GINZBURG, M.M.(Leningrad)

On the article by L. E. Gurtovoi i V.M.Sizova on "Immediate and late results of the classic cesarean section." Akush. i gin. no.3: 70 My-Je '55.   (MLRA 8:10)
   (CESAREAN SECTION)   (GURVOTOI, L.E.) (SIZOVA, V.M.)

GINZBURG, M. M., NIKOLAYEVA, A. I.

Abdominal cesarean section as revealed by data of the Professor
Snigirev Maternity Home. Akush. i gin. no.3:50-53 '61.
                                                (MIRA 14:12)

1. Iz rodil'nogo doma imeni prof. Snegireva (glavnyy vrach A. A.
Dodor; nauchnyy rukovoditel' - prof. M. A. Petrov-Maslakov),
Leningrad.

(CESAREAN SECTION)

GINZBURG, M.M., inzh. (g. Ukhta)

Solution of integral equations for nonlinear networks derived
by the use of an operator method. Elektrichestvo no.12:28-33
D '62.   (MIRA 15:12)

(Electric networks)

Ginzburg, M. N. - "Still birth fertility from 2,000 grams and over in weight,"
Collection dedicated to the Maternity Hospital im. Snegireva on its 175th anniversary,
Leningrad, 1949, p. 221-26

SO: U-4355, 14 August 53, (Letopis 'Zhurnal 'nykh Statey, No. 15, 1949)

GINZBURG, M.P. (g.Voronezh)

   Our suggestions. Put' i put.khoz. 5 no.7:30-31 Jl '61.

                (MIRA 14:8)
     (Railroads--Maintenance and repair)

GINZBURG, M.D.

modeling of nonlinear equations for unsteady gas
motion and evaluating the accuracy of linearization methods.
Gaz, prom." no.6:35-39 '62.   (MIRA 15:6)

GINZBURG, M.Ya.

Problem of optimization of the control of petroleum refining processes. Khim. i tekh. topl. i masel 8 no.10:42-48 O '63.

(MIRA 16:11)

1. Nauchno-issledovatel'skiy institut po kompleksnoy avtomatizatsii proizvodstvennykh protsessov v neftyanoy i khimicheskoy promyshlennosti.

GINZBURG, M.Ya.

Foreign experience in the automatic processing of information
in remote-control enterprises of the petroleum industry.
Neft. khoz. 42 no. 3:66-70 Mr '64.   (MIRA 17:7)

GINZBURG. M.Ya.; CHUPRYNIN, B.Ye.

Device for recording the θ angle of synchronous machines. Trudy
ENIN AN Azerb. SSR 13:117-122 '56.   (MLRA 10:4)
                (Electric motors, Synchronous)

25756

S/024/61/000/001/010/014
E061/E128

9.3280

AUTHORS: Ginzburg, M.Ya., and Shpakov, V.L.   (Sumgait)

TITLE: A Contribution to the Problem of the Construction of Electronic Delay Circuits

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Energetika i avtomatika, 1961, No. 1, pp.164-165

TEXT: An electronic circuit giving a pure time delay, which can be simply varied, is described. The circuit uses operational amplifiers and is designed to utilize the full permissible range of amplifier voltages. The circuit is shown in the diagram. The circuit parameters are given by:

$$K_{11} = \frac{1}{R_{11}C_1} = \frac{12}{C_{21}C_{31}\tau} \quad ;$$

$$K_{12} = \frac{1}{R_{12}C_1} = \frac{72}{C_{41}C_{21}\tau}$$

$$K_{13} = \frac{1}{R_{13}C_1} = 6\tau^{-1} \quad ;$$

$$K_{21} = \frac{1}{R_{21}C_2} = C_{21}\tau^{-1}$$

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A Contribution to the Problem of the Construction of Electronic Delay Circuits

$$K_{22} = \frac{1}{R_{22}C_2} = \frac{12}{C_{41}\tau} \; ; \qquad K_{31} = \frac{R_{oc3}}{R_{31}} = C_{31} \leqslant 1$$

$$K_{41} = \frac{R_{oc4}}{R_{41}} = C_{41} \geqslant 2 \; ; \qquad K_{42} = \frac{R_{oc4}}{R_{42}} = 1$$

$$C_{21} \geqslant \frac{24}{C_{41}}$$

τ is the delay time; the K terms denote gains; C_{41}, C_{31}, C_{21} are constants. The highest pulsation in the frequency spectrum of the input must be less than π/τ. The circuit represents a convenient method of simulating systems in which the delay time is a function of other variables.
There are 1 figure and 2 Soviet references.

SUBMITTED: April 11, 1960

Card 2/3

GINZBURG, M.Ya.

Calculating devices for the automatic determination of the complex
parameters of processes with fluidized bed. Khim. i tekh. topl.
i masel. 6 no.10:33-37 O '61.   (MIRA 14:11)

1. Neftekhimavtomat.
              (Fluidization)   (Automatic control)

GINZBURG, M.Ya.; AGALAROV, Ch.S.

Automatization of accounting operations in storage systems
for petroleum products. Azerb. neft. khoz. 40 no.1:41-44
Ja '61.   (MIRA 14:8)
            (Machine accounting)
            (Petroleum--Storage)

AGALAROV, Ch.S.; ALESKEROV, S.A.; GEL'MAN, M.M.; GINZBURG, M.Ya.; IBRAGIMOV,
I.S.; ZUL'FUGA.ZADE, E.; MAMEDLI, E.M.

"Information converter for electronic digital computers" by E.I.
Gitis. Reviewed by Ch.S. Agalarov and others.   Izm.tekh. no.7:
64 Jl '62.   (MIRA 15:6)

(Electronic digital computers)
(Gitis, E.I.)

AUTHOR: Ginzburg, M.Ya.

TITLE: On the problem of functional analog-discrete conversion in digital measuring systems

PERIODICAL: Priborostroyeniye, no. 2, 1963, 4 - 7

TEXT: The author presents an analysis of the functional analog-discrete conversion $N = \varphi(\tau) = F^{-1}\left(f^{-1}(\tau)\right)$ (1), where F^{-1} = function inverse to F, f^{-1} = function inverse to f. A graph shows the curves of arbitrary function $N = \varphi(\tau)$, the values of the links of the broken, approximating function $\varphi(\tau)$ and sign N. The block diagrams of converters of arbitrary function with time control and output control are given and the various systems analyzed. There are 6 figures.

Card 1/1

AKIMOV, Vyacheslav Filippovich, inzh.; VINOGRADOV, Yuriy Ivanovich,
inzh.; GINZBURG, Mark Yakovlevich, inzh.; KASPAR'YANTS,
Konstantin Saakovich, inzh.; FRANKFURT, Yakov Mironovich,
inzh.; MAMIKONOV, A.G., red.; NOVICHKOVA, M.M., ved. red.;
VORONOVA, V.V., tekhn. red.

[Automation of field petroleum processing and gas transporta-
tion]Avtomatizatsiia promyslovoi podgotovki nefti i transporta
gaza. [By]V.F.Akimov i dr. Moskva, Gostoptekhizdat, 1963. 166 p.
                                            (MIRA 16:3)
    (Oil fields--Equipment and supplies) (Automation)
        (Gas, Natural--Pipelines)

ABDULLAYEV, A.A.; GINZBURG, M.Ya.; VLADIMIRSKIY, A.I.; GRIFTLER, L.M.

Expedient changes in the system of technological flow in
gas-condensate wells. Gas.prom. 5 no.3:10-13 Mr '60.
                                                (MIRA 13:6)

(Condensate oil wells)

ABDULLAYEV, Asker Alekperovich; VLADIMIRSKIY, Abram Iosifovich;
GEFTLER, Leonid Mikhaylovich; GINZBURG, Mark Yakovlevich;
GUSEYNOV, Chingis Saibovich; ZUBAREVA, Ye.I., ved. red.;
POLOSINA, A.S., tekhn. red.

[Automation of gas pipelines in foreign countries]Avtomati-
zatsiia magistral'nykh gazoprovodov za rubezhom. Moskva,
Gostoptekhizdat, 1962. 109 p.   (MIRA 16:3)
   (Gas, Natural—Pipelines) (Automation)

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AGALAROV, Ch.S.; GINZBURG, M.Ya.; MELIKOV, S.G.

Automatic control of shut-off and pumping equipment on tank farms.
Transp. i khran. nefti no.8:9-16 '63.   (MIRA 17:3)

1. Nauchno-issledovatel'skiy institut po kompleksnoy avtomatizatsii
proizvodstvennykh protsessov v neftyanoy i khimicheskoy promyshlen-
nosti.

GINZBURG, M.Ye., dotsent, kand.tekhn.nauk; KUPRITS, Ya.N., prof.-doktor, red.; GEL'MAN, D.Ya.; KEYZER, V.A.; SAVEL'YEVA, Z.A., tekhn.red.

[Groats production technology] Tekhnologiia krupianogo proiz-
vodstva. Izd.2., perer. i dop. Pod red. IA.N.Kupritsa.
Moskva, Izd-vo tekhn. i ekon.lit-ry po voprosam mukomol'no-
krupianoi, kombikormovoi promyshl. i elevatorno-skladskogo
khoz., 1959. 263 p.   (MIRA 12:12)
                   (Grain milling)

SOKOLOV, Aleksandr Yakovlevich, doktor tekhn. nauk, prof.;
ZHISLIN, Ya.M., kand. tekhn. nauk; KOTLYAR, L.I.,
kand. tekhn. nauk; GINZBURG, M.Ya., kand. tekhn. nauk;
FURER, G.L.; PARFENOV, K.A., kand. tekhn. nauk; RYZHOVA,
L.P., inzh., red. izd-va; MODEL', B.I., tekhn. red.

[Machines for processing grain] Mashiny dlia pererabotki
zerna. Moskva, Mashgiz, 1963.   346 p.   (MIRA 16:6)

1. Glavnyy instruktor zavoda im. F.E.Dzerzhinskogo (for
Furer).
                (Grain--Handling machinery)

KUPRITS, Ya.N., prof. doktor tekhn. nauk; DEMIDOV, P.G., prof.;
        DEMIDOV, A.R., prof. doktor tekhn. nauk; GINZBURG,
        M.Ye., kand. tekhn. nauk, dots.; DROGALIN, K.V., kand.
        tekhn. nauk; NAUMOV, I.A., kand. tekhn. nauk;
        TSETSINOVSKIY, V.M., kand. tekhn. nauk; TRUNOV, A.F.,
        inzh., retsenzent; KLEYMAN, L.M., red.

