USSR

KHOREV, A. I., et al, Metallovedeniye i termicheskaya obrabotka metallov,
Sept 71, no 9, pp 43-46

ing-type thermal treatments, TMT provides higher strength while frequently
increasing plasticity as well. Deformation of the Ti+3% Al+15 Mo alloy by
20% prior to aging at 500°C for 25 hrs increases its strength from 155 to
172 kgf/mm^2 while decreasing its per-unit elongation from 4 to 3%.

USSR

UDC 620.17:669.295'71'26'28

KHOREV, A. I., GLAZUNOV, S. G., and MUKHINA, L. G.

"Mechanical Properties of Alloys of the Ti-Al-Cr and Ti-Al--Cr-Mo System"

Abstract: Alloys of the Ti-Al-Cr and Ti-Al-Cr-Mo system with a constant amount of α-stabilizing element (3% Al) and a variable amount of β-stabilizers (chromium and molybdenum) were investigated. The experimental procedure and test results are discussed. The mechanical properties of the alloys in the annealed and quenched states were plotted for annealing at -50°C for 1 hour with cooling in air, annealing at -100°C and cooling in air, water quenching from -50°C, water quenching from -100°C, and water quenching from +50°C. The mechanical properties of the alloys in the thermally hardened state and their sensitivity to syperheating were also plotted. It was found that alloys of the Ti-Al-Cr and Ti-Al-Cr-Mo (close to critical concentration) system in the annealed state have high plasticity with strength reaching 120 kg/mm². Quenching with subsequent aging as a method

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USSR

KHOREV, A. I., et al., Metallovedeniye i Termicheskaya Obrabotka Metallov, No 3, 1971, pp 28-34

of improving strength while retaining satisfactory plasticity can be applied for alloys of the Ti-Al-Cr system containing no more than 3.6% Cr and for all Ti-Al-Cr-Mo alloys containing up to 9% Cr + 15% Mo. The mechanical properties of alloys with superheated structure in the annealed and thermally hardened state were investigated. With equal strength obtained after hardening heat treatment of low-alloy alloys and annealing of high-alloy alloys, the latter retain higher plasticity.

2/2

Mechanical Properties

USSR   UDC 621.791.052.001:5:620.192.4:669.295

KHOREV, A. I., Candidate of Technical Sciences

"Influence of Eutectoid-Forming β-Stabilizing Elements on the Mechanical
Properties of Titanium Alloy Welded Joints"

Moscow, Svarochnoye Proizvodstvo, No. 2, Feb 71, pp 3-5

Abstract: The influence of the following eutectoid-forming β-stabilizing
elements was studied: iron and chromium together with iron (with a constant
content of α-stabilizing aluminum at 3%). Alloys studied included Ti-3%
Al-(0.4-12%) Fe and Ti-3% Al-(0.6-9.0)% Cr-(0.4-6.0)% Fe. β alloys,
alloyed with iron have considerably lower plasticity than β alloys, alloyed
with molybdenum, vanadium,or chromium in the state after welding. In the
annealed state, welded joints of titanium alloys alloyed with up to 6.4%
Fe or 6% Cr plus 4% Fe have satisfactory mechanical properties at room
temperature, the alloys with iron and chromium having higher properties.

1/1

USSR K UDC 621.791.

KHOREV, A. I.

"Effect of Alloying Elements on the Mechanical Properties of Welds in Alloys of
the System Titanium-Aluminum-Chromium and Titanium-Aluminum-Chromium-Molybdenum"

Moscow, Svarochnoye Proizvodstvo, No 8, Aug 70, pp 29-32

Abstract: A study was made of alloys of the system Ti-Al-Cr and Ti-Al-Cr-Mo.
It is shown that alloys alloyed simultaneously with the beta-stabilizing ele-
ments chromium and molybdenum have better mechanical properties than those
alloyed with chromium alone. The plasticity of welds of alloys as annealed
at $(t_n-50)°$ C is maintained satisfactorily when alloyed up to 1% with
chromium and with up to 6% chromium plus 10% molybdenum. The strengthening
heat treatment quenching from $(t_n-50)°$ C plus aging at 450--550° C for 10
hours as a method of raising the strength may be applied to welds of alloys
Ti-3Al-(0.6-1.8)Cr-(1-3)Mo. At the same time, similar mechanical tests were
conducted on welds of VT15 beta-alloys based on the system Ti-Mo-Cr-Fe-Al and
Ti-Mo-V-Cr-Al. The given formulation does not increase the plasticity of the
welds as strengthened by heat treatment. The tests resulted in the premature
brittle failure of the specimens.

1/1

Lubricants and Lubrication

USSR   UDC 669.24'14'715-419:621.771

KHOREV, M. I., and ZAV'YALOV, YU. I.

"Eliminating Metal Gathering on the Rolls in Rolling Nickel-Steel-Aluminum Strip"

Moscow, Tsvetnyye Metally, No 3, Mar 70, pp 52-54

Abstract: A description is given of a method of rolling with various pass reductions using various technological lubricants in order to eliminate metal gathering on the rolls. A table shows 5 sets of parameters for pass reductions, weldability ratios, and metal gathering on rolls; another table gives the compositions of 9 lubricants, their characteristics, and rolling results. Lubricant No 3 was found best in eliminating metal gathering. The subsequent rolling is done on a cluster mill 160/350x450: 0.95--0.65--0.5--0.38--0.24--0.20 mm using lubricants Nos. 5 and 6, since they burn out best on annealing. The strip is annealed in a compartment-type electric furnace for 12 hrs., the tape temperature being $535\pm5^{\circ}C$.

1/1

USSR

UDC 621.039.524.034.3

NESTEREHKO, V. B., KHOREV, V. I., KREMESHNYY, A. I., SOKOL'CHIK, V. A.

"Gas Loop Devices Using a Dissociating Heat Exchange Agent"

Dissotsiiruyushch. gazy kak teplonositeli i rab. tela energ. ustanovok -- V sb.
(Dissociating Gases as Heat Transfer Agents and the Working Medium of Power
Plants -- Collection of Works), Minsk, Nauka i tekhn. Press, 1970, pp 161-165
(from RZh-Elektrotekhnika i Energetika, No 5, May 1971, Abstract No 5U189)

Translation: Two loop devices designed for studying dissociating heat exchange
agents, testing building materials and reserve testing of fuel elements are
described. The loop devices are located in the research (IRT-2,000) reactor
of the Nuclear Power Institute of the Belorussian SSR Academy of Sciences.
The characteristic features inherent in the loop devices operating on the
dissociating heat exchange agent are reflected. There are two illustrations
and a one-entry bibliography.

1/1

- 130 -

TITLE--MOLD LININGS -U-

AUTHOR-(05)-NIZKOVSKIKH, V.M., KURUKLIS, G.L., GELFENBEIN, E.YU.,
  TARLINSKIY, I.V., KHOREV, V.N.

COUNTRY OF INFO--USSR

SOURCE--GER. 1,558,150

DATE PUBLISHED--14MAY70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CHEMICAL PATENT, MOLD LUBRICANT, EPOXY RESIN, MOLYBDENUM
  DISULFIDE, TOLUENE, BUTANOL, ETHANOL, KETONE, ETHYLENE GLYCOL, ACETATE,
  PETROLEUM PRODUCT, ORGANIC SOLVENT, METAL CASTING, MOLDING MATERIAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/0838   STEP NO--GY/0000/70/000/000/0000/0000

CIRC ACCESSION NO--AA0131431
                        UNCLASSIFIED

CIRC ACCESSION NO--AA0131431
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MOLD LINING COMPNS. USED IN
  PRESSURE MOLDING OF METALS WERE PREPD. FROM MOS SUB2, EPOXY RESINS,
  DI-BU PHTHALATE, AND POLYETHYLENE POLYAMINE DILD. WITH NITRO CONTG.
  SOLVENTS. A COMPN. OF THIS TYPE WAS DILD. WITH A MIXT. OF PHME, BUOH,
  ETOH, ME SUB2 CO, ETHYLENE GLYCOL, AND BU OR AMYL ACETATE, COATED ONTO
  THE WALL OF A MOLD, AND DEGREASED WITH ME SUB2 CO OR ETOH. THE COATING
  HARDENED MORE QUICKLY THAN PREVIOUS COATING COMPNS. TO GIVE A SMOOTH
  THIN LINING WHICH INCREASED THE EASE OF REMOVAL OF THE CASTING. AFTER
  2-3 CASTINGS, THE SURFACE WAS WASHED WITH PETROLEUM AND RECOATED.
  FACILITY: ORDZHONIKIDZE, URAL PLANT OF HEAVY MACHINE BUILDING.

UNCLASSIFIED

1/2   017   UNCLASSIFIED   PROCESSING DATE---04DEC70
TITLE--EXTRACTION OF WATER BY TRIBUTYL PHOSPHATE AND SOLUTIONS OF TRIBUTYL
   PHOSPHATE IN DILUENTS -U-
AUTHOR-(05)-ROZEN, A.M., KHORKHORINA, L.P., AGASHKINA, G.O., TETERIN,
   E.G., MALTSEVA, A.N.
COUNTRY OF INFO--USSR

SOURCE--RADIOKHIMIYA 1970, 12(2), 345-55

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANIC PHOSPHATE, ORGANIC SOLVENT, URANYL NITRATE, ENTROPY,
   SOLVENT EXTRACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1461   STEP NO--UR/0186/70/012/002/0345/0355

CIRC ACCESSION NO--AP0135132
                          UNCLASSIFIED

CIRC ACCESSION NO--AP0135132

ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT. THE PROPERTIES OF THE SYSTEMS BU
   SUB3 PO SUB4 H SUB2 O AND BU SUB3 PO SUB4 H SUB2 O DILUENT WERE STUDIED.
    THE SOLVENTS USED WERE KEROSINE, BENZENE, METHYLBENZENE, CHCL SUB3, BU
   SUB2 O, CCL SUB4, OR AS MIXTS. WITH BU SUB3 PO SUB4. THE EFFECT OF
   URANYL NITRATE ON THE SOLY. OF WATER IN THE SYSTEM H SUB2 O BU SUB3 PO
   SUB4 URANYL NITRATE SOLVATE AND THE PHYS. CHEM. INTERPRETATION OF THE
   RESULTS FOR BU SUB3 PO SUB4 H SUB2 O SYSTEM AT VARIOUS TEMPS. ARE
   DISCUSSED. THE EXTN. OF H SUB2 O IS DEPENDENT ON AN ENTROPY EFFECT, A
   DECREASE IN THE EXCESS ENTROPY IN BU SUB3 PO SUB4 H SUB2 O SOLNS.
   APPARENTLY, THE EXTN. OF H SUB2 O IS DEPENDENT ON SOME ORDERING IN THE
   ORG. PHASE.

UNCLASSIFIED

USSR   UDC 542.91-661.718.1

PETROV, K. A., KHORKHOYANU, L. V., BEYSHEKEYEV, Zh., and DZHUNDUBAYEV, K.

"Phosphorus-containing Phenothiazine Derivatives"

Abstract: In searching for physiologically active substances the authors synthesized previously unknown phosphates, phosphonates and thiophosphonates of phenothiazine derivatives with residues of phosphorus acids bonded to the nitrogen atom of the phenothiazine nucleus by a hydrocarbon chain. [β -(Phenothiazinyl-10) isopropyl] phosphates were obtained by the reaction of chlorophosphates with 10-(β -hydroxypropyl)phenothiazine. Bis[β -(phenothiazinyl-10)isopropyl] methylphosphonate was obtained from methylphosphonic acid dichloride and 10-(β -hydroxypropyl)phenothiazine. [β -(Phenothiazinyl-10) isopropyl] diethylthiophosphinate was obtained from the diethylamide of diethylphosphinous acid and 10-(β -hydroxypropyl)phenothiazine with subsequent addition of sulfur to the phosphinite. Sodium phenothiazine reacts with diethyl esters of chloromethyl- and β -chloroethylphosphonic acids to give N-ethylphenothiazine and diethyl [β -(phenothiazinyl-10)ethyl] phosphonate respectively. The oxidation of [β -(phenothiazinyl-10)isopropyl] phosphates was studied.
1/1

USSR   UDC 547.341

PETROV, K. A., KHORKHOYANU, L. V., DZHUNDUBAYEV, K., SULAYMANOV, A.

