

1/2 011 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--METHOD FOR DETERMINING PROBABILITY PROPERTIES OF INFORMATION WHEN  
CALCULATING THE LOAD DURATION CURVES OF INTERSYSTEM ENERGY TRANSMISSION  
AUTHOR--KNAPS, A.R.

COUNTRY OF INFO--USSR

SOURCE--LATV. PSR ZINAT. AKAD. VESTIS FIZ. TEHN. SER. (USSR), NO. 1, P.  
105-12, 1970

DATE PUBLISHED-----70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--TRANSMISSION LINE, GRAPHIC TECHNIQUE, ELECTRIC PROPERTY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/1725

STEP NO--UR/0371/70/000/001/0105/0112

CIRC ACCESSION NO--AP0136966

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136966

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CONSTRUCTION OF LOAD GRAPHS FOR INTERSYSTEM TRANSMISSION LINES CONSIDERING THE PROBABILITY CHARACTER IN SYSTEM ELEMENTS OPERATION IS DISCUSSED. A METHOD IS ELABORATED FOR GRAPHIC ANALYTIC CONSTRUCTION OF THE DURATION LOAD CURVES OF THE TRANSMISSION LINES TAKING INTO ACCOUNT THE PROBABILITY CHARACTER OF THE INFORMATION ABOUT THE LOAD AND THE OPERATING CONDITIONS IN THE POWER STATIONS AND THE ADDITIONAL LOAD OF THE INTRASYSTEM LINKS DURING EFFICIENT REDISTRIBUTION OF THE ENERGY OUTPUT BETWEEN THE SYSTEM'S POWER STATIONS. APPLICATION OF THE CURVES IS SUGGESTED FOR PROJECTING INTERSYSTEM TRANSMISSION LINES.

UNCLASSIFIED

USSR

UDC 621.311.001.24:681.3

KNELLER, I. O.

"Experiments in Using Digital Computers to Solve the Operative-Maintenance Problems for Power Systems"

V sb. Probl. tekhn. elektrodinamiki (Problems of Technical Electrodynamics -- collection of works), vyp. 25, Kiev, Naukova Dumka Press, 1970, pp 11-15 (from RZh-Elektrotehnika i Energetika, No 4, Apr 71, Abstract No 4 Ye236)

Translation: Digital computer calculations performed at the REU of the Don Basin Power Administration are described. A comparative characteristic of programs for operative-maintenance calculations is presented. The savings when using the programs designed for introduction of optimal power system operations are estimated.

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DSSR

UDC 678.06:631.6.672

YEVSYUKOV, YE. I., and KNEL'TS, K. F.

"The State of Art and the Possibilities of Developments in the Production of Plastic Materials and Objects Manufactured From Them for the Use in Agricultural Production, Development, and Water Economy"

Moscow, Plasticheskiye Massy, No 11, 1973, pp 7-10

Abstract: A review covers achievements in the development of plastic films, plastiglasses and plastic tubing, reflecting upon the fact that production is only about 77% that of the possible consumption market. Predictions are made for the 74-75 period, the demand again outpacing the productivity. The stress is made of the need to coordinate the productivity with the consumers demand.

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1/2 007

UNCLASSIFIED

PROCESSING DATE--04DEC70

TITLE--EFFECT OF PHOTOSYNTHESIS ON CORN PRODUCTIVITY IN RELATION TO SOIL FERTILIZING -U-  
AUTHOR--(04)-KNIGA, M.I., KNIGA, N.M., NASONOVA, M.G., SHEVCHENKO, I.M.

COUNTRY OF INFO--USSR

K

SOURCE--DOKL. VSES. AKAD. SEL'SKOKHOZ. NAUK 1970, (2), 11-13

DATE PUBLISHED-----70

SUBJECT AREAS--AGRICULTURE, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CEREAL CROP, MINERAL FERTILIZER, PHOTOSYNTHESIS, CHLOROPHYLL, BIOLOGIC PIGMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605009/D10 STEP NO--UR/3275/70/000/002/0011/0013

CIRC ACCESSION NO--AT0140085

UNCLASSIFIED

2/2 007

CIRC ACCESSION NO--AT0140085  
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--04DEC70

ABSTRACT. INDEXES OF PHOTOSYNTHESIS WERE STUDIED AT VARIOUS STAGES OF GROWTH OF CORN IN RELATION TO THE FERTILIZER MODIFICATIONS APPLIED: N-P-K, N-P, N-K, AND P-K. THE LEVELS OF FERTILIZERS WERE N 90, P 25, AND K 20 KG PER HA. APPLICATION OF N-P-K, N-P, AND N-K INCREASED PRODUCTIVITY. IN THE STAGE OF COB FORMATION THE LEVEL OF DRY MATTER IN THE LEAVES REACHED 31PERCENT (N-P-K), WITH THE CONTENT OF CHLOROPHYLL INCREASING SIMULTANEOUSLY. N-P-K HAD THE BEST EFFECT ON THE AMT. OF LEAF CAROTENE.  
FACILITY: KHAR'KOV. ZOOVET. INST., KHARKOV, USSR.

UNCLASSIFIED

172 013

UNCLASSIFIED

PROCESSING DATE--13NOV70

TITLE--SOLID PHASE REACTIONS IN HOLMIUM OXIDE FERRIC OXIDE AND  
PRASEODYMIUM OXIDE FERRIC OXIDE SYSTEMS -U-  
AUTHOR--(03)-KNIGA, M.V., VASILYEVA, L.I., SKOMOROKHOVA, A.I.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(5), 1394-7

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SOLID STATE, CHEMICAL REACTION, FERRIC OXIDE, METAL OXIDE,  
HOLMIUM COMPOUND, PRASEODYMIUM COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1403

STEP NO--UR/0078/70/015/005/1394/1397

CIRC ACCESSION NO--AP0135077

UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0135077

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PREPARED SUB3 AND HOFED SUB3 (I),  
HAVING PEROVSKITE STRUCTURE, FORM IN THE TITILE SYSTEMS AT 1:1 MOLE RATIO  
OF THEIR COMPONENTS AND AT 800-1200DEGREES. THE HO SUB2 O SUB3 SYSTEM  
FORMS GARNET, HO SUB3 FE SUB5 O SUB12 (III), AT THE 3:5 COMPONENT RATIO.  
FORMATION OF I PRECEDES THE FORMATION OF II. FACILITY:  
BELORUSS. GOS. UNIV. IM. LENINA, MINSK, USSR.

UNCLASSIFIED



172 035

UNCLASSIFIED

PROCESSING DATE--18SEPT70

TITLE--EFFECT OF MOLAR RATIOS OF COMPONENTS ON THE KINETICS OF THE REACTION OF PRASEODYMIUM AND IRON OXIDES -U-  
AUTHOR--(02)-~~KNIGA, M.V.~~ VASILYEVA, L.I.

R

COUNTRY OF INFO--USSR

SOURCE--VESTSI AKAD. NAVUK BELARUS. SSR, SER. KHIM. NAVUK 1970, (1), 50-3

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL REACTION KINETICS, PRASEODYMIUM COMPOUND, IRON OXIDE, HEAT OF FORMATION, IR SPECTRUM, X RAY ANALYSIS, SPECTROSCOPIC ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0554

STEP NO--UR/0419/70/000/001/0050/0053

CIRC ACCESSION NO--AP0105539

UNCLASSIFIED

2/2 035

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0105539

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. UPON HEATING TO 800-1300DEGREES, MIXTS. OF PR SUB2 O SUB3 AND FE SUB2 O SUB3 IN RATIOS OF 1:1, 1:3, 3:1, AND 3:5 GAVE PRFEO SUB3. THE REACTION WAS ANALYZED BY X RAY AND IR SPECTROSCOPY AND PHASE STUDIES. REGARDLESS OF THE STOICHIOMETRY, PRFEO SUB3 WAS ALWAYS OBTAINED. FOR ALL OF THE REACTION RATIOS, THE HEAT OF FORMATION WAS 44-7 KCAL-MOLE. HOWEVER, THE RATIOS AFFECTED THE DIFFERENT REACTIONS RATES INCREASING IN THE FOLLOWING ORDER: 3:1, 1:1, 3:5, 1:3, PR SUB2 O SUB3:FE SUB2 O SUB3.

UNCLASSIFIED

1/2 007  
 TITLE--EFFECT OF PHOTOSYNTHESIS ON CORN PRODUCTIVITY IN RELATION TO SOIL  
 FERTILIZING -U-  
 AUTHOR--(04)--KNIGA, M.I., KNIGA, N.M., NASDNOVA, M.G., SHEVCHENKO, I.M.  
 COUNTRY OF INFO--USSR  
 SOURCE--DOKL. VSES. AKAD. SEL'SKOKHOZ. NAUK 1970, (2), 11-13  
 DATE PUBLISHED-----70

SUBJECT AREAS--AGRICULTURE, BIOLOGICAL AND MEDICAL SCIENCES  
 TOPIC TAGS--CEREAL CROP, MINERAL FERTILIZER, PHOTOSYNTHESIS, CHLOROPHYLL,  
 BIOLOGIC PIGMENT

CONTROL MARKING--NO RESTRICTIONS  
 DOCUMENT CLASS--UNCLASSIFIED  
 PROXY FICHE NO-----FD70/605009/010 STEP NO--UR/3275/70/000/002/0011/0013

UNCLASSIFIED

PROCESSING DATE--04DEC70

2/2 007

CIRC ACCESSION NO--AT0140085  
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. INDEXES OF PHOTOSYNTHESIS WERE STUDIED AT VARIOUS STAGES OF GROWTH OF CORN IN RELATION TO THE FERTILIZER MODIFICATIONS APPLIED: N-P-K, N-P, N-K, AND P-K. THE LEVELS OF FERTILIZERS WERE N 90, P 25, AND K 20 KG PER HA. APPLICATION OF N-P-K, N-P, AND N-K INCREASED PRODUCTIVITY. IN THE STAGE OF COB FORMATION THE LEVEL OF DRY MATTER IN THE LEAVES REACHED 31PERCENT (N-P-K), WITH THE CONTENT OF CHLOROPHYLL INCREASING SIMULTANEOUSLY. N-P-K HAD THE BEST EFFECT ON THE AMT. OF LEAF CAROTENE.

FACILITY: KHAR'KOV. ZOOVET. INST., KHARKOV, USSR.

UNCLASSIFIED

1/2 008

UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--EFFECT OF COURMARIN AND SYNTHETIC GROWTH RETARDANTS ON RNA AND PROTEIN SYNTHESIS IN DETACHED BARLEY LEAVES IN DARK AND LIGHT -U-  
AUTHOR--(02)-KNIPL, YA.S., KULAYEVA, D.N.

