo-
graphic polarography method showed that as distinct from sta-salt, which does
not have oxidation-reduction peaks and capacity jumps in the region limited by
the anode wave of Hg-oxidation and reduction of the background homologs of
sta-salt give desorption peaks in this region, the height of which rises with
an increase in the length of the substitute and correlates well with their
desensitizing effect. This correlation indicates that the deactivization of
the sensitivity centers is greater as substances are adsorbed more intensively.
A determination of acid dissociation constants of sta-salt homologs and the
solubility products of their Ag-salts showed that both quantities drop with an
increase in the length of the substitute and the latter must also lead to pro-
gressive desensitization. 16 references. Authors abstract.

2/2   - 70 -

1/2   011   UNCLASSIFIED   PROCESSING DATE--04DEC70
TITLE--MECHANISM OF TRANSLATION MISTAKES IN VIVO AND IN VITRO -U-

AUTHOR-(03)-MEDNIKOV, B.M., GALIMOVA, L.M., BELOZERSKIY, A.N.

COUNTRY OF INFO--USSR

SOURCE--BIOKHIMIYA 1970, 35(2), 216-23

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--AMINO ACID, ANTIBIOTIC, PYRIMIDINE, NUCLEOTIDE, STREPTOMYCIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3009/0197   STEP NO--UR/0218/70/035/002/0216/0223

CIRC ACCESSION NO--AP0139060
UNCLASSIFIED

CIRC ACCESSION NO--AP0139060
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SERICIN PRODUCED BY BOMBYX MORI
WORMS FED ON A DIET CONTG. STREPTOMYCIN HAS A SIGNIFICANTLY LOWER
PROPORTION OF THE FOLLOWING AMINO ACIDS IN COMPARISON WITH STD. SERICIN:
VALINE, 15.3PERCENT DECREASE; LEUCINE, 13.3; ISOLEUCINE, 13.2;
THREONINE, 11.6; ARGININE, 8.8; AND SERINE, 4.0; WHILE THE PROPORTION OF
THE FOLLOWING IS INCREASED: GLUTAMIC ACID BY 26PERCENT; LYSINE, 17.6;
ALANINE, 14.0; AND ASPARTIC ACID, 3.7. IT IS SUGGESTED THAT THE
TRANSLATION MISTAKES INDUCED BY THE ANTIBIOTIC IN VIVO ARE COMPARABLE TO
THOSE OBSD. IN CELL FREE SYSTEMS. THE MISTAKES RECORDED IN THE ABOVE
EXPTS. CAN BE INTERPRETED AS FOLLOWS: ALL THE 4 BASES CAN BE READ AS A,
THE PYRIMIDINES CAN ALSO BE READ AS G; IN ADDN., U CAN BE READ AS C AND
G AS A, WHILE A IS ALWAYS TRANSLATED CORRECTLY. THE MISREADING
FREQUENCY OF NUCLEOTIDES U GREATER THAN C GREATER THAN G GREATER THAN A
IS CORRELATED TO THEIR THERMODYNAMIC STABILITY.   FACILITY:
MOSCOW STATE UNIV., MOSCOW, USSR.

USSR   UDC 517.917

GALIN, B. K.

"Qualitative Study of One System of Differential Equations"

Uch. zap. Kazan. gos. ped. in-t (Scientific Notes of Kazan State Pedagogical
Institute), 1970, No. 83, pp 12-24 (from RZh-Matematika, No 4, Apr 71,
Abstract No 4B202)

Translation: A qualitative study of the following system is given:

$$x' = y(y + k_1 x + l_1)(y + k_2 x + l_2),$$

$$y' = \beta x + \alpha y + \gamma y^2.$$

where
$$k_1 < 0, \ k_2 > 0, \ l_1 < 0, \ l_2 > 0, \ \gamma > 0,$$ and α

is a variable parameter. N. Rozov.

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- 18 -

USSR

ASRYAN,, N. G., and GALIN, L. A.

"The Impact of a Cylindrical Shell Against the Surface of a Compressible Fluid"

Abstract: A solution is given for the problem of the impact of a thin cylindrical shell against the surface of a compressible fluid. It is assumed that the shell is quite thin, and that the pressure acting upin it is great, and therefore plastic deformation takes place in the shell. Under these conditions the strength properties of the shell may be disregarded, and only inertial forces need be taken into consideration during establishment of its law of motion. The value of the wave potential is determined, as well as the value of displacement of the shell during the impact time under consideration, and the value of change of the pressure acting upon the shell. This problem is reduced to determination of the potential of displacements $\varphi(x, y, t)$ in the region of perturbed motion Ω . This region is separated from an unperturbed region enveloping the Mach cones which originate from points of intersection of the cylindrical shell with the free surface of the fluid. This makes it possible to find the pressure acting upon the shell. 4 figures, 6 references.

1/1

GALIN, M. B.

JPRS 55999
5 MAY 72

UDC 551.509.313

DESCRIPTION OF PLANETARY WAVES BY THE DIFFERENCE METHODS

A study was made of the numerical solution of the linear vorticity transfer equation in a hemisphere by difference methods. The errors connected with the transfer operator and the inversion of the Laplace operator are analyzed separately as a function of the scale of the disturbance. For the case of the central difference scheme, an exact solution of the difference transport equation of the current function ψ was constructed for a grid with 21 points. Various methods of integration with respect to time are compared.

In recent years, the methods of integrating the nonlinear equations of hydrodynamics for purposes of long-range forecasting of the pressure fields and the fields of other meteorological elements encompassing the entire Northern Hemisphere or a significant part of it have received significant development [1, 3, 5, 6]. The experiments performed with real initial conditions demonstrated the possibility of stable integration over prolonged periods. This arose to a significant extent from application of the Arakawa scheme [7] for difference description of the nonlinear advection of the vorticity. In the case of exact differentiation with respect to time, the indicated scheme insures retaining for the entire integration period certain quadratic invariants of the investigated fields.

In the case of the barotropic vorticity equation, these invariants will be the kinetic energy and the square of the absolute vorticity averaged over the region. It is clear that retaining the quadratic invariants is not consistent with exhibion of infinite amplitudes in the wave components and, consequently, protects against nonlinear computation instability. However, replacement of exact differentiation with respect to time by the finite-difference analog can disturb the invariance of the above-mentioned quadratic characteristics and lead to computation instability. In addition, the application of finite differences with respect to space and time even in the case of a stable calculation unavoidably leads to errors in determining the amplitude and phase of different waves.