"Synthesis and Properties of β-Alkoxyvinylphosphonic Anhydrides I."

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 9, Sep 70,
pp 1968-1970

Abstract: To the dichloroanhydride of β-ethoxyvinylphosphonic acid
in anhydrous toluene, water was added dropwise at 20° followed by
heating the reaction mixture for 2 hrs at 110° under a stream of
nitrogen. The solvent was evaporated and the residue kept 2-3 hrs
at 2-3 mm vacuum and 100-110° to yield the anhydride of β-ethoxy-
vinylphosphonic acid (I), m.p. 75-76°, a thermally stable hydro-
scopic, brittle material. Another way of obtaining (I) was by
adding water to the starting dichloroanhydride kept in anhydrous
benzene-pyridine mixture; absolute methanol could be substituted
for water. To obtain a monoalkyl ester, (I) dissolved in anhydrous
benzene or toluene was refluxed 6-10 hrs with anhydrous alcohol in
a dry atmosphere. After removing the solvent, the residue was kept
at 90-110°/7-8mm for 2-3 hrs, yielding the product -- dark syrupy
1/2

USSR

PETROV, K. A., et al, Zhurnal Obshchey Khimii, Vol 40, No 9,
Sep 70, pp 1968-1970

liquids. The anhydrides were characterized by conversion to
ammonium and calcium salts.

2/2

USSR   UDC 547.341

PETROV, K. A., KHORKHOYANU, L. V., DZHUNDUBAYEV, K., SULAYMANOV, A.

"Synthesis and Properties of β-Alkoxyvinyl Phosphonic Anhydrides"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 9, Sep 70,
pp 1971-1973

Abstract: A new method for the synthesis of anhydrides of β-alkoxy-
vinylphosphonic acid (I) is described, consisting of the reaction
of equimolar quantities of the dichloroanhydride with the complete
ester of β-alkoxyvinylphosphonic acid. The product is a monomer.
To obtain β-propoxy-α-methylvinylphosphonic anhydride, (I) in an
absolute benzene pyridine mixture is reacted with absolute methanol.
The reaction mixture is refluxed for 5 hrs, precipitate separated,
filtrate washed with benzene, solvent evaporated, and residual mass
kept for 1-1.5 hrs at 80-100/10-15 mm. These anhydrides react with
epoxides to yield five membered cyclic esters. The epoxides are
added in ice followed by heating the reaction mixture for 6-7 hrs
to 70-100°.

1/1

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USSR   UDC 547.341.07

PETROV, K. A., KHORKHOYANU, L. V., DZHUNDUBAYEV, K., SULAYMANOV, A., and
PRIGORENKO, P. G.

"A Method of Making β-Alkoxyvinylphosphonic Acid Anhydrides"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki,
No 27, 1970, Soviet Patent No 279615, Class 12, filed 6 May 69, p 29

Abstract: This Author's Certificate introduces: 1. A method of making
β-alkoxyvinylphosphonic acid anhydrides. As a distinguishing feature of the
patent, β-alkoxyvinylphosphonic acid dichloride is interacted with water,
and conventional methods are used to remove the hydrogen chloride which is
released. 2. A modification of this method distinguished by the fact that
the process is carried out in an organic solvent such as benzene.

1/1

AZOVA, L. G., GUSEV, M. V., KHOR'KOVA, G. A., and KORSHUNOV, I. S., Moscow
State University

"Molecular Oxygen Uptake by Cell Suspensions of Clostridium butyricum"

Abstract: The rate of oxygen uptake by Clostridium butyricum strains MO-1,
BC-6K, and USA in phosphate buffer was found to vary both with the initial
concentration of dissolved oxygen and with the density of the cell suspensions.
It was particularly high in the MO-1 and USA strains in the lag phase. At
high initial oxygen concentrations (7.0 to 10.0 mg/liter) the MO-1 and USA
strains took up 2.5 to 3.0 times more oxygen that did the BC-6K strain. An
increase in the cell concentration reduced the rate in all cases. Preliminary
incubation of the cell suspensions with oxygen greatly reduced the rate of
uptake by the MO-1 and USA strains but had no effect on that of the BC-6K
strain.

1/1

1/2   011   UNCLASSIFIED   PROCESSING DATE--16OCT70
TITLE--STUDY OF THE PROPERTIES OF MOISTURE SORBED ON PEAT BY CALORIMETRY
    AND NMR SPECTROSCOPY -U-
AUTHOR-(04)-VOLAROVICH, M.P., GAMAYUNOV, N.I., YEODOKIMOV, B.V., KHORKOVA,
    M.O.
COUNTRY OF INFO--USSR

SOURCE--KOLLOIDNYY ZHURNAL, 1970, VOL 32, NR 2, PP 182-188

DATE PUBLISHED-------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--MOISTURE MEASUREMENT, HYDROGEN BONDING, SOIL WATER,
    CALORIMETRY, NMR SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1993/0394   STEP NO--UR/0069/70/032/002/0182/0188

CIRC ACCESSION NO--AP0113312
                    UNCLASSIFIED

CIRC ACCESSION NO--AP0113312

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PROPERTIES OF SORBED MOISTURE
ON PEAT HAVE BEEN STUDIED BY CALORIMETRY AND NMR SPECTROSCOPY. THE
STUCTURE OF SORBED MOISTURE IS CHARACTERIZED BY DISORDERED WATER
MOLECULES BOUND BY HYDROGEN BONDS. THE STRUCTURE OF OSMOTIC MOISTURE
ALSO DIFFERS FROM THAT OF PURE WATER. THE AMOUNT OF CATIONS SORBED BY
PEAT AFFECTS THE EVAPORATION HEAT AND MOBILITY OF WATER MOLECULES.

UNCLASSIFIED

1/2   011   UNCLASSIFIED   PROCESSING DATE--18SEP70
TITLE--INTERACTION OF LYSOZYME WITH LOW MOLECULAR WEIGHT INHIBITORS AND
 MODIFIED SUBSTRATES CONTAINING BETA (1 TO 4) AND BETA (1 TO 6)
AUTHOR-(04)-SHASHKOVA, YE.A., VIKHA, I.V., VICHUTINSKIY, A.A., KHORLIN,
 A.YA.
COUNTRY OF INFO--USSR

SOURCE--BIOKHIMIYA 1970, 35(1), 124-31

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--AMINE DERIVATIVE, SACCHARIDE, BACTERIA, CELL PHYSIOLOGY,
 ENZYME ACTIVITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1984/0850   STEP NO--UR/0218/70/035/001/0124/0131

CIRC ACCESSION NO--AP0055551
                    UNCLASSIFIED

2/2   011   UNCLASSIFIED   PROCESSING DATE--13SEP70
CIRC ACCESSION NO--AP0055551

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SPECIFICITY OF LYSOZYME WAS
STUDIED IN RELATION TO THE POSITION OF THE GLYCOSAMINIDE LINKAGES
BETWEEN THE MONOSACCHARIDE BONDS OF THE SUBSTRATE DURING INTERACTION OF
THE ENZYME WITH THE FOLLOWING COMPDS.: N ACETYLGLUCOSAMINE, N,N'
DIACETYLCHIOBIOSE, N,N',N'' TRIACETYLCHITOTRIOSE, P NITROPHENYL BETA N,
ACETYL D GLUOCOSAMINIDE, P NITROPHENYL BETA N,N' DIACETYLCHITOBIOSIDE
(II), P NITROPHENYL O (2 ACETAMIDO, 2 DEOXY BETA D GLUCOPYRANOSYL), (1
YIELDS 6) O 2 ACETAMIDO 2 DEOXY, BETA D GLUCOPYRANOSIDE (II), P
NITROPHENYL O (2 BENZAMIDO, 2 DEOXY BETA D GLUCOPYRANOSYL), (1 YIELDS 6)
O (2 ACETAMINDO, 2 ACETAMINDO 2 DEOXY BETA D GLUCOPYRANOSIDE), AND P
NITROPHENYL O (2 ACETAMIDO, 2 DEOXY BETA D GLUCOPYRANOSYL), (1 YIELDS 4)
O 2 ACETAMINDO 2 DEOXY BETA D GLUCOPYRANOSYL (1 YIELDS 6) O 2 ACETAMINDO
2 DEOXY, BETA D GLUCOPYRANOSIDE (III). THE CONCNS. OF THESE COMPDS.
REQUIRED TO INHIBIT BY 50PERCENT THE LYSIS OF MICROCOCCUS LYSODEIKTICUS
BACTERIAL WALLS WAS DETD. THESE DATA PLUS LIT. CONSTS. OF DISSOCN. FOR
THE LYSOZYME COMPLEXES OF THE 1ST 2 COMPDS. (REPORTED ELSEWHERE) WERE
USED TO CALC. THE K SUB1 VALUES FOR THE COMPDS. STUDIED. THIS PERMITTED
QUANT. CALCN. OF THE AFFINITY AT THE ACTIVE SITE OF THE ENZYME. FOR I
AND II THE POSITION OF THE GLYCOSIDIC BONDS BETWEEN THE MONOSACCHARIDE
UNITS DET. THE COMPLEMENTARITY OF THE SUBSTRATE AT THE ACTIVE SITE. III
CONTAINS BOTH THE 1 YIELDS 44 AND 1 YIELDS 6 GLUCOSAMINIDIC BONDS AND
SHOWS STRONG AFFINITY TO THE ACTIVE SITE OF LYSOZYME AND CAN BE
HYDROLYZED BY THIS COMPD. WITH SUBSEQUENT TRANSGLYCOSYLATION.

UNCLASSIFIED

USSR   UDC 547.458.5

YEVDAKOV, V. P., KHORLINA, I. M., and KHELEMSKAYA, N. M.

"The Use of Amides of Trivalent Phosphorus Acids in the Synthesis of
Polygalacturonic Acid Amides"

Abstract: It was shown that amides of phosphorus acids may be used in the
conversion of carboxyl and ester groups of acid polysaccharides into amides.
This reaction is not accompanied by phosphorylation of the polysaccharide
hydroxyl group to any noticeable degree. Varying the reaction conditions --
time, temperature -- the N,N-diethylamides of polygalacturonic acid may be
obtained with the desired degree of amide content, from 10 to 85%.

1/1

Controls

USSR

UDC: 621.374

BOGACHEV, A. I., ISAKOV, Yu. D., LYAPINSKIY, Yu. V., LYAPINSKIY, V. V., and **KHOAN**, Y. N.

"Method of Transforming Time Shift Between Pulses"

Moscow, Izmeritel'naya tekhnika, No 3, 1972, pp 52-54

Abstract: The necessity occasionally arises, in automatic control and computer engineering, to determine the time shift of one pulse train relative to another or to transform it linearly into pulse widths. A device for doing this is discussed in this article. A block diagram of the device is given and its operation explained, together with a timing diagram. Some details of the method of its testing are given. The device is subject to two types of error: one, in determining the the moment of passage of zero value of the sinusoidal signal; two, in the magnitude of the insensitivity zone. Advice in the reduction of these errors is provided. The instrument can be used in the mass production of functional elements.