COUNTRY OF INFO--USSR, POLAND

SOURCE--FIZIOLOGIYA RASTENIY, 1970, VOL 17, NR 3, PP 549-557

DATE PUBLISHED-----70

K

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PLANT GROWTH REGULATOR, PROTEIN SYNTHESIS, URACIL, RNA/(U)CCC  
PLANT GROWTH REGULATOR, (U)PHOSPHON D PLANT GROWTH REGULATOR, (U)B9  
PLANT GROWTH REGULATOR, (U)AMG1618 PLANT GROWTH REGULATOR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1999/1147

STEP NO--UR/0326/70/017/003/0549/0557

CIRC ACCESSION NO--AP0123130

UNCLASSIFIED

PROCESSING DATE--23OCT70

UNCLASSIFIED

2/2 008

CIRC ACCESSION NO--AP0123130  
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE EFFECT OF COUMARIN AND OF THE GROWTH RETARDANTS: CCC, PHOSPHON D, B 9 AND AMU 1618 ON INCORPORATION OF C PRIME14 LEUCINE INTO PROTEINS AND OF C PRIME14 URACIL INTO RNA OF BARLEY LEAF DISCS IN THE DARK AND LIGHT IS STUDIED. THE RETARDANT EFFECT IS COMPARED WITH THAT OF 6 BENZYLAMINOPURINE (BAP). IN CONTRAST TO THE CYTOKININ COUMARIN, THE RETARDANTS CCC, PHOSPHON D AND B 9 INHIBITED INCORPORATION OF C PRIME14 LEUCINE INTO LEAF DISCS IN LIGHT AS WELL AS IN THE DARK. AMU 1618 WAS ONLY SLIGHTLY ACTIVE. SUPPRESSION OF PROTEIN SYNTHESIS BY COUMARIN AND THE SYNTHETIC GROWTH RETARDANTS OCCURRED WITHOUT THEIR APPRECIABLE INFLUENCE ON LABELLING OF RNA. SUPPRESSION OF PROTEIN SYNTHESIS BY COUMARIN AND THE GROWTH RETARDANTS IN THE DARK COULD BE OBSERVED AFTER 6 HOURS AND INCREASED WITH TIME. THUS THE DELAY OF CHLOROPHYLL DECREASE IN DARKENED BARLEY LEAVES PREVIOUSLY OBSERVED IN EXPERIMENTS WITH COUMARIN. CCC AND PHOSPHON D OCCURS WHEN PROTEIN SYNTHESIS IS SUPPRESSED AND DIFFERS PRINCIPALLY FROM THE DELAY OF YELLOWING OF DETACHED LEAVES AS A RESULT OF CYTOKININ TREATMENT WHICH STIMULATES PROTEIN SYNTHESIS. AFTER THE PERIOD OF PROTEIN SYNTHESIS INHIBITION IN DARKENED BARLEY LEAF DISCS CAUSED BY COUMARIN, CCC AND PHOSPHON D TREATMENT, A PERIOD OF ACTIVATION OCCURRED WHICH WAS ACCOMPANIED BY STIMULATION OF RNA LABELLING. THE PHYSIOLOGICAL ESSENCE OF THIS STIMULATION IS NOT CLEAR.

UNCLASSIFIED

Acc. Nr: **AP0038059**

**K**

Ref. Code: UR 0326

PRIMARY SOURCE: *Fiziologiya Rasteniy*, 1970, Vol 17, Nr 1, pp 14-22.

**EFFECT OF COUMARIN AND SYNTHETIC GROWTH RETARDANTS ON CHLOROPHYLL AND PROTEIN CONTENT IN LEAF DISKS**

**Knip1, Ya. S.; Kulayeva, O. N.**

Department of Plant Physiology, Lodz University, Poland and K. A. Timiriachev Institute of Plant Physiology, USSR Academy of Sciences, Moscow

The effect of coumarin, CCC, phosphon D, B-9 and AMO-1618 on the chlorophyll and protein content in barley leaf disks was studied under conditions of cytokinin biotests in light and dark. In the dark coumarin, CCC and phosphon D were similar to cytokinins in inhibiting decrease of chlorophyll in the leaf disks. In these conditions CCC and phosphon D also slowed down decrease of the protein content. In contrast, in the light coumarin, CCC, phosphon D and B-9 accelerated chlorophyll and protein loss. Thus in the light modification of the biotest for cytokinins, the growth retardants effect is principally different from that of cytokinins. This indicates that the effect of retardants and cytokinins on metabolism of detached leaves in dark are probably different. Acceleration of protein and chlorophyll loss in illuminated leaf disks due to coumarin, CCC and phosphon D cannot be prevented by applying GA & BAP. Their action therefore cannot be

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regarded as an «antigibberellin» or «anticytokinin» action. Contrary of other retardants, the effect of B-9 is considerably weakened in the presence of BAP or GA. The effect of AMO-1618 on barley leaf disks was weak in the light as well as in darkness. The study shows that individual growth retardants affect differently the metabolism of leaves and that special investigations on the mechanism of action of each of the compounds are desirable.

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

USSR

VALATSKA, K. K., DAVIDENENE, D. K., ~~KNISHLEVSKIY, K. M.~~, and LEONAS, P. I.

"Investigation of Photoeffect in Germanium and Silicon Under Photoreflex Conditions"

Lit. fiz. sb. (Collection of Lithuanian Works on Physics), 1971, 11, No 2, pp 269-275 (summaries in Lithuanian and English) (from RZh-Fizika, No 10, Oct 71, Abstract No 10YE790 by authors)

Translation: The authors investigated the intrinsic photoeffect in Ge and Si under photoreflex conditions. Theoretical calculations are given of spectral characteristics of the photoreflex signal for specimens of varying thickness with varying surface treatment, as well as a comparison of these calculations with experimental results.

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1/2 020 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--PHOTOMETRIC DETERMINATION OF PALLADIUM USING 2-MERCAPTOIMIDAZOLE  
DERIVATIVES -U-  
AUTHOR--(03)-TSEKASEVICH, K.V., KNIZHKC, P.O., MIKHAYLENKO, M.I.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. ANAL. KHIM. 1970, 25(3), 532-4 *K*  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--PHOTOMETRIC ANALYSIS, PALLADIUM, METAL CHEMICAL ANALYSIS,  
IMIDAZOLE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3001/0465 STEP NO--UR/0075/70/025/003/0532/0534  
CIRC ACCESSION NO--AP0126217  
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--20NOV70

2/2 020

CIRC ACCESSION NO--AP0126217

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

ABSTRACT. THE PHOTOMETRIC DETN. OF PD WITH 2-MERCAPTOIMIDAZOLE (I) IN AN AQ. MEDIUM (50-500 MUG PD) AND THE EXTN. PHOTOMETRIC DETN. OF PD WITH 4-PHENYL-2-MERCAPTOIMIDAZOLE (II) AND 4,5-DIPHENYL-2-MERCAPTOIMIDAZOLE (III) (5-50 MUG PD) WERE STUDIED. IN THE FORMER CASE ADD TO THE SOLN. CONTG. PD 1.5 ML 5N HCL AND 4 ML 0.1M I; DIL. TO 15 ML WITH H SUB2 O AND MEASURE THE ABSORBANCE AT 440 NM OR BY USING A NO. 4 FILTER. LI, MG, CA, NZ, SR, CO, BA, HG, AL, TI, SN, PB, V, BI, CR, MO, W, MN, FE, CO, AND NI, 50-100 FOLD, DO NOT INTERFERE IN THE DETN. IN THE 2ND METHOD ADD TO THE SOLN. CONTG. PD 1 ML 5N HCL AND DIL TO 5 ML WITH H SUB2 O. THEN ADD 6 ML 0.01M II OR III IN ANYL ALC. AND SHAKE FOR 1 MIN. DIL. THE ORG. PHASE WITH NH SUB4 OH TO 6 ML AND DET. SPECTROPHOTOMETRICALLY AT 440 NM OR BY USING A NO. 4 FILTER; 500-2000 FOLD AMTS. OF THE ABOVE ELEMENTS DO NOT INTERFERE.

FACILITY: ODESSA TECHNOL. INST. FOOD REFRIG. IND., ODESSA, USSR.

UNCLASSIFIED

1/2 017

TITLE--USE OF THIN LAYER CHROMATOGRAPHY FOR THE ANALYSIS OF PHARMACEUTICAL PREPARATIONS AND THEIR MEDICINAL MIXTURES PREPARED FROM A GROUP OF

AUTHOR--KNIZHNIK, A.Z.

COUNTRY OF INFO--USSR

SOURCE--FAKH. Zh. (KIEV) 1970. 25(1), 47-51

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, CHEMISTRY

TOPIC TAGS--DRUG ANALYSIS, AROMATIC AMINE, THIN LAYER CHROMATOGRAPHY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3004/0664

STEP NO--UR/0491/TO/025/001/0047/0051

CIRC ACCESSION NO--AP0131259

UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0131269

ABSTRACT/EXTRACT--(L) GP-0- ABSTRACT. ATTEMPTS WERE MADE TO SEP. BY THIN LAYER CHROMATOGRAPHY THE FOLLOWING DRUGS FROM THEIR MIXTS.: WHITE STREPTOCIDE, NORSULFAZOLE, SULFADIMEZINE, SOL. SULFACYL, SOL. NORSULFAZOLE, SULFANTHROL, METHYLSULFAZINE, SULGIN, SULCUMIDE, UROSULFAN, ETHAZOLE, ANESTHESIN, NOVACAINE, P-AMINOSALICYLIC ACID, SULFAPYRIMIDAZINE, AND MADRIBON. THE CM PRIME2 OF THE AREA WAS COVERED WITH A SLURRY CONTG. 29.92 MG SILICA GEL KSK (FREED FROM FE), 1.48 MG MEDICAL GYPSUM, AND 0.076 ML H SUB2 O. THE PLATES WERE DRIED 1 HR AT 120 DEGREES AND STORED OVER CONCD. H SUB2 SO SUB4; (2) FOR EACH 1 CM PRIME2 OF THE AREA A SLURRY WAS APPLIED CONTG. 12.82 MG SILICA GEL KSK AND 0.062 ML PRON OR ISO-PRON AS FIXER. TO THE PREPN. OF FLUORESCENT PLATES, INSTEAD OF H SUB2 O, A SOLN. WAS USED OBTAINED BY DISSOLVING 20 MG FLUORESCIN IN 2 ML 0.1N NAOH AND DILG. TO 100 ML. DEVELOPING SYSTEMS USED WERE: (1) CHCL SUB3, HEXANE, LICH (1:1:1); (2) CHCL SUB3, MEOH (95:5) (3) CHCL SUB3, ME SUB2 CO-BUCH-HCO SUB2 H (40:10:-10:10); (4) ACDET-ME SUB2 CO-10PERCENT AG. NH SUB3 (3:3:4:1), AND (5) O SUB6 H SUB2, ACOH, MEOH (9:1:0:5). TO LOCATE SPOTS, DIAZOTIZATION OF THE NH SUB2 GROUPS OF THE DRUGS WAS CARRIED OUT FOLLOWED BY COUPLING WITH BETA, NAPHTHOL. THE R SUBF VALUES ARE TABULATED. FACILITY: 1ST MOSCOW I. M. SECHNOV MED. INST., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 620.17.669.24

KHARLANOVA, V. M., GORELIK, S. S., and KNIZHNIK, G. S.

"Relationship of the Mechanical Properties of Alloy Kh20N80 to Prior Deformation"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 1, Jan 74,  
pp 75-76

Abstract: The effect of degree of prior deformation on the strength properties and, especially, creep rate of alloy Kh20N80 was studied. Alloy blanks were cold rolled to 3-30% reduction and recrystallized at 1080° C for eight hours. The most significant factor noted in this study was that the degree of prior deformation has a drastic effect on creep rate of this heat-resistant alloy. For a 5% prior deformation the creep rate is  $1.4 \cdot 10^{-3}/\text{sec}$ .

This value drops to a minimum at 15% deformation ( $0.5 \cdot 10^{-3}/\text{sec}$ ) and then shoots up to a maximum value of  $2 \cdot 10^{-3}/\text{sec}$  for 25-30% prior deformation. The reasons for this variation of creep rate to prior deformation lie in the fact that at 15% deformation the main deformation takes place in the grain boundaries and not in the grain volume, while at 25-30% deformation the

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USSR

KHARLANOVA, V. M., et al., Metallovedeniye i Termicheskaya Obrabotka  
Metallov, No 1, Jan 74, pp 75-76

number of fine grains resulting from crushing of coarse increases drastically  
so as to cause a large increase in the number of lines of slip, thus yielding  
the high creep rate. Three figures, five bibliographic references.

