TAMEVOSIAN, G. T.

"Synthesis of polycyclic hydroaromatic ketones: II. 3-keto-7methyl--1, 2, 3, 9, 10, 11 - hexahydrophenanthrones". Tamevosian, G. T. and Vardanian, A. G.    (p. 327)

SO:   Journal of General Chemistry, (Zhurnal Obshchei Khimii) 1949, Vol. 19, No. 2.

TAREVOSIAN, G. T.

"Synthesis of polycyclic hydroaromatic ketones: III. 3-keto-1, 2, 3, 11, 12, 12a-hexahydrochrysene". Tarevosian, G. T. and Vardanian, A. G. (p. 332)

SO: Journal of General Chemistry, (Zhurnal Obshchei Khimii) 1949, Vol. 19, No. 2.

L 12576-63      EWP(j)/EWT(m)/BDS    AFFTC/ASD    Pc-4    RM

ACCESSION NR: AP3003319                     S/0191/63/000/007/0075/0077

AUTHOR: Temevos'yan, G. O.

TITLE: Exhibition of achievements of the national economy of the SSSR

SOURCE: Plasticheskiye massy, no. 7, 1963, 75-77

TOPIC TAGS: polyvinyl alcohol, polyvinyl acetate, polyvinyl acetate emulsion, butaphol film, ETs-A cast material, FA monomer, FAED resin

ABSTRACT: Author presents a survey of various vinyl polymers produced by the Soviet industries in the form of powders and films. Polyvinyl alcohol is described. Physico-mechanical properties are listed. Articles can be produced from this alcohol by methods used for thermoplastics. Polyvinyl acetate is described next. It is produced in several forms, depending upon intended uses. Polyvinyl-acetate can be readily intermixed with mineral fillers and is converted into wares by moulding, calendering and spraying. Physico-mechanical properties and commercial brands are described. Polyvinyl acetate emulsions, butaphol film and cast ETs-A material are

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L 12576-63
ACCESSION NR: AP3003319

briefly touched on. Author concludes by summarizing some of the properties of furil varnishes and resins, FA monomer and FAED resins. Orig. art. has: 1 table.

ASSOCIATION: none

SUBMITTED: 00          DATE ACQ: 30Jul63          ENCL: 00

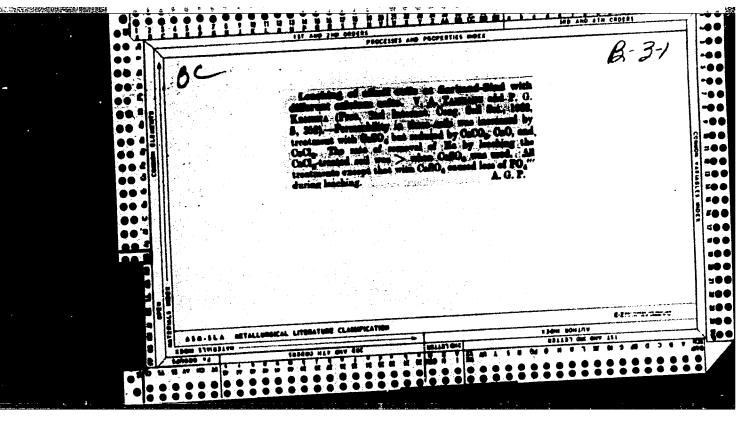SUB CODE: ML          NO REF SOV: 000          OTHER: 000

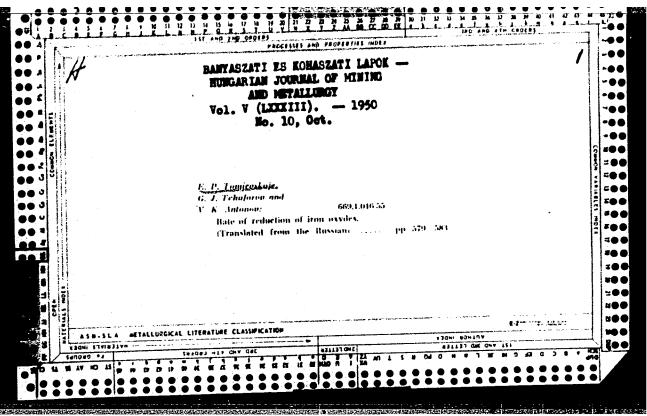Card 2/2

POZLYSHEV, V.A.; PENTIN, Yu.A.; TAMEVSKIY, V.M.

Infrared absorption spectra of some halogenalkanes in the liquid
and solid states and the number and configurations of rotational
isomers.  Opt.i spektr. 3 no.3:211-220 S '57.        (MIRA 10:9)
                        (Isomers--Spectra)

VLOKH, N.P.; MOSHINSKIY, L.G.; BRUN, B.S.; ZOLOTAREV, M.A.;
PEPELYAYEV, B.I.; TAMGIN, V.S.

Eliminating cavities at the Pokrovskiy mine.  Gor. zhur.
no. 12:73-74  D '65.                                    (MIRA 18:12)

BANYASZATI ES KOHASZATI LAPOK —
HUNGARIAN JOURNAL OF MINING
AND METALLURGY
Vol. V (LXXXIII). — 1950
No. 10, Oct.

E. P. Tumicubuie.
G. J. Tchularon and
V. K. Antonov:                    669.1.016.55
Rate of reduction of iron oxides.
(Translated from the Russian) ..... pp. 579-581

GUBKIN, S.I. [deceased]; TAMILIN, R.I.

Hardness of steel at temperatures near solidus.   Vestsi AN
BSSR. Ser. fiz.-tekhn.nav.   no.2:5-9   '58.          (MIRA 11:10)
                          (Steel--Testing)

TAMITSKAYA, M.V., uchitel'nitsa.

Reviewing botany on field excursions to collective-farm fields. Est. v
shkole no.3:42-48 My-Je '53.                                    (MLRA 6:5)

1. Mamontovskaya semiletnyaya shkola, Pushinskiy rayon, Moskovskoy oblasti.
        (School excursions)  (Botany--Study and teaching)

TAMITSKAYA, M.V., metodist.

Experience in conducting student excursions to farms. Est.v shkole no.6:87-88 '53.
(MLRA 6:10)

1. Moskovskiy oblastnoy institut usovershenstvovaniya uchiteley.
(School excursions)

TAMITSKAYA, M.V., uchitel'nitsa

"Destroy weeds!" by S.A.Kott. Reviewed by M.V.Tamitskaia. Biol. v shkole no. 3:94-95 My-Je '58.                                    (MIRA 11:8)

1. Mamontovskaya shkola Mytishchinskogo rayona Moskovskoy oblasti.
(Weed control)
(Kott, S.A.)

TAMITSKAYA, M.V.,uchitel'nitsa

Practical assignments in studying the biology of plants and
insect pests.  Biol. v shkole  no.1:71-75  Ja-F '59.
(MIRA 12:2)

1. Mamontovskaya srednyaya shkola Mytishchinskogo rayona Moskov-
skoy oblasti.
(Botany--Study and teaching)  (Entomology--Study and teaching)

TAMITSKIY, D. F.

MICHURIN, IVAN VLADIMIROVICH, 1855-1935.

Teachers' insufficient knowledge of Michurin biology and ways to overcome it.
Est. v shkole no. 3, 1952.