1/1

* USSR

UDC   621.397.238:621.397.62

KOROBKOV, L. A., TSIRLIN, V. M., SHESTAKOV, Yu. N., PETROV, V. A.,
PALITSKIY, V. M., KHOROBRYKH, V. T., BEREZIN, I. I.

"A Device for Reception of Television Image Signals With Accompanying
Audio"

Translation: This Author's Certificate introduces a device for reception
of television image signals with accompanying audio combined in a single
channel of a television system. The device contains a synchropulse selec-
tor, sound and image separation modules, and modules for demodulating the
audio channel signals. As a distinguishing feature of the patent, the
device is designed for reducing transient interference and increasing the
resistance to interference of the accompanying audio channel. Connected
at the input of the installation are two devices for restoring the DC
component of the video signal. One of these signal-restitution devices is
connected to a device for synchromixture regeneration through an electronic
switch controlled by a signal from the synchropulse selector. Signals from
the synchropulse selector and synchrogenerator are sent to the device for

1/2

USSR

KOROBKOV, L. A., et al., Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, 1970, No 36, Soviet Patent No 288028, class 21, filed 19 Apr 67, published 3 Dec 70, p 52

synchromixture regeneration. The second signal-restitution device is connected to a code-pulse demodulator and an amplifier through an electronic switch controlled by a signal from the synchropulse selector. The signal from the amplifier is sent to the output of the device through an optimum low-frequency filter and a bilateral clipper with low-frequency filter. Priority dates from 2 March 1967.

2/2

BARANOV, A. V., VOROB'YEV, G. A., PERVUKHIN, N. P., and KHOROMENKO, A. A.

"Study of the Breakdown of Silicon Monoxide Films at Constant Voltage"

Translation: The thickness of the SiO films was d = 300-5000 Å. It was
observed that E_{br} rises with a decrease in d and that E_{br} drops when the
upper electrode is the cathode. These facts support the electrical
character of the breakdown of SiO film.

1/1

USSR   UDC 666.76:669.056.9

ABZGIL'DIN, F. YU., AMIROV, R. A., and BIGLOV, A. KH., Ufa Aviation Institute imeni Sergo Ordzhonikidze, and KHOROSHAVIN, L. B., Eastern Institute of Refractories

"Refractory Coatings on Phosphate Bonds"

Abstract: Based on results of investigating the adhesive and cohesive strengths and thermal stability of materials on phosphate bonds, optimum compositions of coatings for the alloys 1Kh18K9T, EI-703, Ep-99, YT-9, OT-4, and EI-961, bronze Kh08, molybdenum and graphite were determined. The investigation included refractory coatings based on titanium, zirconium, hafnium, and silicon; hafnium, boron, and silicon nitrides; mullite, magnesian spinel, and calcium, barium, and strontium zirconates; molybdenum disulfide and disilicide and calcium titanate. Results are presented of determinations of working temperatures, ultimate shear strength, thermal stability of coatings, and electric conductivity and temperature conductivity of some compositions. The coatings are recommended as structural materials at 1000-1800°C. The electroninsulating materials on a corundum base can be used for preparing Nichrome tensometers with the mentioned alloys. The coatings materials can also be used as ceramic adhesives for joining alloys, particularly graphite and ceramics, of different compositions. Two figures, three tables, fourteen bibliographic references.
1/1

KHOROSHAYA, S.I.

JPRS 57825
2 Jan 73

UDC: 614.2[(47+57):517.3]

DEDICATED AID (ON THE FIFTY-FIRST ANNIVERSARY OF THE SOVIET-MONGOLIAN AGREEMENT)

[Article by S.Yu. Belen'kiy, S. I. Khoroshaya (Moscow); Russian; No 11, 1972, submitted 23 June 1972, pp ...]

Fifty years ago, an agreement was signed between the government of RSFSR and the Mongolian People's government concerning establishment of friendly relations. The signing of this document was a concrete manifestation of the Leninist policies of the young Soviet government directed toward establishing equal friendly relations with all eastern countries. Since that time friendship between the Soviet and Mongolian people developed with each year, it strengthened, and became a tradition, on the basis of selfless fraternal relations between the two socialist nations.

This agreement was of enormous significance to the victory of the Mongolian revolution, and it served as the start of close political, economic, and cultural collaboration between the Soviet Union and Mongolia.

In accordance with this agreement, the Soviet Union tendered considerable aid to the Mongolian People's Republic in the area of development of its public health.

In prerevolutionary Mongolian public health was practically absent; social disease and other forms of serious infectious disease were rampant. Mortality was very high. For precisely this reason the people's rule established in Mongolia on 11 July 1921, which attributed enormous significance to organization of health care in the republic, turned to the Soviet government with the request to give assistance in organizing the foundation of public health.

Since 1923, the People's Commissariat of Health of RSFSR regularly sent medical expeditions to the Mongolian People's Republic (MPR) to investigate the sanitary condition of the country, detect social diseases, render aid in organizing the work of the first public health agencies and physical examinations of the people. There are some interesting documents unknown heretofore, filed in the central state archives of RSFSR which describe one such expedition that worked in Mongolia in 1933-1935.

- 83 -

USSR   UDC: 621.373.531.3(088.8)

PODLIPENSKIY, V. V., KHOROSHAYEV, V. M., Tomsk Institute of Radio Elec-
tronics and the Electronics Industry

"A Transistorized Oscillator"

USSR Author's Certificate No 262155, filed 11 Sep 67, published 3 Jun 70
(from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11G197 P)

Translation: This Author's Certificate introduces a sawtooth voltage os-
cillator with arbitrary nonlinearity which contains two series-connected
transistors of opposite conductivity types, one of them acting as a key, and
the other acting as a current-stabilizing stage. The oscillator also con-
tains a time-setting capacitor and an amplifier with divided load, the col-
lector being connected through a series circuit consisting of a variable re-
sistor and a capacitor to the base of the current-stabilizing transistor.
To provide continuous and independent control of the shape of the beginning
and end of the working section of the sawtooth voltage, isolating capacitors
and two controlled diode limiters are connected between the emitter of the
amplifier and the current-stabilizing stage. These limiters are connected
to the slide wires of two variable resistors connected in parallel to the
base and emitter of the current-stabilizing transistor.

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USSR   UDC: 621.373.444.1

PODLIPENSKIY, V. V., KHOROSHAYEV, V. M., Tomsk Institute of Radio Electronics and
the Electronics Industry

"A Transistorized Generator"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 6,
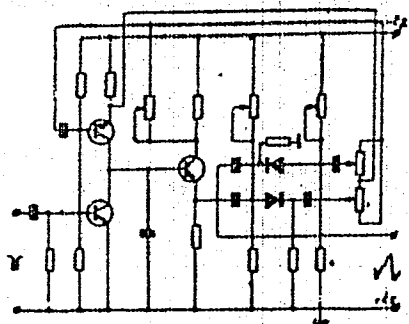1970, p 31, patent No 262155, filed 11 Sep 67

Abstract: This Author's Certificate introduces a transistorized sawtooth voltage
generator with arbitrary nonlinearity containing two series-connected transistors
of different conductivity types, one of them acting as a switch and the other as
a current stabilizing stage. Also incorporated in the device are a time-mark
capacitor and a split-load amplifier with collector tied to the base of the cur-
rent stabilizing transistor through a series-connected variable resistor and capac-
itor. As a distinguishing feature of the patent, the generator is designed for
continuous and independent control of the shape of the beginning and end of the
working section of the sawtooth voltage. Blocking capacitors and two adjustable
diode limiters are connected between the amplifier emitter and the current stabil-
izing stage. The diode limiters are connected to the sliding contacts of two
parallel-connected variable resistors which are connected to the base and emitter
of the current stabilizing transistor.
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USSR

PODLIPENSKIY, V. V. and KHOROSHAYEV, V. M., Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 6, 1970, p 31, patent No 262155, filed 11 Sep 67

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USSR

UDC 539.374

BOGOYAVLENSKIY, K. N., YEGOROV, YU. I., YEFIMOV, I. A., KHOROSHAYLOV, V. G.

"On the Possibility of Cold Rolling of EI437BU Alloy"

Translation: The results of a study to determine the resistance to deformation
under conditions close to cold rolling are presented. The maximum possible
degree of deformation before destruction of the samples under various load
conditions, contact friction, and various heat treatments was determined.
High plasticity is ensured after appropriate heat treatment, making it possible
to recommend the cold rolling method for obtaining a feather profile from the
EI437BU alloy. Authors' Abstract.

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USSR

VERNOV, S. N., IVANOVA, T. A., SOSNOVETS, E. N., TVERSKAYA, L. V., FEDOROVA, G. F., and KHOROSHEVA, O. V.

"Injection of High-Energy Electrons into the Inner Regions of the Magnetosphere During a Magnetic Storm 29 October - 4 November 1968"

Abstract: Measurements of electron fluxes ($E > 250$, 500, and 800 kev) made with the satellite "Molniya-1" [Lightning-1] during a magnetic storm are reported. The trajectory of the satellite was the following: apogee 39,600 km in the Northern Hemisphere, perigee 520 km in the Southern Hemisphere, inclination of orbit 65°, period of rotation ~12 hours. The data is compared with readings made at various ground stations during the same period. It was found that after a series of strong minor storms the intensity of electrons in the gap ($E_e > 250$ kev) rose by more than a factor of 2. In a subsequent series of such disturbances, additional injection occurred and the front of the injected electrons moved closer to the earth. An

1/2.

USSR

injection of electrons of higher energies in the region $L < 3$ was not as effective
as for $L = 3$, and the spectrum here was softer. It is observed that these pheno-
mena are closely associated with increased intensity of polar disturbances and in
all probability are of great interest in understanding the dynamics of the magneto-
sphere as a whole.

1/2   015   UNCLASSIFIED   PROCESSING DATE--02OCT70
TITLE--HEIGHTS OF AURORA AND THEIR CONNECTION WITH GEOMAGNETIC
DISTURBANCES IN HIGH LATITUDES -U-
AUTHOR-(02)-YEMEYLANEKO, S.N., KHOROSHEVA, O.V.

COUNTRY OF INFO--USSR

SOURCE--RAZDEL IV, POLYARNYYE SIYANIYA, 1970, NR 19, PP 72-76

DATE PUBLISHED--------70

SUBJECT AREAS--ATMOSPHERIC SCIENCES, EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--AURORA, GEOMAGNETIC DISTURBANCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY RLEL/FRAME--1994/0116   STEP NO--UR/3307/70/000/019/0072/0075

CIRC ACCESSION NO--AP0114512
                              UNCLASSIFIED

CIRC ACCESSION NO--AP0114512
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ALTITUDE OF THE LOWER BORDER
OF AURORAE WAS MEASURED ON THE BASIS OF SYNCHRONOUS PHOTOGRAPHS FROM TWO
STATIONS. THE MEASUREMENTS RELATE TO A GEOMAGNETIC LATITUDE OF
72-73DEGREES. THE MOST PROBABLE VALUE OF THE ALTITUDE IS 125 KM. A
DIURNAL DEPENDENCE IS OBSERVED IN THE ALTITUDE DISTRIBUTION: THE
ALTITUDE IS MARKEDLY INCREASED FROM EVENING HOURS TO MIDNIGHT HOURS.
THESE RESULTS CONFIRM THE EARLIER CONCLUSION THAT THE ISTANTANEOUS
AURORAL ZONE IS ASYMMETRICAL WITH RESPECT TO THE EARTH' SURFACE. ITS
ALTITUDE IS GRADUALLY CHANGED: 150 KM, 125-130 KM AND 105 KM AT THE
DAY, EVENING AND NIGHT PARTS RESPECTIVELY. THE CHARACTER OF GEOMAGNETIC
DISTURBANCES IS DEPENDENT ON AURORA ALTUTUDE. THE LOWER AURORAE (H
SMALLER THAN 130 KM) ARE ACCOMPANIED BY BAY LIKE DISTURBANCES THE HIGHER
ONES BY IRREGULAR SHORT PERIOD FLUCTUATIONS IN THE SMALL AMPLITUDE.