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1/2 028 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--PREPARATION OF FIBERS FROM A MIXTURE OF POLYACRYLONITRILE WITH  
POLYMETHYL METHACRYLATE -U-  
AUTHOR-(03)-KRASOVSKAYA, S.B., ZAZULINE, Z.A., KNOXIN, A.A.

COUNTRY OF INFO--USSR

SOURCE--KHM. VOLOKNA 1970, (2), 19-22

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--POLYACRYLONITRILE FIBER, POLYMETHYLMETHACRYLATE, WEAR  
RESISTANCE, TENSILE STRENGTH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/0045

STEP NO--UR/0183/70/000/002/0019/0022

CIRC ACCESSION NO--AP0132340

UNCLASSIFIED



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UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0132340

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. POLYACRYLONITRILE FIBERS WERE MODIFIED WITH POLY(ME METHACRYLATE) OF MOL. WT. 7 TIMES 10 PRIMES (IN 90:10 RATIO) TO GIVE FIBER BLENDS HAVING SUPERIOR WEAR RESISTANCE AND FLEXURAL STRENGTH, GOOD TENSILE STRENGTH, AND SLIGHTLY LOWER LIGHTFASTNESS. FACILITY: MTI, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 681.142.65

BALASHOV, Ye. P., and KNOL', A. I.

Mnogofunktional'nyye Zapominayushchiye Ustroystva (Multifunctional Memory Units), Leningrad, "Energiya," 1972, 144 pp

Translation of Annotation: The book examines new types of devices for the processing and storage of information: i.e., multifunctional memory units, in which the functions of storage and logical and arithmetic information processing are combined. It examines the problems of synthesis and organization of logical and associative-logical memory units, multichannel devices for counting and converting numerical pulse information, and processors based on immediate-access memory units.

The book is intended for scientific workers, graduate students, engineers, and students in senior courses familiar with the principles of digital computers and engaged in the design and development of memory devices and computer and control systems.

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BALASHOV, Ye. P., and KNOL', A. I., Mnogofunktsional'nyye Zapominayushchiye Ustroystva (Multifunctional Memory Units), Leningrad, "Energiya," 1972, 144 pp

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USSR

BALASHOV, Ye. P., and KNOL', A. I., Mnogofunktsional'nyye Zapominayushchiye Ustroystva (Multifunctional Memory Units), Leningrad, "Energiya," 1972, 144 pp

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1/2 005 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--OCEAN GATES -U-  
AUTHGR--~~KNOP, A.~~ *K*  
COUNTRY OF INFO--USSR  
SOURCE--IZVESTIYA, AUGUST 9, 1970, P 4, COLS 2-4  
DATE PUBLISHED--09AUG70  
SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR  
TOPIC TAGS--SEAPORT, GENERAL CONSTRUCTION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3001/0772 STEP NO--UR/9003/70/000/000/0004/0004  
CIRC ACCESSION NO--AN0126464  
UNCLASSIFIED

2/2 005

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AN0126464

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CONSTRUCTION OF A SEA PORT IN THE WRANGEL BAY, NOT FAR FROM THE ANKHODKA PORT, IS SOON TO BEGIN. IT WILL BE A BIGGER PORT THAN THE NAKHODKA AND WILL BE ABLE TO ACCOMMODATE 130,000 TO 140,000 TON SHIPS. ACCORDING TO N. A. KETVUNSKIY, CHIEF PROJECT ENGINEER, THREE PORT INSTALLATIONS FOR LOADING COAL, WOOD SPLITS, AND 20-30 TON CONTAINERS ARE BEING DESIGNED BY JAPANESE ENGINEERS. OTHER INSTALLATIONS ARE DESIGNED BY A SOVIET INSTITUTE, THE SOYUZHMORNIPROYEKT. THE CITY WHICH EVENTUALLY WILL GROW NEAR THE PORT IS BEING PLANNED BY THE "PRIMORGRAZHDANPROYEKT" OF VLADIVOSTOK.

UNCLASSIFIED



USSR

UDC: 519.2

KNOPOV, P. S.

"On Controlling Random Functions Which Satisfy Stochastic Differential Equations"

V sb. Mat. metody issled. i optimiz. sistem (Mathematical Methods of Studying and Optimizing Systems--collection of works), Kiev, 1971, pp 184-188 (from RZh-Kibernetika, No 8, Aug 72, Abstract No 8V84)

Translation: Let  $V(t, s)$  be the Cauchy function which corresponds to the differential operator

$$\sum_{k=1}^n a_k(t) \frac{d^k}{dt^k} = \sum_{k=1}^m b_k(t) \frac{d^k}{dt^k}$$

and

$$x(t) = \int_{-\infty}^t V(t, s) d\omega_s + \int_{-\infty}^t V(t, s) u(s) ds,$$

where  $\omega_s$  is a Wiener process,  $u(t)$  is the (deterministic) control.

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USSR

KNOPOV, P. S., Mat. metody issled. i optimiz. sistem, Kiev, 1971, pp 184-188

It is required to select  $u(t)$ ,  $0 \leq t \leq T$  in such a way that the functional

$$I = M \int_0^T [(f(t) - r(t))^2] dt$$

reaches a minimum with some function  $f(t)$ . It is shown that the minimum of  $I$  is reached on controls  $u(t)$ ,  $0 \leq t \leq T$  which satisfy the Volterra's integral equation of the first kind:

$$f(t) = \int_0^T V(t, s) u(s) ds$$

The author also considers the case where  $V(t, s)$  is a Green's function of a linear partial differential operator.  
R. Liptser.

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USSR

UDC 51:330.115

KNOPOV, P. S., TUR, L. P.

"One Problem of Control of Reserves"

Mat. Metody Issled. i Optimiz. Sistem. Vyp. 3 [Mathematical Methods of Investigation and Optimization of Systems, No 3 -- Collection of Works], Kiev, 1970, pp 21-33, (Translated from Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract No 6 V553 from the Article).

Translation: The problem is studied of supply a consumer with a certain material, the reserve of which is distributed between two hoppers of volume  $Q$  and  $q$  respectively. The process of expenditure and refilling of reserves  $Q + q$  occurs as follows: first the current reserve  $Q$  is fully exhausted. At this moment an order is transmitted for delivery of  $Q + q$  units of material. Filling of the order requires a certain random time  $\mu$ . During this period of time, the demands are satisfied using the emergency reserve  $q$ . The distributions of time required to exhaust reserve  $Q$ , time required to exhaust reserve  $q$ , and delay time in filling orders are known.

USSR

UDC 519.21

KNOPOV, P. S.

"Some Notes on the Prediction of a Random Process"

Mat. Metody Issled. i Optimiz. Sistem. Vyp. 1 [Mathematical Methods of Study and Optimization of Systems, No 1 -- Collection of Works], Kiev, 1970, pp 11-14  
 (Translated from Referativnyy Zhurnal Kibernetika, No 3, 1971, Abstract No 3 V89 by V. Makovskiy).

Translation: Prediction of the values of random process  $\xi(t)$ , observed in set T and having the form.

$$\xi(t) = \sum_{i=1}^m a_i p_i(t) + \eta(t).$$

where  $\eta(t)$  is a centered Gaussian Process with correlation function  $r(s,t)$ ,  $v_i$  are random quantities and  $p_i(t)$  are nonrandom functions, can be fixed at point  $T_0 \in T$  as

$$\xi(t_0) = \sum_{k=1}^n \xi_k \varphi_k(t_0).$$

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UDC 519.21

USSR

• KNOPOV, P. S., Mat. Metody Issled. i Optimiz. Sistem. Vyp. 1, Kiev, 1970, pp 11-14

where  $\phi_k(t_0)$  are the natural functions of the integral operator with kernel  $r(s,t)$ , continued to point  $t_0$ . Since it is difficult to find  $\phi_k(t)$ , the author introduces recurrent sequence of functions  $h_n(s, t_0)$  and proves that the sequence  $\xi_n(t_0) = \int_T h_n(s, t_0) \times$   
 $\times \xi(s) m(ds)$  converges in the mean square to  $\xi(t_0)$ .

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1/2 041 UNCLASSIFIED PROCESSING DATE--27NOV70  
 TITLE--FORMATION OF SUBMICROSCOPIC CRACKS IN POLYMERS UNDER THE INFLUENCE  
 OF CYCLIC LOADING -U-  
 AUTHOR--(02)--KNOPOV, V.M., SLUTSKER, A.I. K  
 COUNTRY OF INFO--USSR  
 SOURCE--FIZ. TVERD. TELA 1970, 12(4), 1176-80  
 DATE PUBLISHED-----70  
 SUBJECT AREAS--MATERIALS, PHYSICS  
 TOPIC TAGS--X RAY DIFFRACTION, POLYAMIDE RESIN, POLYPROPYLENE, PLASTIC  
 FILM, CRACK PROPAGATION, CYCLIC STRESS, VIBRATION STRESS  
 CONTROL MARKING--NO RESTRICTIONS  
 DOCUMENT CLASS--UNCLASSIFIED  
 PROXY REEL/FRAME--3007/0962 STEP NO--UR/0181/70/012/004/1176/1180  
 CIRC ACCESSION NO--AP0136392  
 UNCLASSIFIED

2/2 041

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0136392

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SMALL ANGLE X RAY DIFFRACTION WAS USED TO STUDY THE FORMATION OF SUBMICROSCOPIC CRACKS IN POLYCAPROAMIDE AND POLYPROPYLENE FILMS. THE RATE OF THE CRACK CONC. INCREASE WAS FASTER WHEN CYCLIC, RATHER THAN CONST. STRESS WAS APPLIED. THE CRACKS FORMED UNDER THE CYCLIC STRESS HAD GREATER STABILITY. THE VIBRATIONAL STRESS WAS MORE DESTRUCTIVE FOR POLYMERS THAN THE STATIONARY STRESS.

FACILITY: FIZ.-TEKH. INST. IM. IOFFE, LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC 549.21:620.183.2:539.24/25

VOLKOV, G. M., and KNOROZ, L. I.

"Periodicity in the Properties of Pyrolytic Carbon Filaments"

Moscow, Doklady Akademii Nauk SSSR, Vol 205, No 6, 1972, pp 1382-1384

Abstract: Chemical etching was used to remove the surface of pyrolytic carbon filaments (PCF). The remaining nucleus was oxidized in air at 800°C. Microphotographs of this sections show PCF cross-sections before and after oxidation. The filaments are composed of concentric shells of alternating high and low chemical reactivity. This is demonstrated in the electron micrograph of a PCF cross-section after oxidation which has the appearance of a rose. The PCF have reaction characteristics different from pyrographite which may be a function of differences in the temperature of formation.

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USSR

UDC 669.15'295-194:620.178.2

LAKHTIN, Yu. M., ZELENОВА, V. D., GLADCOVA, G. V., and KJIOROZOVA, T. B.,  
Moscow Automobile and Road Institute

"The Tendency Toward Brittle Failure of Titanium-Containing Steels"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 11, 1972,  
pp 60-61

Abstract: A study was made of the tendency toward brittle failure of 30KhT2 and 30KhT2N3Yu steels containing 2.1% Ti, in order to determine regions of their applicability. Specimens with and without nitrated layer, the latter with notches, were subjected to impact tests. Their impact strength and cold brittleness threshold were determined and the macro- and micro-structures of fractures after tests at different temperatures were analyzed. According to test results and electron-microscopy investigations, the lower cold brittleness thresholds of 30KhT2 and 30KhT2N3Yu steels are at 10°C and 40°C, respectively. Because of the high temperature of the lower threshold of cold brittleness, the 30KhT2 and 30KhT2N3Yu steels are not recommended for parts working under conditions of significant impact loads. Two figures, one table, three bibliographic references.

