$C h \varepsilon c h u l i \nu, \mathcal{B}. \mathcal{B}.$

AUTHORS: Chechulin, B.B., Syshchikov, V.I.

TITLE: The Cyclic Strength of Titanium (Tsiklicheskaya prochnost' titana)

ABSTRACT: A study was made of the cyclic strength characteristics of industrially pure Ti, i.e., of σ_w, of the character of the curve of endurance and notch sensitivity in the presence of cyclic loads, and of the influence exerted by a corrosive medium and by the admixture of H. An ingot of magnesium-fusion-process Ti, produced in an arc furnace (wherein σ_b=58.8 kg/mm^2, δ = 24%, a_k=5.9 kg/mm^2), was forged into test specimens at temperatures of 750-900°C, which were subsequently annealed for 45 minutes at 650-680°. The tests consisted in 10^7 cycles of bending in alternate directions of a rotating cantilever bar. The clear emergence in the curves plotted in semilogarithmic coordinates of a dependence of σ_w on the number of cycles is a good indication that the Ti does have a σ_w. Even when the test specimens were not very

Card 1/2

137-58-2-4254

The Cyclic Strength of Titanium

carefully polished, σ_w in the case of the smooth bars equalled 30.8 kg/mm^2, i.e., was equal to 0.525 σ_b (or 0.61 σ_s). When circular notches were cut into the specimens, the base radii of the notches being 0.75 and 0.15 mm, this markedly lowered the σ_w (to 21 and 11 kg/mm^2 respectively). A comparison of the effective stress concentration factors in the case of Ti and that of various grades of steel (carbon steels and alloy steels) revealed that the Ti possessed the least notch sensitivity when the cyclic ratio (σ_w smooth/σ_w notched) = 1.46. Tests made with the smooth and notched bars in synthetic sea water (similar in composition to that of the Pacific Ocean) showed that, in contrast to the steels and ordinary nonferrous alloys, a corrosive medium has practically no effect on the σ_w of Ti. Annealing the Ti in a 10^{-3} mm Hg vacuum at 950° for 2-10 hours more than doubled its a_k but affected hardly at all (with respect to relative grain size) its σ_w and its notch sensitivity in the cyclic tests. The presence of H did not exert any decisive influence on the fatigue characteristics of the Ti.

G. T.

1. Titanium alloys--Characteristics

Card 2/2

CHECHULIN, B.B.

MIKHAYLOV-MIKHEYEV, Prokopiy Borisovich,doktor tekhn. nauk; VYAZNIKOV, N.F.,
kand.tekhn. nauk, retsenzent; CHECHULIN, B.B., inzh., red.;
SIMONOVSKIY, N.Z., red. izd-va; SOKOLOVA, L.V., tekhn. red.

[New industrial metal-titanium] Novyi promyshlennyi metall - titan.
Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1958. 32 p.
(MIRA 11:8)
(Titanium)

B. B. Chechulin

PHASE I BOOK EXPLOITATION   SOV/2090

25(1)

Sbornik statey, (vyp.) 1 (Welding; Collection of Articles, Nr 1) Leningrad, Sudpromgiz, 1958. 244 p. 4,000 copies printed.

Resp. Ed.: O. I. Kopyrin, Candidate of Technical Sciences; Ed.: I. A. Zhirmunskiy; Tech. Ed.: K. M. Volchok.

PURPOSE: This collection of articles is intended for use in research institutes, institutes of higher learning, design offices, and plants.

COVERAGE: These technical papers deal with the results of research in welding technology. The main purpose of this work was to investigate the effects of various welding regimes and heat treatments on the mechanical properties of welds of austenitic and perlitic composition. A number of experiments also dealt with the welding properties and weldability of titanium-base alloys and a number of nonferrous metals. One of the objects of the research was to establish the relationship between the geometry of the weld seam and its physical properties. The crystallization of the weld, its mechanical properties, and the various factors affecting the grain structure of the metal were studied by a number of scientists. Of special practical interest is the study of the behavior of a welded structure in which the elasticity of the material and of the welded joint are not within the same range. These considerations lead to experiments with mechanically induced changes in the properties of the weld seam. Another problem which presents many difficulties in welding is the behavior and changes in the heat-affected zone next to the welded joint. One of the papers deals with experiments in this field. A description is given of the equipment and the technique used in electroslag welding, which is regarded as one of the major advances in modern welding technology. Several papers deal with special fluxes for this of nonferrous alloys and with the use of special fluxes for this work. Most of the papers are profusely illustrated with graphs, diagrams, and photographs. References are given after each article.