9.  Monthly List of Russian Accessions, Library of Congress, _____September_ 1953. Uncl.

SOV/154-58-3-10/24

AUTHORS:     Znitov, I. R., Docent, Candidate of Technical Sciences,
             Tamitskiy, E. D., Engineer

TITLE:       On the Problem of the Quantitative Photometric Interpretation
             of the Discriminative Properties of Spectrozonal and Color
             Material for Aerial Photography (K voprosu o kolichestvennoy
             fotometricheskoy otsenke deshifrovochnykh svoystv
             spektrozonal'nykh i tsvetnykh aerofotomaterialov)

PERIODICAL:  Izvestiya vysshikh uchebnykh zavedeniy. Geodeziya i
             aerofotos"yemka, 1958, Nr 3, pp 95-98 (USSR)

ABSTRACT:    This is a presentation of a new method of increasing the accu-
             racy in estimating the discriminative properties of various
             types of photographic color materials. The procedure is as
             follows: A negative is assumed to incorporate features of three
             different types of timber, for example fir, birch, and oak
             trees. The photoelectric photometer measures the density D of
             the features of all three types of timber. Averaged densities
             are obtained from measuring 100 specimens of each type of tim-
             ber. They are plotted in a diagram. The distribution of the
Card 1/3     points along the coordinate axis permits to determine to what

SOV/154-58-3-10/24

On the Problem of the Quantitative Photometric Interpretation of the Discriminative Properties of Spectrozonal and Color Material for Aerial Photography

degree the densities of the images of one group of objects differs from another. This method is most effective in estimating the discriminative properties of two-layer color photographic materials. The density of each layer can be measured at any point of the negative. In three-layer negatives the method of quantitative estimation is complicated by the necessity of establishing a three-coordinate frame of reference. In this case the color shade of the negative can be determined according to the international system of color coordinates XYZ with the aid of a visual colorimeter. The ranges of straying are entered into the standardized color diagram. The advantage offered by this method is self-evident in particular with two-layer negatives which are also referred to as spectrozonal negatives. The method was successfully tested in the Laboratory of Aerial Photography Methods of the Chair of Cartography at the MGU. There are 4 figures and 1 reference, 1 of which is Soviet.

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SOV/154-58-3-10/24

On the Problem of the Quantitative Photometric Interpretation of the Discrim-
inative Properties of Spectrozonal and Color Material for Aerial Photography

ASSOCIATION:   Moskovskiy ordena Lenina i ordena Trudovogo Krasnogo Znameni
               Gosudarstvennyy universitet im. M. V. Lomonosova (Moscow Lenin
               Order and Order of the Red Labor Banner State University imeni
               M. V. Lomonosov)

SUBMITTED:     December 3, 1957

Card 3/3

INDICHENKO, I.G.; TAMITSKIY, E.D.

A new copying apparatus for the printing of colored and spectrozonal
aerial photographs. Geod.i kart. no.5:30-35 My '61. (MIRA 14:6)
(Color printing)     (Map printing)

GORBATOV, V.A.; TAMITSKIY, E.D.

     Investigating the stability of the color characteristics of a
landscape being photographed. Geod. i kart. no.11:34-38   N '64.
                                          (MIRA 18:2)

On the Reduction Velocities of Iron Oxides.  E. P. Tamievskaya, G. I. Chufarov, and V. K. Antonov.  (Banyaszati es Kohaszati Lapok, 1950, vol. 5, Oct., pp. 579-583).  [In Hungarian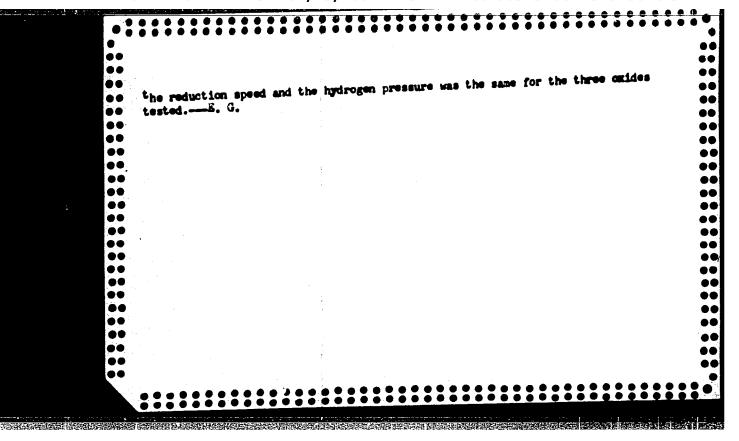].  This paper is a translation of a paper published in the April 1950 issue of the Bulletin of the Russian Academy of Science.  The authors investigated the reduction velocities of $Fe_2O_3$, $Fe_3O_4$, and FeO for certain determined surface areas.  They also determined the oxygen pressures corresponding to the dissociations at certain reduction velocities.  The preparation of the specimens and the test procedure are described and the results are given in tables and graphs.  The authors draw the following con-clusions:  (1) Thermodynamical calculations confirm that at temperatures between 900° and 1200° K. the equilibrium oxygen pressure during dissociation is about $10^{10}$ times greater for $Fe_2O_3$ than for FeO.  (2) In spite of the large difference as regards dissociation conditions, the reduction velocities of the three oxides when reduced with hydrogen and for equal surface areas are about equal; the corresponding activation energies are 13.5 to 16.5 kg.cal./mol.  (3) The relation between the reduction velocity and the hydrogen pressure is not linear; removal of oxygen from the solid phase lattice structure follows laws during dissociation which are different from those during reduction.  (4) The adsorbtion-catalytic character of the reduction process has been confirmed.  (5) The relation between (over)

METALLURGICAL LITERATURE CLASSIFICATION

the reduction speed and the hydrogen pressure was the same for the three oxides tested.—E. G.

VEYMER, Arnol'd Tynuvich; TAMJARV, K., red.; SEPP, A., tekhn. red.

[Socialist industrialization of the Estonian S S.R.] Eesti
NSV sotsialistik industrialiseerimine.  Tallinn, Eesti
Riiklik Kirjastus, 1958.  389 p. [In Estonian]  (MIRA 15:1)
                    (Estonia--Industries)

SCHNEIDR, Heinrich, kand. yur. nauk; TAMJARV, K., red.; KOHU, H.,
        tekhn. red.

        [Intercollective organizations and their legal status in the
        Estonian S.S.R.]Kolhoosidevahelised organisatsioonid ja
        nende oiguslik seisund Eesti NSV-s.  Tallinn, Eesti Riiklik
        Kirjastus, 1961. 121 p.                        (MIRA 15:11)
                (Estonia—Collective farms)

TAMJÄRV, K., red.; SEPP, A., tekhn. red.

[Protection of labor safety in agricultural establishments]
Töökaitse ja ohutustehnika pollumajandusettevotetes. Tallinn,
Eesti Riiklik Kirjastus, 1963. 489 p.          (MIRA 16:12)
    (Agricultural laws and legislation)
    (Agriculture--Safety measures)

LIDARZHIK, M.; MIEZIVA, I.; BERANOVA, D.; TAMKHINA, I.