        [Technology of grain processing; flour, groats and mixed
        feed industries] Tekhnologiia pererabotki zerna; muko-
        mol'noe, krupianoe i kombikormovoe proizvodstvo. Moskva,
        Kolos, 1965. 504 p.   (MIRA 18:12)

GINZBURG, M.Z., inzh.

Constructing building materials enterprises in the Krivoy Rog
Basin. Prom.stroi. 37 no.12:7-12 D '59.   (MIRA 13:4)

1. Gosudarstvennyy proyektnyy institut Pridneprovskiy Promstroy-
proyekt.
(Krivoy Rog Basin—Building materials industry)

GINZBURG, N.B., podpolkovnik meditsinskoy sluzhby (Khar'kov)

Case of severe thrombophlebitis of the veins of the abdominal cavity caused by odontogenic infection. Vrach.delo no.12:1339 D '57.
(TEETH--DISEASES)   (MIRA 11:2)
(THROMBOSIS)
(VEINS--DISEASES)

GINZBURG, N.B.; ZADOYANNYY, V.V. (Khar'kov)

Cerebral hemorrhage in acute nephritis. Klin.med. 35 no.6:122-123
Je '57.   (MIRA 10:8)
        (NEPHRITIS, compl.
            cerebral hemorrh.)
        (CEREBRAL HEMORRHAGE, etiol. and pathogen.
            nephritis, acute)

GINZBURG, N.B., TER-AVAKOVA, N.M.

Use of reserpine in hypertension. Klin.med. 36 no.9:98-101 8'58
(MIRA 11:10)

(RESERPINE, ther. use
hyperension (Rus))

GINZBURG, N.B., podpolkovnik meditsinskoy sluzhby

Course of experimental myocardial infarct in acute radiation
sickness in rabbits. Vrach.dlo no.12:1263-1265 D '59.

(MIRA 13:5)

1. Kafedra normal'noy fiziologii (nach. - prof. I.T. Kurtsin)
Voyenno-meditsinskoy ordena Lenina Akademii im. S.M. Kirova i
Khar'kovskiy voyenno gospital'.
    (HEART--INFARCTION)   (RADIATION SICKNESS)

GINZBURG, N.B., podpolkovnik meditsinskoy sluzhby; KOSTIN, N.S.,
podpolkovnik meditsinskoy sluzhby, kand.meditsinskikh nauk

Diagnosis of hemorrhage into the pericardium in a closed injury
of the thorax. Voen.-med. zhur. no. 6:50-62 Je '60.
(MIRA 13:7)
(CHEST—WOUNDS AND INJURIES)   (HEMORRHAGE)

GINZBURG, N.B.

Features of the course of acute coronary insufficiency in irradiated
animals. Med. rad. 5 no.9:83 S '60.   (MIRA 13:12)
          (CORONARY HEART DISEASE)   (RADIATION SICKNESS)

GINZBURG, N.B., podpolkovnik moditsinskoy sluzhby

Course of acute coronary insufficiency in radiation sickness in dogs. Vrach. delo no. 3:50-55 Mr '61.   (MIRA 14:4)

1. Khar'kovskiy voyennyy gospital'.
        (RADIATION SICKNESS)   (CORONARY VESSELS—DISEASES)

GINZBURG, N.B., kand. med. nauk (Khar'kov)

Visceral form of hemochromatosis (pigmentary liver
cirrhosis). Vrach. delo no.12:128-130 D '63.

(MIRA 17:2)

GINZBURG, N. B.   "The Course of Experimental Myocardial Infarction During Acute
Radiation Sickness."   The symptoms of myocardial infarction were more pronounced
during radiation sickness in dogs and rabbits.

AUTHOR: Ginzburg, N.G.

TITLE: High Frequency Heating of Ingots

PERIODICAL: Byul. Tsentr. In-t inform. M-va tsvetn. metallurgii SSSR, 1957,
               No. 5, pp. 28-29

TEXT: The experience of the "Krasnyy Vyborzhets" plant in using h-f
heating of cupronickel blanks before pressing pipes instead of heating in re-
sistance furnaces is described. The latter method involves a high power con-
sumption (about 500 kw hours per ton of pipes) and does not provide the necessary
quality of heat treatment. The h-f heating reduced the power consumption by 1.7
times, cuts spoilage, reduces oxidation, etc, with the result that the efficiency
of the press increased by 14%.

                                        L.Ya.L.

Translator's note: This is the full translation of the original Russian
                     abstract.
Card 1/1

AUTHORS: Butomo, D.G., Ginzburg, N.G., Zedin, N.I. and
             Sergeyev, L.N.

TITLE: Cracking of Aluminium Bronze During Tests in an
             Ammonia Atmosphere (Rastreskivaniye alyuminiyevoy
             bronzy pri ispytanii v ammiachnoy atmosfere)

PERIODICAL: Tsvetnyye metally, 1959, Nr 6, pp 84-85 (USSR)

ABSTRACT: Season cracking of brass in ammonia is due to
             preferential attack of zinc by NH_3. Practically no
             data are available on the possibility of failure of
             aluminium bronze products by the same method. However,
             some investigators note that aluminium bronze is
             inclined to crack as a result of corrosion in the
             presence of internal stresses (Ref 3). Aluminium bronze
             is comparable with brass both in structure and in
             behaviour in ammonia atmosphere. Aluminium, like zinc,
             must displace copper from its ammoniate solution. Thus,
             it can be concluded that stressed aluminium bronze
             products will crack in an ammonia atmosphere in the same
             way as brass. This assumption was verified with tubular
Card 1/4   specimens made from the alloy BrA5 containing 4.67% Al and

Cracking of Aluminium Bronze During Tests in an Ammonia
Atmosphere

94.92% Cu. Tests were carried out by keeping the
specimens, which had been degreased and etched, in an
exsiccator, the bottom of which was covered with a
20% ammonia solution, for 24 hours. After the tests,
transverse cracks formed on the tube surfaces, which are
characteristic of residual tensile stresses along the
rolling direction of the tube (Fig 1). Even more
convincing were the results of experiments with
elastically deformed loops made from a strip of BrA5
alloy, 0.7 mm thick. From twenty specimens cut out of
this strip, ten were annealed at 600°C for one hour, the
other ten were tested in the work-hardened condition.
Tests were carried out for 24 and 72 hours. After
24 hours, 50% of the annealed loops and 90% of the work-
hardened ones had failed. After 72 hours, all the
loops failed. The microstructure of the specimens which
had failed in the ammonia tests was studied (Fig 2a and b).

Card 2/4   As can be seen, the propagation of cracks in both cases

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Cracking of Aluminium Bronze During Tests in an Ammonia Atmosphere

is not along the grain boundaries. In this behaviour the alloy BrA5 differs from brass, in which failure is intercrystalline, particularly if the alloy is in the annealed condition. Experiments were carried out in which the chemical composition of the corrosion products of the tubes of the BrA5 alloy was analysed after ammonia tests. The results prove that selective solution of aluminium occurs during corrosion of the stressed BrA5 alloy, similar to the selective solution of zinc in brass. It is concluded that, in general, stressed articles made of copper alloys in which the alloying elements are capable of displacing copper from its ammoniate solutions and forming solid solutions with copper, will fail when exposed to ammonia atmospheres if the concentration of the solid solution and the magnitude of the tensile stresses are sufficiently great. There are

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Cracking of Aluminium Bronze During Tests in an Ammonia
Atmosphere

      2 figures and 3 references, 2 of which are Soviet and
1 English.

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GINZBURG, N.M.

Hygienic measures in cold storage warehouses. Veterinariia 33
no.8:54-57 Ag '56.   (MLRA 9:9)

1.Glavnyy veterinarnyy vrach Glavmyasomaslotorga Ministerstva
torgovli SSSR.
(Meat--Preservation) (Cold storage--Hygienic aspects)

GINZBURG, N. N.

Information. Zhur. mikrobiol., epid. i immun. 32 no.8:157-158
Ag '61.   (MIRA 15:7)

(CHOLERA)

GINZBURG, N.S.

"Khakass Autonomous Province"; studies of the economic geography by
L.A. Nikol'skaia. Reviewed by N.S. Ginsburg. Izv. Vses. geog. ob-va
93 no.4:360-361 Jl - Ag '61.   (MIRA 14:7)
          (Khakass Autonomous Province--Economic geography)
                    (Nikol'skaia, L.A.)

GINZBURG, N.S.

Reconstruction of the Volga-Baltic Waterway. Izv. Vses. geog. ob-va
94 no.3:209-220 My-Je '62.   (MIRA 15:7)
                    (Mariinsk Canal System--Shipping)

MASHEVICH, Z.A., inzhener; MISHIN, A.N., inzhener, retsenzent [deceased];
GINZBURG, N.Ya., inzhener, retsenzent; USATOV, G.A., inzhener,
retsenzent; KORSAKOV, V.S., dotsent, kandidat tekhnicheskikh nauk,
redaktor; MODEL', B.I., tekhnicheskiy redaktor.

[Technology of steam engine construction] Tekhnologiia lokomobile-
stroeniia. Moskva, Gos.nauchno-tekhnicheskoe izd-vo mashinostroit.
i sudostroit. lit-ry, 1953. 543 p.
(MIRA 8:4)
(Steam engines—Construction)

BELYAKOV, Ye.P., otv. red.; GINZBURG, N.Ya., otv. red.; KRICHEVSKIY,
        Ya.M., otv. red.; MELIK-GAYKAZOV, V.I., otv. red.; TIKHONOVA,
        Ye.D., red.; SELEZNEV, P.I., tekhn. red.

        [Rolling mills]Stany prokatnye. Moskva, TSINTImash, 1960. 137 p.
                                                    (MIRA 15:11)

        1. Russia (1923- U.S.S.R.)Gosudarstvennyy nauchno-tekhnicheskiy
        komitet.
                        (Rolling mills)

AUTHORS: Ginsburg, V. A., Yakubovich, A. Ya., Filatov, A. S.,
            Shpanskiy, V. A., Vlasova, Ye. S., Zelenin, G. Ye.