UNCLASSIFIED

1/3   017   UNCLASSIFIED   PROCESSING DATE--02OCT70
TITLE--DEVELOPMENT OF A POLAR STORM -U-

AUTHOR-(02)-KHOROSHEVA, O.V., DARCHIVEVA, L.A.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, GEOMAGNETIZM I AERONOMIYA, VOL X, NO 2, 1970, PP 295-299

DATE PUBLISHED-------70

SUBJECT AREAS--ATMOSPHERIC SCIENCES, EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--STORM, GEOMAGNETIC FIELD, AURORA, POLAR AREA

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1990/0034   STEP NO--UR/0203/70/010/002/0295/0299

CIRC ACCESSION NO--AP0108416
                       UNCLASSIFIED

2/3   017   UNCLASSIFIED   PROCESSING DATE--02OCT70
CIRC ACCESSION NO--AP0108416
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THERE IS NO UNANIMITY OF OPINION
AS TO HOW A POLAR STORM IS GENERATED AND PROPAGATED. THERE ARE AT LEAST
THREE MODELS: 1) THE DISTRUBANCE BEGINS SIMULTANEOUSLY IN THE ENTIRE
POLAR OVAL WITH AN ACCURACY TO SEVERAL MINUTES; 2) THE DISTURBANCE
BEGINS AT THE MIDNIGHT MERIDIAN AND THEN IS PROPAGATED IN BOTH
DIRECTIONS FROM IT ALONG THE OVAL; 3) THE DISTURBANCE BEGINS IN THE
MORNING DAYTIME SECTOR OF THE OVAL AND THEN WITH A LAG OF ABOUT 1 HOUR
APPEARS AT THE MIDNIGHT MERIDIAN. THERE IS ALSO A COMPROMISE THEORY
THAT EACH POLAR STORM PASSES THROUGH THREE STAGES: THE DISTURBANCE
BEGINS IN THE MIDDAY SECTOR OF THE OVAL; AFTER ABOUT 1 ONE HALF HOURS IT
WEAKENS AND AT THIS TIME THERE IS A SIMULTANEOUS BURST AT THE MIDDAY AND
MIDNIGHT MERIDIANS; APPROXIMATELY 40 MINUTES THEREAFTER THERE IS STILL
ANOTHER BURST, AGAIN ONLY AT THE MIDDAY MERIDIAN. IN ORDER TO CLARIFY
THIS SITUATION THE AUTHORS MADE A DETAILED ANALYSIS OF 14 POLAR STORMS
INVESTIGATED BY G. V. STARKOV, ET AL. (GEOMAGNETIZM I AERONOMIYA, 7,
1967, 367), WHO PROPOSED THE COMPLEX THREE STAGE NATURE OF STORM
DEVELOPMENT. ON THE BASIS OF DATA ON THE MAGNETIC FIELD AND AURORAS THE
CONCLUSION IS DRAWN THAT THERE IS A SIMULTANEOUS FORMATION AND
DEVELOPMENT OF A POLAR STORM THROUGHOUT THE POLAR OVAL. THIS RESULT IS
INTERPRETED AS THE SIMULTANEOUS LEAKAGE OF SOFT PLASMA ALONG THE ENTIRE
BOUNDARY OF TRAPPED RADIATION. THE AUTHORS CONTEND THAT THE CONCLUSIONS
DRAWN BY SOME RESEARCHERS THAT THERE IS A TIME SHIFT IN THE COURSE OF A
STORM AT DIFFERENT MERIDIANS, USUALLY INTERPRETED AS A LONGITUDINAL
DRIFT OF THE DISTURBANCE SOURCE, ARE ERRONEOUS.

UNCLASSIFIED

CIRC ACCESSION NO--AP0108416
ABSTRACT/EXTRACT--THEY ATTRIBUTE THIS TIME SHIFT TO INCORRECT
DETERMINATION OF THE TIME OF STORM ONSET.

UNCLASSIFIED

Welding

USSR   UDC 621.791.754.019:546.74

MARTYSHIN, G. V., KHOROSHEVA, V. B., Moscow

"Some Peculiarities of the Welding of Thin-Sheet Structures of Dispersion-Hardened Nickel Alloy VZh101"

Kiev, Avtomaticheskaya Svarka, No 1, Jan 73, pp 16-20.

Abstract: The peculiarities of welding of VZh101 alloy related to the tendency of its joints toward thermal cracking are studied. It is recommended that parts be heated to 950-1,000°C for 5 hours before welding. After welding, joints should be heat treated as follows: hardening from 1,150°C, 1 hour, aging at 830-850°C, 16 hours, with cooling in air in both cases. If the welded joints cannot be hardened, they should be heated to 950°C for 5 hours. The use of EP533 wire produces welded joints more resistant to cracks, but with 10-15% lower strength. In case of cracking of welded joints during heat treatment, it should be performed in furnaces providing high heating rates (40-50°C/min) in the 750-950°C temperature interval.

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UDC: 51:330.115

USSR

KHOROSHEVSKAYA, E. G.

"Effect Which the Indices of a Computer System Have on Expected Income When the System is Used"

V sb. Vychisl. sistemy (Computer Systems—collection of works), vyp. 39, Novosibirsk, 1970, pp 29-37 (from RZh-Kibernetika, No 11, Nov 71, Abstract No 11V764)

Translation: A procedure is proposed for calculating the income realized by homogeneous universal computer systems when they are used. A relation is found between income and the basic indices of the system. Examples of organization of universal computer systems are considered which reflect the current state of the art of computer technology. A program written in ALGOL is presented. From the introduction.

UDC 681.3

USSR

KHOROSHEVSKIY, V. G., KHOROSHEVSKAYA, E. G., GOLOSKOKOVA, T. M.

"Calculation of Technical and Economic Indicators for High Productivity Homogeneous Universal Computer Systems"

Translation: Formulas are concluded for the technical and economic indicators of homogeneous universal computer systems (UCS) on the assumption that the number of elementary machines (EM), number of repair devices (RD), intensity of failures in EM, repair and switching of machines, and initial status of the system are arbitrary. The formulas allow manual production of numerical values which correspond with accuracy sufficient for practice to the results of more precise and cumbersome calculations (both for stable and for transient modes). The following indicators are studied: mathematical expectation of the number of properly operating EM, switched EM, busy RD, cost of operation, cost functions characterizing losses due to down time of machines and RD and expected income. The results are illustrated with examples of homogeneous UCS.

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UDC: 681.3

"Algorithms of the Operation of Homogeneous Universal Computer Systems in the Simplest Situations"

Translation: The authors discuss two algorithms of distribution of a finite set of simple problems among the elements of a homogeneous universal computer system. There are no great difficulties in realization of the algorithms, in contrast to algorithms of mathematical programming. The results of statistical processing of experiments on modeling the algorithms are presented. Programs of the algorithms written in ALGOL language are given in an appendix. V. Mikheyev.

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USSR

VINOKUROV, V. G., DIMITRIYEV, Yu. K., YEVREINOV, E. V., KOSTELYANSKIY, V. M.,
LEKHNOVA, G. M., MIRENKOV, N. N., REZANOV, V. V., KHOROSHEVSKIY, V. G.

"A Homogeneous Computer System of Minicomputers"

Vychisl. Sistemy [Computer Systems -- Collection of Works], No 51, Novosibirsk,
1972, pp 127-145 (Translated from Referativnyy Zhurnal Kibernetika, No 6,
1973, Abstract No 6V600, by the authors).

Translation: The expediency is demonstrated of constructing homogeneous com-
puter systems (HCS) of minicomputers. A two-dimensional computer system, the
MINIMAKS is described. The elementary machines of this system are based on
ASVT-M modules. The composition of typical HCS software is presented. 20
biblio. refs.

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USSR

KHOROSHEVSKIY, V. G., SEDUKHINA, L. A.

"Stochastic Algorithms for Functioning of Homogeneous Computer Systems"

Vychisl. Sistemy [Computer Systems -- Collection of Works], No 51,
Novosibirsk, 1972, pp 3-19 (Translated from Referativnyy Zhurnal Kiber-
netika, No 6, 1973, Abstract No 6V689, by the authors).

Translation: Two algorithms are suggested for the functioning of homogen-
eous computer systems (HCS) solving sets of problems represented by programs
with various numbers of parallel branches. The first algorithm allows
stochastically optimal loading of the HCS with tasks with various performance
times, while the second assures a subminimum of the penalty function. The
basis is an algorithm which transforms the initial set of tasks to a set of
enlarged tasks with identical solution time.   ALGOL programs and results
of statistical processing of experiments on modeling of the algorithms are
presented.

USSR

KHOROSHEVSKIY, V. G.

"Possibility of Performance of Tasks in Homogeneous Computer Systems"

Translation: Possibility indicators are introduced, characterizing the process of performance of a task using less than absolutely reliable homogeneous computer systems. Simple methods of calculation of the indicators are suggested.

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USSR

KHOROSHEVSKIY, V. G., TALNYKIN, Z. A.

"Games-Theory Approach to the Problem of Functioning of Homogeneous Computer Systems"

Vychisl. Sistemy [Computer Systems -- Collection of Works], No 51, Novosibirsk, 1972, pp 20-37 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V595, by the authors).

Translation: Given a homogeneous computer system (HCS), consisting of n elementary machines (EM). The solution of a problem may involve $0 \le i \le n$ machines (for example, due to machine failures). The HCS receives a stream of tasks of various ranks. It is considered that a task has rank $0 < j \le n$ if its program requires j machines. The problem is to organize the functioning of the HCS such that the stochastically optimal utilization of each machine is assured as tasks are performed. Four games theory problems are stated and solved for the basic modes. This approach has the advantage that the problem of organization of functioning is solved only once for each system. Furthermore, it is proven that the solution of the system can be found using the HCS being studied. The algorithms for functioning of the HCS are extremely simple; they are realized by a pseudorandom number generator. A "mechanism" natural to the HCS may be used as such a generator (for example, the mechanism of failure and repair of individual EM).

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USSR

UDC 8.74

IGNAT'YEV, M. B., FLEYSHMAN, B. S., KHOROSHEVSKIY, V. G., SHCHERBAKOV, O. V.

"Reliability of Homogeneous Computation Systems"

V sb. Vychisl. sistemy (Computation Systems--collection of works), vyp. 48, Novosibirsk, 1971, pp 16-47 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V411)

Translation: A study was made of the problems of reliability of homogeneous all-purpose computation systems. The monitoring and correction procedures for the computation processes are described. Definitions of systems with structural redundancy and long-lived systems are presented. These classes of systems include the known systems of reliability theory. The reliability indexes of the homogeneous all-purpose computation systems are introduced. A study was made of the approaches when estimating the reliability of the elementary computer of the homogeneous all-purpose computation systems. Stochastic models of these systems are constructed which lead to simple formulas for the reliability indexes. It is noted that the numerical results obtained by these formulas coincide with a known degree of accuracy with the results of the more exact but more tedious calculations. Approximate methods of calculating the indexes of the homogeneous all-purpose computation systems are also investigated. Asymptotic estimates of the reliability indexes of the systems are presented for 1/3

USSR

IGNAT'YEV, M. B., et al., Vychisl. sistemy, vyp. 48, Novosibirsk, 1971, pp 16-47

$N \to \infty$. Divisions of the system into subsystems which are optimal from the point of view of reliability are found. The conditions are presented (logarithmic growth with time of the number of elementary computers) insuring reliability of the system as high as one might like. It is established that a sufficiently high reliability of such systems can be achieved, in particular, if their program organization is either by the principle of systems with structural redundancy or by the principle of long-lived systems. The proportion of the computers comprising the structural redundancy does not exceed a tenth part of the number of elementary computers in the system. The investigated principles have the advantage that they do not permit idle time of the elementary computers which are in a state of good repair. The methods of solving the monitoring and diagnostic problem for failures in homogeneous computation systems are noted. Calculation formulas were obtained for the technical-economic indexes. The problem of the optimal number m^* of devices in the repair system is solved. It was found that m^* comprises an insignificant portion of the number N of computers in the system; in addition, the ratio $m^*/N \to 0$ when $N \to \infty$. The results are illustrated by examples of homogeneous all-purpose computation systems. It is noted that highly efficient and highly reliable systems can be constructed on the existing physical-technological base. From the point of view of reliability,

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USSR

IGNAT'YEV, M. B., et al., Vychisl. sistemy, vyp. 48, Novosibirsk, 1971, pp 16-47

efficiency and cost homogeneous computation systems are a prospective area in computer engineering. The bibliography has 25 entries.