Low molecular weight epoxide resins and their engi-
neering uses. Khim.prom. no.3:209-213 Ap-My '60.
(MIRA 13:8)

1. Issledovatel'skiy institut sinteticheskikh smol i lakov,
Pardubitse, Chekhoslovakiya.
(Resins, Synthetic)

L 7520-66    EPA(s)-2/EPF(c)/EWP(j)/EWT(m)/ETC(m)/T    RM/WW

ACCESSION NR: AP5016887

AUTHOR: Zvonarzh, V.(Pardubitse); Tomkhina, I. (Pardubitse)

UR/0374/65/000/003/0087/0092
678:620.179.16

TITLE: Static and dynamic properties of fiberglass reinforced plastics.
Part 2. The effects of thickness

SOURCE: Mekhanika polimerov, no. 3, 1965, 87-92

TOPIC TAGS: fiberglass reinforced plastic, plastic elasticity, elasticity modulus,
polyester resin, Beer equation

ABSTRACT: In a previous communication (Mekh. polim., 1965, 1, 146), the authors
described the influence of the individual components of polyester resin and glass on the
dynamic E and G moduli, and the mechanical loss coefficients d and d' of fiberglass-
reinforced plastics. The present paper is devoted to the study of thickness effects, i.e.,
the influence of the number of layers and the thickness of single layers on the statically
and dynamically determined E and G elasticity moduli. The temperature effects were
also studied. The fiberglass-reinforced plastic was made of Yplast 35 and the unsatur-
ated CHS-Polyester 104 resin with 2% methyl-ethyl ketone peroxide and 1% of a 10%
solution of cobalt naphthenate in toluene. Tests showed that the E and G moduli are, for
all practical purposes, independent of the total thickness of the material; they are sensi-
tive, however, to the thickness of a single elementary layer, i.e., to the glass content

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L 7520-66

ACCESSION NR: AP5016887

within the plastics. The results are in good agreement with theoretical approximate equations; the systematic deviation indicates that the Beer equation (F. Beer, VDI Ztschr., 1959, 101, 463) neglected the wave-like packing of the fibers and assumed an ideal connection between the resin and glass. The dynamic moduli are, as a rule, larger (in absolute terms) than the corresponding static quantities and the difference increases with the temperature. Orig. art. has: 10 formulas, 2 figures, and 3 tables.

ASSOCIATION: None

SUBMITTED: 10Nov64          ENCL: 00          SUB CODE: MT

NO REF SOV: 002          OTHER: 003

Card   2/2

L 53812-65     EPA(s)-2/EPF(c)/EPR/T/EWP(j)     Pc-4/Pr-4/Ps-4/Pt-7     WW/RM

ACCESSION NR: AP5011996

UR/0374/65/000/001/0146/0150
678:539.433

AUTHORS: Tamkhina, I. (Pardubitse); Zvonarzh, V. (Pardubitse)

TITLE: Static and dynamic properties of fiberglass. 1. Effect of temperature

SOURCE: Mekhanika polimerov, no. 1, 1965, 146-150

TOPIC TAGS: fiberglass, polyester, temperature dependence, elasticity coefficient / Uplast 35, CHS Polyester 104

ABSTRACT: The static and dynamic elastic and shear moduli, the coefficients of mechanical and shear loss, and the dielectric loss in fiberglass, cured resins, and glass filler were investigated. Samples were made of Uplast 35 and CHS-Polyester 104. The average glass content was about 55%. The properties of fiberglass depend chiefly on the binder, which was CHS-Polyester 104 in the experiment. The static and dynamic shear and elastic moduli of this material decline rapidly with rise in temperature above 40C, and at 70C are already less than half the initial value. At 20C the dynamic elasticity modulus was found to be about 45 000 $kg/cm^2$, the shear modulus 15 000 $kg/cm^2$. The corresponding

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L 53812-65

ACCESSION NR: AP5011996

Poisson's ratio is about 0.5, and the coefficient of loss about 0.1. For glass the elasticity modulus is near 600 000 kg/cm$^2$. For fiberglass the elasticity modulus is 150 000 kg/cm$^2$ at 20C. It declines with rise in temperature, and the temperature gradient declines with increase in frequency. Mechanical loss generally increases with rise in temperature, but it shows a minimum at 40C. The ratio of elasticity modulus to shear modulus tends to be about 3, and Poisson's ratio about 0.5. Dielectric loss generally increases with rise in temperature, with a maximum at about 80C. Increase in frequency shifts the maximum toward higher temperatures. Orig. art. has: 6 figures and 2 equations.

ASSOCIATION: none

SUBMITTED: 10Nov64

NO REF SOV: 000

ENCL: 00

OTHER: 014

SUB CODE: MT, TD

Card 2/2

TAMKIVI, P. I.

Tamkivi, P. I. - "Control of the Velocity of DC Electric Drive by Changing the Magnetic Current of Machinery in Stages." Min Higher Education USSR. Leningrad Electrical Engineering Inst imeni V. I. Ul'yanov (Lenin). Leningrad, 1956 (Dissertation for the Degree of Candidate in Technical Sciences).

So: Knizhnaya Letopis', No. 10, 1956, pp 116-127

Tamkivi, P.I.

110-1-5/19

AUTHOR:     Tamkivi, P.I., Candidate of Technical Sciences

TITLE:      Speed Control of d.c. Drive by Changing Parts of the
            Magnetic Flux (Upravleniye skorost'yu elektroprivoda
            postoyannogo toka izmeneniyem magnitnogo potoka po chastyam)

PERIODICAL: Vestnik Elektropromyshlennosti, 1958, Vol.29, No.1,
            pp. 17 - 22 (USSR).

ABSTRACT:     The speed of a four-pole d.c. machine can be controlled
            by altering the field current of only one pair of poles. When
            this is done, it may be said that part of the magnetic flux
            has been changed; the term 'dual field control' has been
            used in American literature. If the operating conditions of
            the machine are satisfactory and the mechanical characteristics
            of the drive are suitable, this arrangement will increase the
            range of speed control up to the limit of the mechanical
            strength of the motor. The magnetic field conditions arising
            in motors during this kind of operation are analysed to show
            that if part of the flux is changed, transverse armature
            reaction is to some extent self-compensating. The influence of
            the latter on the resulting flux in a machine, type ПН-68,
            has been calculated and is shown graphically in Fig.2. The
            results show that whilst with ordinary methods of control the
            cross-field has a de-magnetising effect at small flux values,

Card1/3

Speed Control of d.c. Drive by Changing Parts of the Magnetic Flux

it may even have a magnetising effect when only part of the
magnetic flux is changed. When a part of the flux is changed,
re-distribution of the flux may reduce the maximum voltage
between commutator bars, compared with ordinary methods of
control; this is illustrated by the graphs in Fig. 3. It may
also reduce the maximum potential difference on the commutator
as shown in Fig.4.
A formula is given for the external characteristics of the
generator. Practical tests were made with a machine, type
ПH-68, operating as a generator and as a motor. The experimental
data plotted in Fig. 5 show that whilst, with ordinary methods
of control, a two-fold change of speed causes instability, an
eight- or nine-fold change can easily be obtained by altering
the excitation of pairs of poles or of single poles. This
improvement is mainly due to the altered distribution of mag-
netic flux in the machine. At small values of magnetisation,
the cross-field has a smaller de-magnetising effect than in the
normal case.
Transient processes during field control are examined mathemat-
ically and it is concluded that when only part of the field is
varied they differ little from normal. The method is
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110-1-5/19

Speed Control of d.c. Drive by Changing Parts of the Magnetic Flux

recommended for increasing the range of speed control without altering the design of the machine for drives using uncompensated machines. Of the possible methods of control, that in which the poles are controlled in pairs gives the best static and dynamic characteristics.
There are 6 figures and 5 References, 4 of which are Russian and 1 English

ASSOCIATION: **Power Institute**, Ac.Sc. Estonian SSR
(Institut energetiki AN ESSR)

SUBMITTED: July 18, 1956

AVAILABLE: Library of Congress
Card 3/3

AGUR, Ustus; TIISMUS, Hugo; TAMKIVI, P., kand. tekhn. nauk,
    retsenzent; ABO, L., red.; LUMET, E., tekhn. red.

[Electric drives] Elektriajamid.  Tallinn, Eesti Riiklik
Kirjastus, 1963.  625 p.                    (MIRA 16:12)
    (Electric driving)     (Electric motors)

KUBELKA, Vatslav [Kubelka, Vaclav], dokt. tekhn.nauk, prof.; BOGATUROV, B.V.
[translator]; VESELYY, Vityaz'slav, glavnyy retsenzent; TAMKHINA, Ya.,
inzh., doktor, glavnyy red.; VOYTSEKHOVSKIY, V.L., kand.tekhn.nauk,
red.; MIHAYEVA, T.M., red.; MEDVEDEV, L.Ya., tekhn.red.