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USSR   UDC 539.21.536.421

KUZ'MENKO, P. P., GALINA, G. A., and USHANKIN, YU. V., Kiev State University

"Relationship of Young's Modulus to the Degree of Close Ordering in Alloys of the Mg-Cd System"

Abstract: It is shown that within the limits of error of the experimental parameters used, in Mg_3Cd and $MgCd$ alloys of the hexagonal system the change of Young's modulus during disordering is proportional to the degree of close ordering. 2 figures, 6 bibliographic references.

1/1

1/2   025   UNCLASSIFIED   PROCESSING DATE--16OCT70
TITLE--BERYLLIUM FLUORIDE YTTRIUM FLUORIDE SYSTEM AND A CROSS SECTION OF
  THE POTASSIUM FLUORIDE BERYLLIUM FLUORIDE YTTRIUM FLUORIDE SYSTEM WITH
AUTHOR-(03)-BORZENKOVA, M.P., GALINA, V.N., NOVOSEOVA, A.V.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(1), 25,30

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--BERYLLIUM COMPOUND, FLUORIDE, X RAY ANALYSIS, EUTECTIC,
  YTTRIUM COMPOUND, POTASSIUM COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/0925   STEP NO--UR/0363/70/006/001/0025/0030

CIRC ACCESSION NO--AP0118093
                          UNCLASSIFIED

CIRC ACCESSION NO--AP0118093

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BASED ON THE RESULTS OF THE
THERMAL AND X RAY PHASE ANALYSES THE CONSTITUTION DIAGRAM OF B SUBE F
SUB2 MINUS YF SUB3 SYSTEM WAS CONSTRUCTED.   IN PARTICULAR, THE SECTION
OF THE TERNARY KF MINUS BEF SUB2 VF SUB3 SYSTEM WITH A CONST. (5 MOLE
PERCENT) KF CONTENT WAS STUDIED. THE INTERACTION IN THE BEF SUB2 MINUS
VF SUB3 SYSTEM HAS A EUTECTIC CHARACTER. THE BEF SUB2 IS PRESENT IN THE
SYSTEM IN THE FORM OF A QUARTZ LIKE PHASE.   THE EUTECTIC IS OBSD. AT
77.5 MOLE PERCENT BEF SUB2, THE REST BEING VF SUB3, WITH THE M.P. OF THE
EUTECTIC BEING 500DEGREES. BY USING DTA METHODS, THE PRESENCE OF
REVERSIBLE POLYMORPHIC TRANSFORMATIONS FOR THE FLUORIDES WAS OBSD. (AT
1052DEGREES FOR VF SUB3 AND AT 220DEGREES FOR QUARTZ LIKE BEF SUB2).
INVESTIGATION OF MELTS OF THIS SYSTEM, ESP. IN THE BE RICH REGION, IS
ASSOCD. WITH MANY EXPTL. DIFFICULTIES DUE TO THE VOLATILITY OF THE BEF
SUB2 AT LESS THAN 800DEGREES AND THE VITRIFICATION IN THE SYSTEM, THE
TENDENCY TOWARDS WHICH INCREASES WITH INCREASING BEF SUB2 CONTENT.
PRIOR TO THE EXPTS., THE ALLOYS WERE ANNEALED AT 400DEGREES, SOMETIMES
FOR 2-3 MONTHS. DUE TO THE VITRIFICATION IN THE SYSTEM, IT WAS
IMPOSSIBLE TO CONSTRUCT THE PHASE DIAGRAM ON THE BASIS OF THE COOLING
CURVES. CRYSTN. OF THE SYSTEM CAN BE INDUCED BY ADDING KF. TO ENSURE
EQUIL. IN SUCH A SYSTEM, LONG TERM ANNEALING (200-50 HR) AT 400DEGREES
WAS REQUIRED. WHEN 5 MOLE PERCENT KF IS ADDED, THE FIELDS OF PRIMARY
CRYSTN. IN THE SYSTEM REMAIN THE SAME.   THREE FIELDS OF SECONDARY
CRYSTN. ALSO WERE PRESENT. AT 300DEGREES THE TERNARY EUTECTIC BEF SUB2
(QUARTZ LIKE) PLUS BETA- VF SUB3 PLUS KBE SUB2 F SUB5 CRYSTALLIZES.

UNCLASSIFIED

1/2   020   UNCLASSIFIED   PROCESSING DATE--23OCT70
TITLE--EFFECT OF TEMPERATURE ON THE RATE OF LEAD DISCHARGE FROM TRILONATE
   ELECTROLYTES IN THE PRESENCE OF VARIOUS ANIONS -U-
AUTHOR-(03)-GALINKER, V.S., KUDRA, O.K., NOVIKOVA, L.S.

COUNTRY OF INFO--USSR

SOURCE--UKR. KHIM. ZH. 1970, 36(2),150-4

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ELECTRODEPOSITION, LEAD, ELECTROLYTE, THERMAL EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/1935   STEP NO--UR/0073/70/036/002/0150/0154

CIRC ACCESSION NO--AP0118897
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0118897
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DEVIATION FROM STRAIGHT LINES
IN THE CURRENT RECIPROCAL TEMP. GRAPHS (LOG I VS. 1-T) FOR THE RATE OF
ELECTRODEPOSITION OF PB PRIME2 POSITIVE FROM PB-TRILON 3 COMPLEX CONTG.
ELECTROLYTES IN THE PRESENCE OF OAC PRIME MINUS AND HALIDE IONS IS
ATTRIBUTED TO THE BALANCE BETWEEN 2 EFFECTS, THE INCREASE IN ELECTRODE
REACTION RATE EXPECTED AT HIGHER TEMP. DUE TO INCREASED RATE OF
DIFFUSION AND INCREASED NO. OF IONS ABLE TO PENETRATE THE ENERGY BARRIER
AND THE CHANGES IN THE NATURE OF THE ELECTRODE SURFACE WITH INCREASED
TEMP. (CHANGE IN THE CONCN. OF ADSORBED IONS). FOR SOLNS. CONTG.OAC
PRIME MINUS, AT A P.D. OF 350 MV THERE IS A MAX. AT SIMILAR TO
45DEGREES. FOR THOSE CONTG. CI PRIME MINUS THERE IS A MIN. AT 55DEGREES
IN THE CURRENT RECIPROCAL TEMP. GRAPHS. THERE IS A BREAK IN THE
VISCOSITY RECIPROCAL TEMP. GRAPHS AT SIMILAR TO 55DEGREES, BUT COND.
DOES NOT CORRELATE WELL WITH VISCOSITY AT LOW CONCNS. OF PB PRIME2
POSITIVE.   FACILITY: KIEV. POLITEKH. INST., KIEV, USSR.