3/3

USSR   UDC: 681.3

KHOROSHEVSKIY, V. G.

"On Algorithms of Operation of Homogeneous Universal Computer Systems"

Translation: The author considers three modes of operation of homogeneous
universal computer systems: solution of a complex problem, solution of a
finite set of problems, solution of a stream of problems. Ways are men-
tioned for constructing algorithms of the distribution of problems among
the elements of a universal computer system. A heuristic algorithm is
described as well as an algorithm based on the methods of the theory of
games. V. Mikheyev.

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USSR   UDC 681.3

KHOROSHEVSKIY, V. G., KHOROSHEVSKAYA, E. G., GOLOSKOKOVA, T. M.

"Calculation of Technical and Economic Indicators for High Productivity Homogeneous Universal Computer Systems"

Translation: Formulas are concluded for the technical and economic indicators of homogeneous universal computer systems (UCS) on the assumption that the number of elementary machines (EM), number of repair devices (RD), intensity of failures in EM, repair and switching of machines, and initial status of the system are arbitrary. The formulas allow manual production of numerical values which correspond with accuracy sufficient for practice to the results of more precise and cumbersome calculations (both for stable and for transient modes). The following indicators are studied: mathematical expectation of the number of properly operating EM, switched EM, busy RD, cost of operation, cost functions characterizing losses due to down time of machines and RD and expected income. The results are illustrated with examples of homogeneous UCS.

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USSR

ANTONOV, A. M. and KHOROSHILOV, O. V., Kiev State University

"Calculating the Gas Parameters in the Forced Air Region During the Flow Around a Porous Cone at an Angle of Attack"

Kiev, Dopovidi Akademiyi Nauk Ukrayins'koyi RSR. Serija A: Fizyko-Tekhnichni ta Matematychni Nauki, No 1, 1973, pp 52-55

Abstract: Analyses of the results of the experimental and theoretical study of the phenomenon of intense, surface, mass transfer at high flight velocities of various bodies make it possible to draw conclusions as to the possibility of using injection as an effective means for changing such aerodynamic characteristics as drag and lift. From this point of view, intense forced air fed through a porous surface is very promising if the energy of the gas is sufficient to repulse the boundary layer. The authors study three-dimensional streamlining with forced air. The motion of a thin cone is studied at an angle of attack and with a gas of constant velocity being fed through its porous surface. As a consequence, the cone thickens, resulting in altered lift and drag. A full system of Euler differential equations with a spherical system of coordinates is used for calculating the field of flow in the forced gas region. The problem associated with streamlining a cone at the angle of attack α is solved by giving the unknown functions in the form of a small

USSR

ANTONOV, A. M., and KHOROSHILOV, O. V., Dopovidi Akademiyi Nauk Ukrayins'koyi RSR. Serija A: Fizyko-Tekhnichni ta Matematychni Nauki, No 1, 1973, pp 52-55

parameter asymptotic series. This makes it possible to reduce the full system of Euler differential equations to a system of differential equations which are convenient for numerical integration. The numerical integration was carried out on a computer using the Runge-Kutta method. Graphs are given showing the results of the numerical calculations for various values, cone gap angles, and forced gas parameters. The results may be utilized for the analysis of the field of gas flow in the forced gas region on long cones. Original article: eight formulas, two figures, and five bibliographic entries.

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KHOROSHILOV, V. P.

JPRS - 54173

01 OCT 71

UDC 615.472:615.835.35]:615.462

ANALYSIS OF STRUCTURAL STRENGTH OF THE SHELL OF A THERAPEUTIC
PRESSURE CHAMBER BUILT OF ORTHOTROPIC TWO-PLY FIBERGLASS

Steel is the most widely accepted material used for
building shells of various types of pressure chambers. The
main disadvantage of steel is its weight, which makes its
use in clinical conditions difficult. For technological
reasons, the use of titanium is limited so far. Thus, the
most promising material is fiberglass, because of its light
weight, high strength, technological qualities, and low
cost. The strength of a pressure chamber shell can be cal-
culated only when certain investigations are carried out in
advance.

The fiberglass shell of a pressure chamber is a thin-
walled spun shell of positive curvature. In order to join
the shell with other subassemblies, metal stiffening rings
are installed at each end of the shell. Under the uniform
action of inner force loading, plane stress is generated in
the shell wall, with the principal stresses oriented along
the annular and meridian directions. To best utilize the
anisotropy of the fiberglass, the method of separate two-
layer longitudinal and transverse winding is used in manu-
facturing the shell. A layer is the entire thickness of the
wall formed by the winding in one direction, irrespective of
how many times (prokhodov) the glass fiber is turned around.
Longitudinal and transverse winding does not permit obtain-
ing the optimal thickness in a shell of double curvature,
inasmuch as, in contrast to the easily obtainable necessary

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1/2   034   UNCLASSIFIED   PROCESSING DATE--13NOV70
TITLE--THAT WAS THE BEGINNING -U-

AUTHOR--KHOROSHILOV, P.YE.

COUNTRY OF INFO--USSR

SOURCE--(ETO NACHINALOS' TAK) MOSCOW, VOYENIZDAT, 1970, 67 PP

DATE PUBLISHED-------70

SUBJECT AREAS--NAVIGATION, MILITARY SCIENCES

TOPIC TAGS--ANTIAIRCRAFT DEFENSE, RADAR DETECTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/0231   STEP NO--UR/0000/70/000/000/0001/0067

CIRC ACCESSION NO--AM0132502
                          UNCLASSIFIED

CIRC ACCESSION NO--AM0132502
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PREFACE 3.   INTRODUCTION 5.
THE NECESSITY OF AN EFFECTIVE ANTI AIRCRAFT DEFENSE 9.   BRIEF
CHARACTERISTICS OF ANTI AIRCRAFT DEFENSE OF THE USSR IN THE THIRTIES
13.   ORIGINATION OF THE IDEAL OF DEVELOPING A NEW TECHNOLOGY 19.   THE
ACADEMY OF SCIENCES OF THE USSR AND THE ORDER FOR DEVELOPMENT OF RADAR
DETECTION EQUIPMENT 25.   REALIZATION OF RADAR DETECTION 45.   THE
BOOKLET DEALS WITH THE HISTORY OF THE DEVELOPMENT AND TESTS OF AERIAL
TARGET RADAR DETECTION EQUIPMENT IN THE SOVIET UNION IN THE THIRTIES.
THE AUTHOR OF THE BOOKLET WAS ONE OF THE ORGANIZERS OF EXPERIMENTAL WORK
IN THIS FIELD AND PARTICIPATED IN TESTS OF EXPERIMENTAL EQUIPMENT. THE
BOOKLET WAS WRITTEN FOR THE MASS READER.

UNCLASSIFIED

USSR

UDC 532.5

KHOROSHILOV, V. S., Dnepropetrovsk

"On Oscillations of a Liquid Partially Filling a Rotating Conical Cavity"

Kiev, Prikladnaya mekhanika, No. 11, Nov 71, pp 130-134

Abstract: The motion of a liquid under centrifugal forces located in a conical cavity partially filled with an incompressible liquid and rotating with an angular velocity relative to the longitudinal axis is investigated. The motion of the cavity is assumed to be close to stationary rotation. The depth of the rotating liquid is assumed to be relatively small. A solution is given for the boundary value problem concerning oscillations of the liquid. The problem of determining the velocity field of a rotating liquid for the case of a partially filled conical cavity is then solved.

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USSR   UDC 678.744.3-139.01:53

AMELINA, M. A., MAKASHOV, G. F., KHOROSHILOVA, I. P., BOCHARNIKOV, V. K., and BUBLIK, V. A.

"Radiation Hardening of Oligomeric Esteroacrylates"

Plasticheskiye Massy, No 4, Apr 71, pp 5-7

Abstract: The use of ionizing radiation for polymerization of unsaturated polyesters, conducted at elevated temperatures in the absence of catalysts, enables one to change the rate and the extent of the polymerization process within a broad range, control rigorously the degree of hardness of the obtained products, improve purity, homogeneity, decrease internal stresses of the products and impart to them higher thermal stability and mechanical strength. The purpose of the article was to study the effect of chemical structure of polyesters, particularly oligomeric esteroacrylates on the rate of their radiation polymerization, physical and mechanical properties of radiation hardened products and the magnitude of radiation dose which is necessary to produce materials with optimum physical and mechanical indices. Commerical oligomeric esteroacrylates were investigated: MGF-7, MGF-8, MGF-9 and TMGF-11. A cobalt-60 gamma radiation source was used at room temperature. The dose rate was 180 rad/sec. Thermochemical polymerization
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USSR

AMELINA, M. A., et al., Plasticheskiye Massy, No 4, Apr 71, pp 5-7

was conducted in parallel to radiation hardening for comparison. It was
found that radiation polymerization of oligomeric esteroacrylates produces
higher quality products than those obtained by ordinary thermochemical
polymerization. Since the radiation doses which are needed in order to
obtain radiation hardening of polymers are low the use of this method in
certain cases is expedient.

2/2

TITLE--PLASTIC GLASS -U-

AUTHOR-(05)-KHOROSHILOVA, I.I., KUTEPOV, D.F., DEVDARIANI, T.V.,
   ZASLAVSKIY, N.N., SUZDALEVICH, G.A.
COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 265,437
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--09MAR70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--PHENOL FORMALDEHYDE RESIN, FURFURAL, ACETATE, GLASS, FIRE
   RESISTANT MATERIAL, GLASS PLASTIC, REINFORCED PLASTIC, CHEMICAL PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/1768   STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0137008
                        UNCLASSIFIED

CIRC ACCESSION NO--AA0137008
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT. PLASTIC GLASS WITH GREATER
   STABILITY AND LOWERED COMBUSTIBILITY IS PREPD. BY SATG. A GLASS FILLER
   WITH A BINDER AND HARDENING THE RESULTING MATERIAL WITH 5PERCENT FE
   PRIME3 POSITIVE SALTS. THIS IS CARRIED OUT WITH A COMPN. CONTG. EQUAL
   AMTS. OF A 40-70PERCENT SOLN. OF FURFURAL,PHENOL,FORMALDEHYDE ACETATE
   RESIN IN FURYL ALC. AND AN AQ. SOLN. OF AN ACETATE CONDENSATE OF A
   PHENOL,HCHO RESIN.

UNCLASSIFIED

USSR   UDC 661.143(088.8)

LADYGINN. A., TOLMACHEVA, K. F., and KHOROSHILOVA, L. I.