[Fats, oils and emulsions, and their use in tanning. Translated
from the Czech] Zhiry, masla i emul'sii i ikh primenenie v kozheven-
roi promyshlennosti. Perevod s cheshskogo B.V.Bogaturova. Pod. red.
V.L.Voitsekhovskogo. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po
legkoi promyshl., 1957. 233 p.                          (MIRA 11:2)

1. Slovatskoye vyssheye tekhnicheskoye uchilishche v Bratislave,
Chekhoslovakiya. (for Kubelka).   2. Slovenskaya Akademiya nauk,
Sektsiya estestvennykh i matematicheskikh nauk (for Tamkhina,
Veselyy)
        (Oils and fats)    (Emulsions)

TARM, A.

Notes on loose pages on Juhan Smuul's book of poems Mere ja taeva vahel (Between the Sea and the Sky). p. 1430

LOOMING. (EN KIRJANIKE LIIT) Tallinn, Estonia
No. 10, Oct. 1959

Monthly List of East European Accessions (EEAI) LC, Vol. 8, No. 12, Dec. 1959
Uncl.

TAME, A.

The ideal, the present age, and the positive hero in our dramatic literature.
p. 1404

LOOMING. (EN KIRJANIKE LIIT)  Tallinn, Estonia
No. 10, Oct.. 1959

Monthly List of East European Accessions (EEAI) LC, Vol. 8, No. 12, Dec. 1959
Uncl.

KLFSMENT, I.R.; Prinimali uchastiye:DREBENTSOVA, L.I.; TAMM, A.G.

Composition of compounds separated from intermediate shale
tar fractions with a soda solution.  Khim. i tekh. gor.
slan. i prod. ikh perer. no.10:228-241  '62.        (MIRA 17:5)

BORISOV, M.I.; BOGDANOV, N.P.; GENTS, N.N.; TAMM, A.I.; FILATOVA, I.T.,
red.; GOLICHENKOVA, A.A., tekhn.red.

[Trade Union of Builders; brief outline history] Profsoiuz
stroitelei; kratkii istoricheskii ocherk. Moskva, Izd-vo
VTsSPS, Profizdat, 1959. 190 p. (MIRA 13:5)
(Trade unions)

83860

28.1000
1.5100

S/023/60/000/002/003/003
C 111/ C 333

AUTHOR: Tamm, B.

TITLE: Methods of Linear Interpolation of Curves of Third Order
for Numerically Controlled Milling Machines

PERIODICAL: Izvestiya Akademii nauk Estonskoy SSR. Seriya
tekhnicheskikh i fiziko-matematicheskikh nauk,
1960, No. 2, pp. 160-175

TEXT: The present paper was carried out in the Institut avtomati-
ki i telemekhaniki Akademii nauk SSSR (Institute of Automatics
and Telemechanics of the Academy of Sciences USSR) under guidance
of V. A. Kotel'nikov, Candidate of Technical Sciences.

For the automatic control of the milling process the profile of
the material to be machined is approximated by polygonal lines.
Here the maximum deviation of the polygonal line from the profile
must not exceed a magnitude $\delta$ defined by the demanded accuracy
of the treatment. If the profile is described by $y = f(x)$, then
the x-axis can be divided into equal intervals $\Delta x$ and the
secant line corresponding to these intervals can be taken as
approximation. The choice of $\Delta x$ depends on the mentioned

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S/023/60/000/002/003/003
C 111/ C 333

Methods of Linear Interpolation of Curves of Third Order for
Numerically Controlled Milling Machines

$\delta$ - demand. The determination of an optimum $\triangle$ x (i. e. as
large as possible) for which this demand is satisfied, requires
a repeated detailed calculation of the whole polygonal line.
Therefore the author proposes to dispense with equal $\triangle$ x-inter-
vals, and starting from the given initial point to determine the
first $\triangle$ x such that the corresponding secant has the maximum
admissible distance $\delta$ from the curve f(x). The end point of the
secant determines the new initial point, the second secant is
chosen again so that the $\delta$ -demand is maximally utilized, etc.
The method can still be modified by remaining on the first secant
as long as it has again the maximally admissible distance $\delta$
from the curve beyond the intersection with the curve. The author
explicitly calculates this interpolation method for the case where
the profile is described by cubic parabolas.

The author mentions V. V. Karibskiy, Engineer of the Institute
of Automatics and Telemechanics of the Academy of Sciences USSR.

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S/023/60/000/002/003/003
C 111/ C 333

Methods of Linear Interpolation of Curves of Third Order for
Numerically Controlled Milling Machines

There are 12 figures, and 4 references: 2 Soviet and 2 American.

ASSOCIATION: Institut energetiki Akademii nauk Estonskoy SSR
              (Institute of Power Engineering of the Academy of
              Sciences Estonskaya SSR)
SUBMITTED: November 6, 1959

Card 3/3

S/103/61/022/008/007/015
D274/D302

AUTHOR:         Tamm, B.G. (Tallin)

TITLE:          Automatic programming system for machine tools

PERIODICAL:     Avtomatika i telemekhanika, v. 22, no. 8, 1961,
                1038-1054

TEXT:  The computation of change points (i.e. points where one type
of curve intersects another type) is considered for a linear-circu-
lar interpolator along a contour consisting of lines and circles:
a system of automatic programming is proposed for computing these
points. The track of the cutter center (the equidistant) is auto-
matically found by a computer. This compares very favorably with
previous methods. The method of computing the equidistant reduces
to simply describing the track of the cutter center by means of a
coded control-program. The control program contains the initial
data (i.e. all the unknown geometrical elements in terms of the
known ones) and the instructions for the computing process. Tables
are given with the code used for the Russian words expressing the

Card 1/5

Automatic programming system...

S/103/61/022/008/007/015
D274/D302

geometrical elements and the instructions. The program is punched
on tape in the form of a combination of decimal and octary figures.
The elementary code notations are fed into the computer in the deci-
mal system; the complex notations and the instructions are fed in
the octary system. The notations are fed to the working memory of
a general-purpose computer (GPC), and the instructions are read
gradually by the input unit in the course of the computation pro-
cess. The system of automatic programming (SAP) itself is always
placed in the permanent memory of a general-purpose digital compu-
ter. The SAP operates as follows. The computation process can
start after the coded notations are fed to the working memory. The
instructions are fed (after reading) to a control unit. This unit
forms (automatically) the algorithm of the computations and deci-
phers the input data. The deciphering is done by two devices: the
decipherer of commands, and the decipherer of the geometrical
meaning of the command. The first decipherer divides the commands
into two groups, so that the second decipherer receives only the
commands containing geometrical elements. Each geometrical element
has its own converter. A geometrical element which passes through

Card 2/5

Automatic programming system...