Microelectronics
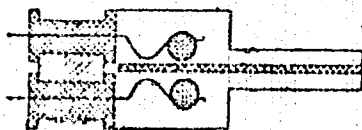
USSR   UDC: 621.3.049.75

GALINOVSKIY, A. I., DZYUBAK, E. I.

"A Connector for Printed Circuit Boards"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki,
No 6, Feb 71, Author's Certificate No 294270, Division H, filed 15 Apr 68,
published 26 Jan 71, p 181

Translation: This Author's Certificate introduces a connector for a printed
circuit board. The unit contains an insulated base with two rows of flat
contact springs arranged in parallel. As a distinguishing feature of the
patent, the operational reliability of the connector is improved by fitting
the insulated base with two camshafts which are parallel and interconnected
by a common drive mechanism. The contact springs of the connector rest on
the cams on these shafts.

USSR

UDC 539.3

GALIN'SH, A. K., GUR'YANOV, N. G.

"Effect of Local Loads on a Flat Transversally Isotropic Spherical Shell"

Sb. aspirantsk. rabot. Kazan. un-t. Teoriya plastin i obolochek (Collection of Aspirant Works. Kazan' University. Theory of Plates and Shells), 1971, No. 1, pp 158-167 (from RZh-Mekhanika, No 3, Mar 72, Abstract No 3V155)

Translation: Equations taking into account deformations of a transverse shift are used. When the load is applied in the pole, the solution is obtained in terms of Thompson functions and a logarithmic function. The general form of integrals of homogeneous equations are represented in the form of an infinite series in terms of Thompson functions and trigonometric functions. A segment of a spherical shell acted on by a concentrated load applied at an arbitrary point is considered as an example. The particular solution in this case is also represented in the form of an infinite series in terms of Thompson functions and trigonometric functions. G. N. Chernyshev.

1/1

USSR   UDC: 539.3

GALIN'SH, A. K.

"Calculation of Plates and Shells by Refined Theorems"

V sb. Issled. po teorii plastin i obolochek. Vyp. 6-7 (Studies in the
Theory of Plates and Shells—collection of works. No 6-7), Kazan', Kazan'
University, 1970, pp 23-64 (from RZh-Mekhanika, No 4, Apr 71, Abstract No
4V127)

Translation: For the beginning of the article, see v sb. Issled. po te-
orii plastin i obolochek, No 5, Kazan', Kazan' University, 1967, pp 66-92,
RZh-Mekh, 1968, 6V172. It is noted that refined theories leading to sys-
tems of equations of hyperbolic type have come into wide use recently in
problems of dynamics in place of the Kirchhoff theory (for plates) and the
Kirchhoff-Love theory (for shells), which lead to systems of equations of
parabolic type. A survey is given of works on construction of refined
theories of the Timoshenko type, which is understood by the author to mean
those theories which lead in the case of a plate to a system of fourth
order differential equations of hyperbolic type, and which lead in the case
of shells to tenth order differential equations of hyperbolic type. Prob-

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GALIN'SH, A. K., Issled. po teorii plastin i obolochek. Vyp. 6-7, Kazan',
Kazan' University, 1970, pp 23-64

lems of selecting the numerical coefficients to be introduced in construc-
tion of these theories are set forth. A number of works are noted in which
approximate theories of higher order are constructed. Works are mentioned
in which the limits of validated and effective applicability of a theory
of the Timoshenko type are clarified with the construction of a solution
based on the three-dimensional theory of elasticity.

The construction of linear and nonlinear theories for solving problems
in statics is considered. A survey is presented on papers dealing with
reducing a three-dimensional problem in elasticity theory to a two-
-dimensional problem in the theory of shells. Energy methods of reduction
are analyzed: the unknown functions are approximated in the form of an
expansion with respect to some sequence of functions of the normal (to the
middle surface) coordinate. The coefficients of this expansion which are
functions of the coordinates of the middle surface are found with the
application of variational principles or averaging methods. A method of
power series is mentioned. A survey is given on works in which the fol-
lowing are proposed: a) asymptotic procedures for constructing the stressed
states of a certain form or class; b) methods of resolving the three-
-dimensional stressed state into qualitatively different components. U.
K. Nigul.

2/2   - 133 -

Acc. Nr.   Abstracting Service: Ref. Code
AP0045162_   CHEMICAL ABST.   UR0191

91068d **Effect of dispersed fillers on the temperature depen-
dence of the specific heat of polystyrene.** Tytyuchenko, V. S.;
Dushchenko, V. P.; Solomko, V. P.; Galinskaya, V. I. (USSR).
Plast. Massy 1970, (1), 51-2 (Russ). Block polystyrene (I) was
filled with a finely divided kaolin (diam. ~1-5 μ), 2 fractions of
powd. quartz (II) (diam. <0.05 mm; 0.1 < diam. <0.16 mm),
and glass fibers (diam. = 0.003 mm, length = 1.0 mm), and its
sp. heat (C_p) as a function of temp. was detd. thermal anal. at
20-140°. The C_p of the filled I increased with temp.; the rate of
increase in the glass state region was 7 × 10^{-4} cal/g-degree. In-
creased filler content brought about a decline in C_m which was
most pronounced in I-II compns. (when diam. <0.05 mm), pre-
sumably due to the lower heat capacity of the filler and a reac-
tion with the binder.   CKJR

REEL/FRAME
19780062

7

USSR   UDO 621.383.032.217.3

VENEDIKTOV, N.YA., GALINSKIY, N.D., SHEFTEL', M.M.

"Study Of Porous Layers Of MgO As Emitters Based On Streaming For Preliminary
Amplification Of Image Intensity"

Elektron.tekhnika. Nauch.-tekhn.sb. Elektronnoluch. i fotoelektr.pribory
(Electronic Technology. Scientific-Technical Collection. Electron Beam And
Photoelectric Devices), 1971, Issue 2(20), pp 40-47 (from RZh--Elektronika i
yeye primeneniye, No 3, March 1972, Abstract No 3A118)

Translation: The results are reported of a study of porous layers of MgO,
operating at streaming [prostrel] in models of image intensity amplifiers. The
stability of the coefficient of secondary emission and the effect of streaming
of the film by fast electrons are studied. A.B.