"Process for Preparing Phosphors"

USSR Author's Certificate No 334856, filed 24 Mar 69, published 18 Aug 72
(from Referativnyy Zhurnal -- Khimiya, No 8(II), 1973, Abstract No 8L170
by N. Sh.)

Translation: A method is described for preparing high quality luminescent
compounds of diphenyl or diphenylamine or triphenylamine or their deriva-
tives or urea or thiourea mixed with one of the salts of inorganic or organic
acids (with halogens, nitrates, sulfates, phosphates, or acetates) of the
metals of groups I-VIII of the periodic table in subsequent heating of the
mixture from $120 - 220^\circ$ for 30-120 minutes. The product obtained was then
cooled, filtered, washed with a suitable solvent and dried. The listed com-
ponents, for example diphenylamines and ammonium chloride had a relative
weight ratio of 1:0.01-1. The new luminescent compounds in contrast to those
which are known are prepared in different organic solvents and form luminescent
solutions. By treating paper and fabric with these solutions a thin lumine-
scent screen may be prepared using only a small amount of the compound. For
example, a mixture made up of 1 gram of diphenylamine and 1 gram of aluminum
1/2

USSR

LADYGIN, N. N., et al., USSR Author's Certificate No 334856, filed 24 Mar 69, published 18 Aug 72

chloride, after careful mixing is heated to $150^\circ C$ for 30-40 minutes. The product obtained is cooled to 20°, dissolved in acetone and filtered from the undissolved particles. After evaporating the acetone, the powder is recrystallized, from ethanol and ground to   necessary powder size. During excitation with ultraviolet light, the powder has a bright luminescent in the blue area of the spectrum.

2/2

USSR   UDC 631.811:631.589.2:541.183.12

SOLDATOV, V. S., PERYSHKINA, N. G., KHOROSHKO, R. P.,
SUDARIKOVA, N. I., Institute of General and Inorganic Chemistry,
Academy of Sciences Belorussian SSR, Minsk

"Ionite-Base Synthetic Nutrient Media for Plant Growth.
Communication III. Methods of Regenerating Ionite Substrata"

Abstract: Analysis of substrata after 5-7 vegetation cycles in-
dicates nearly complete depletion of potassium and partial de-
pletion of nitrogen. Earlier research points to a theoretical
possibility of producing artificial ionite-base media for plant
cultivation. Detailed here are two new experimental procedures
involving rapid regeneration of depleted substrata and restora-
tion of productivity. The first method specifies individual
additions of potassium and nitrogen in the form of potassium
hydroxide and nitric acid in amounts equivalent to the deficit of
the appropriate element. The second method involves the treatment
of soil with a diluted solution of potassium nitrate containing
1/2

- 12 -

USSR

SOLDATOV, V. S., et al, Agrokhimiya, No 12, Dec 71, pp 86-91

both basic regenerated ions in the form of a neutral salt.
Preference is given to the second variant since it places no
stringent requirements on dosage additives or thorough mixing of
the soil. Subsequent treatment of the substrates with H_2O_2
solutions to inactivate the plant metabolites and increase the
soil's productivity is suggested. The optimum H_2O_2 concentration
is cited as 0.2% (27 ml of 30% H_2O_2 per 1 kg of dry soil).
Higher concentrations are said to have adverse effects on the
plants. (2 tables, 3 biblio. references)

2/2

GOL'DIN, L.L., DZhELEPOV, V.P., LOMANOV, M.F., SAVChENKO, O.V., and KhOROShKOV, V.S.

"The Use of High-Energy, Heavy Charged Particles in Medicine"

Abstract: Present methods of radiation treatment involve primarily the use of X-rays, gamma radiation, and light particles such as electrons. These techniques are severely limited by the necessity of restricting radiation damage to non-cancerous tissues and the difficulty of controlling the depth of penetration of such radiation. The development of more powerful accelerators makes possible the use of heavy charged particles at high energies. The penetration of these particles through various materials can be much more closely controlled, making it possible to confine the damaging effects to the malignant tissues with much greater accuracy. This effect is further strengthened by the relatively low scattering of heavier particles. For all radiation therapy except intercranial surgery and a few other special cases, a beam of Pi-mesons appears to offer the best characteristics.

1/2

USSR

GOL'DIN, L. L., et al., Uspekhi Fizicheskikh Nauk, Vol 110, No 1, May 73, pp 77-99

The article discusses the uses of radiation therapy, both alone and in combination with surgery, describes the effects of various types of radiation on the human body, and discusses possible future developments. Several radiation therapy installations are described, and there is a survey of experiments in various countries. The authors believe that large-scale centers for high energy and heavy-particle radiation therapy should be established now and that the development of suitable Pi-meson radiation apparatus should be carried out.
     Four tables, 15 illustrations, 48 bibliographic citations (mostly from western sources).

2/2

Acc. Nr: *AP0047229*

Ref. Code: UR 0216

PRIMARY SOURCE: Izvestiya Akademii Nauk SSSR, Seriya
Biologicheskaya, 1970, Nr 1, pp *111-113*

Mikhaylov, I. N.; Khoroshkov, Yu. A.

ELECTRONMICROSCOPICAL INVESTIGATION OF THE EPIDERMIS AND THE SKELETAL MUSCLE OF MAN FIXED WITH FORMALDEHYDE

Research Laboratory, Ministry of Health, USSR

Electronmicroscopical investigation of the effect of formaldehyde fixation on the ultrastructure of a skeletal muscle and epidermis of man was carried out. The results showed that formaldehyde fixation does not cause tangible chages in the ultrastructure of the tissues investigated. The general picture of the ultrastructural organization of the epidermis and the striated muscular tissue practically does not differ from the controls. Formaldehyde fixation reveals most clearly the fibrillar components (myofibrils in muscle cells, tonofibrils and tonofilaments in epidermal cells).

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REEL/FRAME
19790732

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AP0047229

Formaldehyde fixation calls forth a slight size increase of the volume of some mito-chondria and the elements of the sacroplasmatic reticulum. An increase of the melanine type pigment is observed in the cells of the lower layers of the epidermis.

Considering the changes just mentioned the data obtained entitle one to recommend a 10% solution of neutral formaldehyde as a fixative fluid for electronmicroscopical investigations.

19790733

USSR   UDC 547.944/945

ABDUSALAMOV, B. A., ASLANOV, KH. A., SADYKOV, A. S., and KHOROSHKOVA, O. A.,
Tashkent Order of the Labor Red Banner State University imeni V. I. Lenin

"Investigation of the Alkaloid Content of Sophora Japonica"

Abstract: The alkaloids were extracted from dried, ground seeds of Sophora
japonica L. After deoiling with petroleum ether, the seeds were treated
with a methanol solution of   potassium hydroxide, dried and extracted with
chloroform. After reextraction with sulfuric acid and alkalinization with
10% KOH, the material was again extracted with chloroform to yield a group
of eight alkaloids, from which it was possible to identify citizine,
N-methylcitizine, sophocarpine, and matrine.

1/1

Single Crystals

USSR   UDC 669-172

VOROB'YEV, G. M., GORIN, D. I., and KHOROSHUN, L. K., Minsk

"Anisotropy of Wear Resistance of a Single Crystal"

Moscow, IAN SSSR, M tally, No 2, Mar-Apr 71, pp 176-177

Abstract: Anistropy in wear resistance of single crystals was
studied using a single crystal of Fe + 4% Si with the friction
surface corresponding to the crystallographic planes along
which sheet usually occurs in metals with a body centered cubic
lattice: (110), (112). Wear tests were studied with a specific
load of 150 kg/cm^2, slipping rate 0.94 m/sec. The experiments
established that the minimum wear is observed when the plane
of friction and slipping plane are parallel and there are no steps
on the friction surface. The maximum wear is observed when
plastic deformation is facilitated in the surface layer, accom-
panied by the formation of steps.

1/1

USSR

BOL'SHESOL'SKIY, P. P., NAZAROV, A. M., and KHOROV, V. P.

UDC: 62-55

"Nonlinear Correction Device"

USSR Author's Certificate No 287158, filed 22 Jan 69, published 14 Jan 71 (from RZh-Avtomatika, telemekhanika i vychislitel'naya tekhnika, No. 12, 1971, Abstract No. 12A155P)

Translation: The proposed device can be used in deviation automatic control systems. Known correcting devices contain parallel-connected capacitors and resistors. Correcting devices of this type do not provide adequate control quality in a broad range of controlled quantity variation. The proposed correcting device is distinguished from the known systems in that it contains 2 oppositely connected stabilitrons at the input, which are connected in series with a scaling resistor and shunted to the zero potential bus by an additional resistor, the scaling resistor being made in the form of series-connected resistors whose connecting point is tied to the zero potential bus through an additional circuit containing a resistor and a connected diode. These differences raise the quality of the control because of the automatic change in the control law depending on the input signal level, thus stabilizing the operating threshold of the control circuit.

Resume
1/1

USSR

KUKINOV, A. M., POLYAKOV, V. G., UDACHIN, G. F., KHOROVA, L. A.

"Experiment on Recognition of Manuscript Numerals Using a Tracking Scan"

Opoznavaniye i Opisaniye Liniy [Recognition and Description of Lines --
Collection of Works], Moscow, Nauka Press, 1972, pp 108-118 (Translated
from Referativnyy Zhurnal, Kibernctika, No 3, Moscow, 1973, Abstract
No 3 V707 by the authors).

Translation: A model is described of an automaton for reading of non-
stylized manuscript arabic numerals. The model calls for a tracking
scan of a pattorn around its outside contour, recognition using a system
of characteristics and a nonparametric method of production of the
decision rule.

1/1

DUZHINSKIY, S. I., and KHORT, K. A., Surazh Veterinary Laboratory, Bryznaksys Oblast

"Rapid Diagnosis of Brucellosis"

Abstract: In an article published in Veterinariya, No 3, 1969, P. I. Zverev and L. D. Lyutova described a method for the rapid diagnosis of brucellosis. This method was applied to 1,423 blood samples from cows and found to be highly sensitive and simple to use even with hemolyzed sera. However, it was not very specific and in doubtful cases the complement fixation test was needed for confirmation.

1/1

USSR   UDC 621.791.89.546.56:546.78

NESMIKH, V. S., MALEVSKIY, YU. B., GUBENKO, B. G., and KHORUNOV, V. F., Institute of Electric Welding imeni Ye. O. Paton, Academy of Sciences UkrSSR

"Contact-Reaction Soldering of Copper With Refractory Metals"

Abstract: A method for the contact-reaction soldering of copper with tungsten, molybdenum, chromium, and other metals using a titanium interlayer was developed by the authors. Experiments were conducted in a vacuum chamber with electron-beam heating. The 10-mm-diameter cylindrical samples were made of tungsten, molybdenum, chromium, niobium, and copper. The titanium foil interlayer was 12 microns. The samples were subjected to compression at different times during soldering (before the appearance of the liquid phase, immediately after contact soldering, or after a certain isothermic holding time). The soldered joints were tested for tensile strength and heat resistance. Phase content and joint structure were studied by metallographic and x-ray spectral analysis. The results show that pressure application immediatelt after the end of contact soldering is the most expedient procedure. A technology for the production of x-ray tube anodes was developed on the basis of these results.
1/1

USSR   UDC 621.382:621.362

BYALED'DINOV, M.F., KHORUNZHIN, YU. P., DITYAT'YEV, M.B.