S/103/61/022/008/007/015
D274/D302

the second decipherer and its converter, is expressed by its appropriate characteristic (a circle e.g. is expressed by the coordinates of its center and its radius). The converters constitute the converter unit. This unit, besides transforming the given geometrical elements into standard form, solves also problems of finding the equidistant. After the elements of the equidistant have been put into standard form, all the change points are calculated which are required for determining the continuous track of the cutter center; other relevant data of the cutter (its radius e.g.) are given by the control unit and processed. The last stage of the computation process consists in finding the increments (with respect to the coordinate-axes) of conti-guous points of the equidistant. Then the increments leave the output of the computer in the form of perforated tape, ready for use by the interpolator. In principle, the described system of automatic programming can be incorporated in any general-purpose computer with sufficient data-storage capacity, provided it is equipped with a special input device for the code or the system. An example is given of transforming a straight line to standard form. Another example illustrates the calculation of

Card 3/5

Automatic programming system...      S/103/61/022/008/007/015
D274/D302

the change points given by the intersection of a straight line and
a circle. The control functions of the control unit are described,
and an average working cycle of the system is considered as an ex-
ample. The system was programmed for actual conditions and experi-
mentally tested on the computer M-3. The results showed that the
time gained by using the system is expressed by a factor of 7 to 8
(as compared with non-automatic means) in the case of relatively
simple parts; the gain is much greater for complex parts. If faster
computers are used (for example "Minsk-1"), and photo-electric input-
devices, computation time is reduced by a factor of 60. The system
saves brain-work and time. As the program is coded, the errors in
the data processing are reduced to a minimum. It is no longer nec-
essary to make accurate drawings of parts; it is sufficient to make
sketches by hand, hence the labor of the designer is considerably
facilitated. There are 8 figures, 5 tables and 4 references: 2 Sov-
iet-bloc and 2 non-soviet-bloc. The references to the English-lan-
guage publications read as follows: A. Siegel: Automatic Programming
of Numerically-Controlled Machine Tools. Control Engineering, no. 10,
October 1956. D.T. Ross: Automatic Programming. Aircraft Production,
v. 20, no. 5, May 1958.
Card 4/5

TAMM, B.

First interdepartmental conference on methods for preparing
information for program-controlled machine tool.
Eesti tead. akad.tehn. füüs. no.1:77-78 '62.

TAMM, B. G.

Stanki i instrument, no. 10, 1962, p. 44

Dissertations

S/121/62/000/010/005/005
D040/D112

**The following dissertations for the degree of Cand. of Technical Sci. were presented:**
Electric Motors in Unstabilized Motion Periods"; V.M. Kolesnikov, at the
All-Union "Order of the Red Banner of Labor" NII of Electromechanics, "In-
vestigation of a Pulse Drive With a Step-by-Step Motor and Development of
Its Elements"; S.N. Korchak, at the Moskovskiy stankoinstrumental'nyy
institut (Moscow Institute of Machine Tools and Instruments), "Investiga-
tion of the Machinability of Steels in Grinding by Wheels Having Different
Properties"; Ye.P. Mikityuk, at the Kiyevskiy ordena Lenina politekhniche-
skiy institut (Kiyev "Order of Lenin" Polytechnic Institute), "Investiga-
tion of the Effect of Partial Bimetallization on the Wear Resistance of
Cast Iron Friction Couples"; N.K. Ostroumov, at the Moskovskoye ordena
Trudovogo Krasnogo Znameni vyssheye tekhnicheskoye uchilishche im. N.E.
Baumana (Moscow "Order of the Red Banner of Labor" Higher Technical School
im. N.E. Bauman), "Investigation of the Automatics of Mechanical Copying
in Machine Tools with Coordinate Cams and Elastic (Flexible) Links"; B.G.
Tamm, at the Nauchno-issledovatel'skiy tekhnologicheskiy institut (Techno-
logical Scientific Research Institute), "Methods of Automatically Pro-
gramming the Calculation of Initial Data for Program Control Systems";

Card 2/3

KOBRINSKIY, A.Ye., red.; TAMM, B.G., red.; SKVORTSOVA, A., red.;
        TOOMSALU, E., tekhn. red.

[Methods for treating information for program controlled
machine tools] Metody podgotovki informatsii dlia stankov
s programmnym upravleniem; sbornik statei.  Tallinn, 1963.
183 p.                                      (MIRA 17:2)
1. Eesti NSV Teaduste Akadeemia. Kibernetika instituut.

TAMM, B.G., kand. tekhn. nauk

New system of automatic programming for metal-cutting tools.
Vest. AN SSSR 33 no.12:42-45 D '63.          (MIRA 17:1)

1. Institut kibernetiki AN Estonskoy SSR.

TAMM, B. G.

"Sur la programmation automatique des systemes de commande."

report submitted for 4th Intl Cong, Cybernetics, Namur, Belgium, 21-25 Oct 64.

TAMM, B.

Methods for the automatic computation of trajectories for the mechanical treatment of a certain class of spatially complex surfaces. Eesti tead akad tehn fuus  no.3:182-189  '61.

1. Academy of Sciences of the Estonian S.S.R., Institute of Cybernetics.

PRUUDEN, E.; PRUUDEN, Yu. [Pruuden, J.]; TAMM, B.

Approximate determination of the optimal sequence of a given
combination of machining positions. Izv. AN Est. SSR. Ser.
fiz.-mat. i tekh. nauk 14 no.3:455-463 '65.   (MIRA 18:11)

1. Institut kibernetiki AN Estonskoy SSR.

AUTHOR: Artym, A. D., and Tamm, D. L.

TITLE: Selecting the Transmitting System for Stereophonic Radio Broadcasting

ABSTRACT: From a consideration of the requirements of a stereophonic radio-
transmission system, the following fundamental principles of the system have
been drawn: (1) transmitting both stereo-sound channels can be realized by
one radio transmitter having a subcarrier; (2) stereophonic program
transmission can be realized by FM in the microwave band by using standard
transmitters; (3) transmission-channel signals can be formed by the Crosby
sum-difference method. The AM-subcarrier system has been selected for its
simpler two-channel modulation and particularly for its simpler channel
division in the receiver; with an FM system, a better (by 7 db) anti-noise
feature could be obtained only by considerable complication of the receiver

Card 1/2

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Selecting the Transmitting System for Stereophonic Radio Broadcasting

circuit. Experimental testing of an AM master oscillator (a block scheme is presented) showed good quality in both channels with only 11 tubes and a simple alignment. The channel frequency characteristics show that the nonlinear distortion factor in any of the channels is not higher than 1.5% with m = 100%. The background-noise level lies lower by -65 db than the signal level at m = 100%. The experiments have proven that: (1) the above transmission-signal principle permits easy division of the two channels; (2) the master oscillator and the transmitter can secure a high quality of reproduction of the program. Bibliography: 5 items.

V.M.L.

Card 2/2

TAMM, E. I.

BELOUSOV, A. S.; RUSAKOV, S. V.; TAMM, E. I.; TATARINSKAYA, L. S.

"Photoproduction of $\pi$-Mesons from Deuterium"

report presented at the Intl. Conference on High Energy Physics, Geneva,
4-11 July 1962

RAUDAM, E.I.; REYNET, Ya.Yu.; TIKK, A.A.; VEL'DI, A.T.; TAMM, E.I.

Use of aerosols and electroaerosols in the acute stage of polio-
myelitis especially in tracheotomized patients.  Zhur. nevr. i
psikh. 60 no.11:1428-1434 '60.                    (MIRA 14:5)

1. Kafedry nevrologii i obshchey fiziki Tartuskogo gosudarstvennogo
universiteta i respiratornyy tsentr Tartuskoy respublikanskoy
klinicheskoy bol'nitsy.
           (POLIOMYELITIS)   .      (TRACHEA—SURGERY)
                    (INHALATION THERAPY)

AUMEES, Leo; TAMM, F., red.

[The bird population of Vilsandi] Vilsandi linnuriik.
Tallinn, Eesti Riiklik Kirjastus, 1963.  54 p. [In
Estonian]                                (MIRA 17:6)

IVASK, Albert; TAMM, F., red.; LUMET, E., tekhn. red.

[Rõuge - Haanja - Vastselinna] Rouge - Haanja -
Vastseliina.  Tallinn, Eesti Riiklik Kirjastus, 1962. 1 v.
                                        (MIRA 17:1)
            (Estonia--Description and travel)

RENNO, Olav; TAMM, F., red.

