L 44002-66 EWP(d)/EWT(l)/EWP(v)/EWP(k)/EWP(h)/EWP(l)

ACC NR: AP6029946 SOURCE CODE: UR/0413/66/000/015/0111/0111

INVENTOR: Artemenko, I. A.; Voytovich, I. D.; Kan, Ya. S.; Rakhubovskiy, V. A.

ORG: none

TITLE: A counter based on cryotrons. Class 42, No. 184525 [announced by the Institute of Cybernetics, AN SSSR (Institut kibernetiki AN SSSR); Physicotechnical Institute, AN SSSR (Fizikotekhnicheskiy institut AN SSSR)]

SOURCE: Izobret prom obraz tov zn, no. 15, 1966, 111

TOPIC TAGS: pulse counter, cryogenic circuit

ABSTRACT: A cryotron pulse counter consisting of a control, memory, starting, and an input circuit is described. The memory circuit (see Fig. 1) contains two cryotrons

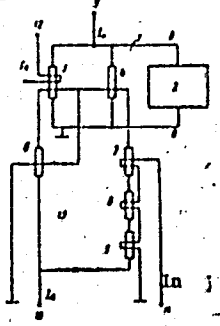


Fig. 1. A cryotron counter

1 - Memory circuit; 2 - cryotron generator; 3-8 - cryotrons; 9-12 - terminals; 13 - control circuit.

Card 1/2 UDC: 681.142.07

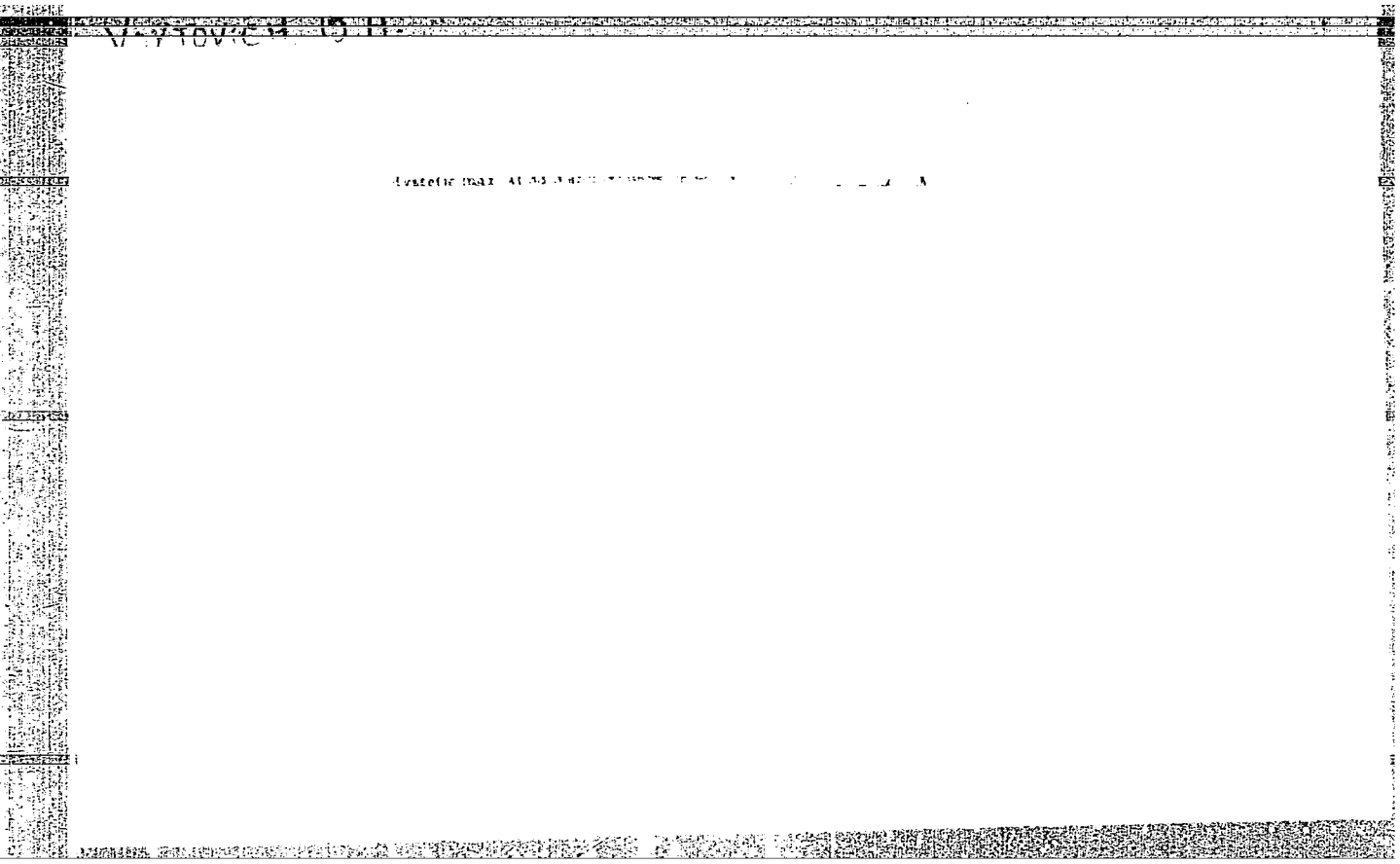
L 44002-66

ACC NR: AP6029946

connected in parallel to the superconducting circuit containing the cryotron generator control coil and to the current source from the starter circuit. The control circuit has two parallel arms, each containing a control coil for the memory circuit cryotrons. One of these branches also includes a cryotron whose control coil is connected between a current source and the control circuit. The other branch consists of a group of cryotrons with a common control coil which serves as the counter input terminal. This arrangement achieves economy and assures that the counter is able to operate as an accumulator. Orig. art. has: 1 figure. [BD]

SUB CODE: 09/ SUBM DATE: 25Mar64/ ATD PRESS: 5070

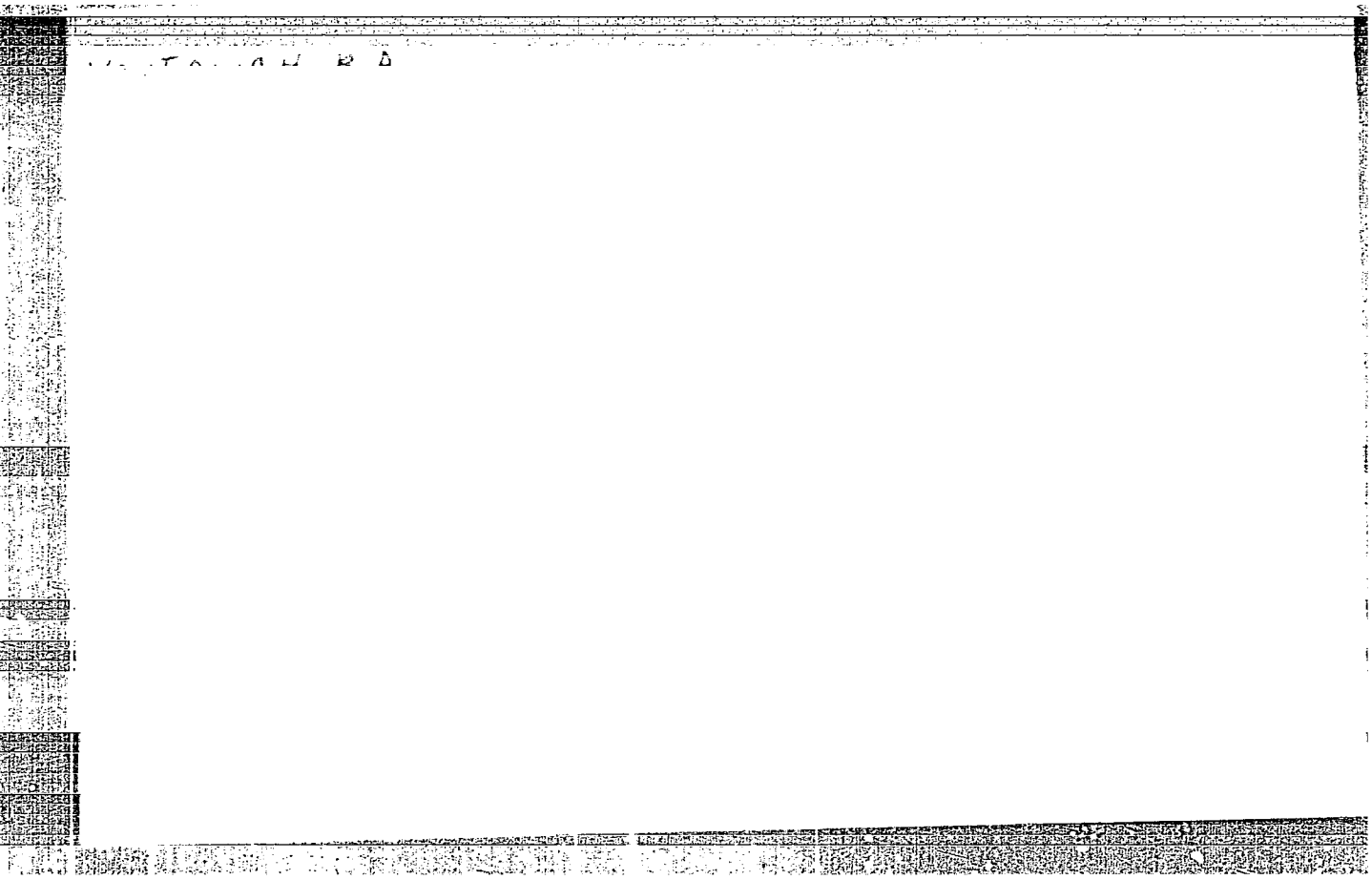
Card 2/2 blg



VOYTOVICh, B. A. Cand Chem Sci -- (diss) "Physico-chemical ~~research on~~ study of systems of tetrachlorides of zirconium and hafnium with methyl alcohol and phosphorus oxychloride" Kiev, ~~1957~~ 1957. 13 pp 21 cm. (Acad Sci Ukrainian SSR . Institute of General and Inorganic Chemistry), 100 copies

(KL, 20-57, 81-82)

9



Voytovich, B.A.

AUTHORS: Sheka, I.A., and Voytovich (Voytovych), B. A. 21-6-8/22

TITLE: Physico-Chemical Investigations of the Systems: Tetrachlorides of Zirconium and Hafnium with Methyl Alcohol (Fiziko-khimicheskiye issledovaniya sistem: tetrakhloridy tsirkoniya i gafniya s metilovym spirtom)

PERIODICAL: Dopovidi Akademii Nauk Ukrains'koi RSR, 1957, No 6, pp 566-568 (USSR)

ABSTRACT: Among the numerous methods of separating zirconium from hafnium the adsorption method is especially recommended. This method is based on the selective adsorption of hafnium by the silica gel from the solutions of zirconium and hafnium tetrachlorides and hafnium in the methyl alcohol. The viscosity of solutions plays an important part in separating zirconium and hafnium by the adsorption method. The obtained results indicate that the most favorable conditions for separation zirconium and hafnium by this method occur at the concentration of their tetrachlorides in the methyl alcohol amounting to 20 to 24%. Next the problem of alcoholysis was investigated. It turned out that the degree of alcoholysis considerably increases with temperature rise: at 40° C the alcoholysis amounts to 50% (instead of 33% at 20° C for $ZrCl_4$). The study

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Physico-Chemical Investigations of the Systems: Tetrachlorides of Zirconium and Hafnium with Methyl Alcohol

of electric conductivity at various temperatures has shown that the reaction of alcoholysis is reversible. Cryoscopic investigations were carried out in order to clear up the problem of producing molecular compounds of zirconium and hafnium chlorides with methyl alcohol. The investigation has shown that the solvent has a great effect on the processes of interaction of substances dissolved in it.
The article contains 3 non-Slavic references.

ASSOCIATION: Institute of General and Inorganic Chemistry of the AN Ukrainian SSR (Instytut zahal'noi ta neorhanichnoi khimii AN URSR)

PRESENTED: By Yu.K. Delimarskiy (Delimars'kyy), Member of the AN Ukrainian SSR

SUBMITTED: 1 April 1957

AVAILABLE: Library of Congress

AUTHORS: Sheka, I.A. and Voytovich, B.A.