TABLE OF CONTENTS:

SOV/2090

CHECHULIN B.B.

TITLE BOOK EXPLOITATION SOV/3713

Metallurgy; sbornik statey, No. 3 (Physical Metallurgy;Collection of Articles, No. 3), Leningrad, Sudpromgiz, 1959. 390 p. 3,200 copies printed.

Ed.: G. I. Kapyrin, Candidate of Technical Sciences; Literary and Tech. Ed.: V. I. Denisenko.

PURPOSE: This collection of articles is intended for scientific personnel at research and educational institutions and industrial plants and also for advanced students.

COVERAGE: The articles report the results of investigations of 1) the effect of various factors on the susceptibility of constructional and heat-resistant steels and titanium alloys to brittle failure at various temperatures under various conditions of loading (long-time, short-time, impact), to their mechanical properties, structure, and condition of alloys as related to stainless and heat-resistant steels; and 3) corrosion resistance and evaluation of chromium Soviet and non-Soviet steels. The articles are accompanied by numerous Soviet and non-Soviet references. No personalities are mentioned.

Savyalov, A. S., Doctor of Technical Sciences, Professor. Return of Steel-Embrittlement Processes During Heating and the Effect of Alloying Elements on the ... 3

Zaplau, N.B., Candidate of Technical Sciences; E. S. Baylev, Engineer; and V. A. Mironenko, Technician. Effect of Nickel and Copper on Thermal Brittleness of Chrome-Molybdenum-Vanadium Constructional Steel 39

Moros, L. S., Doctor of Technical Sciences; and T. I. Mingin, Engineer. Mechanism of Hydrogen Embrittlement in Steel 51

Gilman, L. L., Doctor of Technical Sciences, Professor; E. N. Kolotin, Engineer; V. P. Bodorovich, Candidate of Chemical Sciences; and V. I. Barukhin, Engineer. Change in Mechanical Properties of Certain Steels Under the Action of Hydrogen at High Temperatures and Pressure 58

Moros, L. S., and N. N. Khosin, Engineer. Investigation of the Mechanism of Hydrogen Embrittlement of Titanium and Its Alloys 72

Rubin, S. I., Candidate of Technical Sciences. Role of Intermediate Structure in the Heat Treatment of Medium-Alloy Constructional Steel 88

Gol'dshteyn, L. M., Engineer. Stability of Structure and Properties of Tempered Steel 106

Menchinskiy, A. L., Candidate of Technical Sciences. Microscopic and Macroscopic Cracks in Quench-Hardened Steel 118

Churakov, V. I., Engineer. Sensitivity of Titanium and Its Aluminum Alloys to Brittle Failure Under Nonrepetitive Loading 136

Chechulin, B. B., Candidate of Technical Sciences. Investigation of the Nonuniform Grain Size of Specimen and Development of the First Failure Crack in Testing Steel for Mechanical Properties 153

Bobkov, P. O., Doctor of Technical Sciences, Professor. Some Observations on the Strength of Metals as Related to Their Microstructure 166

Baumer, B. S., Candidate of Technical Science. Investigation of the Initial Portions of Stress-Strain Diagrams and Relaxation of Stresses for Quench-Hardened Steel 198

SOV/126-7-4-15/26

AUTHOR: Chechulin, B.B.