"Semiconductor Thermoelectric Conditioners And Coolers"

Kholodil'n. tekhn. i tekhnol. Resp. mezhved. nauchno-tekhn. sb. (Refrigeration
Technology And Production Processes. Republic Interdepartmental Scientific-Technical
Collection), 1970, No 9, pp 6-8 (from RZh--Elektronika i yeye primeneniye, No 11,
November 1970, Abstract 11B173)

Translation: A description is given of conditioners and coolers, the operation
of which is based on the use of the Peltier thermoelectric effect. A number of
new developments are described which were produced during the last 2-3 years at
SKBPP [expansion uncertain. SKB probably = Spetsial'noye konstruktorskoye byuro,
i.e., Special Design Office. PP may = Pishchevaya promyshlennost', i.e., Food
Industry]. An analysis is conducted of the practical operation of conditioners
placed into use in 1963-1964. The problem is discussed of determining the quanti-
tative indices of the reliability, both of conditioners on the whole, and of
thermopiles. Liquid coolants are discussed, with water heat removal from hot
junctions, and their technical characteristics are listed. Summary.

1/1

USSR   UDC: 621.317.757.3

ZAVERTANNYY, V. V., PIS'MENETSKIY, V. A., KHORUNZHIY, V. A., Khar'kov Poly-
technical Institute imeni V. I. Lenin

"Concerning a Method of Spectral Analysis of Isolated Radio Signals"

Abstract: A method is described for forming the spectral density of iso-
lated radio signals by using a device for preprocessing the signal. This
signal processor provides for storage of the signal, reproduction, and
frequency displacement of duplicates of the signal by steps. It is shown
that the frequency band of a spectrum analyzer can be expanded by a factor
of N + 1 when N circulations are made in the processor. In a spectrum ana-
lyzer with 30-50 filters, a coefficient of panoramism of 900-1500 can be
achieved by using preprocessing.

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USSR   UDC   621.317.757

PIS'MENETSKIY, V. A. and KHORUNZHIY, V. A.

"Combination System for the Frequency Analysis of Radio Signals"

Tr. Taganrog. radiotekhn. in-ta (Works of the Taganrog Radio-Engineering Institute), 1972, vyp.28, pp 65-73 (from RZh-Radiotekhnika, No 11, Nov 72, Abstract No 11 A285)

Translation: The authors describe combination type block-diagrams of spectral analyzers in which the number of frequency channel selections reaches several hundred thousand. The authors consider the circuits of spectra analyzers with increased duration of the remembered realization of the signal and spectra analyzer circuits with widened bands of the analyzed frequencies. A significant improvement is shown in the metrological characteristics of the unit used for frequency analysis during utilization of known spectra analyzers. This is due to the preliminary processing of the signal with the aid of the following: 1) preliminary time compression, 2) summation of instantaneous spectra, and 3) storage of signals. The possibility is indicated of realizing practically any value parameters for systems of formation with respect to the fixed values of the parameters of the utilized analyzers. A.K.

1/1

USSR   UDC   621.396.965.8

KHRESIN, I. N.

"Estimating Accuracy Losses in the Determination of Angular
Parameters of Trajectory in a Stationary Coordinator"

Tr. Mosk. energ. in-ta (Transactions of the Moscow Power Insti-
tute) No 117, 1972, pp 166-170 (from RZh--Radiotekhnika, No 10,
1972, Abstract No 10G4)

Translation: A comparison is made of the accuracy of a real co-
ordinator and the accuracy of the optimal coordinator (of the Kal-
man filter type). The definite gain in accuracy as a result of
optimization, which increases with increasing observation time, is
demonstrated. Three illustrations, bibliography of two. N. S.

1/1

USSR   UDC 632.95

VLADIMIRTSEV, I. F., KARABANOV, Yu. V., KHRIPKO, S. S., BOLDYREV, I. V.

"Biological Activity of Benzanilines"

Translation: The results are presented from testing compounds with the formula
$RC_6H_4CH = NC_6H_4R'$ (I) (R = H, halide, NO_2, aminogroup, alkoxyl; R' = H, halide,
NO_2). The selectivity of the effect of I and the relation of the phytotoxicity
to the nature of the substitution in the benzene rings are demonstrated. The
0.01% I compounds stimulate the root growth of oats, but they inhibit the
growth of lettuce. The derivatives of salycilanaline have high phytotoxicity
for dicotyledons, and they are of greatest interest from the point of view
of finding new herbicides. $3-MeO-4-NOC_6H_4CH = NPh$ has high stimulating
activity.

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USSR   UDC 632.95

VLADIMIRTSEV, I. F., KARABANOV, Yu. V., KHRIPKO, S. S., RYBCHENKO, L. I.,
CHEREPENKO, G. I.

"Biological Activity of Substituted α'-nitrostilbenes"

Translation: In order to obtain plant growth regulators and fungicides, a
number of derivatives of styrene and stilbene were synthesized; $PhCH=CH_2$
suppresses the growth of oat roots in a concentration of 0.01% by 56%, and
in a concentration of 0.001%, by 60%, and it suppresses the leaf growth by
45 and 21% respectively. The $PhCH=C(NO_2)Ph$ (I) has a significant inhibiting
effect. In a 0.01% concentration it suppresses the growth of oats and
lettuce by 79%. The $PhCH=CHNO_2$ not only suppresses growth but causes the
plants to die. The fungicidal activity of I approaches that of figon;
π-Br- and π-Cl-I are of practical interest as root and stalk growth stimu-
lators.

1/1

ETIOLOGY AND PATHOGENESIS OF CHRONIC
INFLAMMATORY DISEASES OF THE RESPIRATORY ORGANS

V. V. Dubiley, P. V. Dubiley, L. D. Khorushavin

A total of 1100 patients with inflammatory diseases of the respiratory organs (bronchitis bronchoectatic disease, pneumonia and pneumosclerosis) were observed, the microflora of their sputum taken from the oral cavity was studied by means of a bronchoscope and during the operation. The presence of constantly mixed coccal flora in patients allowed the authors to make a conclusion that infection is an indispensable factor in the development of the inflammatory process in the respiratory organs. The analysis of the anamnestic data and clinical manifestations of the disease enabled the authors to single out the main etiological factors which lead to the development of the disease — droplet infection of children and influenza. Alcohol, smoking, overcooling can be regarded as contributing factors in the development of the disease but not influencing the clinical course.

The authors made experiments on 120 animals (rabbits) in whom they disturbed the nervous regulation of the respiratory organs (vagus dissection), created a depot of infection in the major bronchi and acted upon the animals by overcooling, as a result of which the authors received a model of an inflammatory disease of the respiratory organ which fully resembled the one observed in patients (bronchitis, emphyzema, pneumonia and pneumosclerosis).

REEL/FRAME
19790751

1/2   018   UNCLASSIFIED   PROCESSING DATE--13NOV70
TITLE--WATER EXCRETING FUNCTION OF THE KIDNEYS IN CONGESTIVE HEART FAILURE
-U-

AUTHOR--KHORUNZHAYA, L.V.

COUNTRY OF INFO--USSR

SOURCE--VRACHEBNOYE DELO, 1970, NR 4, PP 100-104

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HEART DISEASE, RHEUMATIC DISEASE, KIDNEY FUNCTION, EXCRETION,
WATER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1703   STEP NO--UR/0475/70/000/004/0100/0104

CIRC ACCESSION NO--AP0129073
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0129073
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE WATEREXCRETING FUNCTION OF THE
KIDNEYS FOLLOWING STANDARD WATER LOADS WAS STUDIED IN 47 PATIENTS WITH
RHEUMATIC HEART DISEASE ASSOCIATED WITH CONGESTIVE HEART FAILURE. IN
CONGESTIVE HEART FAILURE STAGE I THE WATEREXCRETING FUNCTION OF THE
KIDNEYS WAS WITHIN NORMAL LIMITS, ALL LATER STAGES SHOWNING DIFFERENT
TYPES AND FORMS OF ABNORMAL WATER EXCRETION. IN SEVERE HEART FAILURE
THE INTAKE OF FLUIDS SHOULD BE RESTIRCTED. THE CAUSES OF ABNORAML
WATER EXCRETING FUNCTION OF THE KIDNEYS IN THESE PATIENTS ARE ANALYSED
AND DISCUSSED.   FACILITY: DONETSKOGO MEDITSINSKOGO INSTITUTA.

UNCLASSIFIED

Acc. Nr:
AP0037019

Ref. Code: UR 0239

ON A METHOD FOR STUDYING THE HYDRO-URETIC COMPONENT
OF THE OSMOREGULATION SYSTEM

A. K. Merzon and *L. V. Khorunzhaya*.

Clinic for Internal Diseases, State Medical Institute, Donetsk

Effect of intravenous administration of ethyl alcohol on the renal function was studied in practically healthy people under water deprivation. Minory doses (less than 0.5 ml 96° alcohol per 1 kg of body weight) proved to be ineffective. Greater doses (0.6—0.8 ml/kg) entailed a complete central blockade of the antidiuretic hormone (ADH) followed by a marked water diuresis approximately at the same time as after peroral water load. The described method proved useful for revealing the role of inappropriate ADH secretion in impaired hydrouresis. Thus, in patients with severe congestive heat failure and no hyponatremia, the excessive drinking of water and intravenous alcohol administration failed to cause hydrouresis, which gave ground to reject any connection between impaired hydrouresis and ADH hypersecretion in these patients.

D.n.

2

REEL/FRAME
19721955

1/2   010   UNCLASSIFIED   PROCESSING DATE--16OCT70
TITLE--THE STRUCTURE OF THE LOCAL W ALGEBRAS IN QUANTUM FIELD THEORY -U-

AUTHOR--KHOKUZHIY, S.S.

COUNTRY OF INFO--USSR

SOURCE--TEORETICHESKAYA I MATEMATICHESKAYA FIZIKA, 1970, VOL 2, NR 3, PP
  350-360
DATE PUBLISHED-------70

SUBJECT AREAS--MATHEMATICAL SCIENCES

TOPIC TAGS--QUANTUM FIELD THEORY, ALGEBRA

CONTROL MARKING--NO RESTRICTIONS   .

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1985/2023   STEP NO--UR/0646/70/002/003/0350/0360

CIRC ACCESSION NO--AP0102052
                         UNCLASSIFIED

CIRC ACCESSION NO--AP0102052
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT.   IN THE FRAMEWORK OF THE HAAG ARAKI
  AXIOMATIC APPROACH AN INVESTIGATION HAS BEEN MADE OF THE FOLLOWING TWO
  PROPERTIES OF LOCAL W ALGEBRAS: 1) THE PROPERTY FOR THE LOCAL ALGEBRA
  TO BE (OR NOT TO BE) A FACTOR; 2) THE DUALITY THEOREM. A REASONABLY
  COMPLETE COLLECTION OF RIGOROUS RESULTS CONCERNING BOTH PROPERTIES IS
  PRESENTED.

UNCLASSIFIED

UDC 621.391.2

USSR

SAVCHENKO, I. S., KHORUNZHIY, V. A., TSIS'MENETSKIY, V. A., ZVEREV, G. I.