Matsalu.  Tallinn, Kirjastus "Eesti Raamat,"  1965.  103 p.
[In Estonian]                                (MIRA 18:4)

... away in assay of the luminosity of A heated to a tem-
perature of some thousands of degrees by adiabatic com-

USSR.

Compressibility of argon under high adiabatic compression. Yu. N. Ryabinin, A. M. Markevich, and I. I. Tamm. Zhur. Eksptl. i Teoret. Fiz. 24, 107–13(1953). The d., vol., and compression rate of A (technical grade: 94% A, 4% $N_2$, 2% $H_2O$) were measured at pressures from 2100 to 7000 kg./sq. cm. The Poisson coeff. was 1.60. The velocity of sound was calcd. to be the same as in the case of an ideal gas. The $pV/RT$ ratio was approx. one. Thus, under the conditions used, A behaved like a quasi-ideal gas.                    A. P. Kotloby

TAMM, I·I.

Effect of a screening on the oxidation and decomposition of metal and at high temperatures and very high pressures

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Formation of nitric oxide during adiabatic compression of air mixtures. Yu. N. Ryabinin, A. M. Markevich, and I. I. Tamm (*Dokl. Akad. Nauk SSSR*, 1954, 95, 111—113).—Experiments are described in which NO is produced by sudden compression and expansion of air or air/A mixtures. The % of NO formed increases with the compression ratio and the speed depending on the wt. of piston used) at which the adiabatic cycle is performed, and reaches ~1.9% at 8300 kg per sq. cm. for compression ratio 720 and piston weighing 187 g. Addition of A to air in the 1 : 1 proportion increases the max. temp. obtainable and raises the yield of NO to 1.57% at 3900 kg per sq. cm. for compression ratio 292 and piston weighing 141.5 g.
—S. K. LACHOWICZ.

TRANS D178251, 22-3 -55

*Тамм, I. I.*

USSR/Physical Chemistry - Kinetics, Combustion, Explosions, Topochemistry, Catalysis.

B-9

Abs Jour: Referat. Zhurnal Khimiya, No 2, 1958, 3841.

Author : Yu. N. Ryabinin, A.M. Markevich, I.I. Tamm.
Inst   : Academy of Sciences of USSR.
Title  : Formation of Nitrogen Oxide by Adiabatic Compression of Combustible Mixtures.

Orig Pub: Dokl. AN SSSR, 1957, 112, No 2, 283-286.

Abstract: A method to increase NO yield of the diabatic air compression to 9000 kg per sq.cm by rising the temperature at the expense of combustion of gases added to the air is proposed. The methods of carrying out the experiments were described earlier (RZhKhim, 1954, 37431). The maximum NO yield (in %) in mixtures containing 5.5% of $CH_4$ and 94.5% of air, 5.5% of $CH_4$, 52.7% of $O_2$ and 41.8% of $N_2$, 18.3% of $H_2$, 45.4% of $O_2$ and 36.3% of $N_2$, and 15.6% of CO, 46.1% of $O_2$ and 38.3% of $N_2$ was

Card   : 1/2

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USSR/Physical Chemistry - Kinetics, Combustion, Explosions, Topo-
chemistry, Catalysis.

Abs Jour: Referat. Zhurnal Khimiya, No 2, 1958, 3841.

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1.4, 2.86, 2.37 and 1.7 correspondingly. The authors emphasize
the influence of the cooling speed of the reacting mixture on
the NO yield.

Card    : 2/2

-2-

$\Gamma \Lambda M M , \Gamma \cdot 1 \cdot$

AUTHOR:    MARKEVICH,A.M., TAMM,I.I., RYABININ,YU,N.                · PA - 2776
TITLE:    Formation of Hydrocyanic Acid under Strong Adiabatic Compression of
Gas Mixtures. (Obrazovaniye sinil'noy kisloty pri sil'nom adiabati-
cheskom sshatii gazovykh smesey, Russian)

ABSTRACT:    In the authors' previous works the reaction of the forming of nitrogen
oxide was investigated by high adiabatic compression. It was also
possible to obtain yields of up to 1% from pure air within some ten
thousandths parts of a second, at a compression of up to 700 and a
pressure of 8000 - 9000 kg/cm². By dilution of the mixture with argon,
by which higher temperatures were attained, or by the addition of
fuels (methane, $H_2$, CO), the authors were able to increase the nitrogen
yield up to more than 3 % by increasing the temperature by means of
combustion. Under these circumstances the production of HCN is also
possible and was studied on this occasion. Thermodynamic consider-
ations point to the face that with a rise of temperature the equilibrium
is shifted in the case of this reaction in favor of the formation of
HCN, which is similar to what is the case with the formation of NO.
Now HCN formation in nitrogen-hydrocarbon mixtures, i.e. methane,
and acetylene, was investigated. In the case of methane there was
no reaction up to 10 000 kg/cm². Only considerable additions of

Card 1/2

Formation of Hydrocyanic Acid under Strong Adiabatic       PA - 2776
Compression of Gas Mixtures.

argon (77°) could make this possible (table 1), and the highest HCN
yield amounted to 1 %.of the original admixture volume. Much more
HCN was obtained from acetylene mixtures. Reaction begins at a
pressure of about 1000/kg/cm² and the yield is about 3 % HCN (at a
pressure of 5000-9000 kg/cm²) The addition of argon also here leads
to an increase of the yield of HCN up to 4 %. The shape of the ex-
perimental curves deserves special interest: They are characterized
by transition to saturation. Apparently the constant HCN yield is
to be explained by the cooling regime, in which connection a sort
of "hardening" takes place. Therefore, the HCN quantity, which is
actually proved by means of the reaction products, need not corre-
spond to that quantity which was obtained by experiments carried out
at maximum temperatures, but it can be much smaller. Cooling of
reaction products forms an integral part of the adiabatic cycle.
By this it is possible to explain the occurrence of a horizontal
section of the curves (illustration 1) at a pressure of about

Card 2/2       4000-4500 kg/cm². (1 table, 1 drawing, 6 citations from Slav pub-
                lications).
ASSOCIATION:   Institute for Chemical Physics of the Academy of Science of the USSR.
PRESENTED BY:  V.N.KONDRAT'YEV
SUBMITTED:     20.11.1956
AVAILABLE:     Library of Congress

AUTHORS:       Markevich, A. M., Tamm, I. I., Ryabinin, Yu. N.

TITLE:         The Formation of the Formaldehyde in an Adiabatic Compression
               of Methane-Oxygen Mixtures (Obrazovaniye formal'degida pri
               adiabaticheskom szhatii metano-kislorodnykh smesey)

ABSTRACT:      The authors employed a method suggested already earlier (Ref 1).
               The methane used contained 1-2% of higher hydrocarbons. The
               most interesting part of the adiabatic cycle,  within which the
               pressure increases to some hundreds and thousands of $kg/cm^2$,
               lasts only some ten-thousandths of a second. The velocity of
               the temperature change of the compressed gas is therefore also
               $10^6$-$10^7$ degree/second, so that a rapid drop of temperature in
               the expansion of chemically active gas mixtures leads to a
               high degree of hardening (Ref 2); thus, the reaction may be
               fixed at an intermediate stage. In the paper by M. S. Furman
               and D. S. Tsiklis (Ref 7) the formation of formaldehyde in an
Card 1/3       adiabatic compression of methane-oxygen mixtures was qualita-

SOV/76-32-10-3/39

The Formation of the Formaldehyde in an Adiabatic Compression of Methane-Oxygen Mixtures

tively determined. The present experiments show that the character of the reaction of the mixture depends first of all on the oxygen content. Mixtures with more than 15% $O_2$ ignite under the deposition of soot. It is characteristic that the ignition does not take place at the maximum pressure but a little later when the mixture has expanded. Only with an oxygen content of less than 15% was it possible to interrupt the reduction in order to obtain an intermediate product. The reaction products of the compression have an unpleasant, sharp smell and contain formaldehyde as well as other intermediate products which form an intense fog with air. At a low compression (300-350 kg/cm2) and a low content of formaldehyde this formation of fog is not observed. In mixtures of natural gas and oxygen the formaldehyde formation begins at lower compressions than in pure methane, due to the increase of the oxygen content. The maximum content of formaldehyde (2,2%) is obtained at an oxygen content of 6 and

9%, and at a pressure of about 3000 kg/cm$^2$; it remains constant

Card 2/3     up to 7000 kg/cm$^2$. Mixtures with 12% $O_2$ have a different re-

SOV/76-32-10-3/39

The Formation of the Formaldehyde in an Adiabatic Compression of Methane-Oxygen Mixtures

action character. There are 6 figures, 1 table, and 9 references, 9 of which are Soviet.