TITLE: Production, pyrolysis, and photolysis of polyfluorinated azo
            compounds of the aliphatic series

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 142, no. 1, 1962, 88-91

TEXT: Further methods of synthesizing polyfluoro azoalkanes (PFAA) and
their derivatives were elaborated. It was found that PFAA were formed:
(a) when reducing azoxy compounds by PCl_3 vapor in the vapor phase and
in N_2 atmosphere at 100-150°C: $R_fN=N(O)R_f \xrightarrow{PCl_3} R_fN=NR_f + POCl_3;$
(b) when oxidizing hydrazo compounds containing R_fNH groups: ($R_f=CF_3$,
CF_2H, and others); these compounds are synthesized by reducing azoxy
compounds. Among others, the following were used as oxidizers of hydrazo
derivatives: Cl_2, Br_2, nitric oxides, chromate mixtures, potassium
permanganate in acetic acid; (c) when fluorinating linear or cyclic
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azines by CoF_3 in a carbon fluoride medium at 90-120°C, or by elementary
F (diluted with N_2) at -10°C; (d) when fluorinating nitriles of
polyfluoro carboxylic acids and HCN in the vapor phase on CoF_3 at
100-150°C. Some PFAA derivatives were synthesized: (e) by chlorinating
in the vapor phase in ultraviolet light (UV) at 300°C, or by fluorinating
hydrogenous azo compounds on CoF_3 at 50-80°C:

$$R_f-NCH_3 \xrightarrow[\text{UV}]{Cl_2} R_fN-NCHCl_2, \text{ or } R_fN-NCH_3 \xrightarrow{CoF_3} R_fN-NCHF_2, \text{ and others;}$$
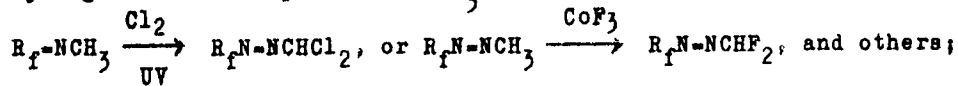
(f) by the usual conversion of functional groups. The initial azo
compounds used in reactions (e) and (f) were obtained by condensation of
polyfluorinated nitroso alkanes with the corresponding amines. The
constants of the substances obtained are tabulated. PFAA are yellow
liquids or gases which explode when heated, but are much more stable than
their non fluorine-containing analogs. Pyrolysis: It was found that
hexafluoro azo methane was slowly pyrolyzed in a copper tube at 400°C:
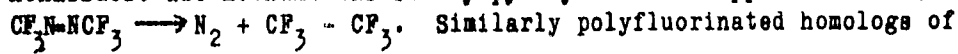
$$CF_3N-NCF_3 \longrightarrow N_2 + CF_3 - CF_3.$$ Similarly polyfluorinated homologs of
hexafluoro azo methane also decompose. This decomposition can be used as
a method of synthesizing PFAA. At 600-700°C, tetrafluoro methane, tetra-

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Production, pyrolysis, and ...

fluoro ethylene, and lamp black are formed among others. This suggests
the thermal decomposition of intermediate forming trifluoro methyl
radicals. The low temperature coefficient, $E_{act} = \sim 5$ kcal/mole, proves
the chain radical nature of the decomposing reaction in a high concentra-
tion of azo compounds. The free radical nature of the PFAA decomposition
was also proved in their photolysis in UV: hexafluoro azo methane
decomposes to form perfluoro tetramethyl, perfluoro hexamethyl hydrazine,
and perfluoro hexamethyl tetrazine. Polyfluorinated hexaalkyl tetrazines
are stable and do not decompose below 350-400°C:

$$(CF_3)_2N \cdot N(CF_3)N(CF_3) \cdot N(CF_3)_2 \longrightarrow (CF_3)_2N \cdot N(CF_3)_2 + CF_3N=NCF_3.$$ When

photolyzing trifluoro and pentafluoro azo methane, substituted hydrazines
and tetrazines were isolated. Due to a mass-spectrometric investigation
carried out by S. S. Dubov and A. M. Khokhlova, and due to chemical
conversions, it was proved that the active free radical in asymmetrical
azo compounds of the $CF_3N=NR$ type was predominantly accumulated on the N
atom of the azo group next to the less electrophilic group. The free
radical nature of the above PFAA conversions is proved by their reaction
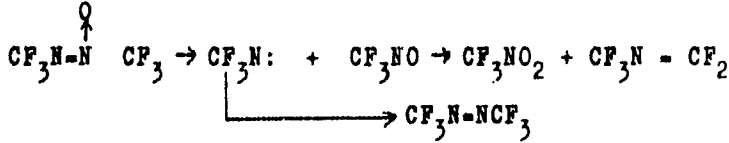
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B103/B110

Production, pyrolysis, and ...

in UV in the presence of acceptors of free radicals. Thus, hexafluoro azo methane, in the presence of chlorine, changes into trifluoro chloro methane, when photolyzed, and into trifluoro nitroso methane in the presence of nitric oxide or methyl nitrite. The aliphatic-aromatic azo compounds of the $R_fN=NC_6H_5$ type are resistant to high temperatures and UV.

Thus, PFAA show a general tendency toward homolytic dissociation into free polyfluorinated radicals and into an N_2 molecule. Thus, N_2^+ is produced in the case of an electronic impact. Pyrolytic decomposition of hexafluoro azoxy methane at 250-300°C, however, takes a different course:

$$CF_3N=N \overset{O}{\uparrow} CF_3 \rightarrow CF_3N: \; + \; CF_3NO \rightarrow CF_3NO_2 + CF_3N = CF_2$$
$$\longrightarrow CF_3N=NCF_3$$

There are 2 tables and 5 references: 1 Soviet and 4 non-Soviet. The three references to English-language publications read as follows: Ref. 3: D. Clark, H. O. Pritshard, J. Chem. Soc., 1956, 2136; Ref. 4: J. R. Dacey, D. M. Young, J. Chem. Phys., 23, 1302 (1955); Ref. 5: J. O.
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S/020/62/142/001/017/021

Production, pyrolysis, and ...   B!03/B110

Pritshard, H. O. Pritshard, A. F. Trotman-Dickenson. Chem. and Ind., <u>1955</u>,
564; Trans. Farad. Soc., <u>52</u>, No. 6 (1956).

PRESENTED: June 1. 1961, by Academician I. L. Knunyants and M. I.
               Kabachnik

SUBMITTED: June 1, 1961

Card 5/5

AUTHORS: Ginzburg, N. 1., Polyakov, A. M.   57-28-5-19/36

TITLE: Electrical Properties of Thin Iron, Nickel and Cobalt Films
            (Elektricheskiye svoystva tonkikh plenok zheleza, nikelya i
            kobal'ta)

PERIODICAL: Zhurnal Tekhnicheskoy Fiziki, 1958, Vol. 28, Nr 5,
            pp. 1029-1031 (USSR)

ABSTRACT: The electrical propeties of thin iron- and nickel films were
            investigated in the papers (Ref 1-3). In order to obtain more
            pure and homogeneous films, the authors employed the method
            of heating the evaporating metal by means of electronic im-
            pact. Thereby, the contamination by material from the crucible
            was excluded. The resistance of the film was measured at room
            temperature, at 78°K (liquid nitrogen), 20.4-14°K (liquid
            hydrogen) and from 4.2 to 1.65°K (liquid helium). For the mea-
            surement of the resistance of comparatively thick films a po-
            tentiometer with a high resistance was used. It was possible
            to measure the film resistance immediately during the conden-
            sation process, during which the evaporation conditions were
            kept as constant as possible. By means of the modification of
            the capacity which was sprged by the evaporator, it was pos-

Card 1/3

sible within certain limits to measure the current intensity
of the atoms condensing at the surface. Figure 1 shows the de-
pendence of the quantity 1/R on the exposure period for cobalt
at three different condensation conditions (I - III). The
temperature dependence of the resistance of films with diffe-
rent thickness exhibiting a resistance varying from a few
dozen ohms to several megaohms was investigated. Thinner films
increased their resistance with a reduction of temperature
(figure 2). The character of the modification of the film re-
sistance was dependent upon the thickness of the film. It must
be mentioned, that in the papers (Ref 1-3) all films without
exception increased their resistance with a temperature reduc-
tion. In order to examine the assumption (Ref 5) on the pos-
sible occurrence of superconductivity in thin films of ferro-
magnetic metals the electric resistance of all produced films
was measured down to $1.65^{\circ}K$ inclusive. From the curves (figure
3) it can be seen, that the resistance of thick nickel films
does not change at all in the temperature interval of from
$4.2 - 1.65^{\circ}K$. Thinner films, however, increase their resistance
with a temperature reduction. The authors are indebted to A.I.

Card 2/3

Electrical Properties of Thin Iron, Nickel and Cobalt Films   57-28-5-19/36

        Shal'nikov for his attention paid to this work. There are 3 figures and 5 references, 2 of which are Soviet.

ASSOCIATION: MGU, Fizicheskiy fakul'tet, Kafedra fiziki nizkikh temperatur (Moscow State University, Physics Dept.,   Chair of Physics of Low Temperatures)

SUBMITTED: October 21, 1957

        1. Thin films--Electrical properties

Card 3/3

24(8), 24(3)   SOV/56-37-2-11/56
AUTHORS: Ginzburg, N. I., Shal'nikov, A. I.