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USSR

UDC 547.963.3

KNORRE, D. G., ROMANOVSKAYA, S. A., and SHUBINA, T. N., Novosibirsk Institute of Organic Chemistry, Siberian Department of the Academy of Sciences USSR

"Synthesis of Biologically Active C-Terminal Gastrin Tetrapeptide in a System In Vitro. I. N'-Hydroxysuccinimide Esters of Trityl- and p-Methoxytrityl-tryptophan and Their Use to Acylate Methionyl-sRNA"

Novosibirsk, Izvestiya Sibirskogo Otdeleniya Akademii Nauk SSSR, Seriya Khimicheskikh Nauk, No 4, Vyp. 2, Mar 72, pp 123-126

Abstract: The article describes a method developed for the synthesis of previously undescribed N'-hydroxysuccinimide esters of trityl- and p-methoxytrityltryptophan from the corresponding acids and studies the ability of these esters to acylate methionyl-sRNA from E. Coli. N-Trityltryptophan and N-p-monomethoxytrityltryptophan were obtained as free acids from their diethylammonium salts by careful acidification of their aqueous-alcoholic solutions. N-Trityltryptophan is obtained at room temperature, N-monomethoxytrityltryptophan at -5° C. The synthesized N'-hydroxysuccinimide esters were used to acylate [<sup>14</sup>C]-methionyl-sRNA from E. Coli in a mixture of acetate buffer (pH 5) with dimethyl sulfoxide. The N-trityl- and N-p-monomethoxytrityltryptophanyl-methionyl-sRNA were obtained in ~80% yield.

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USSR

UDC: 547.963.3:547.854:547.222

GRINEVA, N. I., ZARYTOVA, V. F., and KNORRE, D. G., Novosibirsk Institute of Organic Chemistry, Academy of Sciences USSR, Siberian Department

"Alkylating Derivatives of Nucleic Acid Components 7. Methyl 2',3'-O-[4-(N-2-Chloroethyl-N-methylamino)benzylidene]-uridine-5'-Phosphate"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 1, Jan 70, pp 215-222

Abstract: Preparation was studied of the title compound (I) to be used as alkylating agent of nucleic acids in aqueous solution. Mixing methyl uridine-5'-phosphate (II) and 4-(N-2-chloroethyl-N-methylamino)benzaldehyde (III) in dimethylformamide(DMF) at 70° with 2,2-dimethoxypropane(DMP) and trifluoroacetic acid, after one day at room temperature yielded methyl 2',3'-O-(isopropylidene)uridine-5'-phosphate (IV), along with I and II in various proportions. The yields of the three products varied, depending on concentration of III and the III/DMP ratio. Study of the reaction kinetics established that two side reactions - hydrolysis of I formed in the main reaction and alcoholysis of DiP by II-occur concurrently with formation of I. The study revealed that a shorter reaction time promotes a significant decrease in the content of IV. Kinetic curves of accumulation of various reaction products are shown. Optimum conditions (II 0.115 M, III 0.575 M, DMP 0.46 M,

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USSR

GRINEVA, N. I., Zhurnal Obshchey Khimii, Vol 40, No 1, Jan 70, pp 215-222

trifluoroacetic acid 1.85 M, 45 min) were found for the preparation of I in 84% yield, of the product containing 88% I and a maximum of 5% II. Purification by paper chromatography with subsequent elution with ethanol gave 45-00% of the chromatographically homogeneous substance containing 70% I. Kinetics of I hydrolysis was studied in aqueous solution at 23° and at different pH values to evaluate the stability of the benzylidene bond in I; this is an important characteristic of an alkylating agent. Kinetic curves of I hydrolysis and the plot of the apparent rate constant of the benzylidene bond hydrolysis versus pH show that the pH of alkylation should not be below six. The pK value of the N-2-chloroethyl-N-methylamino group protonation was calculated to be 3.1.

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Molecular Biology

UDC 547.963.3

USSR

BARKINA, G. T., KNORRE, D. G., and MALYGIN, E. G., Institute of Organic Chemistry, Siberian Department of the Academy of Sciences USSR

"Effect of Cobra Venum RNase on tRNA Modified by Water-Soluble Carbodiimide"

Moscow, Molekulyarnaya Biologiya, No 1, 1971, pp 126-131

Abstract: tRNA modified by the *po*-toluenesulfonate of *N*-cyclohexyl-*N'*-[ $\beta$ -(4-methyl-morpholinium)ethyl]carbodiimide does not interfere with the action of cobra (*Naja oxiana*) venom RNase on the phosphodiester bonds adjacent to the modified uridine residues. Of the four possible types of bonds differing from one another in their orientation to the modified nucleotide residue and in the nature of the latter, only the bonds adjacent to quanosine ribose are relatively resistant to hydrolysis. The calculations based on experimental data concerning the relationship between the degree of hydrolysis of tRNA by cobra RNase and the degree of modification of bases were found to be consistent with a model of enzymatic activity previously proposed by the authors in which the enzyme-substrate complex of RNase and polyribonucleotides is formed when the molecule of the enzyme comes into contact with the trinucleotide chain of the substrate.

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Genetics

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USSR

GRINEVA, N. I., ~~KNORRE, D. G.~~, SENZHENKO, L. P., and TEPILOVA, N. M., Institute of Organic Chemistry, Siberian Department of the Academy of Sciences USSR

"Modification of Transfer RNA by 2',3'-O[4-(N-2-Chloroethyl-N-Methylamino)-Benzylidene]-Uridine-5'-Methylphosphate"

Moscow, Molekulyarnaya Biologiya, No 3, 1970, pp 307-312

Abstract: The effect of temperature, tRNA concentration and pH on the kinetics of the reaction of tRNA with MepURCl in an aqueous solution was studied. The efficiency of alkylation (ratio of the rate of alkylation of tRNA to the total rates of all the secondary conversions of the reagent) was virtually independent of temperatures ranging from 20 to 50°C and proportional to the initial tRNA concentration. Alkylation efficiency decreased sharply in the presence of magnesium salts. The rate and efficiency of alkylation was also independent of pH in the 6.0 to 7.5 range. Judging by the data of chromatography modified by 10% tRNA (Tomlinson-Tener system), alkylation did not rupture the polynucleotide chain.

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KNORRE, D.G.

Acc. Nr: APO044690

Ref. Code: UR 0463

PRIMARY SOURCE: Molekulyarnaya Biologiya, 1970, Vol 4, Nr 1, pp 30-36

THE INTERACTION OF TRANSFER RNA WITH ACETALS OF 4-(N-2-CHLOROETHYL-N-METHYLAMINO)-BENZALDEHYDES—DERIVATIVES OF URIDINE AND URIDINE-5'-METHYLPHOSPHATE

Belikova, A. M.; Vakhrusheva, T. Ye.; Vlasov, V. V.; Grineva, N. I.; Zarytova, V. F.; Knorre, D. G.; Teplova, N. M.

Institute of Organic Chemistry, Siberian Branch of the Academy of Sciences, USSR.  
Novosibirsk

It has been shown that the acetals of 4-(N-2-chloroethyl-N-methylamino)-benzaldehyde (RCI) — derivatives of uridine (URCI) and uridine-5'-methylphosphate (mepURCI) do alkylate tRNA. The efficiencies of the reagents are determined as a ratio of the velocity of tRNA modification to the velocity of all by-processes. The efficiencies of URCI and

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RCI are of the same order of magnitude and two orders greater, respectively, as compared with that of mepURCI. In the presence of *tris* the efficiency of URCl decreases significantly and that of mepURCl is altered only slightly. The efficiency of URCl decreases in the presence of mepU due to the interaction of an intermediate cation with primary phosphates of mepU. It suggests that the efficiency of mepURCl is low due to the presence of primary phosphate in its molecule. The quantitative analysis of the data obtained makes it possible to conclude that the interaction of mepUR<sup>+</sup> with phosphate is an intramolecular process.

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1/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--ALKYLATING DERIVATIVES ON NUCLEIC ACID COMPONENTS. VII. METHYL 2  
PRIME, 3 PRIME, O, 4, N, 2. CHLOROETHYL, N, METHYLAMINO, BENZYLIDENE, URIDINES 5  
AUTHOR--(03)-GRINEVA, N.I., ZARYTOVA, V.F., KNORRE, D.G.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(1), 215-22

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ALKYLATION, NUCLEIC ACID, PHOSPHATE ESTER, AMINE DERIVATIVE,  
CHLORINATED ORGANIC COMPOUND, HYDROLYSIS, PAPER CHROMATOGRAPHY, ACETAL,  
CHEMICAL REACTION KINETICS, BENZENE DERIVATIVE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1992/1751

STEP NO--UR/0079/70/040/001/0215/0222

CIRC ACCESSION NO--AP0112737

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--30OCT70

2/2 020

CIRC ACCESSION NO--AP0112737

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

ABSTRACT. KEEPING NH SUB4 URIDINE 5 PRIME, PHOSPHATE ME ESTER IN ME SUB2 CO WITH ME SUB2 C-(OME) SUB2 AND CF SUB3 CO SUB2 H 3 HR GAVE AFTER TREATMENT WITH ET SUB3 N AND REPPTN. OF THE PRODUCT FROM ME OH WITH ET SUB2 O THE ME ESTER OF 2 PRIME, 3 PRIME, O, ISOPROPYLIDENEURIDINE 5 PRIME, PHOSPHATE (I) WHICH IN 2.5 HR AT 70DEGREES IN 50PERCENT AQ. ACOH GAVE URIDINE 5 PRIME, PHOSPHATE ME ESTER.

THE KINETIC DATA FOR THE REACTION OF THE LATTER WITH ME SUB2 C(OME) SUB2 WERE PRESENTED. THE REACTION OF THIS ESTER WITH 4C'CH SUB2 CH SUB2-NMEC SUB6 H SUB4 CHO (II) IN ME SUB2 NCHO' AT MINUS 70DEGREES IN THE PRESENCE OF ME SUB2 C(OME) SUB2 AND CF SUB3 CO SUB2 H AT MINUS 70DEGREES, THEN 1 DAY AT ROOM TEMP., GAVE SOME UNIDENTIFIED MATERIAL, ME ESTER OF 2 PRIME, 3 PRIME, O, (4, (N, 2, CHLOROETHYL, N, METHYLAMINO) BENZYLIDENE) URIDINE 5 PRIME, PHOSPHATE AND I, WHICH WERE SPED. BY PAPER CHROMATOG. HYDROLYSIS OF THE PRODUCT IN 0.01 N HCL 0.5 HR GAVE URIDINE 5 PRIME, PHOSPHATE ME ESTER AND THE KINETIC DATA WERE SHOWN. REACTION OF URIDINE 5 PRIME, PHOSPHATE ME ESTER WITH II LEADS TO 3 TYPES OF PRODUCTS: AN ACETAL, PRODUCTS OF HYDROLYSIS AND PRODUCTS OF ALCOHOLYSIS. FACILITY: NOVOSIBIRSK. INST. ORG. KHIM., NOVOSIBIRSK, USSR.