TITLE: Investigation of the Relationship between the
            Embrittlening Factors and the Micro-Heterogeneity of
            Plastic Deformation of Steel

ABSTRACT: Although the relative importance of various factors
            causing brittle fracture of metals has been studied
            quite extensively, the physical nature and the
            mechanism of the transition of metals from the ductile
            to brittle state is not yet well understood. According
            to a hypothesis put forward by Pashkov, (Ref 1) the
            transition from the ductile to brittle state is
            associated with non-uniform deformation of the micro-
            volumes of the deformed material and, consequently,
            with a non-uniform stress distribution within the
            individual grains. While there are many facts which,
            indirectly, give support to this theory, it has not yet
            been verified by direct experimental evidence and the
            object of the investigation described in the present
Card 1/8   paper was to study the effect of some of the embrittlening

Investigation of the Relationship between the Embrittlening Factors
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factors (low temperature, fast rates of deformation,
large grain size) on the heterogeneity of the deformed
state in steel. Two low-carbon steels containing 0.01
and 0.05% C and a stainless steel 1Kh18N9T, were used as
the experimental materials. The carbon steels were
studied in the normalised condition and the stainless
steel was quenched to obtain fully austenitic structure.
Tensile tests were carried out at room temperature and
at -70°C on specimens with the average grain size of
20 and 43μ, the required grain size having been obtained
by a suitable mechanical and thermal treatment. In
addition, compression tests at various rates of strain
were carried out on specimens measuring 12.7 x 30 and
12.7 x 12 mm; the rate of strain employed in the
static tests was 0.1 sec^{-1}; in the dynamic tests
carried out on a special ram impact machine, the
testpiece, moving at approximately 300 m/sec, was made
to strike a flat, stationary anvil, the rate of strain
attained in this manner being 10^4 sec^{-1}. For the

Card 2/8   subsequent examination of the tested specimens, polished

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Investigation of the Relationship between the Embrittlening Factors
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longitudinal microsections, cut in the plane of the
longitudinal axis, were used. Photographs of such
sections of Armco iron (1) and austenitic steel (2)
testpieces are shown in Fig 1. Two methods were used in
studying the micro-heterogeneity: (1) by measuring the
inequality of the axes of 200 grains (corresponding to
an area of 0.1 to 0.5 mm^2) and calculating the mean
local deformation, ε_{cp}, and scatter of the true deformation,
σ_ε, from the formulae derived by the present author in
his earlier work (Ref 2);   (2) by taking micro-hardness
measurements of each of the grains of the portion of the
microsection examined previously by the first method
(180 to 210 readings), analysing statistically the
obtained data and calculating the mean local hardness and
scatter (mean quadratic deviation) of the micro-hardness
values. To compare the two methods, curves showing the
relationship between micro-hardness and true deformation
($\varepsilon = \ln d/d_0$) under various experimental conditions were
plotted. A curve of this type for a dynamically
compressed, low-carbon steel, is reproduced in Fig 2.

Card 3/8   The mean hardness, H_m, and the scatter of the

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· Investigation of the Relationship between the Embrittlening Factors and the Micro-Heterogeneity of Plastic Deformation of Steel

experimental results, σ_m, were calculated from the formulae given at the bottom of p 608, where n - total number of readings, m_i - number of readings in which micro-hardness equal H_i, was obtained. H_m characterized the degree of deformation of the examined portion of the specimen, σ_m reflected the difference in the degree of deformation of individual grains. To obtain an accurate assessment of the degree of non-uniformity of the deformation, it was necessary to take into account the scatter of the results due to experimental error, σ_0. The magnitude of σ_0 depends on the dimensions of the indentation, i.e. on the hardness of the material. A curve showing the relationship between the mean quadratic error, σ_0 (%), and the indentation diameter (μ) is reproduced in Fig 3. On the assumption that the calculated values of σ_m represented the sum total of σ_0 and the scatter due to non-uniformity of the deformation of individual grains, it was possible to determine the increase of scatter, $\Delta\sigma$, and so obtain the measure of the non-uniformity of deformation. This was illustrated on