TITLE: Cryoscopic Investigation of the Systems $ZrCl_4$-$POCl_3$; $HfCl_4$-$POCl_3$; $ZrCl_4$-CH_3OH; $HfCl_4$-CH_3OH in Nitrobenzene. (Krioskopicheskoe Issledovanie Sistem $ZrCl_4$-$POCl_3$; $HfCl_4$-$POCl_3$; $ZrCl_4$-CH_3OH; $HfCl_4$-CH_3OH v Nitrobenzole).

PERIODICAL: "Zhurnal Neorganicheskoy Khimii" (Journal of Inorganic Chemistry), Vol.II, No.2, pp.426-433. (U.S.S.R.).

ABSTRACT: Carefully purified materials were used to study systems of zirconium or hafnium chloride with $POCl_3$ or CH_3OH in nitrobenzene by measuring deviations from additivity in the depression of the freezing point. The cryoscopic measurements were carried out in an air-tight Beckman apparatus with a platinum electromagnetic stirrer, the accuracy of the freezing point determination being + or - 0.002°C.

It was shown that zirconium and hafnium tetrachlorides and their complex compounds with methyl alcohol, $ZrCl_4 \cdot 2CH_3OH$ and $HfCl_4 \cdot 2CH_3OH$, have normal molecular weights in nitrobenzene. Determinations of electrical conductivity of the solutions of the chlorides and their complex compounds with $POCl_3$ and methyl alcohol in nitrobenzene showed the conductivity of $HfCl_4$ solutions to be somewhat higher than those of $ZrCl_4$ solutions. The existence of the complex compounds of the chlorides with 2

Card 1/2

Cryoscopic Investigation of the Systems $ZrCl_4$-$POCl_3$; $HfCl_4$-$POCl_3$; $ZrCl_4$-CH_3OH; $HfCl_4$-CH_3OH in Nitrobenzene. (Cont.)

molecules of methyl alcohol was established by cryoscopic investigations using the continuous-changes method. It was also shown that in the systems $ZrCl_4$-$POCl_3$ and $HfCl_4$-$POCl_3$ the compounds $ZrCl_4.2POCl_3$ and $ZrCl_4.POCl_3$, $HfCl_4.2POCl_3$ and $HfCl_4.POCl_3$, are respectively present simultaneously. Calculations of the instability constants were made for the complex compounds $ZrCl_4.2POCl_3$ and $HfCl_4.2POCl_3$ for their decomposition into $MeCl_4.POCl_3$ and phosphorus oxic chloride: values obtained were 6.2×10^{-3} and 5.3×10^{-3}, respectively. The first value is in good agreement with the data of Larsen, Layton and Wittenberg, the latter value is somewhat higher than that obtained by these authors.

There are thirtysix references, twenty-two of them Russian.

There are six Tables, four Figures.

Ref. 7 quoted is E.M.Larsen, Layton, J.Wittenberg, J.Amer.Chem. Soc., vol.77,5850, 1955.

The work was carried out at the General and Inorganic Chemistry Institute of the Academy of Sciences of the Ukrainian SSR.
Received 3 November, 1956.

Card 3/3

Voytovich, B. A.

78-3-28/35

AUTHORS: Sheka, I. A. and Voytovich, B. A.

TITLE: Certain electro-chemical properties of the systems $ZrCl_4$-CH_3OH and $HfCl_4$-CH_3OH. (Nekotoryye elektrokhimicheskiye svoystva sistem $ZrCl_4$-CH_3OH i $HfCl_4$-CH_3OH)

PERIODICAL: Zhurnal Neorganicheskoy Khimii, 1957, Vol.II, Nr.3, pp. 676-684 (USSR)

ABSTRACT: The electric conductivity and the transfer of ions was studied in the systems $ZrCl_4$-CH_3OH and $HfCl_4$-CH_3OH. For elucidating the role of HCl in electro-chemical processes taking place in methanol solutions of $ZrCl_4$ and $HfCl_4$, the electric conductivity was measured of the solutions of $ZrCl_4$ and $HfCl_4$ in methyl alcohol and also of solutions from which HCl, forming during the process of interaction of the components, was eliminated. The specific and molecular electric conductivity of zirconium and hafnium tetra-

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Certain electro-chemical properties of the systems $ZrCl_4$-CH_3OH and $HfCl_4$-CH_3OH.

chlorides in methyl alcohol was determined and it was established that the conductivities of concentrated $ZrCl_4$ solutions are somewhat higher than the conductivities of $HfCl_4$ solutions. It was found that the electric conductivity of zirconium and hafnium chlorides is caused fundamentally by the HCl which forms as a result of solvolysis of these chlorides. Depending on the concentrations of the zirconium and hafnium chlorides in the solution, mono- and bi-substituted metoxyl chlorides will form. In concentrated methanol solutions the degree of alcoholysis of zirconium tetrachloride is larger than for hafnium tetrachloride, whilst in diluted solutions it is smaller. The transfer of ions in the system $ZrCl_4$-CH_3OH was studied. On the basis of the obtained results the assumption is expressed that $ZrCl_5^-$, $ZrCl_6^{2-}$, $ZrCl_5CH_3O^{2-}$ are anions;

78-3-28/35

Certain electro-chemical properties of the systems $ZrCl_4$-CH_3OH and $HfCl_4$-CH_3OH.

in diluted solutions the hydrogen ions act as cations, whilst in concentrated solutions the cations are complex, for instance, $ZrCl_3^+.nCH_3OH$, $ZrCl_2^{2+}.mCH_3OH$.

There are 7 figures, 8 tables and 15 references, 5 of which are Slavic.

ASSOCIATION: Institute of General and Inorganic Chemistry, Ukrainian Ac. Sc. (Institut Obshchey i Neorganicheskoy Khimii AN Ukr SSR).

SUBMITTED: November 26, 1956.

AVAILABLE: Library of Congress.

Card 3/3

VOYTOVICH, B. A.

AUTHORS: Sheka, I.A. and Voytovich, B.A. 73-2-3/22

TITLE: Physico-chemical study of $ZrCl_4$ and $HfCl_4$ in Methyl Alcohol. (Fiziko-khimicheskoye issledovaniye rastvorov $ZrCl_4$ and $HfCl_4$ v metilovom spirte).

PERIODICAL: "Ukrainskiy Khimicheskiy Zhurnal" (Ukrainian Journal of Chemistry), Vol.23, No.2, March-April, 1957, pp.152 - 158 (USSR).

ABSTRACT: The physico-chemical properties of the above compounds in methyl alcohol have not been investigated previously although they are of great practical importance. R.S.Hansen et al.(Ref.2: R.S.Hansen, K.Gunnar, A.Jacobs, C.R.Simmons; J.Amer.Chem.Soc.,1950, 72,5043) concluded that in 1 mole of a $ZrCl_4$ solution in methyl alcohol approximately 30% zirconium occurs as methoxy-trichloride of zirconium. On investigating the physico-chemical properties of $ZrCl_4$ and $HfCl_4$ it was found that the density of the solutions depends on the concentration and the temperature of the solution. The viscosity of the solutions was defined and found to be equal for both solutions at identical molar concentration. The viscosity did not change after repeated heating. At a temperature of 20 C and at concentrations varying between 12 - 44%

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Physico-chemical study of $ZrCl_4$ and $HfCl_4$ in Methyl Alcohol. (Cont.)

methoxy-trichlorides of zirconium and hafnium are formed when the 2 compounds are treated with a defined quantity of HCl. An increase in temperature causes alcoholysis. Methoxy-dichlorides of zirconium and hafnium are formed on heating up to approximately 100 C and repeated distillation of methanol and HCl. The degree of alcoholysis of $ZrCl_4$ was found to be higher than for $HfCl_4$ within the limits of concentration given (12 - 44%). Isotherms of density for both compounds were plotted as well as the specific volumes (Diagrams 2 and 3). It can be seen that the isotherms of the density of the solutions show a slight curvature towards the axis. Values for the viscosity and the density of the solutions are tabulated in Tables 1 and 2.

Card 2/3 There are 4 diagrams, 4 tables and 1 drawing. There are 13 references, 3 of which are Slavic.

73-2-3/22

Physico-chemical study of $ZrCl_4$ and $HfCl_4$ in Methyl Alcohol. (Cont.)

SUBMITTED: 24 October, 1956.

AVAILABLE: Library of Congress

Card 3/3

SOV-21-58-8-12/27

AUTHORS: Voytovich, B.A. and Sheka, I.A.

TITLE: On the Interaction of the Chlorides of Hafnium, Niobium and Tantalum with Phosphorus Chloride (O vzaimodeystvii khloridov gafniya, niobiya i tantala s khlorokis'yu fosfora)

PERIODICAL: Dopovidi Akademii nauk Ukrains'koi RSR, 1958, Nr 8, pp 849-852 (USSR)

ABSTRACT: The authors studied phase transformations in the systems $HfCl_4$ - $POCl_3$, $NbCl_5$ - $POCl_3$, $TaCl_5$ - $POCl_3$, and conducted investigations on the interaction processes of the chlorides of hafnium, niobium and tantalum with phosphorus chloride in nitrobenzene and benzene by the cryoscopic method. The formation of the compounds $HfCl_4.2POCl_3$; $HfCl_4.POCl_3$; $NbCl_5.POCl_3$ and $TaCl_5.POCl_3$ is proved. On the other hand, the composition of hafnium and zirconium chloride compounds with phosphorus chloride, cited by van Arkel and de Boer (Ref. 1) and also by Gruen and Katz (Ref. 2), was not confirmed by the present experiments. The authors have established the following regularity: the thermal stability of compounds of tetrachlorides of the elements belonging to the titanium subgroup and niobium and tantalum with phosphorus oxychloride, rises with the increasing atomic number of the element. The

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On the Interaction of the Chlorides of Hafnium, Niobium and Tantalum with Phosphorus Chloride

inactivity of silicon tetrachloride in the reactions with phosphorus oxychloride was noticed previously by V.V. Udovenko and Yu.Ya. Fialkov (Ref. 13).
There is 1 graph, 2 tables and 13 references, 8 of which are Soviet, 1 German, 3 American and 1 Dutch.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii AN UkrSSR (Institute of General and Inorganic Chemistry of the AS UkrSSR)

PRESENTED: By Member of the AS UkrSSR, Yu.K. Delimarskiy

SUBMITTED: March 17, 1958

NOTE: Russian title and Russian names of individuals and institutions appearing in this article have been used in the transliteration.

1. Chlorides--Transformations 2. Chlorides--Phase studies
3. Chlorides--Chemical reactions

AUTHORS: Sheka, I. A., Voytovich, B. A. SOV/78-3-8-43/48

TITLE: On the Compounds Between Hafnium Tetrachloride and Phosphorus Oxychloride (O soyedineniyakh chetyrekhkhloristogo gafniya fosfora s khlorokis'yu fosfora)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1958, Vol. 3, Nr 8, pp. 1973-1976 (USSR)

ABSTRACT: The fusion diagrams of the system $HfCl_4$-$POCl_3$ were investigated. This system is analogous to the system zirconium tetrachloride phosphorus oxychloride. Solutions containing 0-38 mole% $HfCl_4$ were well crystallized. The solutions containing 40-65 mole% $HfCl_4$ tend to considerable undercool; in such solutions crystallizations occur only after a long storing of the solution (at a temperature by 15-20°C lower than the melting temperature). The fusion diagrams of the system $HfCl_4$-$POCl_3$ are investigated within the range 0-77,7 mole%, i.e. in such concentration ranges within which the formation of complex compounds is possible. The thermal analysis of the system showed that in the fusion diagram two distectics and three eutectics occur. The presence

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On the Compounds Between Hafnium Tetrachloride and Phosphorus Oxychloride

of two distectic maxima was found in correspondence with the compounds with the following formula: $HfCl_4 \cdot 2POCl_3$ and $HfCl_4 \cdot POCl_3$, having the following melting temperature: 198,3 and 221,8°C. The clear maxima prove that those compounds at their melting temperatures have a comparatively high stability. The thermal properties of the system $HfCl_4$-$POCl_3$ are analogous to those of the system $ZrCl_4$-$POCl_3$; there is only the difference that the liquidus curve of the system $HfCl_4$-$POCl_3$ is higher than that of the system $ZrCl_4$-$POCl_3$. The results obtained show that the compound $3\ HfCl_4 \cdot 2\ POCl_3$ mentioned in papers does not occur. There are 1 figure, 2 tables, and 10 references, 5 of which are Soviet.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii Akademii nauk USSR (Institute of General and Inorganic Chemistry, AS UkrSSR)

5 (2)
AUTHORS: Sheka, I. A., Voytovich, B. A., Nisel'son, L. A.