TITLE: On the Problem of the Destruction of the Superconductivity of
                 Thin Films by a Field and by a Current

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959,
                 Vol 37, Nr 2(8), pp 399-405 (USSR)

ABSTRACT: The authors investigated the rules governing the destruction of
                 superconductivity in thin tin films (purity 99.998 %) with
                 respect to an experimental verification of the Ginzburg-Landau
                 theory. For this purpose they used cylindrical films of various
                 thicknesses; the length of the cylinders was large compared to
                 their diameter. (Such investigations were carried out without
                 any special success on disk-shaped samples by Alekseyevskiy and
                 Mikheyeva (Ref 1); cylindrical samples were investigated by
                 Shal'nikov together with Feygin, and as results were satisfac-
                 tory, the method was improved.) Carrying out the experiments is
                 described in great detail (cf. Figs 1,2). Figures 3a and b
                 show the results of a simultaneous measurement of the critical
                 currents and fields of a series of films, figures 4 and 5 show
Card 1/3   the dependence of the critical field strengths on actual film

SOV/56-37-2-11/56

On the Problem of the Destruction of the Superconductivity of Thin Films by a Field and by a Current

thickness at various distances to the critical temperature ΔT (for $\Delta T \leqslant 0.3°$). Figure 6 shows the dependence of the critical field of the current H_{kI} on ΔT, and figure 6 the dependence of the critical field strength H_k on T. The ratio $H_k K_{kI} / \frac{8}{3} H_{km}^2$, which, according to Ginzburg, ought to be constant and equal to unity, was determined as amounting to $\leqslant 0.22 \pm 0.03$, the penetration depths as $\delta_{oo}^H = 1.9 \pm 0.3 \cdot 10^{-5}$ cm and $\delta_{oo}^I = 9.3 \pm 1.5 \cdot 10^{-5}$ cm, which considerably exceeds the value for massive tin of $\delta_{oo} = 5 \cdot 10^{-6}$ cm. The endeavor is made to explain the deviation of the value found for $H_k H_{kI} / \frac{8}{3} H_{km}^2$, as well as the deviation of the value of δ_{oo}^H (which differs by three times its amount from that found by Zavaritskiy (Ref 6)). Finally, experimental problems concerning film structure are discussed. The authors thank V. L. Ginzburg for his interest and valuable advice, D. I. Vasil'yev for his assistance in carrying out the experi-

Card 2/3

SOV/56-37-2-11/56

On the Problem of the Destruction of the Superconductivity of Thin Films by a
Field and by a Current

mente, and also I. S. Shapiro and I. A. Antonova. There are
8 figures and 6 references, 4 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: March 18, 1959

Card 3/3

88427

24.2140 (1072, 1158, 1160)

AUTHORS: Brandt, N. B., Ginzburg, N. I.

TITLE: Superconductivity of Crystalline Bismuth Modifications

TEXT: The authors investigated the superconductivity of the bismuth
modifications Bi II and Bi III and the stability of these modifications at
helium temperatures. Bi III was known as a superconductor (T_c = 7.25°K

at 25,000 < p < 29,000 atm); however, the critical temperature was not
quite accurately known and was now determined with greater accuracy.
Bi II was also found to be superconductive, the critical temperature
was about T_0 = 3.93°K (p = 25,000 atm). $\partial T_0 / \partial p$ amounted to about

$-3.5 \cdot 10^{-5}$ deg/atm for Bi II and was for Bi III negligibly small. For in-
vestigating the stability of the superconductive modifications, experi-
ments were carried out in which a pressure was applied at room temperature,
lifted, and again applied at helium temperature. The Bi II modification,

Card 1/2

88427

Superconductivity of Crystalline Bismuth   S/056/60/039/006/014/063
Modifications   B006/B056

when pressure is lifted at helium temperature, changes completely into
Bi I. Bi III, formed at compressions of a Bi-single crystal, when pressure
is lifted at about $\sim 2.2°K$, changes into the non-superconductive modifica-
tion Bi I ($p \approx 20,0000$ atm), i.e., the transition at helium temperatures
is characterized by a strong hysteresis. Repeated compression of one and
the same specimen leads to the appearance of a finely dispersed crystalline
structure. In this case, the superconductive modification remains conserved
when pressure is lifted and changes into the non-superconductive Bi I at
$6.5 - 7.5°K$. It may therefore be assumed that the superconductivity of
films deposited by evaporation at helium temperature is connected with the
formation of a crystalline modification analogous to Bi III. Nor is it ex-
cluded that carbon deposited by evaporation on a diamond base, crystallizes
at helium temperature with diamond structure. The authors thank A. I.
Shal'nikov and N. Ye. Alekseyevskiy for their interest and S. G.
Obruchnikov for highly qualified mechanical work. There are 3 figures
and 7 references: 3 Soviet, 2 British, and 2 US.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State Univer-
               sity)
SUBMITTED: July 8, 1960
Card 2/2

BURZ, G. [BOORSE, H.]; GINZBURG, N.I. [translator]

Some experimental aspects of superconductivity [translated from the English]. Usp.fiz.nauk 72 no.1:99-115 S '60. (MIRA 13:8)
(Superconductivity)

KUPER, L. [Cooper, L.N.]; GINZBURG, N.I. [translator]

Theory of superconductivity [translated from the English]. Usp.
fiz.nauk 72 no.1:117-131 S '60.   (MIRA 13:8)
                    (Superconductivity)

24.2140 (1072, 1164, 1482)

1.6000

S/181/61/003/011/032/056
B125/B138

AUTHORS: Brandt, N. B., and Ginzburg, N. I.

TITLE: Investigation of the crystalline modifications of bismuth and some problems of technique in obtaining high pressures at low temperatures

PERIODICAL: Fizika tverdogo tela, v. 3, no. 11, 1961, 3461-3472

TEXT: The authors worked out a technique for obtaining high, but very homogeneous, pressures up to 30,000-40,000 kg/cm at low temperatures down to $1.6^{\circ}K$. This technique, which is very similar to the Bridgeman method, is used to induce, and to investigate, the superconductivity properties of the crystalline modifications of BiII and Bi III. Unlike the Bridgeman method, the cylindrical sample 2 is here surrounded by a thin ($\sim 50 \mu$) layer of graphite lubricant. At low temperatures, the pressure acting on the piston 2 is created by a multiplier and by a press. With a multiplier high pressures can be created quickly and reliably at low temperatures, which is very useful for magnetic measurements of superconductors. With a press of the type developed by V. I. Khatkevich (Dokt. diss., Institut

Card 1/8

Investigation of the crystalline...

fizioheskikh problem AN SSSR, M. 1952) the load acting on the piston can be varied during the experiment. N. Ye. Alekseyevskiy is thanked for lending the press. The crystalline modifications of bismuth are shown in the phase diagram in Fig. 6. According to the measurements carried out on monocrystalline samples of bismuth of the Hilger-type (purity 99.998 %), the electrical resistivity decreased 160-200 times during cooling from 273 to 4.2°K. The trigonal axis of most of the samples coincided with their longitudinal axis. The results of the first series of experiments, in which pressure was created by a multiplier and the measurements were carried out at 20,000-29,000 kg/cm^2, are shown in Figs. 7, 8, and 9. The superconductivity of the modification Bi II is an unexpected result of the experiments. In the second series of experiments the pressure was created by means of a mechanical press at room and liquid nitrogen tempera- tures. Results of these experiments are shown in Figs. 10, 11, 12. The results of the investigations of Bi I, Bi II, and Bi III indicate the strong influence of crystal structure and of the energy spectrum of the electrons upon superconductivity. Hysteresis is intensified by the cooling of the sample. As the number of cycles increases the volume of the Bi III phase being transformed into Bi I decreases. This transformation always occurs

Card 2/ß

30789
S/181/61/003/011/032/056
B125/B138

Investigation of the crystalline...

independently of the number of cycles at the same pressure of 21,000 kg/cm^2.

The superconductivity properties of Bi III under 27,000 kg/cm^2 do not depend on the number of compression cycles. The Bi III modification can also exist in the absence of external pressure. At nitrogen temperature, the hysteresis of the Bi I $\rightarrow$ Bi III transition is weaker than at helium temperature. At room temperature, there is hardly any hysteresis. No new low-temperature modification different from Bi III seems to exist.
A. I. Shal'nikov is thanked for his interest in the present paper. There are 15 figures and 21 references: 9 Soviet and 12 non-Soviet. The three most recent references to English-language publications read as follows:
L. D. Jennings, C. A. Swenson. Phys. Rev., 112, 31, 1958; D. H. Bowen, G. O. Jones. Proc. Roy. Soc., A254, no. 1279, 522, 1960; D. Pines. Phys. Rev., 109, 280, 1958.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
(Moscow State University imeni M. V. Lomonosov)

SUBMITTED: June 19, 1961

Card 3/6

S/120/62/000/005/027/036
E039/E420

AUTHORS: Brandt, N.B., Ginzburg, N.I.

TITLE: A method of investigating the pressure-temperature phase diagrams at low temperatures

PERIODICAL: Pribory i tekhnika eksperimentá, no.5, 1962, 161-164

TEXT: Samples of bismuth and cerium (1.9 mm diameter and 3 to 4 mm long) are compressed between two pistons of steel or tungsten carbide inside a solid ring of beryllium bronze with an internal diameter of 2 mm and thickness 7 to 8 mm and an external diameter of 30 to 40 mm.   The pressure is measured by means of БФ-2 (BF-2) strain gauges mounted on the outside of the ring. A screw device is used to apply pressure to the pistons and the whole apparatus is mounted inside a double Dewar flask. Temperatures of 1.7 to $4.2\,^\circ$K are obtained using liquid helium and 60 to $77\,^\circ$K using liquid nitrogen.   A pressure calibration is obtained using a superconducting tin manometer at liquid helium temperatures and, because the elastic constants of beryllium bronze change very little in the temperature range 4.2 to $300\,^\circ$K, the calibration at room temperature differs very little from that

Card 1/2

A method of investigating ...   S/120/62/000/005/027/036
                                            E039/E420

at $4.2°K$.   The change in volume of the sample during compression
and at a phase change is determined from the number of turns of
the screw mechanism which moves the pistons.   In order to check
the method the pressure at which the phase change in cerium
occurs was measured at temperatures of 373, 293 and 77°K and shown
to agree well with the results obtained by other workers using a
different method.   The phase changes BiI to BiII and BiII to
BiIII are also observed to occur at pressures of 25.3 and
27 k atm at 300°K which is in good agreement with the results of
Bridgeman.   In order to avoid hysteresis effects data should be
obtained on the first compression cycle.   The results obtained
testify to the reliability of the method for obtaining phase
diagrams at low temperatures and for pressures up to 39 k atm.
There are 5 figures.

ASSOCIATION: Fizicheskiy fakul'tet MGU (Physics Faculty MGU)

SUBMITTED: October 30, 1961

Card 2/2

AUTHORS: Brandt, N. B., Ginzburg, N. I.