UNCLASSIFIED

1/2 011 UNCLASSIFIED PROCESSING DATE--23OCT70  
 TITLE--MODIFICATION OF TRANSFER RNA BY 2, PRIME, 3  
 PRIME, 0, (4, (N, 2, CHLOROETHYL, N, METHYLAMINO) BENZILIDENE), URIDINE, 5  
 AUTHOR--(04)-GRINEVA, N.I., ~~KNORRE, D.G.~~ SENZHENKO, L.P., TEPLOVA, N.M.  
 COUNTRY OF INFO--USSR  
 SOURCE--MOLEKULYARNAYA BIOLOGIYA, 1970, VOL 4, NR 3, PP 307-312  
 DATE PUBLISHED-----70  
 SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
 TOPIC TAGS--RNA, ALKYLATION, CHEMICAL KINETICS, CHROMATOGRAPHIC ANALYSIS  
 CONTROL MARKING--NO RESTRICTIONS  
 DOCUMENT CLASS--UNCLASSIFIED  
 PROXY REEL/FRAME--1998/0155  
 STEP NO--UR/0463/70/004/003/0307/0312  
 C.I.R.C. ACCESSION NO--AP0120855  
 UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--23OCT70

2/2 011

CIRC ACCESSION NO--AP0120855  
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE EFFECTS OF SOME FACTORS HAVE BEEN STUDIED UPON ALKYLATION KINETICS OF TRNA WITH 2 PRIME, 3 PRIME, 014, (N, 2, CHLOROETHYL, N, METHYLAMINO), BENZILIDENE, URIDINE, 5 PRIME, METHYLPHOSPHATE IN WATER SOLUTION. IT HAS BEEN SHOWN THAT THE EFFICIENCY OF ALKYLATION (THE RATIO OF THE TRNA ALKYLATION RATE TO THAT OF ALL BY PROCESSES) DOES NOT DEPEND SIGNIFICANTLY ON THE TEMPERATURE IN THE RANGE 20-50 DEGREES AND IS PROPORTIONAL TO INITIAL TRNA CONCENTRATION. THE EFFICIENCY OF ALKYLATION MARDEGLY DECREASES IN THE PRESENCE OF MAGNESIUM SALTS. THE RATE AND THE EFFICIENCY OF ALKYLATION DOES NOT DEPEND ON PH WITHIN THE RANGE 6.0-7.5. AS REVEALED BY CHROMATOGRAPHY AFTER TOMLINSON AND TENER THE POLYNUCLEOTIDE CHAIN OF TRNA ALKYLATED FOR 10 PERCENT DOES REMAIN INTACT. FACILITY: INSTITUTE OF ORGANIC CHEMISTRY, SIBERIAN BRANCH OF THE ACADEMY OF SCIENCES, USSR, NOVOSIBIRSK.

UNCLASSIFIED

1/2 011 UNCLASSIFIED PROCESSING DATE--23OCT70  
 TITLE--THE REACTION OF N, CYCLOHEXYL, N', BETA, (4, METHYLMORPHOLINIUM)  
 ETHYLCARBODIIMIDE WITH GUANYLYL (3' TO 5') CYTIDINE -U-  
 AUTHOR--(04)-GIRSHOVICH, A.S., GRACHEV, M.A., KNORRE, D.G., CHIMITOVA, T.A.

COUNTRY OF INFO--USSR

SOURCE--IZVESTIYA SIBIRSKOGO OTDELENIYA AKADEMII NAUK SSSR, NO 2, SERIYA  
 KHIMICHESKIKH NAUK, 1970, NR 1, PP 97-102  
 DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--GUANIDINE, IMIDE, MORPHOLINE, HETEROCYCLIC NITROGEN COMPOUND,  
 REACTION KINETICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
 PROXY REEL/FRAE--1984/1601

STEP NO--UR/0289/70/000/000/0097/0102

CIRC ACCESSION NO--AP0100211

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0100211

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE REACTION KINETICS HAS BEEN STUDIED OF GUANOSINE RESIDUE IN GPC WITH CME CARBOXYIMIDE, AND THE TEMPERATURE DEPENDENCE OF THE IONISATION OF THE SAME RESIDUE IN ALKALINE MEDIUM DETERMINED. THE REACTIVITY OF GUANOSINE RESIDUE TO GPC DOES NOT DIFFER CONSIDERABLY FROM THAT OF FREE GUANOSINE.

UNCLASSIFIED

USSR

VORONIN, L., Corresponding Member, Academy of Sciences USSR, Head, Chair of Higher Nervous Activity, Soil Biology Faculty, Moscow State University; Chairman of the Commission, SMIRNOV, M., Candidate of Physicomathematical Sciences, Senior Scientific Associate, Institute of Problems of Information Transmission, Academy of Sciences USSR, RATANOVA, T., Candidate Pedagogical Sciences, Senior Scientific Associate, Laboratory of Perception and Sensation, Institute of Psychology, Academy of Pedagogical Sciences, DASHEVSKIY, I., Doctor-Psychiatrist, Psycho-Neurological Dispensary No 2, Moscow, and KNORRE, V., Candidate of Technical Sciences

"Mysterious Phenomenon: Discovery or Error" -- Once More on the Rosa Kuleshova Effect"

Moscow, Literaturnaya Gazeta, No 31, 29 Jul, p 12

Abstract: Optical perception through touch has been discussed and disputed by scientists during the last ten years. The authenticity of the claim of R. A. Kuleshova to be able to distinguish between the colors of objects by touching them has been established. However, it has been impossible to establish experimentally more data on this phenomenon, because it is impossible to obtain a high percentage of correct answers, since simple random selection is also involved. A commission set out to reexamine the case of R. A. Kuleshova.

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USSR

VORONIN, L., et al, Literaturnaya Gazeta, No 31, 29 Jul 70, p 12

Another series of tests was run to overcome this disadvantage by excluding the ordinary sense of touch. In the first set of tests a plywood baffle of 1.5 x 1.5 m with openings and sewn-in sleeves for the hands of the person to be tested was used. Seven correct color identifications out of a possible 23 were achieved in the first round, involving pencils and studs of the five prime colors. Subsequent rounds were even less favorable.

In a second test series, the person to be tested had his face covered with opaque material. The objects to be tested were reproductions of paintings. In all experiments in which the sense of sight was carefully excluded, R. A. Kuleshova did not exhibit any unusual faculty.

In a third series of tests, R. A. Kuleshova was blindfolded. In this case, she felt capable of sensing colors and gave correct and accurate answers. She described in detail the subjects on pictures, with accurate indication of colors, and fluently read printed text.

The spectro-anomaloscopic tests run in 1963 and 1964 were repeated. This device is capable of producing monochromatic light of four different colors. In 10

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USSR

VORONIN, L., et al, Literaturnaya Gazeta, No 31, 29 Jul 70, p 12

tests, only twice did the test subject arrive at the correct answer. Such a result can be expected from anyone. To examine the discrepancy in the results obtained previously and those obtained now, the commission decided to check into the 1963-1964 tests. It was found that when the device switched from one color to the next, a certain noise from the mechanical movement of parts of the device could provide the test person with information about the color shown. In the new test run, all such movements had been eliminated. The commission came to the conclusion that R. A. Kuleshova uses the same methods used by artists who claim that they see "without the help of eyes," using a narrow slit between the lower edge of the band covering the eyes and the nose. The commission believes that, at least today, no special optical sense is exhibited by R. A. Kuleshova. Of the thousands of other such cases claimed, the commission considers it unlikely that any of these do in fact possess the ability of an optical sense activated by touch.

3/3

USSR

UDC:541.?

TESNER, P. A., KNORRE, V. G., Moscow

"Analytic Description of the Process of Formation of Particles of Black  
During Thermal Decomposition of Hydrocarbons"

Novosibirsk, Fizika Goreniya i Vzryva, Vol. 6, No. 3, Sep 70, pp. 386-390

Abstract: The authors look upon the formation of particles of carbon black as a branched chain process involving several active particles. It is considered that the active particles involved are hydrocarbon radicals. This is indicated by the high activation energy for formation of the active particles. However, due to the high activation energy involved, many hydrocarbon radicals cannot act as seed radicals. No data are currently available to indicate just what the primary seed radicals are. They are apparently fragments or more probably the carbon skeletons of aromatic compounds which have lost their stability due to separation of the hydrogen atom.

1/1

UDC 531.7.08

USSR

KNORRING, V. G., ROZHKOVA, N. F., Candidates of Technical Sciences, and  
KREMLEVSKIY, N. P., Engineer

"A Digital Instrument for the Measurement and Analysis of Vibration Parameters"

Moscow, Priborny i Sistemy Upravleniya, No 5, May 1973, pp 25-27

Abstract: A description is given of a digital vibration-measurement instrument intended for measurement and recording of the first and second harmonic components of vibrations that originate during the acceleration and coasting of large electrical machines, as well as during their balancing. The instrument works on the principle of digital integration of the pulse frequency modulation of the signal. The manner of operation of the instrument is described. The distinguishing feature of this instrument is the fact that switching of the measurement limits takes place not on the basis of the final result (the number of the meter pulses), but on the basis of the output frequency of the voltage-to-frequency converter, since the voltage-to-frequency converter is the only component of the instrument that is sensitive to overloading: it functions linearly only at input voltages not exceeding 100 mv. Since the output voltage of the sensor unit can be considerably higher, a voltage divider is included

1/2

- 106 -

USSR

KNORRING, V. G., et al., *Pribory i Sistemy Upravleniya*, No 5, May 1973, pp 25-27

between the sensor unit and the voltage-to-frequency converter. The procedure is described, whereby the voltage divider acts to keep the input of the voltage-to-frequency converter within the range of its linear functioning. 3 figures. 2 references.

2/2

UDC 531.7.08

USSR

KNORRING, V. G., ROZHKOVA, N. F., Candidates of Technical Sciences, and  
KREMLEVSKIY, N. P., Engineer

"A Digital Instrument for the Measurement and Analysis of Vibration Parameters"

Moscow, Pribory i Sistemy Upravleniya, No 5, May 1973, pp 25-27

Abstract: A description is given of a digital vibration-measurement instrument intended for measurement and recording of the first and second harmonic components of vibrations that originate during the acceleration and coasting of large electrical machines, as well as during their balancing. The instrument works on the principle of digital integration of the pulse frequency modulation of the signal. The manner of operation of the instrument is described. The distinguishing feature of this instrument is the fact that switching of the measurement limits takes place not on the basis of the final result (the number of the meter pulses), but on the basis of the output frequency of the voltage-to-frequency converter, since the voltage-to-frequency converter is the only component of the instrument that is sensitive to overloading: it functions linearly only at input voltages not exceeding 100 mv. Since the output voltage of the sensor unit can be considerably higher, a voltage divider is included

1/2

- 106 -

USSR

KNORRING, V. G., et al., *Pribory i Sistemy Upravleniya*, No 5, May 1973, pp 25-27

between the sensor unit and the voltage-to-frequency converter. The procedure is described, whereby the voltage divider acts to keep the input of the voltage-to-frequency converter within the range of its linear functioning. 3 figures. 2 references.

2/2

1/2 018 UNCLASSIFIED PROCESSING DATE--11SEP70  
 TITLE--EFFECT OF STRAY CAPACITANCE ON TRANSDUCER SENSITIVITY DURING A  
 MEASUREMENT OF THE CONTACT POTENTIAL DIFFERENCE BY THE DYNAMIC CAPACITOR  
 AUTHOR--KNOTS, L.L., BASKAKOV, V.A. R  
 COUNTRY OF INFO--USSR  
 SOURCE--ELEKTROKIMIYA 1970, 6(1), 115-17  
 DATE PUBLISHED-----70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.  
 TOPIC TAGS--ELECTRIC CAPACITANCE, PIEZOELECTRIC TRANSDUCER, CAPACITOR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
 PROXY REEL/FRAME--1986/0422

STEP NO--UR/0364/70/006/001/0115/0117

CIRC ACCESSION NO--AP0102433

UNCLASSIFIED

2/2 018  
CIRC ACCESSION NO--AP0102433  
ABSTRACT/EXTRACT--(U) GP-0-  
PROBLEM IS GIVEN.