SOV/78-4-8-16/43

TITLE: On Compounds of Pentachlorides of Niobium and Tantalum With Phosphoroxychloride (O soyedineniyakh pentakhloridov niobiya i tantala s khlorokis'yu fosfora)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 8, pp 1803 - 1808 (USSR)

ABSTRACT: The investigation of the systems $NbCl_5$ - $POCl_3$ and $TaCl_5$ - $POCl_3$ is of practical importance since the distillable reaction products of these systems may be used for the separation and the purification of tantalum and niobium by rectification (Ref 1). The phase equilibria crystal - liquid and liquid-vapor were investigated. In contrast to the phosphoroxy chloride compounds of $ZrCl_4$ and $HfCl_4$ which are characterized by a strong cooling, $NbCl_5 \cdot POCl_3$ and $TaCl_5 \cdot POCl_3$ crystallize well. Both systems form monomolecular, thermally easily dissociable compounds in agreement with reference 2. The melting temperature of $NbCl_5 \cdot POCl_3$ is 124.5°, that of $TaCl_5 \cdot POCl_3$ 132.4°. The

Card 1/2

liquidus curve of the tantalum system is higher than that of the niobium system. The investigation of the phase equilibrium liquid - vapor showed maxima at a ratio $NbCl_5:POCl_3$ = 1.47:1 and $TaCl_5:POCl_3$ = 1.17:1 (Table 4, Figs 1,2). The maxima do, therefore, not correspond to the composition of chemical compounds. This is characteristic of azeotropic mixtures. The heats of solution of $NbCl_5 \cdot POCl_3$ and $TaCl_5 \cdot POCl_3$ are approximately 3.3 kcal/mol. There are 5 figures, 5 tables, and 3 Soviet references.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii AN USSR (Institute of General and Inorganic Chemistry of the AS UkrSSR). Moscovskiy institut tsvetnykh metallov i zolota im. M. I. Kalinina (Moscow Institute of Non-ferrous Metals and Gold imeni M. I. Kalinin)

SUBMITTED: April 20, 1958

S/078/60/005/009/004/017
B015/B064

AUTHOR: Voytovich, B. A.

TITLE: Influence of the Solvent Exerted on the Stability of the Compounds of the Titanium-, Zirconium-, and Hafnium Chlorides With Phosphorus Oxychloride

PERIODICAL: Zhurnal neorganicheskoy khimii, 1960, Vol. 5, No. 9, pp. 1981-1986

TEXT: In view of the physical and chemical properties of Ti, Zr, and Hf, the stability of the molecular compounds of their chlorides should rise with other substances from Ti to Hf. This was already found on the melting point of the compounds $MeCl_4 \cdot 2POCl_3$ and $MeCl_4 \cdot POCl_3$ (Refs. 1-4) (Table 1). The present investigation deals with corresponding experiments made on $TiCl_4 \cdot 2POCl_3$ and $TiCl_4 \cdot POCl_3$ in nitrobenzene as solvent. The stability of the respective Zr- and Hf salts has already been investigated (Refs. 5, 6). First, the components $TiCl_4$ and $POCl_3$ were examined in nitrobenzene. $TiCl_4$ and $POCl_3$ do not change their molecular weight with the concentration

Influence of the Solvent Exerted on the Stability of the Compounds of the Titanium-, Zirconium-, and Hafnium Chlorides With Phosphorus Oxychloride

S/078/60/005/009/004/011
B015/B064

(Table 2) in nitrobenzene, and the electrical conductivity of the solutions is very low (Table 3). Accordingly, neither an association, nor a considerable dissociation takes place so that it was possible to study the stability of $TiCl_4 \cdot 2POCl_3$ and $TiCl_4 \cdot POCl_3$ cryoscopically. The values of measurement (Table 4, instability constant) show that a partial dissociation takes place. A comparison with publication data (Table 5) shows that $ZrCl_4 \cdot POCl_3$ and $HfCl_4 \cdot POCl_3$ are completely stable in nitrobenzene, whereas $TiCl_4 \cdot POCl_3$ decomposes. $TiCl_4 \cdot 2POCl_3$, $ZrCl_4 \cdot 2POCl_3$, and $HfCl_4 \cdot 2POCl_3$ dissociate partly. Thus, the stability of these salts rises in the melts as well as in the solvent from titanium to hafnium. Finally, B. F. Markov is thanked for his interest. There are 2 figures, 5 tables, and 6 references: 4 Soviet, 1 US, and 1 Dutch.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii Akademii nauk USSR (Institute of General and Inorganic Chemistry of the Academy of Sciences of the UkrSSR)

SUBMITTED: June 30, 1959

Card 2/2

MARKOV, B.F.; VOYTOVICH, B.A.; VARABANOVA, A.S.

Behavior of phosphorus oxychloride toward $TiCl_4$, CCl_4, $SiCl_4$, $GeCl_4$, and $SnCl_4$. Zhur.neorg.khim. 6 no.5:1204-1210 My '61. (MIRA 14:4)

1. Institut obshchey i neorganicheskoy khimii AN USSR.

(Chlorides) (Phosphoryl chloride)

VOYTOVICH, B.A.

Phosphoryl chloride in the system containing phosphorus, antimony, and bismuth chlorides. Zhur.neorg.khim. 6 no.8:1914-1918 Ag '61. (MIRA 14:8)

1. Institut obshchey i neorganicheskoy khimii AN USSR.
(Phosphoryl chloride) (Phosphorus chloride)
(Antimony chloride) (Bismuth chloride)

VOYTOVICH, B.A.; BARABANOVA, A.S.

Effect of solvents on the stability of molecular compounds of phosphoryl chloride with aluminum, iron, niobium, tentalum, and antimony chlorides. Zhur.neorg.khim. 6 no.9:2098-2102 S '61. (MIRA 14:9)

1. Institut obshchey i neorganicheskoy khimii AN USSR.
(Phosphoryl chloride) (Chlorides)

S/078/61/006/011/009/013
B101/B147

AUTHORS: Voytovich, B. A., Barabanova, A. S., Tumanova, N. Kh.

TITLE: Interaction of sulfur monochloride with titanium tetrachloride

PERIODICAL: Zhurnal neorganicheskoy khimii, v. 6, no. 11, 1961, 2545-2549

TEXT: $TiCl_4$ obtained by reduced chlorination of slags containing titanium includes S_2Cl_2 and other impurities. To develop a physico-chemical method of purifying $TiCl_4$, the following systems were studied: $TiCl_4 - S_2Cl_2$ (I); $CCl_4 - S_2Cl_2$ (II); $SiCl_4 - S_2Cl_2$ (III); $POCl_3 - S_2Cl_2$ (IV); $VOCl_3 - S_2Cl_2$ (V); $NbCl_5 - S_2Cl_2$ (VI); $TaCl_5 - S_2Cl_2$ (VII), and $AlCl_3 - S_2Cl_2$ (VIII). (I) was found to form a eutectic containing 20 mole% of $TiCl_4$, melting point: -88°C. $\log N = f(1/T)$ is a linear function (N = molar part of $TiCl_4$; T = temperature of the liquidus). Hence, the

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heat of fusion of $TiCl_4$ is 2.05 kcal/mole. (II) represents a transition from the system of solid solutions to the eutectic system. Polymorphous conversion of CCl_4 occurs at -47°C. (III) forms a continuous series of solid solutions. (IV) forms a eutectic with 7.0 mole% of $POCl_3$, melting point: -81°C; $\log N = f(1/T)$ is a linear function yielding a heat of fusion for $POCl_3$ of 3.27 kcal/mole. (V) forms a continuous series of solid solutions. (VI) and (VII) are simple eutectic systems containing <0.1 % of $NoCl_5$ or $TaCl_5$. They melt at the same temperature as S_2Cl_2. The solubilities of the two chlorides in S_2Cl_2 which are approximately equal, increase fast as the temperature is elevated: 0.5-0.6 % at room temperature, 6-8 % at 100°C. Heat of fusion of $NbCl_5$: 8.15 kcal/mole, of $TaCl_5$: 8.4 kcal/mole. The phase diagram of system (VIII) is given in Fig. 5. $AlCl_3 \cdot 2S_2Cl_2$ with a melting point of 71°C is formed. At $AlCl_3$ concentrations of 5-30 %, the melt separates into two layers since the

above compound is poorly soluble in S_2Cl_2. B. F. Markov is thanked for his interest. There are 6 figures, 2 tables, and 8 references: 6 Soviet and 2 non-Soviet.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii AN USSR
(Institute of General and Inorganic Chemistry AS UkrSSR)

SUBMITTED: June 24, 1960

Fig. 5. Phase diagram of the system $AlCl_3 - S_2Cl_2$.

Legend: (a) mole%.

S/073/61/027/002/002/004
B101/B208

AUTHORS: Markov, B. F., Voytovich, B. A., Barabanova, A. S.

TITLE: Molecular state of compounds accompanying titanium tetrachloride

PERIODICAL: Ukrainskiy khimicheskiy zhurnal, v. 27, no. 2, 1961, 151-154

TEXT: During the preparation of $TiCl_4$ by chlorination of titanium-containing slag also chlorides of Mg, Fe, Si, V, Al etc. are formed. To purify $TiCl_4$ completely from these impurities, the molecular state of the latter and their behavior with respect to $TiCl_4$ has to be studied. A kryoscopic study has now been made of the isomolar series of VCl_4, $VOCl_3$, and $TiCl_4$ on the one hand, and of $AlCl_3$, $FeCl_3$, and $ZrCl_4$ on the other. The chlorides of Al, Fe, Zr being only little soluble in $TiCl_4$, nitrobenzene was used as solvent. It is pointed out that the results may be influenced by interaction of $C_6H_5NO_2$ with the chlorides. The initial substances were prepared as follows: 1) $FeCl_3$ by chlorination of Armco iron at 350°C, sublimation of $FeCl_3$ in an argon atmosphere; 2) VCl_4 by chlorination of V metal and distillation, first

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S/073/61/027/002/002/004
B101/B208

Molecular state ...

in the chlorine stream, then in vacuo; 3) $VOCl_3$ by chlorination of V_2O_5 in the presence of carbon, and fractional distillation of the product; 4) $ZrCl_4$ by chlorination of ZrO_2 and sublimation in the hydrogen stream at 340-350° C; 5) chemically pure $AlCl_3$ was sublimed in the presence of Al metal; 6) pure $TiCl_4$ was distilled on copper filings; 7) nitrobenzene was distilled on P_2O_5. The deviation of the freezing-point depression from the additive value was determined for the following systems: $VOCl_3$ - $AlCl_3$; $VOCl_3$ - $FeCl_3$; $VOCl_3$ - $ZrCl_4$; VCl_4 - $AlCl_3$; VCl_4 - $FeCl_3$; VCl_4 - $ZrCl_4$; $TiCl_4$ - $AlCl_3$; $TiCl_4$ - $FeCl_3$; and $TiCl_4$ - $ZrCl_4$. The molecular state of the chlorides in nitrobenzene had previously been studied by determining the molecular weight. It is known from publications that the molecular weights of $TiCl_4$ and $ZrCl_4$ in nitrobenzene agree with the theoretical values. The same was found for $VOCl_3$. In the case of VCl_4, partial dissociation occurs when changing the concentration from 0.348-0.0347 mole/kg, the molecular weight varies continuously from 188.2 to 177.2 (theoretical value 192.78).