TITLE: The critical fields in the crystalline modifications Bi II
                 and Bi III

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 44,
                 no. 2, 1963, 478-480

TEXT: The modifications Bi II and Bi III forming at room temperature
under a pressure of 25 tons/cm^2 show superconductivity at $T < T_{cr} = 3.916°K$
(25 t/cm^2) and $T \leq T_{cr} \approx 7°K$ (27-30 t/cm^2). The critical fields (H_{cr}) were
measured for these modifications (purity 99.999%). Superconductivity was
measured with constant temperature and slowly increasing field strength
(Bi II), and with constant field strength and slowly increasing tempera-
ture (Bi III). H_{cr} was determined in the usual way by extrapolating the
linear sections of the curves. The values obtained for transverse and
longitudinal fields agreed within the experimental limits of error. From

Card 1/2

The critical fields in the ...

S/056/63/044/002/014/065
B102/B186

the $H_{cr}(T)$ curves it can be seen that Bi II is a "soft" superconductor whose critical-field curve resembles that of tin. Bi III is a "hard" one $\left(\frac{\partial H_{cr}}{\partial T}\right)_{T=T_{cr}}$ $\approx$ 2600 oe/deg, this value being almost independent of pressure in the interval 26÷30 t/cm^2. There are 5 figures.

ASSOCIATION: Moskovskiy gosudarstvenny universitet (Moscow State University)

SUBMITTED: September 11, 1962

Card 2/2

S/056/63/044/003/011/053

70
68

L 17606-63
EWT(m)/BDS   EWT(1)/EPF(h)-2/EWP(q)/   AFFTC/ASD/SSD   Pd-4   WW/JD/JG

AUTHOR: Brandt, N. B. and Ginsburg, N. I.

TITLE: Effect of antimony and lead impurities on phase transitions
in bismuth

PERIODICAL: Zhurnal eksperimental'noy i tekhnicheskoy fiziki, v. 44, no. 3,
1963, 848-851

TEXT: One of the authors investigated earlier, Ref. 1 (N. B. Brandt and M. V.
Razumeyenko, ZhETF, 39, 276, 1960) and Ref. 2 (N. B. Brandt and V. V.
Shchekochikhina, ZhETF, 41, 1412, 1961) the effect of Sb and Pb impurities on the
energy spectrum of electrons in Bi and proceeded then with the study of effects
these same impurities (0-2.5 wt.% of Bi, 0-1.2 wt.% of Pb) have on the pressure-
temperature phase diagram of Bi. The phase transitions were investigated
following a method described by the authors in an earlier paper (Ref. 3: PTE, 5,
161, 1962). It is found that with increase of the concentration the region of
existence of the Bi II modification becomes narrower in the phase diagram and
apparently disappears completely for Sb concentrations exceeding 0.8 wt. %.

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L 17606-63

2

Effect of antimony and lead impurities...

Pb impurities do not appreciably affect the nature of the phase diagram. A comparison with the energy spectrum effects shows that while Pb impurities cause strong changes in the electron part of the Fermi surface, they do not appreciably change the characteristics of the phase transition in the Pb phase diagram. The Sb impurities act exactly in an opposite fashion. Consequently, at helium temperatures the phase diagram is quite insensitive to the changes in the electron part of the Fermi surface and depends very much on the changes within the crystalline lattice which prove to be more involved than the mere change in impurity concentration. There are 2 figures.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: October 4, 1962

Card 2/2

L 9877-63   FSS(1)/EWP(q)/EWT(m)/BDS/
EEC(b)-2--AFFTC/ASD/ESD-3--GW/GD/IJP(C)/E

AUTHOR: Brandt, N. B.; Ginzburg, N. I.

TITLE: Study of the effect of high pressure on superconductivity in cadmium

TOPIC TAGS: superconductivty in cadmium, pressure-dependent superconductivity

ABSTRACT: The ratio of the critical temperature gradient to the pressure gradient in the critical field curve of cadmium is investigated within a wide range of pressures, furthering the investigations of N. Ye. Alekseyevskiy and Yu. P. Gaydukov (Zhurnal eksperimentalnoy i teoreticheskoy fiziki, v. 29, 1955, p. 898), who found the ratio to be negative and its absolute value to be close to that of tin- and indium-type superconductors. Spectrally pure polycrystalline cadmium cylinders 2 to 3 mm in diameter and 2.5 to 3.4 mm long were tested. The effect of pressures up to 27,000 atm on the critical field curves and critical temperature for the superconductive transition in the 0.08 + or - 0.5K temperature range was investigated. A large relative change in critical temperature, about 80% at 26,400 atm, was obtained. The critical temperature changed 4.4 times within the pressure interval from zero to 26,400 atm. The investigation indicates the
Card 1/2

L 9877-63
ACCESSION NR: AP3003115

possibility of transferring cadmium to the nonsuperconducting state at unchanged
crystal modification. This possibility is analyzed to some extent. "In conclusion,
we take the opportunity to thank V. L. Ginzburg for his discussion of the results,
and A. I. Shal'nikov for his interest in the work." Orig. art. has: 5 figures
and 1 table.

ASSOCIATION: Moskovskiy gosudarstvenny*y universitet (Moscow State University)

SUBMITTED: 13Feb63   DATE ACQ: 23Jul63   ENCL: 00

SUB CODE: 00   NO REF SOV: 004   OTHER: 010

Card 2/2

ACCESSION NR: AP4031141   S/0056/64/0046/004/1216/1219

AUTHORS: Brandt, N. B.; Ginzburg, N. I.

TITLE: Effect of high pressure on the superconducting properties
of zirconium

SOURCE: Zh. eksper. i teor. fiz., v. 46, no. 4, 1964, 1216-1219

TOPIC TAGS: zirconium, superconductivity, critical temperature,
critical field, pressure effect, hydrostatic compression effect,
annealing effect

ABSTRACT: Earlier work on the effect of hydrostatic compression on
the superconductivity (ZhETF v. 44, 1876, 1963) is extended from
cadmium to zirconium. Pressures up to 24000 atm and a temperature
range 0.08--0.8K were employed. Hydrostatic compression is shown to
cause a considerable increase in the critical temperature, which
reaches 70% at 24000 atm, and in the temperature gradient of the

Card 1/5

ACCESSION NR: AP4031141

critical field, amounting on the average to 20--25% as the pressure
is changed from 0 to 20000 atm. Both annealed and unannealed sam-
ples were tested, and a stronger increase in the critical temperature
was observed in annealed samples. The results are interpreted in
light of the plastic deformation which can arise in the sample as a
result of the method used in the experiment to produce high pressure.
Results obtained with other metals and alloys are compared. "In
conclusion we thank V. L. Ginzburg for a discussion of the results
and N. N. Mikhaylov for graciously supplying the zirconium." Orig.
art. has: 3 figures and 1 formula.

ASSOCIATION: Moskovskiy gosudarstvenny*y universitet (Moscow State
University)

SUBMITTED: 24Oct63   DATE ACQ: 07May64   ENCL: 03

SUB CODE: PH   NO REF SOV: 005   OTHER: 004

Card 2/5
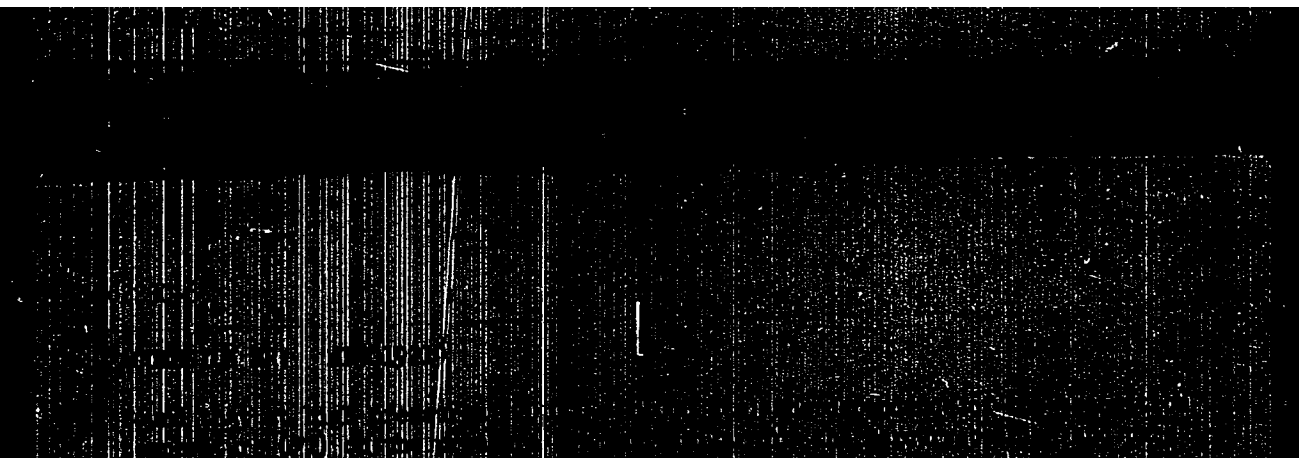
L 3467-66 EWT(1)/EPA(s)-2/EWT(m)/EWP(w)/EPF(n)-2/T/EWP(t)/EWP(b)/EWA(h)/EWA(c)
ACCESSION NR: AP5009069 IJP(c) JD/WH/JG/GG

UR/0053/65/085/003/0485/0521

AUTHOR: Brandt, N. B.; Ginzburg, N. I.

TITLE: Effect of high pressure on the superconducting properties of metals

SOURCE: Uspekhi fizicheskikh nauk, v. 85, no. 3, 1965, 485-521

TOPIC TAGS: superconductivity, pressure effect, hydrostatic pressure, high pressure, metal physical property

ABSTRACT: This is a review paper dealing with the advances made in the study of the superconducting properties of metals at high pressures, and particularly the developments not treated in a 1960 review paper by C. A. Swenson. The sections heading are: I. Introduction. II. Methods of obtaining high pressures at low temperatures. 1. Production of "frozen-in" pressures using an intermediate medium. 2. Production of "frozen-in" pressures without the use of a transmitting medium. 3. Production of pressures directly at low temperatures using an intermediate

L 3467-66

ACCESSION NR: AP5009069

11

termediate medium. III. Effect of pressure on the properties of superconductors.
1. Tin and indium. 2. Tantalum. 3. Mercury. 4. Thallium. 5. Cadmium. 6.
Aluminum. 7. Zirconium and titanium. 8. Alloys. 9. Superconductivity of
crystalline modification. 10. Investigation of the stability of superconducting
modifications. IV. Influence of pressure and microscopic theory of supercon-
ductivity. V. Some remarks on the prospects of further research. Orig. art. has
38 figures, 18 formulae, and 2 tables.