UNCLASSIFIED

PROCESSING DATE--11SEP70

ABSTRACT. AN EXAMPLE OF A MATH. SOLN. OF THE

0123

UNCLASSIFIED



1/2 012

UNCLASSIFIED

PROCESSING DATE--18SEPT0

TITLE--APPARATUS FOR SUPERIMPOSING TRIANGULAR VOLTAGE PULSES ON A DROPPING

MERCURY ELECTRODE AT A GIVEN MOMENT OF DROP LIFE -U-

AUTHOR--(05)-LENTSNER, B.I., KHOPIN, A.M., ~~KNOTS, L.L.~~, TSVENTSASHVILI,  
V.SH., ZHDANOV, S.I.

COUNTRY OF INFO--USSR

SOURCE--ELEKTROKIMIYA 1970, 6(1), 29-34

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--DROPPING MERCURY, THALLIUM, CADMIUM, ION, ELECTROLYTIC  
REDUCTION, BENZALDEHYDE, POLAROGRAPHIC ANALYZER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1984/1815

STEP NO--UR/0364/70/005/001/0029/0034

CIRC ACCESSION NO--AP0100389

UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0100389

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE APP., BASED ON THE  
POTENTIOSTAT, WAS TESTED BY USING A STD. SOLN. CONTG. TL PRIME POSITIVE  
AND CO PRIME2 POSITIVE AND FOR THE STUDY OF A NO. OF COMPS. THE REDN.  
OF BENZALDEHYDE ON THE DROPPING MERCURY ELECTRODES WAS STUDIED IN A N  
HClO SUB4 ALC. SOLN. THE ABSENCE OF ANODE PEAKS CORRESPONDING TO OXIDN.  
OF THE RADICALS TO THE INITIAL SUBSTANCE ON THE CYCLIC POLAROGRAMS IS  
ATTRIBUTED TO THE STAGE SUBSEQUENT TO THE ELECTRODE PROCESS PROCEEDING  
VERY RAPIDLY AND THE OXIDN. CURRENT OF THE INTERMEDIATE PRODUCT NOT  
REGISTERING PRIOR TO RATES OF APPLICATION OF THE POTENTIAL IN THE ORDER  
OF 100 V-SEC.

UNCLASSIFIED

USSR

UDC 541.128.2:547.241

NEYMYSHEVA, A. A., YERMOLAYEVA, M. V., and KNUNYANTS, I. L.

"Nucleophilic Substitution in a Series of Derivatives of Phosphorus Acid. VII. The Effect of Water Concentration on Acetone in the Rate of Hydrolysis of Phosphorus Acid Chloride"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 12, Dec 73, pp 2608-2612

Abstract: It was established that during hydrolysis of acid chlorides of dialkylphosphinous, dialkylthiophosphinous, alkylphosphonous, alkylthiophosphonous and dialkylphosphoric acids in aqueous acetone general third-order kinetics are followed: first in respect to the acid chloride and second in respect to water. The reaction order in respect to water is lowered with decreasing number of C-H bonds at the carbon atom in  $\alpha$ -position with respect to the phosphorus atom. This is probably due to steric hindrance or to the partial input of the  $S_N1$  mechanism.

1/1

- 43 -

Organometallic Compounds

UDC 542.91:547.1'119:547.412.732

USSR

KOPAYEVICH, Yu. L., VELEN'KIY, G. G., MYSOV, Ye. I., GERMAN, L. S., and  
KNUNYANTS, I. L., Institute of Element-Organic Compounds, Academy of  
Sciences USSR

"Derivatives of Bis(pentafluoroethyl)arsenous Acid"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, 1, Jan 73,  
pp 121-122

Abstract: The reaction of ethanol with  $(C_2F_5)_2AsF$  (I) results in the formation of small amounts of the corresponding ester. In the presence of  $SiO_2$ , however, the yield of  $(C_2F_5)_2AsOC_2H_5$  is significantly increased. The hydrolysis of I leads to the formation of  $(C_2F_5)_2AsOAs(C_2H_5)_2$ ; and the subsequent reaction with diethylamine to  $(C_2F_5)_2AsN(C_2H_5)_2$ . Reaction of (I) with phenylmagnesium bromide leads to the formation of  $(C_2H_5)_2AsC_6H_5$ . Syntheses, elemental composition, and mass spectrometric and NMR data are given for the compounds generated.

1/1

USSR

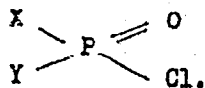
UDC 541.127:547.241

KNUNYANTS, I. L., and NEYMYSGHEVA, A. A.

"Nucleophilic Substitution in a Series of Phosphoric acid Derivatives. VI. The Influence of Steric Electronic Factors on the Reactivity of Acyl Halides of Phosphoric Acid"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), Vyp 11, 1972, pp 2421-2427

Abstract: The hydrolysis rate constant, previously determined using an hydrometer, was compared with the steric constant and the induction constant of the substitutions on compounds having the general formula



X generally had the nature of an alkane, alkene, or a phenyl group. Y was frequently Cl or  $C_2H_5O$ . Sixteen such compounds were examined. In addition, 1/2

USSR

KNUNYANTS, I. L., and NEYMYSHEVA, A. A., Zhurnal Obshchey Khimii, Vol 42(104), Vyp 11, 1972, pp 2421-2427

the hydrolysis rate constant,  $k$ , was also determined for various compounds at different temperatures. Correlation constants between the rate of hydrolysis and the reactivity given as  $\log k = \rho \sigma_R^* + C$  was not less than 0.97.

A direct relationship was established between the induction constant and the log of the hydrolysis rate. However, this relationship did not extend to compounds in which the R group was subject to p - d or  $\pi$  - d interactions. NMR data for  $P^{31}$  support the presence of the interaction of the electrons of the benzene and allyl group double bonds with d orbitals on the phosphorus atom.

2/2

USSR

UDC 547.717.466.07

YAMONTAITE, A. A., KRASIL'NIKOVA, G. K., KIL'DISHEVA, O. V., and ~~KUNYANTS~~  
I. I., Institute of Biochemistry, Acad. Sc. Litvanian SSR Vil'nyus

"Synthesis of Some O,O-Diethyl-S-( $\beta$ -acylaminoethyl)-dithiophosphates"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 4, Apr 72, pp 479-482

Abstract: Ethyleneimides of N-phtalyl-D,L-valine, -glycine, -D,L-alanine, N-carbobenzoxy-D,L-valine, N-benzoyl-D,L-leucine,  $\gamma$ -methyl ether of N-carbobenzoxy-L-glutamic acid, and monomethyl ester of succinic acid were synthesized and reacted with O,O-diethyldithiophosphoric acid in methanol to yield respective O,O-diethyl-S-( $\beta$ -acylaminoethyl)-dithiophosphates. All of these compounds exhibited intensive doublets at 655-660  $\text{cm}^{-1}$  in their IR spectra, indicating the presence of the  $\begin{matrix} \text{O} \\ \diagup \\ \text{P} = \text{S} \\ \diagdown \\ \text{O} \end{matrix}$  S-C grouping. Synthesis of

$\beta$ -chloroethylamides of N-phtalyl-D,L-valine, m.p. 131-132°C, N-acetyl-D,L-valine, m.p. 175-177°C, and monomethyl ester of succinic acid, b.p. 141-142/1.5 mm,  $n_D^{20}$  1.4854,  $d_4^{20}$  1.2480, are also reported.

1/1

USSR

KNUNYANTS, I. L., NEYMYSHEVA, A. A., and YEPMOLAYEVA, M. V.

"Method of Producing Esters of Alkyl-( $\beta$ -sulfonylalkyl)-ethylthionophosphinic Acid"

USSR Author's Certificate No 306131, filed 5/02/70, published 29/07/71.  
(Translated from Referativnyy Zhurnal Khimiya, No 5, Moscow, 1972, Abstract No 5N627P by L. V. Razvodovskaya)

Translation: Compounds with the general formula  $R(R'O)P(S)CH_2CH_2S(O_2)R''$  (I), where R, R' and R'' = alkyl are obtained by adding  $CH_2=CHS(O_2)R''$  (II) to  $R(R'O)P(S)H$  (III) in the presence of EtONa at 90-100°. Zero point zero one nine (0.019) mol (III) (R'=Et, R=Me) and a few drops of EtONa in ethanol are added to 0.019 mol II (R''=Me) in dry CO<sub>2</sub> atmosphere at 20°, heated for two hours at 90-100°, distilled, producing I (R=R''=Me, R'=Et), yield 69%, mp 50-2° (ethanol). I is of interest for study as pesticides.

1/1

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## Organophosphorous Compounds

USSR

UDC 632.95

KNUNYANTS, I. L., BYKHOVSKAYA, E. G., SIZOV, YU. A., ZINOV'YEVA, L. I.

"A Method of Making Alkyl Perfluorovinylalkylphosphinates"

USSR Author's Certificate No 297644, filed 22 Dec 69, published 1 Jun 71  
(from RZh-Khimiya, No 1(II), Jan 72, Abstract No 1N412)

Translation: Compounds of the general formula  $R(R'O)P(O)CF=CF_2$  (I) ( $R = Me, Et; R' = Pr, Bu$ ) are made by the reaction of dialkyl chlorophosphonates with perfluoromagnesium iodide (II) in an organic solvent at  $-15$  to  $20^\circ C$ . A solution of  $Me(iso-PrO)POCl$  in 10 ml of absolute ether is added with stirring, in a stream of  $N_2$ , to a solution of II obtained from 2.5 g Mg and 24 g  $CF_2=CFI$  at  $-15$  to  $20^\circ C$ , and the mixture is stirred for an hour at  $-10^\circ C$ ; the temperature is then raised to  $-5^\circ C$ , and the mixture is decomposed with a 10%  $H_2SO_4$  solution.

The reaction mixture is heated to  $20^\circ C$ . The ether layer is removed, the water layer is extracted with ether and dried over  $Na_2SO_4$ . After distilling the solvent, the result is 3.2 g of I ( $R = Me, R' = iso-Pr$ ), yield 30%, boiling point  $55^\circ/3$ ,  $d_4^{17} 1.2689$ ,  $n_D^{17} 1.3952$ . An similar method is used for synthesizing compound I ( $R = Me, R' = iso-Bu$ ), yield 30-35%, boiling point  $51-2^\circ/3$ ,  $d_4^{22} 1.2087$ ,  $n_D^{22} 1.3908$ . A. F. Prokof'yeva.

1/1

USSR

UDC 547.294'22'13

LIN'KOVA, M. G., GREYCHUTE, D. I., RASTEYKENE, L. P., and KONUNYANTS, I. I.,  
Institute of Heteroorganic Compounds, Academy of Sciences USSR

"Bis- $\beta$ -chloroethyl Sulfides. 2. Derivatives of  $\alpha$ -Chloro- $\beta$ -( $\beta$ -chloro-ethylthio)- and  $\alpha$ -( $\beta$ -chloroethylthio)- $\beta$ -chloroisobutyric Acid"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 11, Nov 71,  
pp 2522-2529

Abstract: The article deals with the synthesis of modified yperite derivatives and the study of their chemical and biological properties. The addition of methyl-, phenyl- and  $\beta$ -chloroethylsulfenyl chloride to methacrylic acid derivatives in  $\text{CCl}_4$ ,  $\text{CHCl}_3$ , ether or  $\text{CH}_2\text{Cl}_2$  at low or room temperature proceeds preferentially to give the corresponding  $\beta$ -chloro- $\alpha$ -thioesters. For purposes of comparing properties, isomeric  $\alpha$ -chloro- $\beta$ -( $\beta$ -chloroethylthio) derivatives of isobutyric acid were obtained by the decomposition of  $\alpha$ -chloro- $\alpha$ -methyl- $\beta$ -propiolactone. Of the compounds obtained by the addition of sulfenyl chlorides to methacrylic acid and its derivatives the most stable is  $\alpha$ -alkthio- $\beta$ -chloroisobutyronitrile, which is not isomerized under normal conditions. Least stable are amides of  $\alpha$ -alkthio- $\beta$ -chloroisobutyric acid,  
1/2

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USSR

LIN'KOVA, M. G., et al., Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya  
No 11, Nov 71, pp 2522-2529

which are isomerized under normal conditions into corresponding amides of  
 $\beta$ -alkthio- $\alpha$ -chloroisobutyric acid. No isomerization of  $\beta$ -chloro- $\alpha$ -  
-phenylthio derivatives of isobutyric acid was observed.