Card 2/5

Molecular state ...

Table 1 presents data for $AlCl_3$ and $FeCl_3$. In order to determine the electrolytic dissociation of the chlorides in nitrobenzene, the electrical conductivity of their solutions was measured at 25°C (Table 2). $TiCl_4$ in nitrobenzene has a conductivity of the order of 10^{-5} $ohm^{-1} \cdot cm^{-1}$, according to publications. In all systems studied here, the kryoscopic investigation of the isomolar series (concentration: 0.05-0.07 mole/kg) showed no deviations of the freezing-point from the additive value, which were beyond the error in measurement. It may be concluded therefrom that in nitrobenzene, the chlorides of vanadium form no compounds with those of Al, Fe, and Zr. There are 3 tables and 16 references: 9 Soviet-bloc and 7 non-Soviet-bloc. The 2 most recent references to English-language publications read as follows: H. Nishida, K. Oyama, J. Chem. Soc. Japan, Ind. Chem. Soc., 60, 1434, (1957); V. V. Dadape, M. R. A. Rao, J. Amer. Chem. Soc., 77, 6192 (1955).

ASSOCIATION: Institut obshchey i neorganicheskoy khimii AN USSR (Institute of General and Inorganic Chemistry, AS UkrSSR)

SUBMITTED: July 2, 1959

Card 3/5

VOYTOVICH, B.A.

Molecular state of certain compounds accompanying titanium tetrachloride. Titan i ego splavy no.5:188-194 '61. (MIRA 15:2)
(Chlorides) (Cryoscopy)

S/073/61/027/005/001/004
B103/B101

AUTHORS: Markov, B. F., Voytovich, B. A., Barabanova, A. S.

TITLE: Interaction of compounds accompanying titanium tetrachloride. II. Vanadium compounds

PERIODICAL: Ukrainskiy khimicheskiy zhurnal, v. 27, no. 5, 1961, 580-584

TEXT: The authors continued their studies on the physicochemical conditions of purifying $TiCl_4$ (Ukr. khim. zh., 27, 151 (1961)). Chlorination of titanium-containing slags yields, in addition to $TiCl_4$, vanadium chlorides (mainly oxychloride) which are completely soluble in $TiCl_4$. In order to explain the interaction of $VOCl_3$ with chlorides of various metals, as well as with $POCl_3$ and CrO_2Cl_2, the following binary systems were subjected to thermal analysis: $VOCl_3$ - $AlCl_3$; $VOCl_3$ - $SiCl_4$ ($POCl_3$, CrO_2Cl_2); $VOCl_3$ - $NbCl_5$ ($TaCl_5$). Sealed Stepanov ampuls were used for this purpose [Abstracter's note: Ampul not defined], since the substances used

readily hydrolyze. Melting points were measured on a Chromel-Alumel thermocouple by taking heating curves on a selfrecording Kurnakov pyrometer. It was found that $VOCl_3$ forms the compound with $POCl_3$: $VOCl_3 \cdot 2POCl_3$; and VCl_4 forms the compound: $VCl_4 \cdot 2POCl_3$. VCl_4 forms a continuous series of solid solutions with $SiCl_4$. The phase diagrams of the systems of $VOCl_3$ with $AlCl_3$, $NbCl_5$, and $TaCl_5$ are eutectic. This also holds for the systems VCl_4 - $POCl_3$ ($SiCl_4$). The systems $VOCl_3$ - $SiCl_4$ and $VOCl_3$ - CrO_2Cl_2 proved to be transition systems between continuous solid solutions and the eutectic. Calculation by Schroeder's equation confirmed that aluminum chloride in the $VOCl_3$ - $AlCl_3$ melt has the form of Al_2Cl_6. There are 5 figures, 3 tables, and 7 references: 4 Soviet and 3 non-Soviet. The three references to English-language publications read as follows: J. C. Scheldon, S. Y. Teree, J. Amer. Chem. Soc., 81, 2290 (1959); R. L. Harris, R. E. Wood, H. L. Ritter, J. Amer. Chem. Soc., 73, 3151 (1951); H. Nishida, K. Oyama, J. Chem. Soc., Japan Ind. Chem.

Interaction of compounds... S/073/61/027/005/001/004
B103/B101

Soc., 60, 1434 (1957).

ASSOCIATION: Institut obshchey i neorganicheskoy khimii AN USSR
(Institute of General and Inorganic Chemistry AS UkrSSR)

SUBMITTED: July 16, 1960

Card 3/3

33279
S/078/62/007/002/006/019
B119/B110

5.4210 1087

AUTHORS: Nisel'son, L. A., Voytovich, B. A.

TITLE: The $SiCl_4$ - $POCl_3$ - BCl_3 system

PERIODICAL: Zhurnal neorganicheskoy khimii, v. 7, no. 2, 1962, 360 - 363

TEXT: The equilibria between crystalline and liquid phases and between liquid and vapor phases of the systems $POCl_3$ - BCl_3 and $SiCl_4$ - $POCl_3$ - BCl_3 were studied. The methods are described by the first author in Zh. neorg. khimii, 5, 1139 (1960); 3, 2150 (1958); and I. A. Shcheka et al., 1, 964 (1956). This study is of interest for obtaining purest Si. Results: BCl_3 and $POCl_3$ form in solid state the compound $BCl_3 \cdot POCl_3$ which dissociates almost completely on melting (melting point 83.8°C). (The equation of A. B. Mlodzeyevskiy and O. A. Yesin can be used for calculating the dissociation constant immediately above the melting point.) The heat of solution of $BCl_3 \cdot POCl_3$ in $SiCl_4$ is 4.6 kcal/mole. When dissolved in $SiCl_4$, the compound is totally dissociated (in BCl_3 and $POCl_3$). The

Card 1/2

33279
S/078/62/007/002/006/019
B119/B110

The $SiCl_4$ - $POCl_3$ - BCl_3 system

simultaneous presence of small BCl_3 and $POCl_3$ quantities in $SiCl_4$ has no influence on their relative volatility as to $SiCl_4$. There are 4 figures, 2 tables, and 9 references: 7 Soviet and 2 non-Soviet. The reference to the English-language publication reads as follows: A. B. Burg, M. R. Poss. J. Amer. Chem. Soc., 65, 1637 (1943).

ASSOCIATION: Gosudarstvennyy institut redkikh metallov (State Institute of Rare Metals)

SUBMITTED: December 24, 1960

Card 2/2

VOYTOVICH B.A

ACCESSION NR: AP3006956 S/0021/63/000/008/1068/1072

AUTHOR: Voytovy*ch, B. A. and Barabanova, O. S.

TITLE: On phase transformations in the systems $TiCl_4$-$POCl_3$-$AlCl_3$ ($NbCl_5$, $TaCl_5$)

SOURCE: AN UkrSSR. Dopovidi, no. 8, 1963, 1068-1072

TOPIC TAGS: phase diagram, ternary phase diagram, phase transformation, crystallization field, TiCl sub 4, POCl sub 3, AlCl sub 3, NbCl sub 5, TaCl sub 5

ABSTRACT: Phase transformation were studied in the systems $TiCl_4$-$NbCl_5$-$POCl_3$, $TiCl_4$-$TaCl_5$-$POCl_3$ and $TiCl_4$-$AlCl_3$-$POCl_3$, and the formation is proved of the compounds $AlCl_3 \cdot POCl_3$, $2AlCl_3 \cdot 3POCl_3$, $TiCl_4$-$NbCl_5 \cdot 3POCl_3$ and $TiCl_4 \cdot TaCl_5 \cdot POCl_3$.

The phase diagrams of the systems $TiCl_4$-$NbCl_5$-$POCl_3$ and $TiCl_4$-$TaCl_5$-$POCl_3$ consist of seven crystallization fields: $Nb(Ta)Cl_5$, $Nb(Ta)Cl_5 \cdot POCl_3$, $TiCl_4$, $TiCl_4 \cdot 2POCl_3$, $TiCl_4 \cdot Nb(Ta)Cl_5 \cdot 3POCl_3$ and $POCl_3$. In the $TiCl_4$-$AlCl_3$-$POCl_3$ systems the crystallization fields are $AlCl_3$, $AlCl_3 \cdot POCl_3$, $2AlCl_3 \cdot 3POCl_3$, $TiCl_4$, $TiCl_4 \cdot POCl_3$, $TiCl_4 \cdot 2POCl_3$ and $POCl_3$.

Card 1/5

ACCESSION NR: AP3006956

The chlorides of aluminum, niobium, and tantalum form more stable equimolecular compounds with phosphorus chlorate than titanium tetrachloride. This may be utilized for separating $POCl_3$ from $TiCl_4$.

Phase (transformation) diagrams for the three systems are given in Figures 1-3 of Enclosures 1-3. Orig. art. has 3 figures.

ASSOCIATION: Insty*tut Zagal'noyi ta ne Organichnoyi khimiyi AN UkrSSR(Institute of General and Inorganic Chemistry, AN UkrSSR)

SUBMITTED: 14Dec62 DATE ACQ: 27Sep63 ENCL: 03

SUB CODE: CH NO REF SOV: 004 OTHER: 004

Card 2/5

VOYTOVICH, B.A. (Kiyev); ZVAGOL'SKAYA, Ye.V. (Kiyev); TUMANOVA, N.Kh. (Kiyev)

Interaction of thionyl chloride with certain impurities in commercial titanium tetrachloride. Izv. AN SSSR. Met. no.6: 46-51 N-D '65. (MIRA 19:1)

VOYTOVICH, B.A.; LOZOVSKAYA, N.F.

Thermal analysis of the ternary system $TiCl_4$ - $SbCl_5$ - $POCl_3$.
Ukr. khim. zhur. 31 no. 11:1136-1143 '65 (MIRA 19:1)

1. Institut obshchey i neorganicheskoy khimii AN UkrSSR.

BARABANOVA, A.S.; VOYTOVICH, B.A.

Reaction of aluminum chloride with phosphorus oxychloride. Zhur. neorg. khim. 9 no.12:2698-2700 D '64. (MIRA 18:2)

BARABANOVA, A.S.; VOYTOVICH, B.A.

Thermal analysis of the systems $TiCl_4$ - $SiCl_4$ - $POCl_3$ and $TiCl_4$ - $VOCl_3$ - $POCl_3$. Ukr. khim. zhur. 31 no.4:352-359 '65. (MIRA 18:5)

1. Institut obshchey i neorganicheskoy khimii AN UkrSSR.

BARABANOVA, A.S.; VOYTOVICH, B.A.

Thermal analysis of the ternary systems $AlCl_3$ - $NbCl_5$ - $POCl_3$ and $AlCl_3$ - $TaCl_5$ - $POCl_3$. Ukr. khim. zhur. 30 no.12:1298-1304 '64 (MIRA 18:2)

1. Institut obshchey i neorganicheskoy khimii AN UkrSSR.

MARKOV, B.F.; BARABANOVA, A.S.; VOYTOVICH, B.A.

Thermal analysis of the systems $TiCl_4$ - $NbCl_5$ - $POCl_3$ and $TiCl_4$ - $TaCl_5$ - $POCl_3$. Ukr. khim. zhur. 29 no.10:1035-1042 '63. (MIRA 17:1)

1. Institut obshchey i neorganicheskoy khimii AN UkrSSR.

VOYTOVICH, B.A.; BARABANOVA, A.S.

Thermal analysis of the system $TiCl_4$ - $AlCl_3$ - $POCl_3$. Ukr.khim. zhur. 29 n .12:1264-1271 '63. (MIRA 17:2)

1. Institut obshchey i neorganicheskoy khimii AN UkrSSR.

VOYTOVICH, B.A. [VOITOVYCH, B.A.]; BARARANOVA, A.S. [Barabanova, O.S.]