ASSOCIATION: None

SUBMITTED: 00   ENCL: 00   SUB CODE: OP

NR REF SOV: 030   OTHER: 052

Card 2/2 AP

BRANDT, N.B.; GINZBURG, N.I.

Effect of hydrostatic pressure and plastic deformation on the superconducting properties of titanium. Zhur.eksp. i teor.fiz. 49 no.6:1706-1714 D '65. (MIRA 19:1)

1. Moskovskiy gosudarstvennyy universitet. Submitted June 16, 1965.

ABSTRACT: This is a continuation of earlier work by the authors dealing with the effect of pressure on the superconducting transition (ZhETF v. 46, 1216, 1964), and is aimed at checking on the hypothesis that the superconducting transition temperature increases under pressure. The superconducting properties of samples of 99.99% pure titanium iodide were investigated in the 0.06--0.6K region, and the effects of plastic deformation and hydrostatic pressures up to 26,000 atm were studied. The experimental setup and measuring technique were described in detail elsewhere (ZhETF v. 44, 1876, 1963). The results show that plastic deformation and the surface states of samples strongly affect the superconducting transition temperature and the critical field of titanium. Nearly-hydrostatic pressures up to approximately 14,000 atm either produce no effect or cause a very small reversible increase in the critical tempera-

L 25694-66

2

ture and field in single-crystal plastically-deformed or lathe-turned titanium samples, regardless of their superconducting parameters. Between 14,000 and 26,000 atm, reversible increases of the field and temperature are observed in plastically deformed samples, at an average rate of ~0.7 x 10⁻⁵ deg/atm. The increase in the superconducting transition temperature of titanium under pressure confirms the hypothesis advanced in the earlier work. Differences between the behavior of titanium and zirconium are described and explained, and the superconducting transition temperatures of different titanium samples are compared with the corresponding densities of the states at the Fermi surface. Authors thank L. N. Fedotov for providing the pure titanium. Orig. art. has: 6 figures and 2 formulas.

SUB CODE: 20/ SUBM DATE: 16Jun65/ ORIG REF: 006/ OTH REF: 007

L 36460-66   EWT(m)/T/EWP(t)/ETI   IJP(c)   JD

TITLE: Temperature-pressure dependence of the superconducting transition in zinc

TOPIC TAGS: zinc, temperature dependence, pressure effect, superconducting transition

ABSTRACT: The effect of uniform pressure on the superconducting transition temperature T_k in zinc has been investigated at pressures up to 26,000 atm. The superconducting transition temperature at 26,000 atm is reduced by a factor of 2.7. It has been shown that an exponential function most satisfactorily describes the dependence of T_k on pressure. The possibility of transferring a superconductor to the normal state by subjecting it to pressure has been described. Orig. art. has: 2 figures, 7 formulas, and 1 table. [Based on authors' abstract]   [NT]

Card   1/1

TITLE: Effect of high pressure on the superconducting transition temperature of
the $Mo_{90}Re_{10}$ and $Nb_{75}Mo_{25}$ alloys

TOPIC TAGS: molybdenum alloy, niobium alloy, temperature dependence,
pressure effect, molybdenum rhenium alloy, niobium molybdenum alloy

ABSTRACT: The effect of pressures up to 28,000 atm on the superconducting
transition temperature of $Mo_{90}Re_{10}$ and $Nb_{75}Mo_{25}$ alloys has been investigated.
It was found that the transition temperature in $Nb_{75}Mo_{25}$ alloy decreases with
hydrostatic pressure whereas it increases in $Mo_{90}Re_{10}$. The results obtained

were compared with the variation of the density of states on the Fermi surface $N(O)$ during compression. The original article offers curves showing the $N(O)$ density of states dependence on the number of valence electrons, the super-conducting transition of the $Nb_{75}Mo_{25}$ alloy at various pressures, and the super-conducting transition temperature dependence of the $Mo_{90}Re_{10}$ and $Nb_{75}Mo_{25}$ alloys on pressure. The authors thank V. V. Baron, Institute of Metallurgy, Academy of Sciences SSSR for making available high quality alloys for the experiment. Orig. art. has: 3 figures and 1 formula. [Based on authors' abstract]   [KP]

SUB CODE: 20/ SUBM DATE: 11Feb66/ ORIG REF: 004/ OTH REF: 004/

32839

AUTHORS: Ginsburg, V. A., Yakubovich, A. Ya., Filatov, A. S., Zelenin, G. Ye., Makarov, S. P., Shpanskiy, V. A., Kotel'nikova, G. P., Sergiyenko, L. F., and Martynova, L. L.

TITLE: Heterolytic transformations of polyfluorinated azoalkanes

PERIODICAL:

TEXT: A number of heterolytic transformations of polyfluorinated azo-alkanes was discovered for the first time. The said azoalkanes, while being highly resistant to oxidizing agents, easily react with reducers (HI, H_2S, H_3P) in polar media (ether, methanol) at low temperatures, whereby the azo group is converted into the hydrazo group. Hexafluoro hydrazomethane presents acid properties and is relatively stable in the solvate form in ether or acetone. The etherate reacts with ketene, and the normal diacyl derivative is formed as a result. Hydrogen fluoride is readily separated from hexafluoro hydrazomethane under the action of bases:

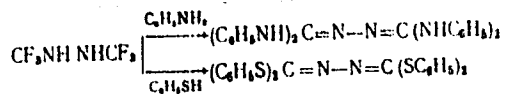Card 1/4

$$CF_3NH\ NHCF_3 \begin{cases} \xrightarrow{C_6H_5NH_2} (C_6H_5NH)_2 C=N-N=C(NHC_6H_5)_2 \\ \xrightarrow{C_6H_5SH} (C_6H_5S)_2 C=N-N=C(SC_6H_5)_2 \end{cases}$$

Hexafluoro hydrazomethane reacts with aluminum chloride to form the dimer of tetrafluoro formazine, and, if oxidized in anhydrous media $(KMnO_4 + CH_3COOH)$, it passes over to the intensively yellow cis-form of hexafluorazo methane, which readily takes the almost colorless trans-form under the action of light, alkali lyes, or metals. In the reduction of azoalkanes which contain the groups CF_2Cl or R_fCF_2, the corresponding hydrazo compounds cannot be isolated, due to hydrolysis. The compound $CF_3NHNHC_6H_5$ can be distilled in vacuo (b.p. $56°C/1$ mm Hg), and passes over to indazole under the action of hydrogen iodide. Under the action of strong acids, the azo group of polyfluorazo alkanes is able to add one proton which, in the case of asymmetric azoalkanes, is added to the nitrogen atom adjoining the more electronegative substituent. These reactions take place most readily in anhydrous hydrofluoric acid, whereby polyfluorazo alkanes are dimerized into benzidine derivatives. Poly-
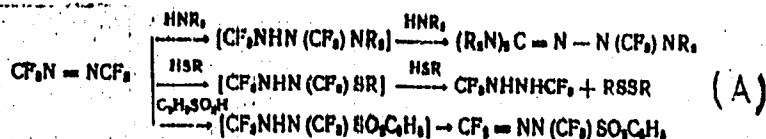
Card 2/7

Heterolytic transformations of...

fluorinated azo compounds are particularly sensitive to nucleophilic reagents. The reaction rate with amines grows with the amine basicity, and the reactivity in azo compounds of the type $CF_3N=NR$ drops in the sequence $R=CF_3 > CF_2H > CH_3$. With secondary amines, mercaptans, and sulfinic acids, the azo compounds react as follows:

$$CF_3N=NCF_3 \begin{cases} \xrightarrow{HNR_2} [CF_3NHN(CF_3)NR_2] \xrightarrow{HNR_2} (R_2N)_2C=N-N(CF_3)NR_2 \\ \xrightarrow{HSR} [CF_3NHN(CF_3)SR] \xrightarrow{HSR} CF_3NHNHCF_3 + RSSR \\ \xrightarrow{C_6H_5SO_2H} [CF_3NHN(CF_3)SO_2C_6H_5] \rightarrow CF_3=NN(CF_3)SO_2C_6H_5 \end{cases} \quad (A)$$

These conversions probably begin with the formation of a transition complex of the type of a π-complex, e. g., $CF_3N=NCF_3$. This assumption

$$\uparrow$$
$$HNR_2$$

is backed by the fact that the transition complex, in the reaction of hexafluorazo methane with trialkyl phosphites, can be isolated under mild
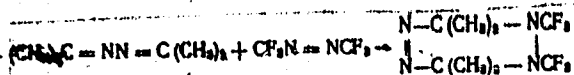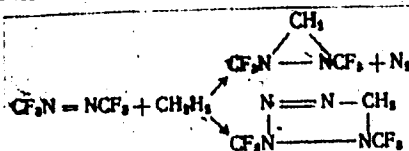
Card 3/7

conditions (cooling with dry ice). On heating, the adduct decomposes to nitrogen, tetrafluoro ethylene, diethyl ether, ethyl fluoride, diethyl fluoro phosphite, and diethyl ethane phosphinate. In analogy to azodicarboxylic acid esters, hexafluorazo methane with dienes readily yields the Diels-Alder addition, reacts with azines according to the scheme

$$(CH_3)_2C = NN = C(CH_3)_2 + CF_3N = NCF_3 \rightarrow \begin{array}{c} N-C(CH_3)_2 - NCF_3 \\ | \\ N-C(CH_3)_2 - NCF_3 \end{array}$$

and with diazomethane as follows:

$$CF_3N = NCF_3 + CH_2H_2 \begin{array}{c} CH_3 \\ CF_3N \overline{} NCF_3 + N_2 \\ N = N - CH_3 \\ CF_3N \overline{} NCF_3 \end{array}$$

Hexafluorazo methane reacts smoothly with organo-magnesium compounds at low temperatures and forms the hitherto unknown acid fluorides of
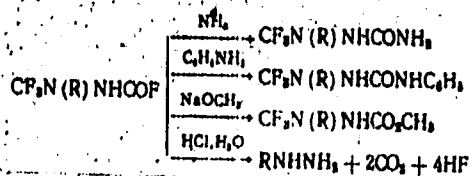
Card 4/7

polyfluoro alkyl-(aryl)-hydrazine carboxylic acids $CF_3N(R)NHCOF$, from which a number of further derivatives was obtained:

$$CF_2N(R)NHCOF \begin{cases} \xrightarrow{NH_3} CF_2N(R)NHCONH_2 \\ \xrightarrow{C_6H_5NH_2} CF_2N(R)NHCONHC_6H_5 \\ \xrightarrow{NaOCH_3} CF_2N(R)NHCO_2CH_3 \\ \xrightarrow{HCl,H_2O} RNHNH_2 + 2CO_2 + 4HF \end{cases}$$

There are 1 table and 3 references: 2 Soviet and 1 non-Soviet.