1/1

USSR   UDC 681.3:06:51

GALIS, R. M. SOROKIN, A. M.

"Statistical and Dynamic Analysis of Programs"

Mat. Obespecheniye ETSVM. Vyp. 4 [Digital Computer Software, No 4 -- Collection
of Works], Kiev, 1970, pp 115-126, (Translated from Referativnyy Zhurnal,
Kibernetika, No 6, 1971, Abstract No 6 V589 by A. Doroshenko).

Translation: A program being studied is represented as a matrix π [i, j],
where i is the number of lines, characterizing the number of words in the program,
j is the number of columns, characterizing the format of each word. Standard
algorithms for analysis and evaluation of algorithms written in ALGOL allow the
following information to be produced: a) statistical analysis program: number
and frequency of operations used in realization of algorithms; number and fre-
quency of accessing of standard programs in interpreting system and standard
units in performing unconditional transfer operator with return; b) dynamic analy-
sis program: quantity of initial, intermediate and output data, as well as volume
of program memory occupied by data and constants; frequency of utilization of po-
sitions in representing order of numbers. The problems arising during dynamic
analysis of programs, particularly resulting from incomplete utilization of para-
meters of the tables during performance of a specific computer process, from the
principle of self-changeability of programs, are solved to some extent by perform-
ing the process of analysis in three stages and by placing the program being
studied and the results in different memory units of the M-220 computer.

USSR   UDC 547.341

GALISHEV, V. A., CHISTIKLETOV, V. N., PETROV, A. A., and TAMM, L. A.,
Leningrad Technological Institute imeni Lensovet

"1,3-Dipolar Addition to Unsaturated Compounds. XXXI. Reactions of Organic
Azides With α,β-Unsaturated Compounds of Trivalent Phosphorus"

Abstract: The reactions of organic azides of α,β-unsaturated phosphines were
investigated. It was shown that in the cases studied, the double bond is not
involved in the reaction so that novel unsaturated phosphineimines are formed.

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For JPRS 5(2-79
14 Sept 73

STUDY OF THE GROWTH CONDITIONS AND PROPERTIES OF SILICON FILMS DEPOSITED BY
THE CHLORIDE METHOD

[Article by Z. I. Kir'yashkina, ...]

Polycrystalline semiconducting films are of defined interest. The structural imperfection characteristic of those can be successfully used; the intercrystalline barriers insure a high specific resistance (to 10^6 ohm-cm) of the silicon film serving as insulation in the integrated circuits, and the surface roughness permits the creation of a stable contact which is the basis for certain types of diodes. On the other hand, the low deposition temperature (by comparison with the epitaxial growth) facilitates the realization of the multilayered semiconducting structures during the first period after significant reduction of the admixture diffusion from the substrate.

Below, there is a discussion of the results of studying the effect of the technological conditions of the polycrystalline silicon film growth on their electrophysical parameters.

Procedure for Obtaining and Studying Melts

1. Silicon films were obtained by the chloride method [1-3] in the horizontal open tube with an electric furnace. The temperature distribution along the furnace appears in Figure 25. The temperature of molten quartz and polycrystalline graphite were placed in two parallel rows along the deposition zone. The thermostated evaporators of two structural designs were used: bubbling and nonbubbling. The total hydrogen flow was 90 liters/hours (with a reactor diameter of about 20 mm); here, the evaporator with the SiCl$_4$ usually passed a flow of 20 liters/hour, and 10 liters/hour went through the evaporator with BBr$_3$.

The thickness of the grown layers of silicon was estimated by the gravimetric method. A study was also made of the electrophysical, the optical and structural properties of the films.

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GALISHNIKOVA, Yu. N.

SUKS 550208
6-73

3

XII-9. POSSIBILITIES OF CONTROLLED CREATION OF COMPACT EPITAXIAL STRUCTURES

[Article by D. I. Milenko, Yu. N. Galishnikova, A. I. Selimov, Saratov; Novo-sibirsk; III Simpozium po [tolnessam Rosta i Sinteza Poluprovodnikovykh Kris-tallov], Plenok, Russian, 12-17 June 1972, p 171]

The further development of epitaxial technology is connected to a great
extent with the growth of complex structures in which selectively etched regions
of the specimen filled with layers with different alloying levels and differ-
ent types of alloying structure are situated in a single technological process.
The realization of such internal processes combining a number of technological
operations is essentially facilitated on application of control methods insur-
ing information about the properties of the structure directly during the
course of obtaining it. Such control methods are important for the study of
kinetics and mechanism of epitaxial growth.

The method of determining the thickness of the grown or etched layer
which we developed for mass transport methods of obtaining epitaxial structures
is used for controlling the deposition of the layers given with respect to
thickness in selectively etched regions of the crystal. Knowledge of the in-
stantaneous growth rate (etching rate) and the thickness of the deposited
(etched) layer at a given point in time permitted these process parameters and
the structure to be kept as given. The knowledge of the growth rate, the
thickness of the grown layer and the temperature of realizing the process per-
mitted growth of multilayered silicon structures with given parameters of the
inside layer. The correction of the thickness of the inside layer was made
considering the formation of transition layers during the growth process. The
performed experiments confirmed the possibilities of controlled realization of
the lateral process of the creation of complex epitaxial structures. Informa-
tion was also obtained on the kinetics of thin deposition of the silicon layers
in individual stages of the process.

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USSR   UDC 615.616.24-003.656.6

BEZRODNYKH, A. A., KASPAROV, A. A., MAZUROV, V. I., KOCHETKOVA,
T. A., RAZDVADOVSKIY, YE. F., SIDOROVA, N. V., KULIKOVA, T. P.,
GALITSINA, I. Z., ZAMARAYEVA, T. V.