Phase transitions in the systems $TiCl_4$ - $POCl_3$ - $AlCl_3$ ($NbCl_5$, $TaCl_5$). Dop. AN URSR no.8:1068-1072 '63. (MIRA 16:10)

1. Institut obshchey i neorganicheskoy khimii AN UkrSSR. Predstavleno akademikom AN UkrSSR Yu.K. Delimarskim [Delimars'kyi, IU.K.].

(Systems (Chemistry)) (Salts)
(Phase rule and equilibrium)

VOYTOVICH, D. A.

VERDEREVSKIY, D. D., and VOYTOVICH, D. A. "On Spraying Vineyards (with Bordeaux Mixture) during Periods of Incubation (of Mildew)" Vinodelie i Vinogradrstvo SSSR, vol. 10, no. 6, 1950, pp. 28-32. 95.8 V77

SO: SIRA SI 90-53, 15 Dec. 1953

ACC NR: AP7002720 SOURCE CODE: UR/0237/66/000/012/0009/0012

AUTHOR: Voytovich, G. D.; Davydov, M. S.; Ivanov, A. I.; Tikhomirov, G. P.

ORG: none

TITLE: Study of the optical properties, structure, and phase composition of lead sulfide and selenide films

SOURCE: Optiko-mekhanicheskaya promyshlennost', no. 12, 1966, 9-12

TOPIC TAGS: optics, spectral absorption, lead sulfide, lead selenide, thin film, thin film optics, thin film structure, thin film phase composition, lead sulfide film, film impurity, cyanide, basic carbonate, zinc oxide, electron microscopy, electron diffraction

ABSTRACT: A study was made of the spectral absorption of thin films of lead sulfide and lead selenide obtained by precipitation from solution. The structure and phase composition of the films were investigated using electron microscopy and electron diffraction. The anomalies observed in the optical absorption curve and spectral response curve were found to characterize films containing impurity phases: cyanide, basic carbonate, and zinc oxide. It was also noted that the

UDC: 539.216.22:546.815'221'23:535

Card 1/2

ACC NR: AP7002720

coprecipitation of impurities substantially affects the crystallization of lead sulfide and lead selenide. Orig. art. has: 4 figs. and 1 table. [Translation of abstract] [SP]

SUB CODE: 20/SUBM DATE: 03Feb66/ORIG REF: 003/OTH REF: 005/

Card 2/2

VOYTOVICH, I.A.

VOYTOVICH, I.A.

On the age of the Pashi and Chib'iu strata of the southeastern Timan region. Dokl. AN SSSR 115 no.5:978-979 Ag '57. (MIRA 11:3)

1. Gosudarstvennyy soyuznyy Ukhtinskiy kombinat Ministerstva neftyanoy promyshlennosti SSSR. Predstavlano akademikom D.V. Nalivkinym.
(Timan Range--Geology, Stratigraphic)

Voytovich, I.A.

20-5-35/54

AUTHOR: Voytovich, I.A.

TITLE: On the Age of Pashi and Chib'yu Strata in the South East of the Timan Region (K voprosu o vozraste pashiyskikh i chib'yuskikh sloyev Yugo - vostochnogo Pritiman'ya)

PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol. 115, Nr 5, pp. 978-979 (USSR)

ABSTRACT: In 1951 and 1953 the core of Devonian sediments originating from several bore holes of the east slope of the Southern Timan was studied by spore- and pollen analysis. According to existing conceptions the Devonian sediments with the Chib'yu strata of the Upper Givetian sublevel of the middle Devonian begin here, which comprise the strate III, II, and IIa. Hereupon rest the Pashi strata of the "sub-fran" sublevel of the upper Devonian (I v, I b and I a), and then the Kynov- and Sargayev strata of the same sublevel. In the strata mentioned in the title spore complexes were discovered which, with respect to age, differed from the age that had been assumed for these sediments in accordance with the unified scheme. In accordance with the results of spore-pollen analysis, the age of the strata concerned cannot

Card 1/3

On the Age of Pashi and Chib'yu Strata in the South East of the Timan Region

be upper Givetian, because among the spores of the latter age there are such as were found by Naumova on the eastern slopes of the Ural, the age of this last-mentioned suite being determined as sub-Devonian Eifelian substrata. On the strength of the spore analysis the position of the Chib'yu strata with respect to the Givetian upper stage cannot be accepted for the simple reason that the forms dominating in these strata are not Givetian; in addition, the strata of the Pashi suite resting upon them, belong, according to what the author says, to the lower Givetian sublevel. Although the age of the Chib'yu stratum cannot be accurately determined according to the spore analysis, as sufficient material is not available, the author believes it to be not less than that of the lower Givetian. It is most probable that if sufficient material were available, it would be possible to solve the problem concerning the vast sedimentary mass of the Chib'yu suite with respect to the lower Devonian Eifelian.

Card 2/3

20-5-35/54

On the Age of Pashi and Chib'yu Strata in the South East of the Timan Region

ASSOCIATION: State Union Ukhta Combine of the Ministry of the Petroleum Industry of the USSR (Gosudarstvennyy soyuznyy Ukhtinskiy kombinat Ministerstva neftyanoy promyshlennosti SSSR)

PRESENTED: By D.V. Nalivkin, Academician, March 1, 1957

SUBMITTED: February 27, 1957

AVAILABLE: Library of Congress

Card 3/3

L 7220-66 EWT(d)/EWT(l)/EEC(k)-2/EPF(n)-2/T/EEC(m) IJP(c) WW

ACC NR: AP5026496 SOURCE CODE: UR/0286/65/000/019/0027/0027

INVENTOR: Voytovich, I. D.; Rakhubovskiy, V. A. 44,55 44,55

ORG: none

TITLE: Cryotron oscillator of relaxation oscillations. Class 21, No. 175088

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 19, 1965, 27

TOPIC TAGS: relaxation oscillator, cryotron, cryogenic circuit 21, 44, 55

ABSTRACT: In the proposed oscillator (see figure), the signals are picked up by a

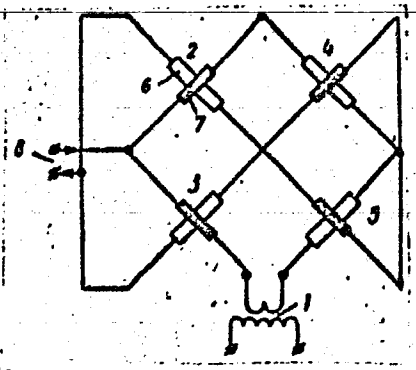

Fig. 1. Cryotron relaxation oscillator

1 - Step-up transformer; 2—5 - cryotrons; 6 - rectifier; 7 - winding; 8 - supply voltage.

Card 1/2

UDC: 621.373.431.2

L 7720-66
ACC NR: AP5026496

step-up transformer or a cryotron connected with an arm of the oscillator. To increase oscillation frequency, improve temperature sensitivity, and simplify the device, four cryotrons are used to form two stages. The feedback between the second and first stages is realized by cross connections between the output rectifiers and the input windings. A d-c supply voltage is connected between the stages. Orig. art. has: 1 figure. [DW]

SUB CODE: EC/ SUBM DATE: 06Aug62/ ATD PRESS: 4141

3/2

ARTEMENKO, I.A.; VOYTOVICH, I.D.

Reduction of penumbras in the production of thin superconducting films. Prib. i tekh. eksp. 10 no.1:224 Ja-F '65. (MIRA 18:7)

1. Institut kibernetiki AN UkrSSR.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120016-5"

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120016-5"

ACC NR: AP7006773 SOURCE CODE: UR/0102/66/000/006/0065/0069

AUTHOR: Voytovych, I. D. -- Voytovich, I. D. (Kiev-Khar'kov); Kan, Ya. S. (Kiev--Khar'kov); Rakhubovs'kyy, V. A. -- Rakhubovskiy, V. A. (Kiev-Khar'kov)

ORG: none

TITLE: Analysis of a cryotron memory circuit with many stable states

SOURCE: Avtomatyka, no. 6, 1966, 65-69

TOPIC TAGS: memory access technique, electromagnetic memory, digital system, digital analog converter, ~~cryotron circuit~~ electronic circuit

ABSTRACT: A cryotron memory cell which determines the number of pulses fed to its input by the value of the current persisting in it, was designed (see Fig. 1). In Fig. 1, K_1 and K_2 are working cryotrons; K_3 is the indicating cryotron; L_1 and L_2 are inductances of arms *abcd* and *aefd*, respectively (it is set that $L_1 = L_2 = L$); L_3 is the inductance of arm *akld*; R_1 and R_2 are resistivities of cryotron tubes K_1 and K_2 in normal state (it is set that $R_1 = R_2 = R$). The transistory processes were analyzed, and the dependence of the number of states from the mesh current $I_0^{(0)}$, when $\beta = 0.81$, $i_{cr}^{(1)} = 150$ ma, and $T = 3.6°K$ was calculated and tabulated; here,

$$\beta = \frac{L_3}{L_3 + L}.$$

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ACC NR: AP7006773

The theoretical analysis of the cell's operation is in good agreement with the experimental data. One of the suggested applications is in a cryotronic pulse counter operating as a digital-to-analog converter (converting the number of input pulses into the resistivities of the cryotron tube K_3, or its grid current). Orig. art. has: 5 formulas, 3 figures, 2 tables.

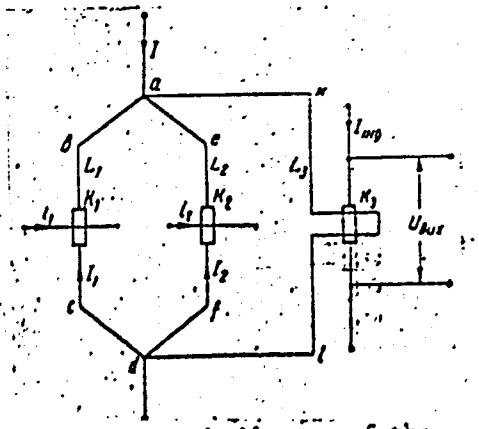
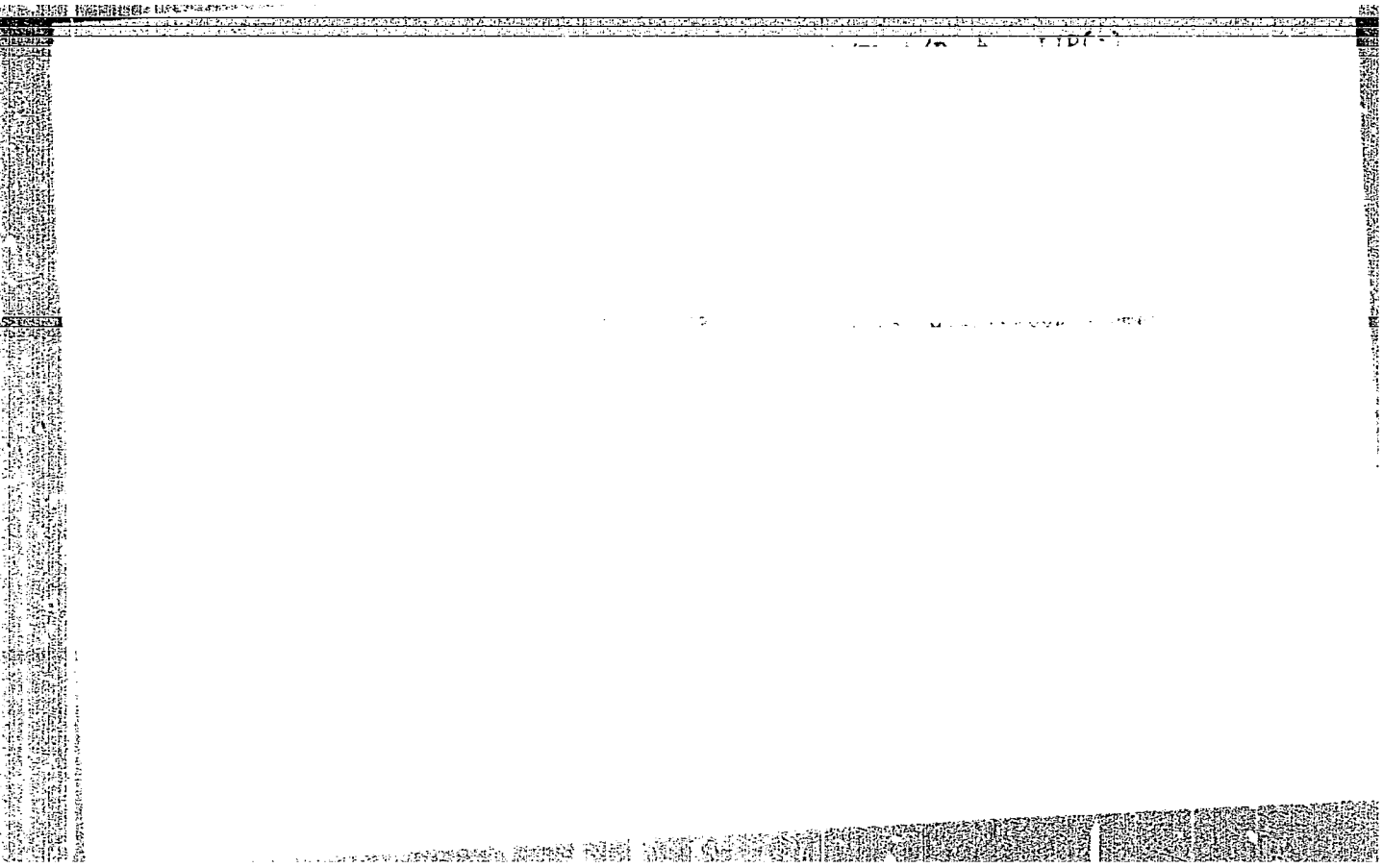