PRESENTED: June 1, 1961, by I. L. Knunyants, Academician, and M. I. Kabachnik, Academician

SUBMITTED: June 1, 1961

Table 1. Compounds synthesized for the first time.
Legend: (a) compound; (b) boiling point; (c) melting point; (d) does not melt below 300°C.

Card 5/7

GINTSBURG, B.Ya., doktor tekhn.nauk; ADAMOVICH, A.V., kand.tekhn.nauk;
TIKHOMIROV, Ya.V.

Selecting the length of the connecting rod of autombile and tractor
engines. Avt. prom. no. 1:13-17 Ja '61.   (MIRA 14:4)

1. Vsesoyuznyy sel'skokhozyaystvennyy institut zaochnogo
obrazovaniya, i Gosudarstvennyy soyuznyy ordena Trudovogo
Krasnogo Znameni nauchno-issledovatel'skiy avtomobil'nyy i
avtomotornyy institut.
        (Tractors—Engines) (Automobiles—Engines)
                (Connecting rods)

GINZBURG, O.E.

"On the Disociaton of the Triaryl Carbinols." J. Gen. Chem. USSR, 23,
(1953), 9, 1504-1509.

So: Translation-2524467, 30 Apr 1954.

PORAY-KOSHITS, A. Ye., PORAY-KOSHITS, B.A., and GINZBURG, O.F.

"tr. Lab. of Dyestuffs, Leningrad Chemical and Technological Inst. -1945-

"Dyes with Anti-Pyrene Nuclei." Dok. AN, 56, No. 1, 1947

"On Dyes with Antipyrene Nuclei and on a Special Case of Dehydrogenation." Dok. AN, 47, No. 6, 1945.

GINZBURG, O.

CA

Dyes with antipyrine nuclei. A. E. Poral-Koshits, O. F. Ginzburg, and B. A. Poral-Koshits (Leningrad Technol. Inst.) J. Gen. Chem. (U.S.S.R.) 17, 1752-7 (1947)(in Russian); cf. C.A. 42, 360g.—Di-4-aminopyrylphenylmethane-HCl, m. 159°, was prepd. in 82-4% yield according to Knorr (Ann. 238, 166(1887)); picrate m. 215° (from alc.). The HCl salt (2 g.) in 50 ml. hot 4% HCl was treated hot with 0.8 ml. HNO₃ (d. 1.4), heated 10 min. until soln. was obtained, the warm soln. made alk. by NH₄OH and filtered, and the filtrate acidified to Congo red by HNO₃, giving 35% dye (I), m. 252° (from 5% HNO₃). A 3% HCl soln. of I treated dropwise with 20% NaOH until strongly alk. lost color and pptd. di-4-antipyrylphenylcarbinol, m. 172-3° (from ligroin-

benzene). This (0.2 g.) in 40 ml. 2% HCl treated hot with a little Zn dust until colorless, the filtered soln. cooled, and the pptd. needles dissolved in hot water and made alk. with NaOH, gave a white ppt. of the methane deriv., which was converted in alc. to di-4-antipyrylphenylmethane picrate, m. 215°. Antipyrine (7.52 g.) in 10 ml. concd. HCl treated with 2.04 g. p-Me₂NC₆H₄·CHO in 5 ml. HCl, followed by 10 ml. H₂O after 15 min., and let stand overnight gave 91%, di-4-antipyryl(p-dimethylaminophenyl)methane-2HCl, decomp. 175° (from 5% HCl); picrate m. 181-2° (from EtOH). The di-HCl salt (5 g.) in 100 ml. 10% FeCl₃ was heated 1.5 hrs. to 80-3°, cooled, freed of Fe by addn. of NaOH, filtered,

and made alk. with 20% NaOH until the red color vanished and the dye pptd. as the carbinol (II), m. 135.6° (from ligroin); picrate m. 143-4° (from water). Reduction of the carbinol by Zn-HCl as described above gave di-4-antipyryl(p-dimethylaminophenyl)methane-2HCl, decomp. 178° (from 5% HCl); picrate, m. 181-2°. Potentiometric titration curves of I and II are given, which show a typical "slow neutralization" of triphenylmethane dyes. I and II are dyes of red shades.

G. M. Kosolapoff

C A

Imidazole derivatives. 1. Mechanism of formation of benzimidazole derivatives and the role of hydrochloric acid in this reaction. D. A. Deal-Koshits, O. F. Ginzburg, and L. S. Efros (Leningrad Technol. Inst.). J. Gen. Chem. (U.S.S.R.) 17, 1768-73(1947)(in Russian).—Many derivs. of benzimidazole can be prepd. by heating an o-diamine with carboxylic acids in the presence of HCl under pressure. The free diamine, resulting from hydrolysis of the HCl salt, is responsible for the reaction, as the HCl salt is incapable of reaction. The catalytic action of HCl is explained by activation of the CO₂H group by addn. of a proton to O, forming a cation of the acid with electron deficiency at the C atom. The intermediate in the reaction is the product of addn. formed as the result of entry of the unshared electron pair of one N of the diamine into the electron-deficient cation of the acid radical. o-C₆H₄(NH₂)₂ (0.01 mol.) and 0.01 mol. acid in 10 ml. HCl were heated in sealed tubes at 180-5°; after addn. of NH₄OH the products were filtered off and dried. The following benzimidazoles were prepd.: 2-Me, m. 178° (from H₂O), in 70.5% yield after 40 min. reaction using 5% HCl (HCl salt, m. 203°); 2-benzyl, m. 187° (from benzene) (HCl salt, m. 92-4°), in 98% yield from PhCH₂CO₂H, using 10% HCl, duration 40 min.; 2-Ph, m. 290°

(from 30% alc.) (HCl salt, m. 300°), in 95% yield from H₂OH, using 25% HCl, duration 40 min.; 2-(3-pyridyl), m. 246.7° (from water) (HCl salt, m. 295.8°), from nicotinic acid in 40% yield, using 10% HCl, duration 2 hrs.; 2-naphthyl, m. 200.2° (from 30% alc.), from 1-C₁₀H₇CO₂H, using 15% HCl, duration 40 min.; 2-(p-aminobenzyl), m. 211.13° (from alc.), from p-H₂NC₆H₄CO₂H (HCl salt, m. 310.12° (from H₂OH-HCl)), 2-benzhydryl, m. 218.19° (from 60%, H₂OH), from Ph₂CHCO₂H in 44% yield, using 10% HCl, duration 2 hrs. (HCl salt, m. 233-8° (from alc.-HCl)). Heating 0.01 mol. o-C₆H₄(NH₂)₂ and 0.01 mol. BzOH 40 min. to 180.5° in a sealed tube gave 65% 2-phenylbenzimidazole; repetition using o-C₆H₄(NH₂)₂.2HCl gave 0% yield; addn. of 0.5 ml. H₂O to the latter mixt. gave 30% 2-phenylbenzimidazole. Heating an equimol. mixt. of the diamine and BzOH in ligroin 40 min. to 180° gave a 48% yield, while replacement of the ligroin by H₂O decreased the yield to 7%. Heating an equimol. (0.01 mol.) mixt. of the diamine and BzOH in 10 ml. HCl of various concns. 40 min. to 180.5° gave the following yields of 2-phenylbenzimidazole: 5% acid, 10.3%; 10% acid, 31.7%; 20% acid, 74.7%; 25% acid, 100%; 35% acid, 48% yield.

G. M. Kosolapoff

GINZBERG, O. F.

Aug 1949

USSR/Chemistry - Synthesis, Dyes Imidazole Derivatives

"Research in the Field of Imidazole Derivatives. Synthesis of Several New Phenyl- and Alkyo-Phenyl-Derivatives of Benzimidazole," B. A. Poray-Koshits, L. S. Efros, O. F. Ginzberg, Lab of Technol of Org Dyes, Leningrad Tech Inst, 7pp

Zhur Obshch Khim, Vol 19, No 8,

o-Diamines of benzene series, both with grater and lesser basicities than that of o-phenylenediamine, have bonsiderably lower tendency toward condensation with carboxylic acids in an aquous hydrochloric acid medium of optimum concentration under pressure. Nevertheless, this method can still be used in preparing benzimidzaole derivatives except in cases where oxidation of o-diamine prevents its entering into condenstation. In these cases derivatives in question may be prepared by melting reagents at 180°C in absence of oxygen. Examples of condensation of 3,4-toluylenediamine and 3,4-diaminochlorobenzene with benzoic acid confirm earlier conclusions on the mechanism of formation of derivatives of benzimidazole in anacidic medium and explain effect of basicity of original amine in course of this reaction. Submitted 27 Mar 1948