"Antifibrosis Effect of Polyvinylpyridine-N-Oxide as a Compound
to Prevent the Development of Silicosis"

Translation: The polymers polyvinyl-pyridine-2- and 4-N-oxides had
an effect on the degree of expression of histologic alterations in
the early stages of the development of experimental silicosis (10
days) when administered intratracheally and, especially, hypoderm-
ically. These polymers normalized the indexes of the oxidation
processes in the lung tissue and the myrocardium. After one,
three and six months of the experiment, the polymers with a molec-
ular weight of 40,000 to 80,000 retarded the development of fibro-
sis, reduced the amount of neutrally soluble collagen and
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USSR

BEZRODNYKH, A. A., et al., Nauch. tr. Irkutsk. med. in-t, 1972, vyp 110, pp 52-53

normalized the amino acid composition of the lung tissue, the indexes of the oxidation phosphorylation and the activity of the intracellular enzymes. On intratracheal administration of polymers with a molecular weight of 50,000 to 1,500,000, the development of catarrhal bronchitis and bronchiolitis was noted.

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- 72 -

UDC 632.951

USSR

SHAPOVALOVA, G. K., and GALITSINA, V. V., All-Union Scientific Research
Institute of Chemical Means of Plant Protection

"The Influence of Water-Soluble Coating on the Insecticide Effectiveness
of Benzophosphate"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 11, No 2, 1973, p 37

Abstract: A package containing 1 kg of the 30% wetting powder of benzophos-
phate, in which the soluble coating constituted 3.3% of the weight of the
active ingredient or 1% of the total, was dissolved so that in the solution
the coating made up only 0.003%. The preparation was then sprayed on the
silkworm Porthetria dispar and the house fly Nusca domestica at a rate of
35 ml/m^2, or 350 l/ha. Mortality was calculated in 24 hours for the flies
and in 48 hours for the silkworms. Results indicated that the coating of
plastified glycerin was not in itself toxic. It had no effect on the con-
tact toxicity of benzophosphate for houseflies, but somewhat reduced its
effectiveness for silkworms.

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USSR

UDC 632.95

1

SHAPOVALOVA, G. K., SEDYKH, A. S., ABELENSHCHEVA, G. M., GALITSINA, V. V., and MARCHENKO, L. F.

"Insecticidal Action and Effectiveness of Phthalophos"

V sb. Khim sredstva zashchity rast. (Chemical Agents for Plant Protection -- collection of works), vyp 1, Moscow, 1970, pp 8-14 (from RZh-Khimiya, No 11, Jun 72, Abstract No 11N394)

Translation: Phthalophos in concetrations of 0.075-0.1% is an effective substitute for DDT in controlling many pests of orchard, berry, vegetable, commerical and fodder crops. Residues of the insecticide remain toxic for pests for a shorter term than DDT. Phthalophos can be used with zineb and copper oxychloride.

1/1

TITLE--CHROMATOGRAPHIC BEHAVIOR OF PERTECHNATE ION ON RESINS OF VARYING
  BASICITY -U-
AUTHOR-(04)-SPITSYN, V.I., OBLOVA, A.A., KUZINA, A.F., GALITSKAYA, N.B.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(5), 1151-4 (PHYS CHEM)

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHROMATOGRAPHY, TECHNETIUM COMPOUND, ION EXCHANGE RESIN,
  CHEMICAL LABELLING, ISOTOPE, PYRIDINE, POLYMER, SOLUTION ALKALINITY,
  DISTRIBUTION COEFFICIENT/(U)AV17 ION EXCHANGE RESIN, (U)AV22 ION
  EXCHANGE RESIN, (U)AN40 ION EXCHANGE RESIN, (U)AN25 ION EXCHANGE RESIN,
  (U)AN23 ION EXCHANGE RESIN, (U)AN41 ION EXCHANGE RESIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/1587   STEP NO--UR/0020/70/190/005/1151/1154

CIRC ACCESSION NO--AT0116995
                          UNCLASSIFIED

CIRC ACCESSION NO--AT0116995
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DISTRIBUTION COEFFS. (KAPPA)
WERE DETD. OF TCO SUB4 PRIME NEGATIVE BETWEEN ION EXCHANGE RESINS AND
WATER AT 1-8 OR 1-13 PH RANGES FOR WEAKLY BASIC OR STRONGLY BASIC
RESINS, RESP. KAPPA WAS DETD. BY LABELLING THE SOLNS. WITH PRIME99 TC
PRIMEM O SUB4 PRIME NEGATIVE AND BY MEASURING THE RADIOACTIVITY OF THE
RESINS AND THE ELUANT, RESP. (RESIN, OPTIMUM PH, MAX. KAPPA TIMES 10
PRIME3 GIVEN): AV-17 (MODIFIED STYRENE DIVINYLBENZENE COPOLYMER), 8.0,
25; AV-22 (AS ABOVE), 8.0, 10; AN-40 (4,VINYLPYRIDINE,DIVINYLBENZENE
COPOLYMER), 4.2, 3.5; AN-25 (2,METHYL,5,VINYLPYRIDINE,DIVINYLBENZENE
COPOLYMER), 4.2, 2.1; AN-23 (2,VINYLPYRIDINE,VINYLBENZENE COPOLYMER),
4.0, 0.9; AN-41 (5,ETHYL,2,VINYLPYRIDINE,VINYLBENZENE COPOLYMER), 3.1,
0.7. THE INCREASED SEPN. BETWEEN THE PYRIDINE N AND THE POLYMER CHAIN
GAVE LOWER KAPPA VALUES.

UNCLASSIFIED

TITLE--IMPROVING PUBLIC HEALTH ECONOMICS -U-

AUTHOR-(03)-KURIYANOV, M.K., GALITSKAYA, YE.P., SIMONOV, V.A.

COUNTRY OF INFO--USSR

SOURCE--GOR'KIY; MOSCOW, SOVETSKOYE ZDRAVOOKHRANENIYE, RUSSIAN, NO 3,
1970, PP 14-17

DATE PUBLISHED------70

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

TOPIC TAGS--PUBLIC HEALTH, ECONOMIC DEVELOPMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/0673   STEP NO--UR/0753/70/000/003/0014/0017

CIRC ACCESSION NO--AP0132796
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0132796
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ECONOMIC REFORM BEING CARRIED
OUT IN OUR COUNTRY ALSO AFFECTS THERAPEUTIC AND PREVENTIVE MEDICAL
ESTABLISHMENTS TO A CONSIDERABLE EXTENT.   IN ACCORDANCE WITH ORDER NO
265 OF THE MINISTER OF HEALTH USSR, DATED 31 MARCH 1967, AN EXPERIMENT
IS BEING CONDUCTED IN A NUMBER OF MEDICAL ESTABLISHMENTS INVOLVING
EXPANSION OF THE RIGHTS OF THEIR DIRECTORS AND INTRODUCTION OF THE
PRINCIPLES OF ECONOMIC INCENTIVES TO STIMULATE THE WORK OF PERSONNEL
DIRECTED TOWARD RAISING THE QUALITY AND EFFECTIVENESS OF MEDICAL
SERVICE, TOWARD DISCOVERY OF INTERNAL POTENTIAL IN USE OF THE WORK OF
MEDICAL PERSONNEL, IN EXPENDITURE OF FINANCIAL AND MATERIAL RESOURCES,
AND ALSO CREATION OF A FUND FOR MATERIAL INCENTIVES OF STAFF MEMBERS FOR
THE HIGH QUALITY OF THEIR WORK.