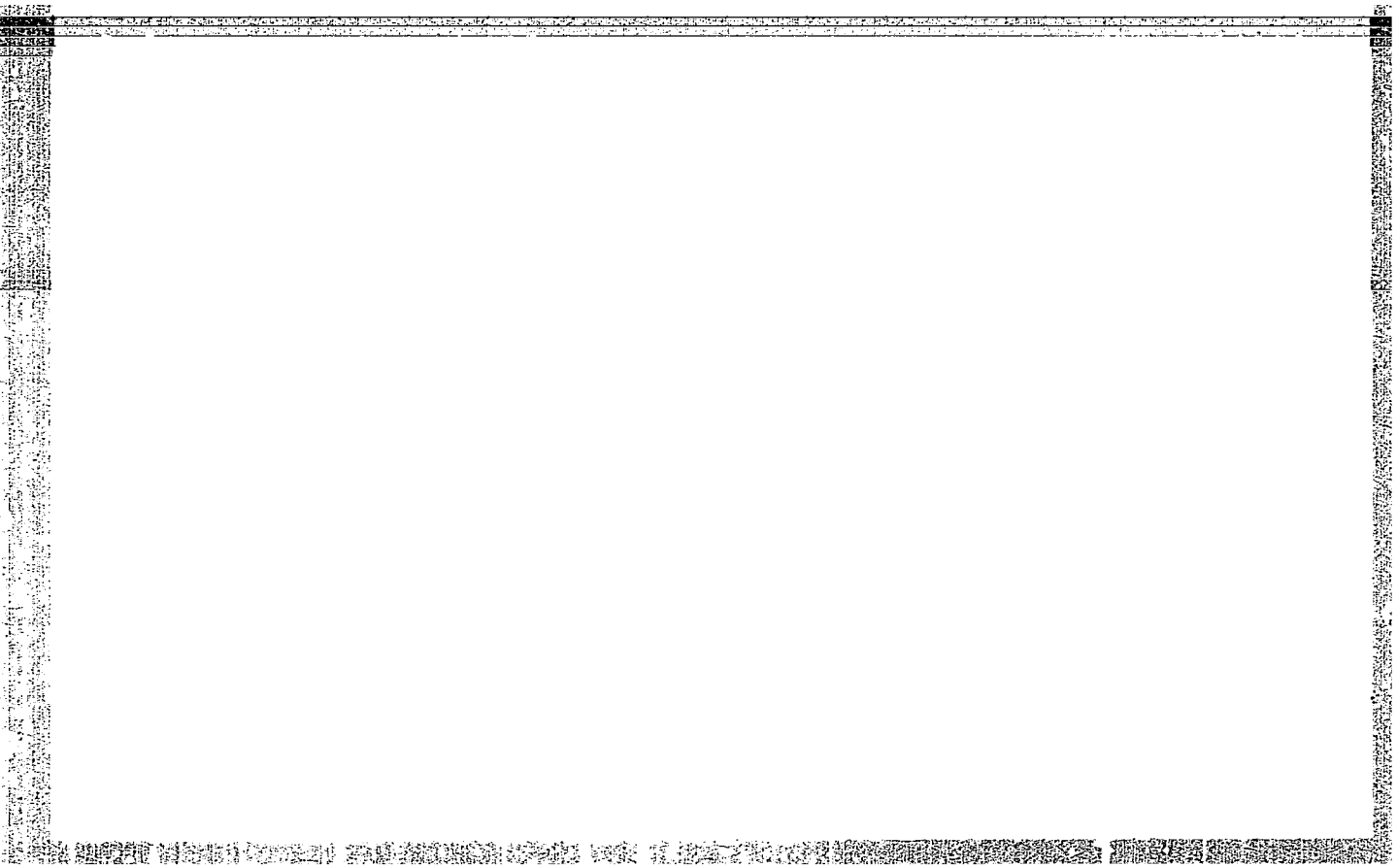
Fig. 1. Block diagram of the basic cryotron cell.

SUB CODE: 09/ SUBM DATE: 23Oct65/ ORIG REF: 001/ OTH REF: 002

Card 2/2



APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120016-5"



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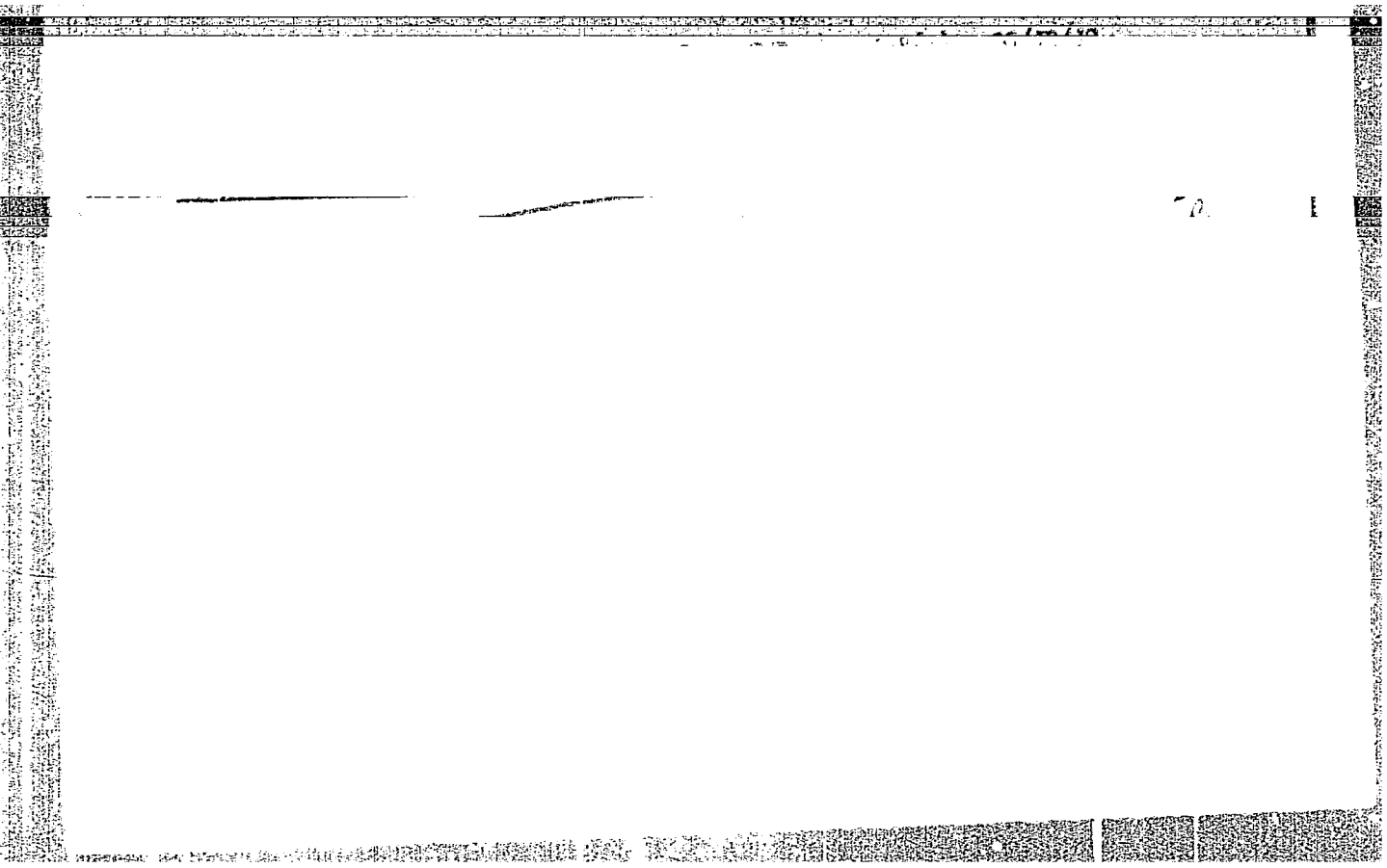

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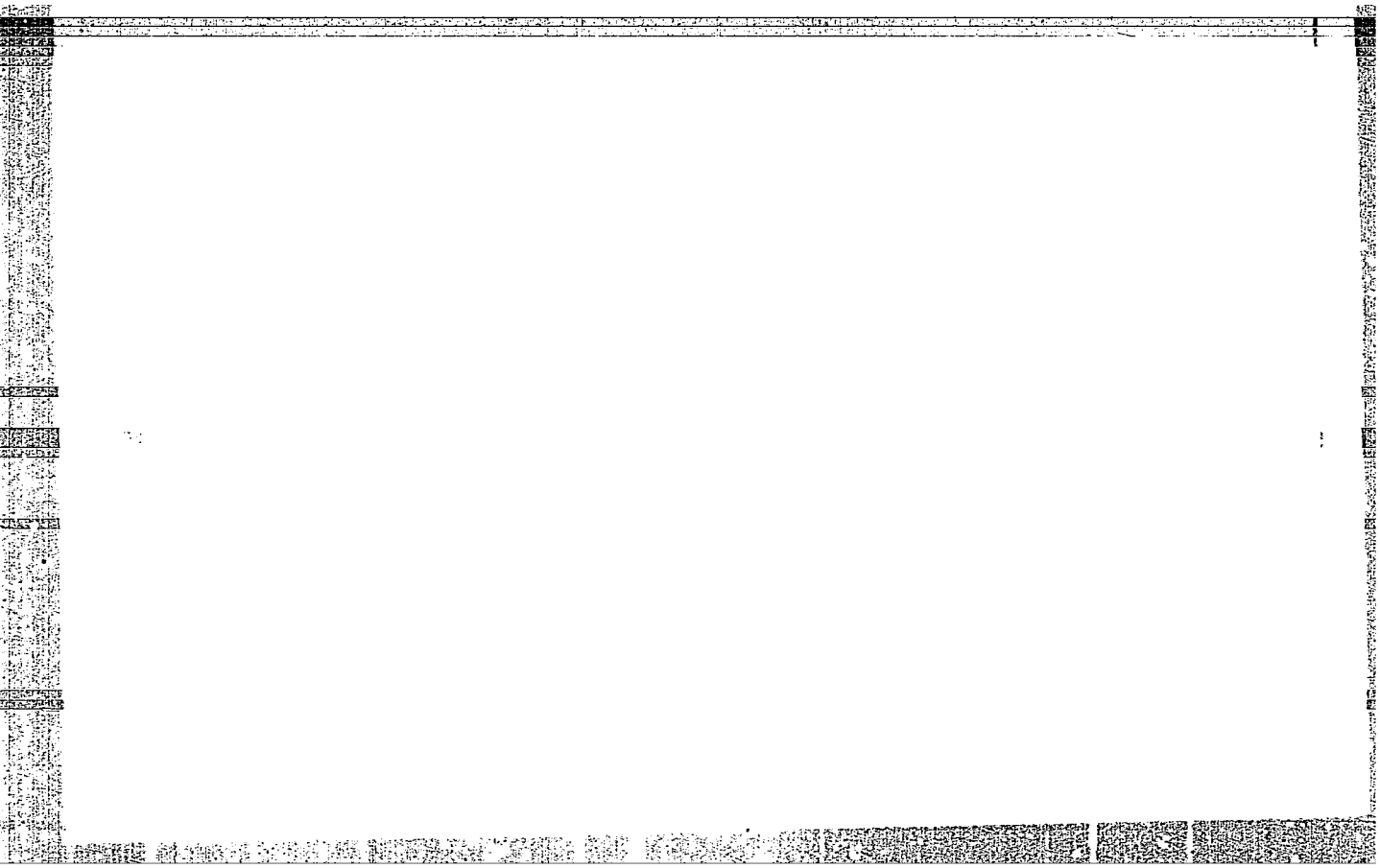

ACC NR: AP6022043 SOURCE CODE: UR/0120/66/000/003/0227/0228

AUTHOR: Artemenko, I. A.; Mikhaylov, G. A.; Voytovich, I. D.