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Investigation of the Relationship between the Embrittlening Factors
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the example of steel mark 3 subjected to various
degrees of plastic deformation by rolling; the obtained
data are given in Table 3 under the following headings:
H_m, kg/mm^2 (mean of 100 readings); scatter of the
results σ_m, kg/mm^2; mean quadratic error, σ_0, kg/mm^2;
difference $\sigma_m - \sigma_0$; increase of scatter, $\Delta\sigma$, in
comparison with the undeformed material; increase of
scatter calculated in terms of deformation in accordance
with the micro-hardness versus deformation curve; data
on micro-heterogeneity based on the measurements of the
inequality of the grain dimensions: deformation:
ε_{cp} and scatter σ_ε. The results of experiments on the
effect of the grain size on the non-uniformity of
deformation in steel containing 0.05% C, and tested in
tension, are reproduced in Fig 4, where the scatter, σ,
is plotted as a function of true deformation, ε; circles
and crosses represent data for specimens with the grain
size of 43 and 20 μ, respectively; continuous curves
relate to material tested at room temperatures, the
Card 5/8   broken curves to specimens tested at -70°C. The results

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of the next series of experiments, in which the effect
of the rate of strain on the non-uniformity of
deformation was studied, are given in Tables 2 and 3
and Fig 3. The data for the austenitic steel are given
in Table 2 (top - static tests at 0.1 sec^{-1},
bottom - dynamic test at 10^4 sec^{-1}) under the following
headings: mean true deformation, ε, %; mean
hardness, H_m, kg/mm^2; scatter of the readings, σ_m;
mean quadratic error of the measurements, σ_o, kg/mm^2;
difference $\sigma_m - \sigma_o$. The data for Armco iron tested at
the same rates of strain are given in Table 3 under the
following headings: mean true deformation, ε, %;
mean hardness, H_m, kg/mm^2; scatter of the readings, σ_m;
mean quadratic error of the measurements, σ_o, kg/mm^2;
difference $\sigma_m - \sigma_o$; increase of scatter in comparison
with the material in the undeformed state, $\Delta\sigma$; increase
of scatter calculated in relation to true deformation,$\Delta\sigma/\varepsilon$;
increase of scatter from the data on inequality of the
grain size, σ_ε. Fig 5 shows the relationship between
Card 6/8 σ and true deformation, ε, for the 0.05% C steel with

Investigation of the Relationship between the Embrittlening Factors
and the Micro-Heterogeneity of Plastic Deformation of Steel

grains 25μ diameter (top curves) and the 0.01% C steels
with grains 10μ diameter (bottom curves) deformed in
compression, statically (circles) and dynamically (crosses).
Finally, the effect of temperature on non-uniformity of
deformation in the 0.05% C steel tested in compression
is illustrated in Fig 6, where the σ versus ε curves are
plotted for the specimens tested at room temperature
(curve 1) and at -196°C (curve 2). Several conclusions
were reached from the obtained results. (1) The fact
that similar data on the non-uniformity of deformation
were obtained by two different methods (grain size
determination and micro-hardness measurements) indicate
the soundness of the physical principles on which they
are based. (2) Non-uniformity of deformation is affected
to a considerable degree by the grain size: the larger
the grains, the higher is the degree of non-uniformity of
plastic deformation. (3) Neither temperature nor rate of
strain affect, appreciably, the variation of the degree

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SOV/126-7-4-15/26

Investigation of the Relationship between the Embrittlening Factors
and the Micro-Heterogeneity of Plastic Deformation of Steel

of deformation from grain to grain. There are
6 figures, 3 tables and 4 Soviet references.

SUBMITTED: April 25, 1957

Card 8/8

SYSHCHIKOV, V.I., insh.; CHECHULIN, B.B., kand.tekhn.nauk

Fatigue strength of welded titanium sheet joints under the effect
of bending. Svarka 2:174-181 '59.   (MIRA 14:5)
        (Titanium—Welding)   (Welding—Testing)

CHECHULIN, B.B., kand.tekhn.nauk

Investigating the connection between specimen sizes and the
appearance of the first failure crack in testing the mechanical
properties of steel. Metallovedenie 3:158-165 '59. (MIRA 14:3)
(Steel—Testing)

CHECHULIN, B.B., kand.tekhn.nauk; SYSHCHIKOV, V.I., inzh.; REYNBERG, Ye. S, kand.tekhn.nauk

Investigating the fatigue strength of titanium. Metallovedenie 3:263-278 '59.   (MIRA 14:3)
        (Titanium—Fatigue)

PHASE I BOOK EXPLOITATION   SOV/4573

Moroz, Lev Solomonovich, Doctor of Technical Sciences, Professor; Boris Borisovich Chechulin, Ivan Vasil'yevich Polin, Leonid Vladimirovich Butalov, Savelly Moiseyevich Shul'kin, and Aleksandr Petrovich Goryachev

Titan i yego splavy, tom 1: Tekhnicheski chistyy titan (Titanium and Its Alloys, Vol. 1: Commercially Pure Titanium) Leningrad, Sudpromgiz, 1960. 515 p. Errata slip inserted. 4,200 copies printed.