UNCLASSIFIED

USSR   UDC 622.24.05:69.034.2.002.72

GALITSKIY, B.M., Engineer. APRISHKO, P.G. Engineer (Baku Branch of the State Institute for the Planning of Petroleum Specialized Constructions)

"Erection of Supports on a Floating Drilling Rig"

Moscow, Montazhnyye i Spetsial'nyye Raboty v Stroitel'stve, No 4, Apr 71, pp 12-14

Abstract: The assembly of the floating drilling rig "Khazar" in Baku consisting of a 50.5 x 45m pontoon of 7.25m height with four 5.6x5.6 m support columns 94m long, designed from drilling 6000m wells at 60 m sea depth, is described. Each support consists of nine sections 10 to 11.5m long and weighing from 52 to 77 ton each, of lattice construction. Each section is made of sheet steel 40-85mm thick and thick wall pipes. All joints were manually welded by an a.c. arc with special care. Sections were assembled by means of a floating 140 ton crane with 80.5m lift.

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USSR

UDC 669.295.046.43

GALITSKIY, N. V., DROZHZHEV, V. I., and ZAVADOVSKAYA, V. N.

"Interaction of Metallic Titanium With Chlorine in a Medium of Molten Chlorides"

Translation: A study is made of the interaction of Cl with metallic Ti sponge and Ti shavings in molten Na, K, Mg chlorides and their mixtures at temperatures of 650-900° and Cl consumption of 0.96-3 l/min. The interaction occurs in two stages. The composition of the melt has the following effect on the process: in the presence of $MgCl_2$ the reaction rate is slower than in pure K and Na chlorides and the start of the interaction is retarded owing to Ti passivation. The chlorination rate is independent of the grain size of the material and the temperature under the conditions outlined. Dilution of Cl with air changes the nature of interaction; Ti oxides appear in the melt, while free Cl appears in the flue gases. 3 ill.   Authors' abstract

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UDC 669.295.054.79

USSR

GALITSKIY, N. V., BAYBEKOV, M. K., DROZHZHEV, V. I., CHEPRASOV, I. M., MEDVEDCHIKOV, E. P., BARKOVA, N. P., ZAVADOVSKAYA, V. N., SELEDTSOV, D. K., and KORENDYASEV, M. I.

"Reprocessing Waste Titanium and Its Alloys in a Chloride Melt"

Moscow, Metallurgiya i Khimiya Titana (Institut Titana), Metallurgiya Publishing House, Vol 6, 1970, pp 135-140

Translation: Results are given of experimental-industrial research on the reprocessing of ungraded waste mixtures of chips from different titanium alloys by chlorinating in a chloride melt. An experimental batch of marketable titanium sponge was obtained. The characteristics of the raw material used, the chlorine gas, the coke, and the working fusion are given, along with a description of the technological conditions, the chart for preparing chips for chlorination, and the technological equipment charts for the chlorination and cleaning conversions. An analysis is made of the distribution of alloying elements in the products of chlorination. Basic expenditure coefficients, calculated per ton of industrial titanium tetrachloride, are deduced, and data are given on the quality of the TiCl$_4$ and the sponge titanium obtained. Three illustrations and one table.

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USSR

UDC 669.295.48

GALITSKIY, N. V., BAYBEKOV, M. K., DROZHZHEV, V. I., CHEPRASOV, I. M., MEDVEDCHIKOV, E. P., BARKOVA, N. N., ZAVADOVSKAYA, V. N., SELEDTSOV, D. K., and KORENDYASEV, M. I.

"Processing of Wastes of Titanium and Its Alloys in Chloride Salt Melt"

Translation: Results are presented from pilot-scale studies of the processing of unconditioned wastes with a mixture of chips of various Ti alloys by chlorination in a chloride salt melt. An experimental batch of commercial Ti sponge is produced. Characteristics are presented for the raw material, chlorine gas, coke, and working melt used; the technological modes and plans of preparation of the chips and chlorination are presented, along with a technological diagram illustrating the limits of chlorination and purification. Distribution of alloying metals in the chlorination of products is analyzed, the basic consumption factors per ton of technical $TiCl_4$ are presented, and data are presented on the quality of the TiCl and sponge Ti produced. 3 figures; 1 table.

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USSR   UDC 669.295.053.2

GALITSKIY, N. V., KONDRATENKO. A. V., LEBEDEV, G. N., VATAMANYUK, V. I., and
PISAREV, L. V., PECHENIK. T. S.

"Pilot Plant Study of Production of Pigment Titanium Dioxide by Burning
Titanium Tetrachloride in a Hydrogen Flame"

Sb. tr. Vses. n.-i. i proyektn. in-t titana [Collected works of All-Union
Scientific-Research and Planning Institute for Titanium], 6, 1970, 47-54,
(Translated from Referativnyy Zhurnal—Metallurgiya, No. 1, 1971, Abstract
No.1 G189 by the authors).

Translation: Results are presented from pilot plant studies of the
production of pigment TiO_2 in a reconstructed installation at the

Kaluga Chemical-Metallurgical Combine. The possibility is demonstrated
of producing TiO_2 by burning $TiCl_4$ in an air-hydrogen flame on equipment

used for production of Aerosil, although the individual units and
apparatus require considerable reconstruction. The TiO_2 specimens

produced have good whiteness, dispersion, covering power and oil number,
but high Cl content, low pH of aqueous extract and rutile content below
the requirement of the state standard. 2 figures; 2 tables.

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USSR   UDC 669.295.05.054

GALITSKIY, N. V., SAVADOVSKAYA, V. N., and DROZHZHEV, V. I.