ASSOCIATION:    Akademiya nauk SSSR, Institut khimicheskoy fiziki, Moskva (Moscow, Institute of Chemical Physics, AS USSR)

SUBMITTED:    November 28, 1956

Card 3/3

5(4)
AUTHORS:     Markevich, A. M., Tamm, I. I., Ryabinin, Yu. N.     SOV/76-33-3-9/41

TITLE:       The Role of Chilling in the Reaction of the Synthesis of
             Nitrogen Oxide I (Rol'zakalki v reaktsii sinteza okisi azota.I)

PERIODICAL:  Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 3,
             pp 559 - 565 (USSR)

ABSTRACT:    The physical importance of chilling is shown by the example
             of the synthesis of nitrogen oxide and the role of chilling
             rate of the combustion products is pointed out. In the re-
             action $O_2 + N_2 \rightleftarrows 2\ NO - 43$ kcal (1) in the presence of an
             excess quantity of oxygen a temperature rise will favor the
             reaction (in the first phase) towards the right, whereas in
             the case of chilling (in the second phase) the decomposition
             reaction is favored. If in the case of high temperatures the
             reaction rate (RR) is sufficiently high, the NO-concentration
             approaches the equilibrium value. Chilling in the second phase
             of the process (Fig 1) will lead to a still greater deviation
             of the NO-concentration from the equilibrium value in order
Card 1/2     to remain constant at a temperature $T_1$. In publications this

The Role of Chilling in the Reaction of the Synthesis     SOV/76-33-3-9/41
of Nitrogen Oxide I

phenomenon is called chilling. In order to obtain a precise
explanation of the conditions of cooling the connection be-
tween the (RR) of the NO-decomposition and the rate of varia-
tion of the equilibrium concentration are taken into account
at different stages of cooling, and the two entirely different
processes of reaction are determined. The transition from
one reaction are determined. The transition from one reaction
phase into the other is denoted by several critical values
of chilling rate and determines the phase of chilling. There
are 3 figures and 2 Soviet references.

ASSOCIATION:     Akademiya nauk SSSR, Institut khimicheskoy fiziki (Academy
of Sciences, USSR, Institute of Chemical Physics)

SUBMITTED:       April 24, 1957

Card 2/2

5(4)                                                    SOV/76-33-4-3/32
AUTHORS:      Markevich, A. M.,   Tamm, I. I.,   Ryabinin, Yu. N.

TITLE:        The Part Played by Quenching in the Reaction of the Synthesis
              of the Nitrogen Oxides.II.(Rol' zakalki v reaktsii sinteza
              okisi azota.II)

PERIODICAL:   Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 4, pp 764-770
              (USSR)

ABSTRACT:     In continuation of a previous paper (Ref 1) a number of data
              from publications on investigations of the nitrogen oxide
              synthesis under various experimental conditions is explained
              in this paper. The paper which contains the corresponding
              diagrams and tables is divided into the following chapters:
              natural cooling of the reaction products in closed reaction
              vessels. Experiments in apparatus with an intensive cooling.
              Experiments in adiabatic apparatus. Determinations in flow
              apparatus. It was found that all data which were obtained under
              most different conditions may be  considered from one view-
              point and therefore determinations may be made with experimen-
              tal data from two completely different conditions of reaction.
              In one case the rate of the direct synthesis reaction is in-
              sufficient, in the other, the rate of cooling of the reaction
Card 1/2      products is low. In the experimental data investigated the

SOV/76-33-4-3/32

The Part Played by Quenching in the Reaction of the Synthesis of the
Nitrogen Oxides II

NO-yield is determined mainly by the rate of cooling. Ex-
periments which took place under an intensive cooling were
successful only in two cases: in the method of membrane de-
struction (Ref 12) and in experiments on an adiabatic appara-
tus (Ref 15) where a strong increase of the rate of cooling
and a corresponding increase in the NO-yield was attained.
There are 5 figures, 2 tables, and 19 references, 13 of which
are Soviet.

ASSOCIATION: Akademiya nauk SSSR Institut khimicheskoy fiziki Moskva
(Academy of Sciences of the USSR Institute of Chemical
Physics Moscow)

SUBMITTED:  July 23, 1957

Card 2/2

BELYAYEV, A.F. (Moskva); SADOVSKIY, M.A. (Moskva); TAMM, I.I. (Moskva)

Application of the law of similarity to the phenomenon of transmitted detonation in blasts.  PMTF  no.1:3-17  My-Je '60.      (MIRA 14:8)

1. Institut khimicheskoy fiziki AN SSSR.
                          (Blasting)

SADOVSKIY, M.A.; TAMM, I.I., kand.tekhn.nauk; BELYAKOV, G.V., inzh.

Determining safe distances for detonation transmission. Bezop.truda v prom. 6 no.8:5-9 Ag '62. (MIRA 16:4)

1. Institut khimicheskoy fiziki AN SSSR. 2. Chlen-korrespondent AN SSSR (for Sadovskiy).

(Blasting—Safety measures)

TAMM, I. Ye.

"Electrodynamics of Anisotropic Media in the
Special Theory of Relativity."

ZhRFKhO   ch. fizich 1924, Vol 56  p. 248

TAMM, I. Ye

"On the Quantum Theory of Paramagnetism.

Zs. F. Phys. 1925  Vol 32.  p. 582.

TAMM, I. Ye.

"Experiment in Quantitative Formulation of the
Principle of Correspondence and Computing the
Intensity of Spectral Lines."

Zs. F. Phys. 1925. Vol 34,  p. 58.

TAMM, I. Ye.

"Crystallooptics of the Theory of Relativity in
Relation to the geometry of Biquadratic Forms."

ZhRFKhO   ch. Fizich   1925 Vol. 57, p. 209.

TAMM, I. Ye.

"On the Quantum Mechanics of a Rotator.

Zs. F. Phys. 1926. Vol 37. p. 685.

TAMM, I. Ye

"On the Electrodynamics of a Rotating Electron.

Zs. F. Phys. 1929. Vol 55. p. 199.

TAMM, I. Ye.

"On the Quantum Theory of the Molecular
Dispersion of Light in Solid Bodies.

Zs. F. Phys. 1930. Vol 60. p. 345.

TAMM, I. Ye.

"On the Relationship of a Free Electron with Radiation according to Dirac's Theory of the Electron and Quantum Electrodynamics.

Zs. F. Phys. 1930. Vol 62. p. 545.

TAMM, I. Ye.

"Notations on the Dirac Theory of Radiation
of Light and Dispersion.

Zs. F. Phys. 1930. Vol 65. p. 705.

TAMM, I. Ye.

"On the Theory of the Photoeffect on Metals
(S. P. Shubin- co-author).