Ed. (Title page): L.S. Moroz; Ed. (Inside book): Z.V. Vlasova; Tech. Ed.: N.V. Erastova.

PURPOSE: This book is intended for scientific workers, plant engineers, and students in advanced courses in schools of higher technical education and tekhnikums. It may also be used as a manual for designers and industrial engineers (with the exception of mechanical engineers).

COVERAGE: The book presents data on the structure, phase transformation, and physicochemical and processing properties of commercially pure titanium.

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Titanium and Its Alloys (Cont.)   SOV/4573

Shape-casting, vacuum metallurgy, plastic deformation, welding, and soldering
and brazing processes for titanium are discussed. Special attention is given
to problems of constructional strength and to titanium reduction processes.
L.S. Moroz wrote section 1 of Chapter 1, Chapter 2, and sections 1, 4, and 6
of Chapter 3. B.B. Chechulin wrote sections 2-6 of Chapter 1, sections 2, 3,
and 5 of Chapter 3, and Chapters 4 and 9. I.V. Polin wrote Chapter 5;
L.V. Butalov, Chapter 6; S.M. Shul'kin, Chapter 7; and A.P. Goryachev,
Chapter 8. The authors thank A.V. Smirnov for his advice, and I.A. Bytenskiy
for assistance in editing the manuscript. References accompany each chapter.

TABLE OF CONTENTS:

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Titanium and Its Alloys (Cont.)   SOV/4573

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Titanium and Its Alloys (Cont.)   SOV/4573

Card 4/6

Titanium and Its Alloys (Cont.)

SOV/4573

AVAILABLE: Library of Congress (TA480.T54M6)

Card 6/6

VM/dfk/mas
3-1-61

S/032/60/026/009/009/018
B015/B058

AUTHOR: Chechulin, B. B.

TITLE: The Problem of the Scale Factor

PERIODICAL: Zavodskaya laboratoriya, 1960, Vol. 26, No. 9,
               pp. 1116 - 1118

TEXT: In the introduction of his discussion on the subject mentioned
in the title, the author points out that when studying the nature of the
scale factor, its appearance in three deformation- and failure stages
of metals must be differentiated: 1) until the appearance of the first
cracks (Ref. 1), 2) the dependence of the limit of plasticity or the
incipient rupture on the sample size (Refs. 2-6), and 3) the difference
in the rupture process after the appearance of the first cracks in larger
and smaller samples. The statistical and energetic theories (Ref. 7)
might be the most appropriate theories concerning the scale factor. In
the author's opinion, these two theories do not contradict, but complete
each other, if the scale factor is considered according to the above
mentioned stages. In order to define the problem concerning the dependence

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The Problem of the Scale Factor

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B015/B058

of the appearance of the first crack on the sample size, elongation
tests were conducted by the author on geometrically similar samples of
37XH3A (37KhN3A) steel with a diameter of 3 and 15 mm, which were
thermally brought to different degrees of hardness. The experimental re-
sults obtained (Table) show that the appearance of the crack in small
samples takes place at a later stage of deformation than in large samples.
Since the energetic theory cannot explain the existence of the scale ef-
fect before the appearance of cracks, this phenomenon can be explained
best by the statistical theory (Ref. 8). When evaluating the impact
strength, the crack-spreading energy is of great significance and is
mainly responsible for the scale effect. In tensile tests of samples of
different sizes, the appearance of the first crack in small samples at
a later stage of plastic deformation than in large samples, is the physi-
cal basic effect of the scale factor. This phenomenon can best be explain-
ed by the statistical theory, so that the latter may also be considered
to be the basic theory for the definition of the scale effect. N. G.
Plekhanova and S. I. Ratner are mentioned. There are 1 table and 8 ref-
erences: 7 Soviet and 1 US.