2/2

USSR

UDC 541-67

KNINYANTS, I. I., GEORGIYEV, V. I., GALAKHOV, I. V., RAGULIN, L. I.,  
and NEYMYSHEVA, A. A.

"p-d-Conjugation in Phosphoryl and Thiophosphoryl Groups of Organophosphorus  
Compounds and Electron Screening of Phosphorus Atom Nucleus"

Moscow, Doklady Akademii Nauk SSSR, Vol 201, No 4, Dec 71, pp 862-865

Abstract: In the NMR spectra the H' protons on the methyl group of methyl-alkylthiophosphinic acid fluorides are less shielded than in case of methyl-alkylphosphinic acid fluorides. Substituting sulfur for oxygen in dialkylphosphinic acid chlorides and fluorides leads to different shifts in  $p^{31}$ . This difference is probably due to weak interaction of the sulfur atom in the p-d conjugation and change in the p-d conjugation in the phosphoryl group depending on substituents. Going from phosphine oxides to respective thiooxides is accompanied by slight changes in electronic density at the phosphorus atom shifting consequently the signal of  $P^{31}$  nucleus. In thiophosphorusorganic compounds the electronic density on the phosphorus atom depends on the inductive effect of the substituents. Therefore the magnitude of  $P^{31}$  shifts will increase with increased electronegativity of the substituents on the phosphorus atom. Decrease in the number of C-H bonds at the carbon

1/2

USSR

KNUNYANTS, I. L., et al., Doklady Akademii Nauk SSSR, Vol 201, No 4, Dec 71, pp 862-865

atom located in the  $\alpha$ -position in respect to the phosphorus results in a shift of the  $P^{31}$  signal towards a weaker field, while the  $F^{19}$  signal shifts towards stronger fields. The shift in  $F^{19}$  signal is constant regardless of the length of the substituent hydrocarbon chain.

2/2

- 36 -

## Organometallic Compounds

USSR

UDC 542.91:547.242+546.16

KOPAYEVICH, YU. L., BELEN'KIY, G. G., GERMAN, L. S., and KNUNYANTS, I. L.,  
Institute of Organoelemental Compounds, Academy of Sciences USSR

## "Fluoroalkylarsenic Derivatives"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 5, 1971,  
pp 1124-1125

Abstract: Tertiary polyfluoroalkylarsines were synthesized by addition of  $\text{AsF}_3$  (I) to certain fluoro-derivatives of ethylene in the presence of  $\text{SbF}_5$  (II). Thus, the reaction of (I) with  $\text{CH}_2=\text{CF}_2$  at  $100-120^\circ$  under pressure for 6 hours, in the presence of traces of (II) yielded the following:  $(\text{CH}_2\text{CF}_2)_3\text{As}$ , 42% yield, b.p.  $146-147^\circ$ . The reaction of (I) with  $\text{CF}_2=\text{CFH}$  requires 0.3 moles of (II) and is easily executed under pressure at  $20^\circ$ . This produced  $(\text{CF}_2\text{CFH})_3\text{As}$  in 74% yield and b.p.  $114-115^\circ$ . By the reaction of (I) with  $\text{CF}_2=\text{CF}_2$  in the presence of 0.3 moles (II) under pressure at  $20^\circ$ , the following products were obtained: 1)  $(\text{C}_2\text{F}_5)_3\text{As}$ , b.p.  $87-88^\circ$ , yield 39%; 2)  $(\text{CF}_3\text{CF}_2)_2\text{AsF}$ , yield 30%, b.p.  $67-68^\circ$ . The structure of these compounds were confirmed by nuclear magnetic resonance and mass-spectroscopic data.

1/1

1/2 008 UNCLASSIFIED PROCESSING DATE--09OCT70  
TITLE--PEPTIDES OF SARCOLYSINE WITH GAMMA AMINOBUTYRIC ACID -U-  
AUTHOR--(04)--NAULIUKONIS, A., KARPAVICHYUS, K., KILDISHEVA, D.V.,  
KNUNYANTS, I.I.  
COUNTRY OF INFO--USSR  
SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (1), 161-2  
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PEPTIDE, ANTINEOPLASTIC DRUG

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1986/1921

STEP NO--UR/0062/70/000/001/0161/0162

ARC ACCESSION NO--AP0103648

UNCLASSIFIED

2/2 008 UNCLASSIFIED PROCESSING DATE--09OCT70  
RC ACCESSION NO--APO103648  
STRACT/EXTRACT--(U) GP-0- ABSTRACT. ADDN. OF 85 ML AC SUB2 O AT  
50-5DEGREES TO 10.3 G H SUB2 N (CH SUB2) SUB3 CO SUB2 H IN 98PERCENT HCO  
SUB2 H GAVE AFTER 2 HR AT ROOM TEMP 47PERCENT HCONH (CH SUB2) SUB3 CO  
SUB2 H (I), M. 105-6DEGREES. TO 3.33 G N,FORMYLSARCOLYSINE AND 1.6 G  
8, HYDROXYQUINOLINE IN TETRAHYDROFURAN (THF) WAS ADDED 2.1 G  
DICYCLOHEXYLCARBODIIMIDE AND AFTER 6 HR A LITTLE ACID WAS ADDED AND THE  
UREA PPT. REMOVED TO GIVE 65PERCENT N,FORMYLSARCOLYSINE 8, HYDROQUINOLYL  
ESTER (II), M. 132-4DEGREES. SIMILARLY, I AND P, NITROPHENOL GAVE  
74PERCENT OF THE CORRESPONDING I P, NITROPHENYL ESTER (III), M. 59-60  
DEGREES. KEEPING 4.6 G II WITH 2 G H SUB2 N (CH SUB2) SUB3 CO SUB2 CH  
SUB2 PH IN THF 1 DAY GAVE 58PERCENT BENZYL N,FORMYLSARCOLYSYL, GAMMA,  
AMINO BUTYRATE (IV), M. 113-14DEGREES. SIMILARLY, THE BENZYL ESTER OF  
SARCOLYSINE AND III GAVE 89PERCENT BENZYL ESTER OF N,FORMYL, GAMMA,  
AMINO BUTYRYSARCOLYSINE (V), M. 99-100DEGREES. V HYDROGENATED OVER PD  
BLACK IN MEOH TO N,FORMYLSARCOLYSYL, GAMMA, AMINO BUTYRIC ACID, M 131-2  
DEGREES. SIMILARLY, THE BENZYL ESTER YIELDED THE FREE N,FORMYL, GAMMA,  
AMINO BUTYRYSARCOLYSINE, M. 134-5DEGREES. KEEPING IV IN PH CH SUB2 OH  
WITH ACCL 1 DAY AT ROOM TEMP. GAVE AFTER ISOLATION OF THE HCL SALT OF  
BENZYL SARCOLYSYL, GAMMA, AMINO BUTYRATE AND TREATING IT WITH ET SUB3 N,  
FOLLOWED BY HYDROGENOLYSIS OF THE CRUDE PRODUCT, 91PERCENT  
SARCOLYSYL, GAMMA, AMINO BUTYRIC ACID, M. 123-4DEGREES. SIMILARLY WAS  
PREPD. THE BENZYL ESTER OF GAMMA, AMINO BUTYRYSARCOLYSINE, M.  
98-9DEGREES, AND GAMMA, AMINO BUTYRYSARCOLYSINE M. 129-31DEGREES.



USSR

UDC 547.241.07

KNUNYANTS, I. L., BYKHOVSKAYA, E. G., SIZOV, Yu. A., and FILYAKIN, V. A.

"A Method of Making 1,1-Bis-(dialkylphosphino)-4-alkanols-1"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 1, Jan 71, Author's Certificate No 289098, division C, filed 24 Nov 69, published 8 Dec 70, p 78

Translation: This Author's Certificate introduces: 1. A method of making 1,1-bis-(dialkylphosphino)-4-alkanols-1. As a distinguishing feature of the patent, dialkylphosphine is interacted with a 4-carboxylic acid halide in the presence of an organic base such as triethylamine in an organic solvent with subsequent isolation of the goal product by conventional methods. 2. A modification of this method distinguished by the fact that the process is carried out with boiling of the reaction mixture.

1/1

USSR

UDC 541.128.2:547.241

NEYMYSHEVA, A. A., YERMOLAYEVA, M. V., KNUNYANTS, I. I.

"Nucleophilic Substitution in a Series of Phosphorus Acid Derivatives. V. Effect of the Solvent on the Kinetics of Phosphorus Acid Chlorides Alcoholysis. Catalytic Action of Hydrogen Chloride"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 9, Sep 70, pp 2022-2028

Abstract: Study of the kinetics of alcoholysis of the ethyl ester of methylphosphonic acid showed it to be of the overall zero order, HCl catalysing the reaction. It was postulated that the zero order may be the result of three separate processes superimposed: a) reaction of acyl chloride with methanol, b) formation of a complex, and c) reaction of the complex with methanol. It was shown in this study that alcoholysis of the phosphorus acid chlorides in nonpolar solvents -- dioxane, toluene, tetrahydrofuran -- is catalyzed with HCl. Catalytic action of HCl depends on the basicity of the oxygen atom at the phosphoryl group and hence it diminished in the order: diethylphosphinyl chloride, ethylmethylchlorophosphonate, 1/2

USSR

NEYMYSHEVA, A. A., et al, Zhurnal Obshchey Khimii, Vol 40, No 9,  
Sep 70, pp 2022-2028

S-ethylmethylthiochlorophosphonate, dimethylchlorophosphonate,  
phosphorus oxychloride. Alcoholysis of phosphorus thiooxychloride  
is practically unaffected by HCl.

2/2

1/2 014 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--SYNTHESIS OF PERFLUOROALKYL MERCURY DERIVATIVES VIA PERFLUOROALKYL  
CARBANIONS -U-  
AUTHOR--(04)-DYATKIN, B.L., STERLIN, S.R., MARTYNOV, B.I., KNUNYANTS, I.L.  
COUNTRY OF INFO--USSR  
SOURCE--TETRAHEDRON LETT. 1970, (17), 1387-8  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--FLUORINATED ORGANIC COMPOUND, MERCURY COMPOUND, CHLORIDE,  
ORGANOMERCURY COMPOUND  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--2000/0764 STEP NO--UK/0000/70/000/017/1387/1388  
CIRC ACCESSION NO--AP0124434

UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0124434

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FLUOROOLEFINS OF SUB3 CR:CF SUB2 (R EQUALS F AND CF SUB3), ARE TREATED WITH HGCL SUB2 IN THE PRESENCE OF KF IN HCONME SUB2 TO GIVE BIS(PERFLUOROISOPROPYL)MERCURY AND BIS(PERFLUORO,TERT,BUTYL)MERCURY. PERFLUOROISOPROPYL MERCURY CHLORIDE IS PREPD. FROM CF SUB3 CR:CF SUB2, HGCL SUB2, AND KF IN MEOCH SUB2 CH SUB2 OME. FACILITY: INST. ORG. ELEM. COMP., MOSCOW, USSR.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--02OCT70  
TITLE--ASPECTS OF THE REACTIVITY OF FLUOROLEFINS -U-  
AUTHOR--(CZ)-DYATKIN, B.L., KNUNYANTS, I.L. *K*  
COUNTRY OF INFO--USSR  
SOURCE--ZH. VSES. KHIM. OBSHCHEST. 1970, 15(1) 5-14  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--FLUORINATED ORGANIC COMPOUND, CONJUGATE BOND SYSTEM  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1992/1411 STEP NO--UR/0063/70/015/001/0005/0014  
CIRC ACCESSION NO--AP0112405  
UNCLASSIFIED

2/2 015 UNCLASSIFIED PROCESSING DATE--02OCT70  
CIRC ACCESSION NO--AP0112405  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A REVIEW, THROUGH PART OF 1969 OF  
THE ELECTRONIC AMPHOTERIC BEHAVIOR OF FLUOROLEFINS, ORIENTATION OF  
THEIR ADDN. REACTIONS WITH UNSYM. ADDUCTS, AND BOND CONJUGATION IN  
FLUOROLEFINS WITH 64 REFS.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--NITRILE AND ESTERS OF BETA,PERFLUORO-TERT-BUTYL, PROPIONIC ACID -U-

AUTHOR--(03)-KNUNYANTS, I.L., PERVOVA, YE.YA., DELYAGINA, N.I.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 264,386.