"Single Radio Pulse Frequency Spectral Analyzer"

Moscow, Pribory i Tekhnika Eksperimenta, No 6, 1971, pp 103-105

Abstract: A 48-channel analyzer is described which permits the frequency spectrum of single radio pulses to be obtained. The operating range of the analyzer is 0.5-30 megahertz, its frequency resolution is 40 kilohertz in the two megahertz band, and its time resolution is 48 microseconds.
    The schematic diagram, the theoretical basis and operating characteristics of the analyzer are presented.
    In the analyzer, from the sinchro pulse received from an experimental device, signals are generated for triple triggering of the drive sweep of the indicator, and a step voltage (3 steps) is shaped to create vertically displaced scans on the display screen. The time intervals between readings can be regulated from 50 microseconds to 2 milliseconds. As a result of triple interrogation of the frequency selection channels during the pulse, it is possible to investigate the dynamics of the process. The cathode ray tube of the memory oscillograph is used to display the results of the analysis. A typical oscillogram is presented. The analyzer can be used to measure the frequency in a single radio pulse, the frequency deviation and its harmonics, the instantaneous frequency spectrum, and several instantaneous spectra during the investigated pulse.
1/1

USSR   UDC: 621.317.757

PIS'MENETSKIY, V. A., KHORUNZHIY, V. A., "Order of Lenin" Polytechnical
Institute imeni V. I. Lenin, Khar'kov

"A Spectrum Analyzer for Narrow-Band Radio Signals"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki,
No 32, Nov 71, Author's Certificate No 318881, Division G, filed 15 Jan 70,
published 28 Oct 71, p 130

Translation: This Author's Certificate introduces: 1. A narrow-band radio
signal spectrum analyzer which contains an input filter, delay-line re-
circulator, reference signal generator and display unit. As a distinguish-
ing feature of the patent, provision is made for expanding the analyzable
frequency band when using a common delay line and recirculator amplifiers,
and also for relaxing the stability requirements of the delay line param-
eters with respect to time. A multichannel input signal frequency con-
verter is connected between the input filter and the adder inputs, and a
multichannel recirculator frequency converter is connected between the
second recirculator amplifier and the other adder inputs through a group
filter. The outputs of this second converter are connected through de-

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USSR

PIS'MENETSKIY, V. A., KHORUNZHIY, V. A., Soviet Patent No 318881

tectors and a commutator to the adder. In addition, an auxiliary output
of the second recirculator amplifier is connected to the input of a circuit
for controlling the frequency of the reference oscillator and the signal
level. The outputs of the control circuit are connected respectively to
the controlling input of the reference frequency oscillator, and to the
controlling input of the second recirculator amplifier. 2. A modification
of this spectrum analyzer distinguished by the fact that a detector to
the input of a video signal generator is connected to the input of the
automatic control circuit through the input filter and a compensating delay
line, and through an integrating circuit to the input of a comparison de-
vice whose second input is connected through a second detector to the
output of the reference signal oscillator, while the output of this cir-
cuit is connected to the output of the signal level control channel. In
addition, one output of the video signal generator is connected to the
input of a modulator whose second input is connected to the output of the
reference signal oscillator, while the modulator output is connected
through a filter to an auxiliary adder input. The second output of the
video pulse generator is connected to the output of the automatic frequency
control channel of the reference oscillator.

2/2

USSR

UDC 612.741.61

MANVELYAN, L. R., KHAYUTIN, V. M., and KHORUNZHIY, V. A., Laboratory of the Bio-
physics of the Cardiovascular System Institute of Normal and Pathological
Physiology, Academy of Medical Sciences USSR

"Independence of the Blood Supply of Contracting Muscle From the Force It Exerts
and Barriers to Shortening It"

Abstract: In acute experiments on anesthetized cats, the intensity of dilatation
of the gastrocnemius blood vessels and the time required for their tone to be re-
stored were found to be independent of the degree of shortening of the muscle,
force exerted by it, or amount of physical work. The sole determining factor is
the frequency of impulses in the motor fibers. The critical frequency of im-
pulses at which the contracting muscle compresses its blood vessels is the same
for both isotonic and auxotonic contractions (mostly 16 pulses/sec).

1/1

1/2   023   UNCLASSIFIED   PROCESSING DATE--23OCT70
TITLE--THE RELATION OF BLOOD FLOW IN AUXOTONICALLY CONTRACTING
   GASTROCNEMIUS MUSCLE TO THE FREQUENCY OF STIMULATION -U-
AUTHOR-(03)-MANVELYAN, L.R., KHAYUTIN, V.M., KHORUNZHIY, Y.A.

COUNTRY OF INFO--USSR

SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 69,
   NR 5, PP 14-18
DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--MUSCLE PHYSIOLOGY, MUSCLE STIMULATION, BLOOD CIRCULATION,
   ELECTROPHYSIOLOGY, HYPEREMIA

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1998/0367   STEP NO--UR/0219/70/069/005/0014/0018

CIRC ACCESSION NO--AP0121055
                         UNCLASSIFIED

CIRC ACCESSION NO--AP0121055
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT. BLOOD FLOW IN THE GASTROCNEMIUS
MUSCLE OF THE CAT DURING SUPRAMAXIMAL STIMULATION OF THE MUSCLE EFFERENT
FIBRES ANDER AUXOTONIC REGIME OF CONTRACTION WAS STUDIED IN RELATION TO
THE FREQUENCY OF STIMULATION (0.125-256 PULSES PER SEC.), THE CRITICAL
FREQUENCY WAS 16 PULSES PER SEC., AT WHICH WAS ATTAINED THE MAXIMAL
POSTCONTRACTION PEAK BLOOD FLOW, A COMPRESSION OF THE BLOOD VESSELS
DURING MUSCLE CONTRACTION AND AT WHICH THE DURATION OF POST CONTRACTION
HYPERAEMIA INCREASED BY LEAPS.   RESULTS ARE COMPARED WITH THE DATA ON
THE FREQUENCY OF MOTENEURON PULSES IN MAN WHICH ARE TYPICAL FOR THEIR
INVOLVEMENT AND FOR THE CHANGE FROM WEAK POSE EFFORT TO STRONG
CONTRACTIONS.   FACILITY: INSTITUTE OF NORMAL AND PATHOLOGICAL
PHYSIOLOGY, USSR ACADEMY OF MEDICAL SCIENCES, MOSCOW.

UNCLASSIFIED

1/2   019   UNCLASSIFIED   PROCESSING DATE--20NOV70
TITLE--INDEPENDENCE OF THE BLOOD SUPPLY OF THE CONTRACTING MUSCLE FROM THE
EXERTED FORCE AND HINDRANCE OF ITS SHORTENING -U-
AUTHOR-(03)-MANVELYAN, L.R., KHAYUTIN, V.M., KHORUNZHIY, V.A.

COUNTRY OF INFO--USSR

SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 49,
NR 6, PP 6-9
DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--MUSCLE PHYSIOLOGY, EXERCISE, ELECTROPHYSIOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/0711   STEP NO--UR/0219/70/049/006/0006/0009

CIRC ACCESSION NO--AP0131310
                         UNCLASSIFIED

2/2   019   UNCLASSIFIED   PROCESSING DATE--20NOV70
CIRC ACCESSION NO--AP0131310
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT.   IN ACUTE EXPERIMENTS ON CATS IT
WAS ESTABLISHED THAT THE INTENSITY OF VASODIALATION IN GASTROCNEMIC
MUSCLE AND THE DURATION OF ITS TONE RESTORATION AFTER CONTRACTION DOES
NOT DEPEND ON THE DEGREE OF SHORTENING OF THE MUSCLE DEVELOPING DURING
ITS CONTRACTION AND THE VALUE OF PHYSICAL WORK, BUT IS DETERMINED ONLY
BY THE FREQUENCY OF IMPULSES IN THE MOTOR FIBERS. THE CRITICAL
FREQUENCY OF IMPULSES, DURING WHICH THE CONTRACTING MUSCLE COMPRESSES
ITS VESSELS IS SIMILAR FOR ISOTONIC AND AUXOTONIC CONTRACTIONS, AND IN
THE MAJORITY OF EXPERIMENTS COMPRISES APPROXIMATELY 16 IMP PER SEC.
 FACILITY: INSTITUTE OF NORMAL AND PATHOLOGICAL PHYSIOLOGY OF THE
ACADEMY OF MEDICAL SCIENCES OF THE USSR, MOSCOW.

UNCLASSIFIED

USSR   UDC 535.373.2

MARKIN, Yu. A., STYROV, V. V., and KHORUZHIY, V. D., Tomsk Polytechnic
Institute imeni S. M. Kirov

"Effect of Surface on Radical Recombination Luminescence Spectra"

Tomsk, Izvestiya Vysshikh Uchebnykh Zavedeniy -- Fizika, No 7, 1970,
pp 132-133

Abstract: A study of the effect of the surface on the radical recom-
bination luminescence (RRL) spectra of zinc sulfide phosphors indi-
cates the following:

1. The halfwidth of the emission bands in the case of RRL is,
as a rule, greater than in the case of photoluminescence.

2. The halfwidth of RRL and photoluminescence spectra varies
differently with temperature, this dependence being more strongly pro-
nounced in RRL.

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USSR

MARKIN, Yu. A., et al., Izvestiya Vysshikh Uchebnykh Zavedeniy -- Fizika, No 7, 1970, pp 132-133

3. There is a shift in RRL emission band maximums with respect to the same bands in photoexcitation.

4. The RRL spectrum is sensitive to the temperature of the specimen.

5. The magnitude of RRL spectra displacement relative to photoluminescence depends on the type of activator.

The authors' laboratory is undertaking experiments to study the role of exciton excitation in RRL at low temperatures, especially in the case of molecular crystals.

2/2

UNCLASSIFIED   PROCESSING DATE--02OCT70

1/2   013

TITLE--EFFECT OF SOME PHYSICAL FACTORS ON THE INTERFACIAL POLYCONDENSATION OF 2,2-BIS(4-HYDROXYPHENYL) PROPANE AND PHOSGENE -U-

AUTHOR-(03)-SMIRNOVA, O.V., KHURVAT, E., LOSEV, I.P.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. B 1970, 12(3), 208-11

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--INTERFACIAL POLYCONDENSATION, HYDROXYL RADICAL, BENZENE DERIVATIVE, PROPANE, PHOSGENE, POLYCARBONATE, PHENOL, MONOMER, MOLECULAR WEIGHT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/0257   STEP NO--UR/0460/70/012/003/0208/0211

CIRC ACCESSION NO--AP0106913
                           UNCLASSIFIED

2/2   013
CIRC ACCESSION NO--AP0106913

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INFLUENCE OF THE ORG. PHASE (HEPTANE, CCL SUB4, BENZENE OF CH SUB2 CL SUB2) AND MONOMER CONCN. ON MOL. WT. AND YIELD OF THE POLYCARBONATE (I) FROM INTERPHASE POLYCONDENSATION OF BISPHENOL A AND COCL SUB2 CATALYZED BY NAOH AND THE RATE OF COCL SUB2 HYDROLYSIS IN THESE SOLVENTS WERE STUDIED. AT 0.1 MOLE-L. CONCNS. OF EACH MONOMER, THE MOL. WT. OF I WAS 5-8 TIME MORE IN SOLVENTS THAT DID NOT DISSOLVE NOR SWELL I (HEPTANE, CCL SUB4 OR 7:3 VOL. MIXTS. OF HEPTANE AND CH SUB2 CL SUB2) THAN IN BENZENE OR CH SUB2 CL SUB2. HOWEVER, AT 0.7 MOLE-L. MONOMER CONCNS., I PREPD. WITH CCL SUB4 AND CH SUB2 CL SUB2 AS THE ORG. PHASE HAD MOL. WTS. 15,400 AND 15,000 COMPARED WITH 58,000 AND 7500 AT 0.1 MOLE-L. MONOMER CONCNS. CESSATION OF GROWTH OF I MOL. WT. AND YIELD OCCURRED IN HEPTANE, CCL SUB4, AND BENZENE AT SIMILAR TO 25, 5, AND 10 MIN, RESP., BU AT SIMILAR TO 5 MIN AND LARGER THAN 45 MIN IN CH SUB2 CL SUB2. HYDROLYSIS OF COCL SUB2 WAS 100PERCENT IN ALL 4 SOLVENTS WITHIN 90 SEC. APPARENTLY, THE POLYMER FILM FORMING AT THE INTERFACE IMPEDED MIGRATION OF COCL SUB2 TO THE REACTION ZONE AND THE CHARACTER OF THIS HINDRANCE DEPENDS LARGELY ON THE NATURE OF THE ORG. PHASE.