ORG: Cybernetics Institute, AN UkrSSR, Kiev (Institut kibernetiki AN UkrSSR)

TITLE: A direct method of determining the phase characteristics of cryotrons

SOURCE: Pribory i tekhnika eksperimenta, no. 3, 1966, 227-228

TOPIC TAGS: cryogenic electronics, cryogenic storage, cryogenic device

ABSTRACT: A direct method for determining the transfer characteristics and, therefore, the amplification factor of cryotrons is described. The method uses a memory cell consisting of two cryotrons: an indicating cryotron and the cryotron under study. The transfer characteristics are recorded for constant resistance values of the cryotron filter so that differences between experimentally measured and actual values of threshold currents do not depend on the grid current. Cryotron amplification factors of 1.6 and 2.2 were experimentally found. These values of cryotron amplification factors were used to choose the minimum relationship between widths of the filter and the grid in order to decrease the operation time of the cryotron. All the measurements in liquid helium were conducted at the Khar'kov Physics Engineering Institute (Khar'kovskiy fiziko-tekhnicheskiy institut) jointly with Ya. S. Kan. Orig. art. has: 2 figures.

SUB CODE: 09,20 SUBM DATE: 21Apr65/ ORIG REF: 002/ OTH REF: 001

Card 1/1 UDC: 621.374.328.537.312.62:536.5

ARTEMENKO, I.A.; VOYTOVICH, I.D. [Voitovych, I.D.]

Superconductivity of lanthanum films. Ukr. fiz. zhur. 10 no.2: 239-240 F '65. (MIRA 18:4)

1. Institut kibernetiki AN UkrSSR, Kiyev.

VOYTOVICH, I.D.

Set coder. Avtom. i prib. no.3:29-30 Jl-S '64. (MIRA 18:3)

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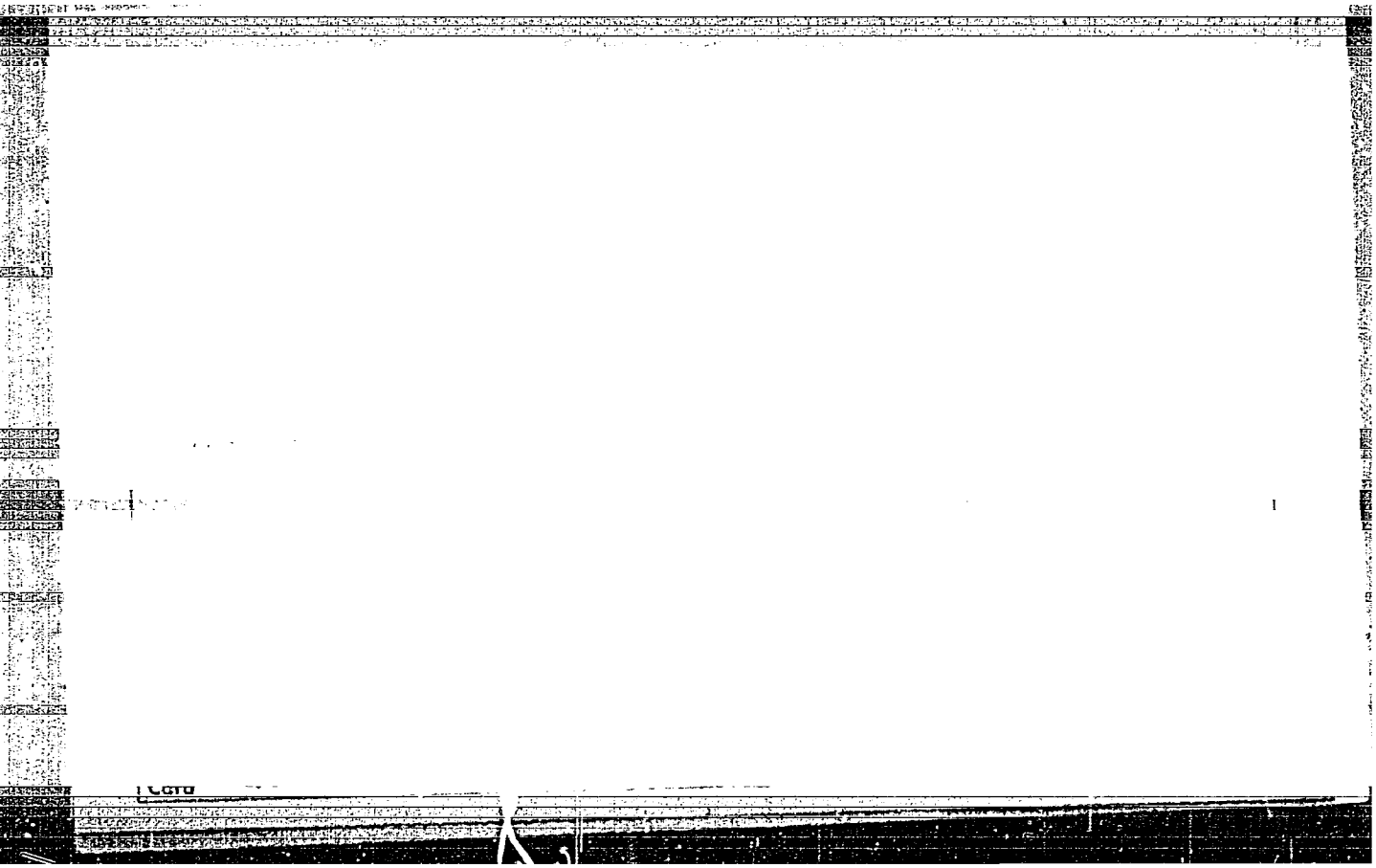

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861120016-5"

ARTEMENKO, G.A. [Artemenko, H.A.]; VOYTOVICH, I.D. [Voitovych, I.D.]; MIKHAYLOV, G.A. [Mykhailov, H.O.]

Static characteristics of film cryotrons. Ukr. fiz. zhur. 8 no.7:798-800 Jl '63. (MIRA 16:8)

1. Institut kibernetiki AN UkrSSR, Kiyev.
(Electric apparatus and appliances)

MELESHKO, V.P.; VOYTOVICH, I.M.; CHIKIN, G.A.

Ion-exchange sorption of nonsugars and coloring matter from molasses solutions. Sakh. prom. 35 no. 1:30-33 Ja '61. (MIRA 14:1)

1. Vornezhskiy sovnarkhoz.
(Molasses) (Ion exchange)

SALNIS, A.N.; VORONICH, I.N.

Unusual case of traumatic toxicosis. Ortop., travm. i protez. 26 no. 10:72-73 O '65. (MIRA 18:12)

1. Submitted March 1, 1965.

VOYTOVICH, K.; NAYDENOVA, I.; KROPIS, E.; NEDOV, P.; BONDARENKO, A.; FILATOVA, I.

Immunity of fruit plants and grapes. Zashch. rast. ot vred. i bol. 10 no.10:21-23 '65. (MIRA 18:12)

1. Moldavskiy institut sadovodstva, vinogradarstva i vinodeliya i Kishinevskiy sel'skokhozyaystvennyy institut.

USSR/Cultivated Plants - Commercial. Oil-Bearing.Sugar-Bearing. H.

Abs Jour : Ref Zhur - Biol., No 15, 1958, 44198

Author : Verderevskiy, D., Voytovich, K.
Inst : -
Title : On the Methods of Developing Cotton Varieties Resistant to Gummosis

Orig Pub : Khlopkovodstvo, 1957, No 5, 37-38.

Abstract : No abstract.

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Abs Jour : Ref Zhur - Biol., No 4, 1958, 15973

hectare) after sowing and up to the appearance of corn shoots on a big scale. When the plants were examined in the 4th -5th leaf stage, the initial blister smut infection totalled 0.27%.

VOYTOVICH, K.A., Cand Biol Sci —(diss) " Immunity of cotton to hommosis [?] and means of its practical utilization." Khar'kov, 1959. 17 pp (Min of Agr USSR. Khar'kov Order of Labor Red Banner Agr Inst im V.V. Dokuchayev), 120 copies (KL,37-59,102)

USSR / Plant Diseases. Cultivated Plants. O

Abs Jour: Ref Zhur-Biol., No 13, 1958, 58866.

Author : Vedrerevskiy, D. D.; Voytovich, K. A.
Inst : All-Union Academy of Agricultural Sciences imeni Lenin.
Title : The Application Perspectives of Chemical Means in the Control of Corn Blister Smut.

Orig Pub: Dokl. VASKhNIL, 1957, No 4, 18-22.

Abstract: In the experiments, conducted by the Moldavian Station VIZR, for the control of Ustilago zeae Unger, the use of Preparation 125 proved to be highly effective (87-89%) in the uprooting spray of the soil. For the protection of specially valuable crops, the method of spraying the plants with a 1% Bordeaux mixture, used as an addition to the uprooting spray, may be applied effectively

Card 1/2

VOYTOVICH, K.A.

USSR / Cultivated Plants. Plants for Technical Use. Oil Plants. Sugar Plants.

Abs Jour : Ref Zhur - Biol., No 8, 1958, No 34727

Author : Voiytovich, K. A.
Inst : All-Union Institute for Plant Protection.
Title : Immunity of the Cotton Plant to Gummosis.

Orig Pub : Sb. tr. Moldavsk. st. Boss. in-ta zashchity rasteniy, 1957, vyp. 2, 51-60.

Abstract : Experiments conducted during 1955 to 1956 towards immunization to gummosis of plants within the scope of work undertaken to develop fast-ripening varieties of cotton plants (611-B, OD-1, 3521-u and 6466), have shown that immunity of maternal plants is transmitted, for the most part, to the plants of the 2nd generation. In the presence of vegetative hybridization of

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Voytovich, K.A.

VERDEREVSKIY, D.D., doktor sel'skokhozyaystvennykh nauk; VOYTOVICH, K.A.

Prospects of utilizing chemical methods in controlling loose smut of corn. Dokl. Akad. sel'khoz. 22 no.4:18-22 '57. (MLRA 10:6)

1. Moldavskaya stantsiya Vsesoyuznogo instituta zashchity rasteniy.
(Smuts) (Corn (Maize)--Diseases and pests)

VERDEREVSKIY, D.D., and VOYTOVICH, K.A.

"Concerning the Times for Spraying Vineyards to Combat Mildew," Vinodeliye i Vinogradarstvo, 1950, No. 3.

Mikrobiologiya, Vol XX, No. 5, 1951. 00-W-24635.

VOYTOVICH, K. A. and VERDEREVSKIY, I. V.

"Concerning the Times for Spraying Vineyards to Combat Mildew", Vinodeliye i Vinogradarstvo, No. 3, pp 40-44, 1950.

VOYTOVICH, K. A.