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,  
DATE PUBLISHED--03MAR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ACRYLONITRILE, PROPIONIC ACID, FLUORINATED ORGANIC COMPOUND,  
ACRYLATE, ISOBUTENE, CHEMICAL PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3007/0839

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0136273

UNCLASSIFIED



2/2 015

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AA0136273

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE COMPO. IS PREPO. BY  
REACTING ACRYLONITRILE OR ACRYLATES WITH PERFLUOROISOBUTYLENE IN THE  
PRESENCE OF CSF OF KF. FACILITY: INSTITUT  
ELEMENTOORGANICHESK IKH SOYEDINENIY AN SSSR.

UNCLASSIFIED

1/2 029 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--NUCLEOPHILIC SUBSTITUTION IN A SERIES OF PHOSPHORUS V AICD  
DERIVATIVES. IV. KINETICS OF CHLOROPHOSPHONATE HYDROLYSIS -U-  
AUTHOR--(03)-NEYMYSHEVA, A.A., ARMOLAYEVA, M.V., KNUNYANTS, I.L.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. OBSHCH. KHIM. 1970, 40(4), 798-803  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--CHEMICAL KINETICS, ACTIVATION ENERGY, CHLORINATED ORGANIC  
COMPOUND, ORGANIC PHOSPHORUS COMPOUND, HYDROLYSIS  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3006/1501 STEP NO--UR/0079/70/040/004/0798/0803  
CIRC ACCESSION NO--AP0135162

UNCLASSIFIED

2/2 029 UNCLASSIFIED PROCESSING DATE--04DEC70  
CIRC ACCESSION NO--AP0135162  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. KINETIC DATA WERE SHOWN FOR THE  
TITLE REACTION RUN IN ME SUB2 CO CONTG. 5 VOL. PERCENT H SUB2 O AT  
TEMPS. OF 0, 10, 20, AND 30DEGREES, FROM WHICH WERE CALCD. THE VALUES OF  
ACTIVATION ENERGIES (THESE WERE IN THE RANGE OF 6-10 DCAL-MOLE), DELTA S  
(28-34 E.U.), AND DELTA F (14-15 KCAL-MOLE) VALUES FOR A SERIES OF  
RP(O)(OR)CL IN WHICH R WAS SELECTED FROM ME, ET, PR, ISO PR, BU, MEETCH,  
ISO BU, PH, AND CLCH SUB2 CH SUB2. THE TABULATED DATA FOR THE KINETICS  
OF HYDROLYSIS OF THE CL ATOM WERE COMPARED WITH EXISTING DATA ON  
HYDROLYSIS OF RO POCL SUB2 AND (RO)SUB2 POCL. THE STEADY DECLINE OF  
RATE CONSTS. FOR SUCH HYDROLYSIS IN PASSING FROM R SUB2 POCL TO  
RP(O)(OR)CL IS EXPLAINED BY THE EXISTENCE OF P O CONJUGATION OF THE O  
ATOM OF THE RO GROUP, WITH THE RESONANCE EFFECT CAUSED BY THE RO GROUP  
BEING DEPENDENT ON THE NATURE OF THE OTHER GROUPS AT THE CENTRAL P ATOM.

UNCLASSIFIED

USSR

UDC 542.91:547.566.2:547.466:547.1'118

KARPAVICHYUS, K. I., POSHKENE, R. A., PUZERAUSKAS, A. P., KIL'SINEVA, O. V.,  
KNUNYANTS, I. I., Institute of Biochemistry of the Lithuanian SSR Academy  
of Sciences and the Institute of Hetero-Organic Compounds of the USSR  
Academy of Sciences

"p- and m-aminophenylalkene Acids and Their Derivatives Containing diethylenediimidophosphoryl and diethylenediimidothiophosphoryl Groups"

Moscow, Investiya Akademii Nauk SSR - Seriya Khimicheskaya, No 11, 1972,  
pp 2549-2554

Abstract: The methyl esters of p- and m-aminophenylalkane acids and the methyl esters of N-(p- and m-aminophenacyl)-DL-valine (R. Poshkene, et al., Tr. AN Lit-SSR, Series B, 1971) were phosphorylated by phosphorus oxychloride or phosphorus thioclychloride in inert solvents in the presence of bases. Without separating the dichlorophosphoryl derivatives into individual forms they were condensed with ethylenimine by the method of H. Bestian (Liebigs Ann. Chem. , No 566, 210, 1950). The HCl separating out was found by triethylamine or an excess of ethylenimine. Thus, the methyl esters and sodium salts of para and meta-aminophenylalkane acids containing diethylenediimidophosphoryl and diethylenediimidothiophosphoryl groups were synthesized, and the methyl

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USSR

KARPAVICHYUS, K. I., et al., *Izvestiya Akademii Nauk SSR -- Seriya Khimicheskaya*, No 11, 1972, pp 2549-2554

esters and sodium salts of DL-valine, acylated by the para and meta-amino-phenylalkanes acids containing diethylenediimidophosphoryl groups were obtained. The experimental procedures and results are described, and the physical and chemical properties of the compounds are tabulated.

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USSR

UDC 547.26'118 + 541.127

NEYMYSHEVA, A. A., YERMOLAYEVA, M. V., and KNUNYANTS, I. L.

"Nucleophilic Substitution in Series of Phosphorus Acid Derivatives.  
IV. Kinetics of Hydrolysis of Chlorophosphonates"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 4, Apr 70, pp 798-803

Abstract: As is known, the rate of hydrolysis declines in the transition from dialkylphosphinic acid chlorides to chlorophosphonates. Using the conductometric method, the authors made a detailed kinetic study of the hydrolysis of chlorophosphonates. A comparison of the reactivity of the dialkylphosphinic acid  $R(R'CH_2)POCl$  and the chlorophosphonates  $R(R'O)POCl$ , where R and R' are identical substituents, showed that the decline in the reaction rate is of a regular character. The decline is due to the presence of  $p_{\pi}-d_{\pi}$  conjugation of the oxygen atom of the alkoxy group, which can be judged from the spectral characteristics of the substances. The mesomeric influence of the alkoxy group depends on the nature of other substituents at the phosphorus atom.

1/1

Communications

USSR

UDC 621.396.2:621.371.1(088.8)

KNYAZEV, A. D.

"Radio Telephone Communications Line"

USSR Author's Certificate No 270010, Filed 30 May 68, Published 31 Aug 70 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4A21SP)

Translation: A radio telephone communications line containing a modulating signal source, amplitude limiters and a modulator on the transmitting side is proposed. The line is distinguished by the fact that in order to lower the level of the extraband emissions, series-connected auxiliary amplitude modulator units, an autooscillator with selective amplifier and an amplitude detector are included between the output of the mentioned limiter and the modulator. The modulating signal amplitude limiter is included between the autooscillator with additional modulation with respect to amplitude and a selective amplifier tuned to the frequency of the mentioned autooscillator.

1.1

I/2 012 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--INCREASING THE EFFICIENCY OF MAINS WATER HEATING SYSTEMS -U-

AUTHOR--(04)-BELINSKIY, S.YA., GIRSHFELD, V.YA., KNYAZEV, A.M., LYUBIN,  
YE.S.

COUNTRY OF INFO--USSR

SOURCE--ELEKT. STANTSII (USSR), VOL. 41, NO. 3, P. 18-21 (1970)

DATE PUBLISHED-----70

SUBJECT AREAS--ENERGY CONVERSION (NON-PROPULSIVE), MECH., IND., CIVIL AND  
MARINE ENGR

TOPIC TAGS--THERMOELECTRIC POWER PLANT, TURBINE HEAT EXCHANGER, HEATING  
ENGINEERING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3007/0501

STEP NO--UR/0104/10/041/03/0018/0021

CIRC ACCESSION NO--AP0135964

UNCLASSIFIED



272 012

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0135964

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE VARIOUS METHODS OF CONNECTING MAINS WATER HEATERS AND ACCUMULATORS IN THERMAL ELECTRIC POWER STATIONS WITH DIFFERENT TYPES OF TURBINE EQUIPMENT ARE ANALYZED. RECOMMENDATIONS ARE GIVEN ON WAYS OF IMPROVING MAINS WATER HEATING CIRCUITS.

UNCLASSIFIED

Devices

USSR

UDC 621.372.834

KNIAZEV, B. R., ZYKOV, A. I.

"Coupling Device for Cryogenic Microwave Resonators"

Moscow, Pribory i Tekhnika Eksperimenta, No 5, 1972, pp 242-243

Abstract: A description is presented of a coupling device for a transmitting line with a microwave resonator cooled to low-temperatures which permits it to be installed at any point of difficult access on the surface of the resonator and adjustment of the coupling. The coupling element is shifted in the resonator cavity by changing the gas pressure in the device. The device can also be used for introducing the investigated specimens and frequency control elements into the resonator cavity.

1/1

Acc. Nr: **AP0034108**

Abstracting Service:  
CHEMICAL ABST. 4-70

Ref. Code:  
**WR 0079**

**K**

71109g Kinetics of germanium(IV) iodide hydrolysis. ~~Kava-~~  
~~zey, E. A. Klebanov, M. S. (Krasnodar. Politekh. Inst., Kras-~~  
~~nodar, USSR). Zh. Neorg. Khim. 1970, 15(1), 20-2 (Russ).~~  
 The hydrolysis of GeI<sub>4</sub> is a diffusion controlled reaction and its  
 rate increases with stirring of reaction mixt. up to a max. of  $3.7 \times$   
 $10^{-7}$  g mole/cm<sup>2</sup> sec at 18.3 revolutions per sec. At up to 18.3  
 revolutions per sec, the rate depends on the diffusion of the  
 hydrolysis products. The apparent activation energy at <33  
 revolutions per sec is 2.32 kcal/mole. HMJR ]

+

18 di

REEL/FRAME

19710751

1/2 022 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--EXTRAPANCREATIC DISEASES IN PATIENTS WITH CHRONIC PANCREATITIS -U-  
AUTHOR--(02)--SAVOGHALENKO, I.S., KNYAZEV, I.I. K  
COUNTRY OF INFO--USSR  
SOURCE--TERAPEVTICHESKIY ARKHIV, 1970, VOL 42, NR 6, PP 88-91  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--PANCREATITIS, DUODENUM, CARDIOVASCULAR SYSTEM, BLOOD  
COAGULATION, PATHOLOGY  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3002/1920 STEP NO--UR/0504/70/042/006/0088/0091  
CIRC ACCESSION NO--AP0129269  
UNCLASSIFIED