PA 149T30

Dyes with antipyrine nuclei   II   D. L. Ginzburg and B.
A. Porai-Koshits (Leningrad   Technol   Inst.)   Zhur
Obshchei Khim () Gen. Chem.) 22, 715 (1952). cf.
C. A 42, 6340. In aq soln the ionization of carbinol de-
rivs formed by the action of alkali on triarylmethane-
type dyes is accompanied by cleavage of hydroxyl ion and
formation of colored ions   The basicity constant of
disazopwvdphenylcarbinol (I) at 17° is 10⁻⁸ as detd po-
tentiometrically   Two inflection points are found in the
titration curve: 1st at pH about 9.6 at the end of titration
of free NaOH and the 2nd at pH about 8 at the end of titra-
tion of I   G. M. Kosolapoff
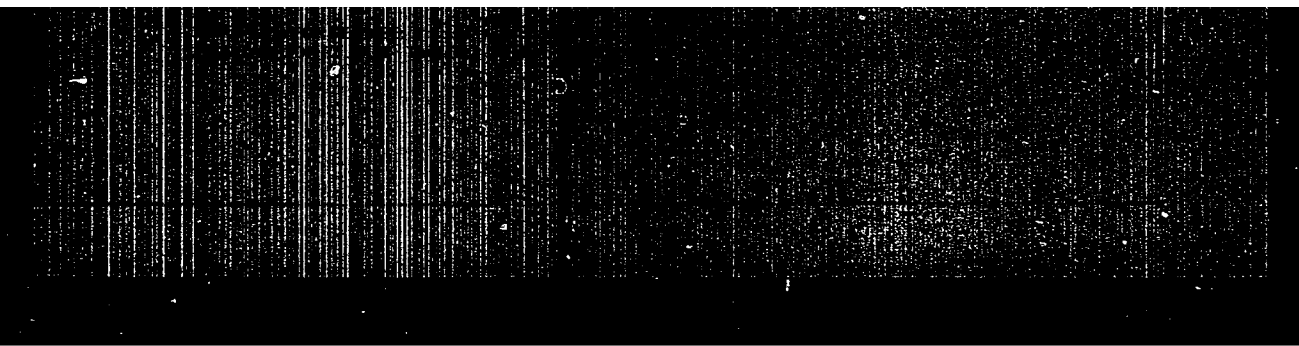
Products of condensation of triarylcarbinols with phenyl-3-methyl-5-pyrazolone. U. R. Chubuk and V. R. Tetyakin (Lensovet Technol. Inst., Leningrad). Zhur. Obshchei Khim. 23, 1049-54(1953).—p-Dimethylamino-substituted-di- and triphenylcarbinols and their Me ethers condense with 1-phenyl-3-methyl-2-pyrazolin-5-one (I), yielding products which in polar solvents dissoc. into the same cations that are formed on soln. of the corresponding dyes in the same solvents. To 7.5 g. I in MeOH was added 5 g. (p-Me$_2$NC$_6$H$_4$)$_2$C(OMe)Ph and the mixt. boiled 4 hrs.,

yielding 91.4% Ph(p-Me$_2$NC$_6$H$_4$)$_2$CCH.C lc:N.NPh.CO (A), decomp. 102-5°, also formed in 66.3% yield from I and the corresponding carbinol, absorption max. 035 mμ, the same as the HI salt of malachite green with nearly the same extinction coeff. Periodic examns. of solns. in PhNO$_2$ for absorption showed a progressive increase of dissocn. (19% in 20 hrs.). Similar boiling of I with p-Me$_2$NC$_6$H$_4$-

C(OH)Ph$_2$ gave 77.5% Ph(p-Me$_2$NC$_6$H$_4$)CCH.CMe:N.-

NPh.CO (B), m. 179-80°, whose absorption coeff. at 500 mμ was about 2.50; in PhNO$_2$ soln. this slowly dissoc. (4.50% in 4.5 days). (p-Me$_2$NC$_6$H$_4$)$_2$CHOH and I similarly

heated in MeOH gave product C, m. 193-4° (decompn.), identified as bis(p - dimethylaminophenyl)(1 - phenyl - 3-methyl-2-pyrazolin-5-on-4-yl)methane (cf. Kehlstadt, C.A. 39, 1642[1]). The polar ionization of A, B, and C occurs at the tertiary C atoms of the carbinol fragment which forms the pos. ion. I and (p-Me$_2$NC$_6$H$_4$)$_2$COH in MeOH give only a soln. colored violet and do not form a ppt. of a condensation product.   G. M. Kosolapoff

GINZBURG, O.F.

Dissociation of triarylmethane dyes. Technol. Inst. Leningrad. O. F. Ginzburg (Len.). *Zhur. Obshchei Khim.* **23**, 1504–9(1953).—The carbinol analogs of triarylmethane dyes are capable of dissocn. with cleavage of HO groups and formation of dye cations. The phenomenon occurs not only in H_2O but also in other solvents. The values of pH actually observed and those calcd. with the aid of ionization consts. (cf. Goldacre and Phillips, *C.A.* **44**, 7063) agreed excellently for several dyes: malachite green HBr salt (4.95 and 4.86); malachite green HI salt (5.02 and 4.94), crystal violet HBr salt (6.40 and 6.25); crystal violet HI salt (6.35 and 6.19). The dissocn. const. of $(p\text{-}Me_2NC_6H_4)_2PhCOH$ is 9.24×10^{-4}, and that of $(p\text{-}Me_2NC_6H_4)_2COH$ is 3.76×10^{-4} (at 19°). The hydrolysis consts. of salts of several dyes were detd. in aq. Me_2CO by detn. of pH of solns. of equimolar compn. of the carbinols and the salts. The pK values found were (in H_2O and aq. 60% Me_2CO): $(p\text{-}Me_2NC_6H_4)_2HCOH$, 5.61 and 4.70; diantipyrylphenylcarbinol 6.56 and 5.60; $(p\text{-}Me_2NC_6H_4)_2$-PhCOH 7.07 and 6.06; 10-methyl-9-phenyl-9-hydroxy-9,10-dihydroacridine 9.58 and 8.55, resp. A plot of pK in H_2O in aq. Me_2CO against that in H_2O gave a straight line, as expected, with slope 1.0. Abs. spectra were detd. for the HI salt of malachite green and the carbinol, as well as of the HI salt of crystal violet and its carbinol. Detn. of optical d. at 600, 620, 630, 635, 640, and 650 mμ in the 1st instance showed that the carbinol is 70% dissocd. in $PhNO_2$ soln. Similar detn. with crystal violet showed that the optical d. at 550, 590, 600, 605, 610, and 620 mμ indicates 90% dissocn. of carbinol in $PhNO_2$.

G. M. Kosolapoff

4/8/54
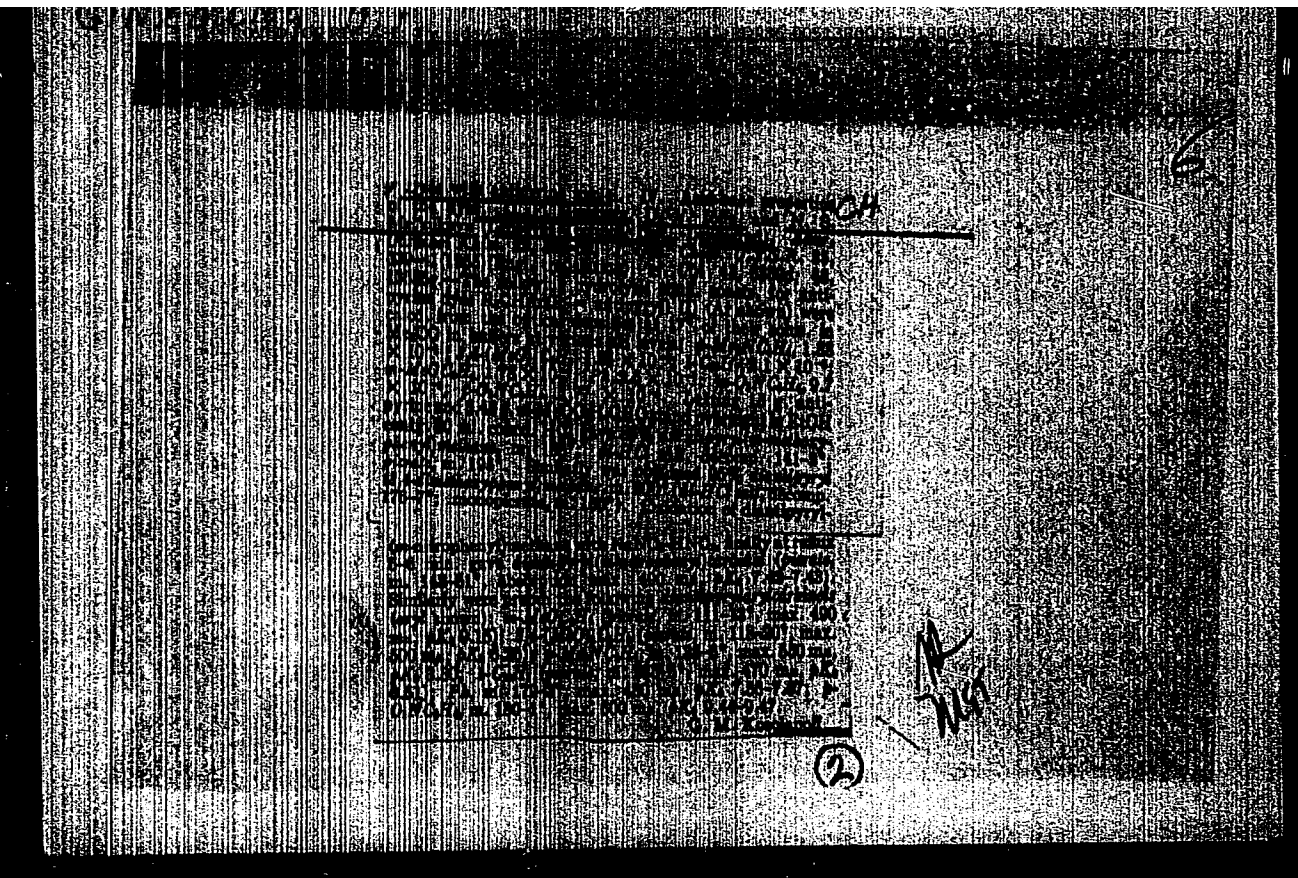
GINZBURG,O.F.; MEL'NIKOVA,N.S.

On aminotriaryl carbinols.   Zhur.ob.khim.25 no.6:1156-1160 Je '55.   /
(MLRA8:12)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta
(Methanol)