"On the Solubility of Pentachloride of Molybdenum in Titanium Tetrachloride"

Moscow, Metallurgiya i Khimiya Titana (Institut Titana), Metallurgiya
Publishing House, Vol 6, 1970, pp 34-36

Translation: The solubility of $MoCl_5$ in $TiCl_4$ at temperatures of 4, 25, 65
and 100°C is determined by the saturation method. In this temperature in-
terval, it changes from 0.002 to 0.034 of a molecular particle. The heat
of solution of $MoCl_5$ in $TiCl_4$ is $\Delta H°_{solu} = 6.82 = 0.2$ gigacalories per mole.
Four illustrations, one table, and six bibliographic entries.

1/1

USSR

STARSHENKO, V. I., and GALITSKIY, N. V.

"Thermal Analysis of Systems of Titanium Tetrachloride and Silicon Tetrachloride With Hexachlorosiloxane and Octachlorotrisiloxane"

Moscow, Metallurgiya i Khimiya Titana (Institut Titana), Metallurgiya Publishing House, Vol 6, 1970, pp 37-41

Translation: At a low-temperature setting for thermal analysis, the dual fusibility diagrams of the systems $TiCl_4$-Si_2OCl_6, $SiCl_4$-Si_2OCl_6, $TiCl_4$-$Si_3O_2Cl_8$, and $SiCl_4$-$Si_3O_2Cl_8$ were studied. The eutectic point in the system $TiCl_4 \cdot Si_2OCl_6$ is at $-47.5°C$ with an Si_2OCl_6 content of 50.5% (molecular); in the system $SiCl_4$-Si_2OCl_6 it is at 9.7% Si_2OCl_6 (molecular) and $-77.5°C$. In the fusibility curve of the $TiCl_4$-$Si_3O_2Cl_8$ system, the eutectic point is located where the $Si_3O_2Cl_8$ content is 59.5% (molecular) and the temperature is $-59.5°C$. At $-105.5°C$, a compound is formed in the solid state with a molecular ratio of 1:1 between the initial components. In the $SiCl_4$-$Si_3O_2Cl_8$ system, the eutectic point is at a temperature of $-83.9°C$ with 34.6% (molecular) $Si_3O_2Cl_8$, the monotectic point at 63.9°C, and a solid compound of the $SiCl_4$-$Si_3O_2Cl_8$ type at a temperature of $-115.0°C$. Three illustrations, one table, seven bibliographic entries.
1/1

USSR   UDC 669.295.046.43

GALITSKIY, N. V., ZAVADOVSKAYA, V. N.,, and DROZHZHEV, V. L.

"The Solubility of Molybdenum Pentachloride in Titanium Tetrachloride"

Sb. tr. Vses. n.-i. i proyektn. in-t titana, [Collected Works of All-Union Scientific-Research and Planning Institute for Titanium], 6, 1970, 34-36, (Translated from Referativnyy Zhurnal-Metallurglya, No. 1, 1971, Abstract No^1 G177 by the authors).

Translation: The saturation method is used to determine the solubility of $MoCl_5$ in $TiCl_4$ at temperatures of 4, 25, 65, and 100°. In this temperature interval, the solubility varies from 0.002 to 0.034 mol   portions. The heat of dissolution of $MoCl_5$ in $TiCl_4$ $\Delta H_{sol}° = 6.82 \pm 0.2$ kcal/mol.

4 figures; 1 table; 6 biblio. refs.

1/1

TITLE--TITANIUM DIOXIDE PRODUCTION -U-

AUTHOR-(02)-DMITRIYEV, YU.M., GALITSKIY, N.V.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 264,378
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI NR 1970
DATE PUBLISHED--03MAR70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--METALLURGIC PATENT, TITANIUM OXIDE, TITANIUM CHLORIDE, OXYGEN
COMPOUND, METALLURGIC RESEARCH FACILITY, CALCINATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/1451   STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0126982
                          UNCLASSIFIED

CIRC ACCESSION NO--AA0126982
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TIO_2 IS PREPD. BY TREATING
$TICL_4$ WITH O,CONTG. METAL COMPOUNDS., E.G. OXIDES, DURING HEATING,
WITH SUBSEQUENT OR SIMULTANEOUS SEPN. OF THE TIO_2 FORMED FROM THE
BYPRODUCTS BY KNOWN METHODS. THE END PRODUCT IS CALCINED IN AN O,CONTG.
ATM., E.G. AIR, AT 650-1300DEGREES.   FACILITY: VSESOYUZNYY
NAUCHNO-ISSLEDOVATEL'SKIY I PROYEKTNYY INSTITUT TITANA.

UNCLASSIFIED

USSR   UDC: 621.396.6-181.5

AGAKHANYAN, T. M., VASIL'YEV, A. S., GALITSKIY, V. V., DONCHUK, S. D.,
PETROV, G. V., SMOLKO, G. G.

"Hybrid Circuits Utilizing Thin-Film Distributed RC Structures"

V sb. Mikroelektronika. Vyp. 1 (Microelectronics. No 1--collection of
works), Moscow, Atomizdat, 1971, pp 31-62 (from RZh-Radiotekhnika, No 6,
Jun 71, Abstract No 6V185)

Translation: Results found in development of microelectronic circuits
utilizing thin-film distributed RC structures are taken as a basis for
analysis of the possibilities of constructing a number of amplifiers,
sine-wave generators and relaxation circuits in the form of hybrid micro-
circuits. A number of recommendations are given on making microcircuits.
Thirty-seven illustrations, bibliography of thirty-six titles. N. S.

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USSR

UDC 547.241-342

NOVIKOVA, Z. S., GALITSKOVA, N. P., and LUTSENKO, I. F.; Moscow State University imeni M. V. Lomonosov

"Isomerization of Alkenyl Esters of Phosphinous Acid and β-Ketophosphines"

Moscow, Doklady Akademii Nauk SSSR, Vol 203, No 3, 1972, pp 595-599

Abstract: This study follows earlier work by the authors on α-metallized (Hg, Sn) carbonyl compounds, in which they devised methods for synthesizing substituted vinyl esters of phosphinous acid and also the isomeric β-keto-phosphines. The present study concerns a new regrouping of the alkenyl esters of diphenylphosphinous acid into β-ketoalkyldiphenylphosphines. The isomeric compounds isopropenyl (I) and α-ethylvinyl (II) esters of diphenylphosphinous acid, along with their isomers diphenylacetonylphosphine (III) and 2-oxobutyl-diphenylphosphine (IV) were investigated. Neither heating nor distillation of these effected any mutual transformations. However, the alpha-substituted vinyl esters of phosphinous acid, in the presence of various nucleophilic stannoorganic compounds, and also the salts of certain metals, were converted into isomeric β-ketophosphines. Reaction times ranged from 5 hours to 30 days for the eight esters tested. Data obtained are summarized in tabular form.