"On the Perspectives of the Application of the Chemical Method of Controlling Boil Smut of Corn," by D. D. Derderevskiy, Doctor of Agricultural Sciences, and K. A. Voytovich, Doklady Vsesoyuznoy Ordena Lenina Akademii Sel'skokhozyaystvennykh Nauk Imeni V. I. Lenina, Vol 22, No 4, Apr 57, pp 18-22

Investigations were conducted to determine methods of controlling boil smut of corn -- Ustilago zeae Unger -- one of the most destructive diseases affecting corn crops in Moldavia. The investigations established that at present the most effective method of controlling the disease is to spray the soil with preparation No 125, a powerful herbicide which destroys the chlamydospores. In some cases an additional spraying with a one percent solution of Bordeaux mixture is highly effective. (U)

SUM.1374

VERDEREVSKIY, D.D.; VOYTOVICH, K.A.; NAYDENOVA, I.N.

Effect of a root mentor on the acquisition of resistance to mildew in the seeded progeny of the European grape. Agrobiologiia no.6:941-942 N-D '62. (MIRA 16:1)

1. Moldavskiy nauchno-issledovatel'skiy institut sadovodstva, vinogradarstva i vinodeliya, Kishinev.
(Grapes--Disease and pest resistance) (Mildew) (Grafting)

VOYTOVICH, K.F.

Clinical aspects and pathogenesis of monocular nystagmus. Zhur. nevr. i psikh 59 no.1:28-31 '59. (MIRA 12:3)

1. Kafedra nervnykh bolezney (zav. - prof. D.K. Bogorodinskiy) I Leningradskogo meditsinskogo instituta imeni I.P. Pavlova.
(NYSTAGMUS, case reports,
unilateral (Rus))

GRINSHTEYN, D.; VOYTOVICH, M. [Voitovych, M.]

Precast reinforced concrete in rural buildings in Transcarpathia. Sil'. bud. 13 no.2:3-5 F '62. (MIRA 16:2)

1. Predsedatel' soveta Irshavskoy mezhkolkhoznoy stroitel'noy organizatsii Zakarpatskoy oblasti (for Grinshteyn). 2. Glavnyy inzh. Irshavskoy mezhkolkhoznoy stroitel'noy organizatsii Zakarpatskoy oblasti (for Voytovich).

KOLESHKO, O.I.; SMOLYAK, L.P.; VOYTOVICH, M.K.

Activity of the micro-organisms of the nitrogen cycle in the soils of drained forest swamps. Bot.; issl. Bel. otd. VBC no.6:95-102 '64.
(MIRA 18:7)

3(4),3(2)

AUTHOR: Voytovich, N. D. SOV/6-59-10-6/21

TITLE: Desk Work by the Topographical Detachments of the Novosibirsk Aerogeodetical Organization

PERIODICAL: Geodeziya i kartografiya, 1959, Nr 10, pp 22-25 (USSR)

ABSTRACT: In the transition to large-scale mapping (1 : 10,000 to 1 : 25,000) field work and the staffs of the various detachments have considerably increased. The administration is unable to employ the entire technical personnel with office work throughout the winter. This is particularly due to want of space. On the other hand, assistance is necessary for stereotopography, mapping, and the preliminary and final compilation. Consequently, office work was done directly by the detachments. This was introduced for the first time in 1955 in five topographical detachments. 10 to 20% of the field surveyors were trained in map compilation within one year. This renewal produced satisfactory results. The author then outlines this work of the field detachments. Beginning with 1958, map compilation has been transferred exclusively to topographical detachments. In this connection, several shortcomings are indicated. Stereotopographical work has also been carried out

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Work the Topographical Detachments of the Novosibirsk Aerogeodetical Organization SOV/6-59-10-6/21

by topographical detachments since 1956-1957. In 1959, stereotopographical office work will be done by four topographical detachments. The principal disadvantage is the insufficient knowledge of the individual detachment heads concerning the methods of office work. Equal wages are requested for field and office work. Final digest: Organization of office work in field detachments has the following great advantage: regular employment of technicians in winter, improvement in the qualification of field surveyors, increase in efficiency, and reduction of production cost.

Card 2/2

VAGANOV, R.B.; VOYTOVICH, N.F.

Irregularities of a diaphragm-type beam guide. Radiotekh. i elektron. 11 no.2:339-342 F '66 (MIRA 19:2)

1. Institut radiotekhniki i elektroniki AN SSSR. Submitted April 12, 1965.

L 29208-66 EWT(1)
ACC NR: AP6008286 SOURCE CODE: UR/0109/66/011/003/0488/0494

12
11
B

AUTHOR: Voytovich, N. N.

ORG: none

TITLE: Open resonators and lines with cone-type and cone-frustum-type correctors

SOURCE: Radiotekhnika i elektronika, v. 11, no. 3, 1966, 488-494

TOPIC TAGS: resonator, lens line

ABSTRACT: The A. Fox and T. Li method (BSTJ, 1961, v. 40, no. 2, 453), which describes the field distribution and radiation loss in an open resonator by a Fredholm homogeneous integral equation of the second kind, is applied to resonators with conical and cone-frustum-shaped mirrors. Formulas are developed for the optimal parameters of such mirrors which ensure minimum

UDC: 621.372.834.001.5

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ACC NR: AP6008286

dominant-mode radiation loss. Distributions of the amplitude and phase of the dominant and first spurious modes throughout the mirrors are shown; also, one-trip radiation loss for the same modes propagating in an optimal resonator is given. The results are compared with the known results for confocal and plane-mirror resonators. The author's numerical values were obtained on a digital computer. The above formulas are also applicable to transmission lines with periodic round lenses because each lens can be regarded as a combination of two cones of frustums. "In conclusion, the author wishes to thank B. Z. Katsenelenbaum for the problem statement and a useful discussion." Orig. art. has: 10 figures, 11 formulas, and 2 tables.

SUB CODE: 09 / SUBM DATE: 19Nov64 / ORIG REF: 001 / OTH REF: 001

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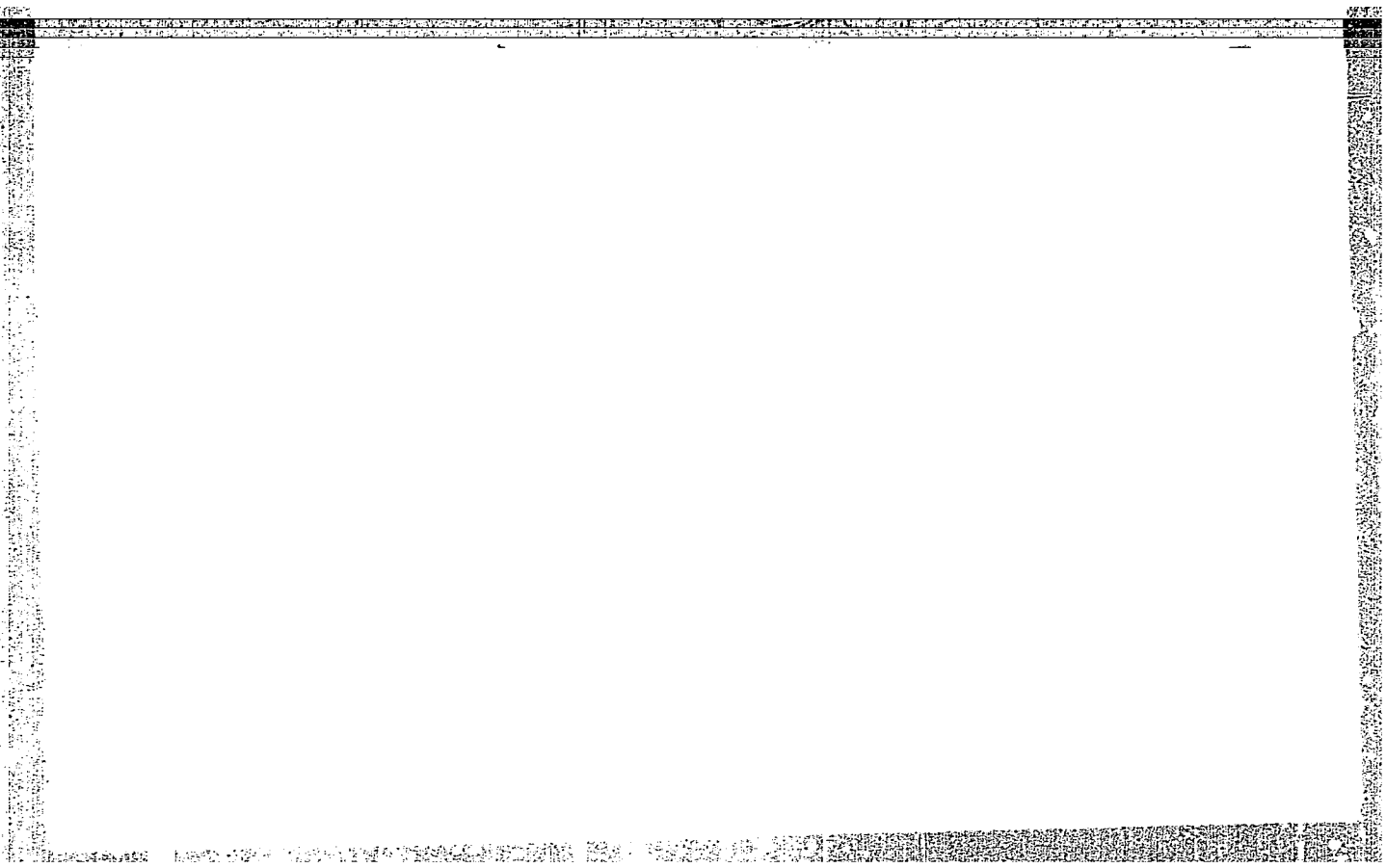

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ACC NR: AP6027240 SOURCE CODE: UR/0109/66/011/008/1496/1499

AUTHOR: Voytovich, N. N.

ORG: none

TITLE: Investigation of beam waveguides with randomly offset lenses

SOURCE: Radiotekhnika i elektronika, v. 11, no. 8, 1966, 1496-1499

TOPIC TAGS: beam waveguide, electromagnetic lens

ABSTRACT: A method is suggested for calculating the electromagnetic-wave incidence on an offset lens in a beam waveguide. The field before every lens is decomposed into natural waves of an ideal system having infinite correctors. This system is represented by an undisturbed line whose axis is parallel to the real-line axis and passes through the point of intersection of the beam center and the lens. A two-dimensional version of a confocal line having infinitely thin lenses set

 UDC: 535.8:666.189.2

ACC NR: AP6027240

in completely-absorbing shields is considered. By specifying the initial field distribution and lens offsets, computer simulation of the problem becomes possible. Several simulation experiments were conducted. It was found that the average loss is not the most probable loss; hence, curves were plotted which show the probability of the fact that the total energy loss in the line does not exceed a predetermined value. "In conclusion, the author wishes to thank B. Z. Katsenelenbaum for the statement of the problem, and R. B. Vaganov for a useful discussion." Orig. art. has: 3 figures and 8 formulas.

SUB CODE: 09 / SUBM DATE: 15Oct65 / ORIG REF: 004 / OTH REF: 002

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BONDARENKO, T.M.; GORBOV, V.G. [Horbov, V.H.]; KOMAROV, I.Z.; VOYTOVICH, O.S. [Voitovych, O.S.]; KAMINSKIY, F.T. [Kamins'kyi, F.T.]; YAKOVLEVA, Ye.O. [IAkovlieva, IE.O.]; YAKOVLEV, S.B. [IAkovliev, S.B.]; YAVONENKO, O.Ye. [IAvonenko, O.IA.]; VISHCHUN, I.A., red.; ALEKSANDROV, M.O., tekhn.red.

[Our territory; brief guide-reference book] Nash krai; korotkyi putivnyk-dovidnyk. Mykolaiv, Mykolaivs'ke obl.upr.kul'tury, 1958. 94 p. (MIRA 13:2)

1. Nikolayev. Oblastnyi kraieznavchyi muzei.
(Nikolayev Province--Guidebooks)