Zs. F. Phys. 1931  Vol 68. p. 97.

"Generalized Spherical Functions and Wave Functions
of the Electron in the field of a magnetic pole.

Zs. F. Phys. 1931. Vol 71. p. 141.

TAMM, I. Ye.

Leading concepts in the creative work of Faraday. I. Tamm. *Uspekhi Fiz. Nauk*
12, 1-30(1932).

F. H. Rathmann

A S S - S L A   METALLURGICAL LITERATURE CLASSIFICATION

TAMM, I. Ye.

"On the Theory of the Photoeffect on Metals.

Phys. Rev. 1932. Vol 39. p. 170.

CA

A possible kind of electron binding on crystal surfaces. Io. Tamm. *Physik Z.
Sowjetunion* 1, 733–46; *Z. Physik 76*, 849–5X(1932).—A crystal is considered as a periodic
potential lattice.  An electron may be bound on this surface under certain conditions
if its energy falls in a forbidden region of the spectrum of the lattice and is smaller than
the potential energy in free space.  The proper function of such a surface state falls
off exponentially on both sides of the boundary surface.  A simple 1-dimensional
example is calcd. and the discrete spectrum of the surface state obtained.  The possible
meaning of this type of binding is considered.                          G. M. Murphy

A possible binding of the electrons on a crystal surface. I. Tamm. *J. Expil. Theoret. Phys.* (U. S. S. R.) 3, 34–5(1933); cf. *C. A.* 28, 5837.—The electron sometimes appears bound to the boundary surface of a periodic potential grating. This may happen when H′, the energy of the electron, either falls in the forbidden region of the

energy spectrum or becomes less than the potential energy in the space outside. Th proper value ψ for such a state of the surface drops exponentially on both sides of th bounding surface.                                          Marie Goyer

A S B . S L A   METALLURGICAL LITERATURE CLASSIFICATION

**Work function for electrons in metals.** Ic. TAMM AND D. BLOCHINZKY *Physik Z. Sowjetunion* 3, 170-205(1933); cf. *C. A.* 26, 5829.—Math. The work function of electrons depends essentially on the image force and not on a potential barrier at the metal surface.
F. T. ROSENBAUM

ASM-SLA  METALLURGICAL LITERATURE CLASSIFICATION

PROCESSES AND PROPERTIES INDEX

Magnetic moment of the neutron. I. Tamm and S. Altshuler. Compt. rend. acad. sci. U. R. S. S. [N. S.], I,

485 N(in German 488 60)(1934).—From the hyperfine structure of at. spectra it is concluded that the most probable value of the magnetic moment of the neutron is —¹/₂ nuclear magneton (cf. Bacher, C. A. 27, 4167).
B. C. A.

A.S.M.-S.L.A.  METALLURGICAL LITERATURE CLASSIFICATION

the theory of the elementary particle. I. E. Tamm, Compt. rend. acad. sci. U. R. S. S. 2, 151-3(in German 153-5)(1934).—It is suggested that the high proton magnetic spin moment of 2½ nuclear magnetons found by Stern may be explained by an addnl. magnetic spin moment of 1½ which is independent of the particle charge. The possibility of such charge-independent spin moments is shown to follow from the Pauli wave equation in which the particle charge and charge-independent spin moment may be either or both different from zero, corresponding to electrons, neutrons or protons. While the theoretical proton-neutron collision cross sections on such a picture are too small by a factor of $5.10^9$ the quantum mech. possibility of particle transformations may help remove this difficulty.                          Morris Muskat

Tamm, I. Ye.

The formulation of the exclusion principle in Dirac's theory of the positron. Ig. Tamm. *Physik. Z. Sowjetunion* 6, 189-93(1934).—A relativistically invariant formulation of the exclusion principle is given in terms of Dirac's generalized d. matrix. It is shown that this formulation is satisfied by Dirac's expressions for the field-free d. matrix.                     Morris Muskat

Exchange forces between neutrons and protons, and Fermi's theory. Ig. Tamm. *Nature* 133, UNI(1934), cf. Fermi, preceding abstr. — The exchange forces between proton and neutron are calcd., and are found to be too small to account for known interactions. Either the Fermi theory needs substantial modification or the origin of the forces between proton and neutron does not lie in their transmutations.                    Gerald M. Petty

Ca

3

Nuclear magnetic moments and the properties of the neutron. Ig. Tamm. *Nature* 134, 380(1934); cf. C. A. 28, 7144[9]; Tolansky, C. A. 28, 5751[4].—Polemic.
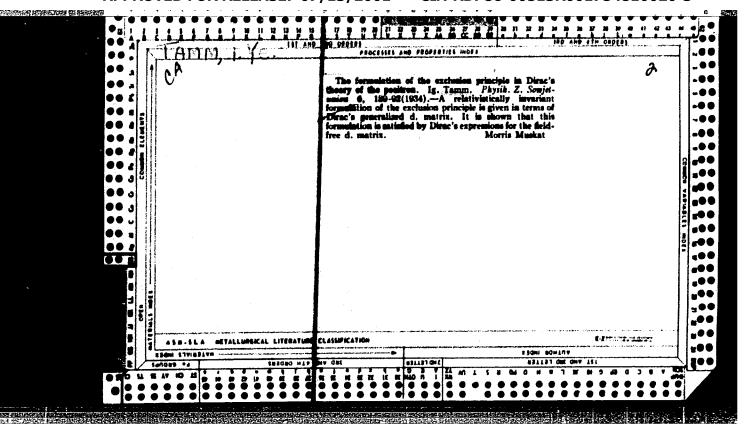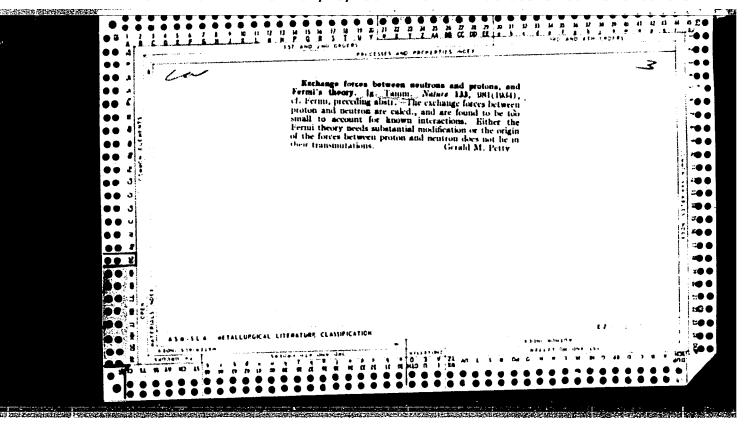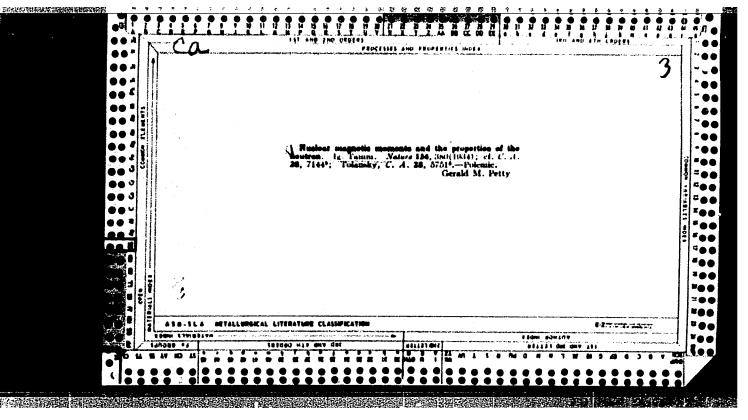Gerald M. Petty

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