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USSR

NOVIKOVA, Z. S., GALITSKOVA, N. P., KOZLOV, V. A., and LUTSENKO, I. F.,
Moscow State University imeni M. V. Lomonosov

"Reaction of Diphenylphosphine and Potassium Diphenylphosphide With
α-Mercurylated Aldehydes and Ketones"

Abstract: Reaction of diphenylphosphine with mercuribisacetaldehyde and the
reaction of potassium diphenylphosphide with chloromercuryacetaldehyde in a
solution of dimethoxyethane takes place with a transfer of the reactive
center yielding vinyl ester of diphenylphosphinous acid. In contrast, α-
mercurylated ketones react with these reagents in two ways, yielding α,ß-
substituted vinyl esters of the diphenylphosphinous acid (0-phosphorylation)
and α-phosphorylated ketones (C-phosphorylation). The course of the reaction
depends on the electron density at the phosphorus atom, on the structure of
organomercury compound and on the type of solvent used. The reaction course
involving the transfer of the reactive center with the formation of 0-isomers
is favored by higher electron density on the phosphorus atom, higher basicity,
and coordination ability of the solvent. The opposite factors favor the
reaction without a transfer of the reactive center to the 1,2-position,
leading to the formation of C-isomers.

1/1

Differential & Integral Equations

USSR

GALIULLIN, A. S. (Lumumba Peoples' Friendship University)

"Problem of the Structure of Systems of Differential Equations"

Minsk, Differentsial'nyye Uravneniya; August 1970, pp 1343-1348

Abstract: The following problem is stated and solved:
For known, particular integrals find the set of systems of ordinary
differential equations and establish the structure of the functional
taking on a stationary value in the solutions of the equations in
question. Determine the conditions for the stability of the given
integral manifold. Particular integrals in a class of bounded, con-
tinuous, and differentiable functions in some region of phase space
are suggested. The functions which determine the system of
differential equations, as well as the integrand (functional), are
included in this same region.

1/2

USSR

GALIULLIN, A. S., Differentsial'nyye Uravneniya, August 1970,
pp 1343-1348

As an example, the author obtains the solution of a problem on the
control of the movement of a heavy body of variable mass (con-
centrated at a point).

The article includes 24 equations. There are 11 references.

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- 1 -

1/2   016   UNCLASSIFIED   PROCESSING DATE--23OCT70
TITLE--CONCERNING CONSTRUCTION OF SYSTEMS OF PROGRAMME MOVEMENT -U-

AUTHOR--GALIULLIN, A.S.

COUNTRY OF INFO--USSR

SOURCE--AVTOMATIKA I TELEMEKHANIKA, 1970, NR 3, PP 32-37

DATE PUBLISHED-------70

SUBJECT AREAS--MATHEMATICAL SCIENCES, PHYSICS

TOPIC TAGS--DYNAMIC SYSTEM, MOTION STABILITY, FUNCTIONAL EQUATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/1483   STEP NO--UR/0103/70/000/003/0032/0037

CIRC ACCESSION NO--AP0106239
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0106239
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THERE IS CONSIDERED THE
DEVELOPMENT OF THE PROBLEM OF CONSTRUCTING THE EQUATIONS OF THE MATERIAL
SYSTEM MOVEMENT ON THE BASIS OF THE SET PROBLEM (1-6). THERE ARE
CONSTRUCTED THE FUNCTIONALS ASSUMING THE STATIONARY VALUES ON THE
SOLUTIONS OF THE EQUATIONS CONSTURCTED, THERE ARE DETERMINED THE
CONDITIONS OF THE STABILITY OF THE PROGRAMME MOVEMENT. THE SOLUTION OF
ONE OF THE PROBLEMS OF CONTROLLING THE MOVEMENT OF A HEAVY POINT OF A
VARIABLE MASS IS PRESENTED AS AN EXAMPLE.

UNCLASSIFIED

USSR

DELONE, B. N., Corresponding Member of the Academy of Sciences of the USSR,
GALIULIN, R. V., DOLBILIN, N. P., ZALGALLER, V. A., SHTOGRIN, M. I., Mathe-
matics Institute imeni V. A. Steklov, Academy of Sciences of the USSR, Moscow

"On the Three Successive Minima of a Three-Dimensional Lattice"

Abstract: Let OA be the shortest vector of the three-dimensional lattice Λ,
OB -- the shortest vector of Λ not parallel to OA, and OC -- the shortest
vector of Λ not parallel to plane OAB. Three such vectors are called the
three successive minima of Λ, and the parallelepiped Π constructed on these
vectors is called a reduced parallelepiped.
    Theorem 1. The reduced parallelepiped Π is primitive (empty).
    This theorem was first geometrically proved by Dirichlet in 1848.
This proof has always seemed somewhat complicated to crystallographers,
and therefore N. V. Belov proposed a new proof in 1951. In this paper,
the authors offer a still simpler proof, and propose an algorithm for re-
ducing three successive minima to a single parallelepiped.

1/1

USSR

UDC: 533.697

BUZINOV, S. N., GALIULLIN, Z. T., and KARPOVA N. A.

"Nonlinear Problems in Non-Steady State Movement of Liquids and Gases Through Tubes"

Tr. Vses. n.-i. in-t prirodn. gazov (Works of the All-Union Scientific Research Institute of Natural Gases) 1970, No. 38/46, pp 149-162 (from RZh-Mekhanika, No. 8, Aug 70, Abstract No. 8B514)

Translation: Solutions of a system of nonlinear differential equations in partial derivatives are considered for the non-steady state movement of fluids in the use of the Leybenzon function in cases where the pressure or outflow in the initial section of the semi-infinite tube varies according to a power law. Some amount of fluid is introduced; this is a problem in "instantaneous source" for the boundary conditions. There is a jump in the outflow, or the outflow varies according to a sine law. The solution is considered for the case in which the daily sinusoidal curve of gas consumption is given, and the power of the last compressor station varies such that all other compressor stations operate in the steady state mode. The effect of the diameter and length of the final section of the tube on variations in the pressure and outflow is investigated. Bibliography of eight. Author's abstract.
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