Card 2/2

PHASE I BOOK EXPLITATION   SOV/6459

Chechulin, Boris Borisovich

Masshtabnyy faktor i statisticheskaya priroda prochnosti metallov
(Size Factor and Statistical Aspect of Metal Strength) Moscow,
Metallurgizdat, 1963. 118 p. Errata slip inserted. 2100
copies printed.

Ed.: V. P. Kogayev; Ed. of Publishing House: A. I. Ozeretskaya;
Tech. Ed.: R. Ya. Ginzburg.

PURPOSE: This book is intended for engineers and technicians of
plant laboratories, scientific research establishments, design
bureaus, and plants of the metallurgical, machine, ship-build-
ing, and related industries.

COVERAGE: The book summarizes basic data on the effect of
specimen size on mechanical properties of materials. The
size factor is reviewed from the standpoints of brittle and
ductile failure, cold brittleness phenomena, and metal fatigue.

Card 1/5

Size Factor and Statistical Aspect (Cont.)   SOV/6459

The analysis presented in the book of the vast factual
material is performed on the basis of the statistical
theory of the strength of materials. Various theories
on the size effect are evaluated. No personalities are
mentioned. There are 221 references, primarily Soviet.

TABLE OF CONTENTS:

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CHECHULIN, B.B.; BODUNOVA, M.B.

Characteristics of the cold brittleness of commercially pure ti-
tanium. Fiz. met. i metalloved. 16 no.5:693-699 N '63.

(MIRA 17:2)

L 14314-65   EWT(m)/EWP(b)/EWA(d)/EWP(w)/EWP(t)   IJP(c)/ASD(f)-2/ASD(m)-3
ACCESSION NR: AT4048071   JD/MLK   S/0000/64/000/000/0196/0203

AUTHOR: Chechulin, B. B.; Bodunova, M. B.

TITLE: Peculiarities of cold brittleness in titanium

SOURCE: Soveshchaniye po metallurgii, metallovedeniyu i primeneniyu
titana i yego splavov. 5th, Moscow, 1963. Metallovedeniye titana
(Metallography of titanium); trudy soveshchaniya. Moscow, Izd-vo
Nauka, 1964, 196-203

TOPIC TAGS: titanium, commercial grade titanium, titanium cold
brittleness, hydrogen effect, strain rate effect, notch sharpness
effect, size factor effect

ABSTRACT: To determine the effect of hydrogen on the NDT(nil ductility
temperature) of commercial titanium and the dependence of the NDT on
the volume-stressed state (notch sharpness), strain rate, and size
factor, smooth and notched specimens of titanium containing 0.002—
0.06 wt% H_2 were subjected to tests for static and impact bend, impact
toughness, and tension at temperatures ranging from -196C to 350C.
The tests showed that the impact toughness of both smooth and notched

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ACCESSION NR: AT4048071

specimens of vacuum heat-treated titanium (containing 0.002—0.003 wt% H₂ does not decrease with decreasing temperature to -196C. Increasing the hydrogen content to 0.015 wt% did not embrittle smooth or notched specimens with a notch root radius of 5 and 2 mm, but sharply decreased the impact toughness of notched specimens with a notch root radius of 0.5 mm at temperatures below 100C. With a 0.035 wt% H₂, however, smooth titanium specimens became brittle at 60C, and the notched specimens with a notch root radius of 5 and 2 mm, at 160 and 200C, respectively. The changes in the NDT of titanium, depending on external factors (notch sharpness, strain rate, and size factor), follow a pattern similar to that observed in steel. The tensile strength of vacuum heat-treated titanium continuously increased as the temperature decreased to -196C. Addition of hydrogen limits the strength increase to the strength at brittle fracture which is practically independent of temperature. Thus the experimental data obtained show that the cold brittleness of titanium is mainly caused by an abrupt drop in its resistance to rupture resulting from hydrogen contamination. Orig. art. has: 5 figures and 2 tables.

ASSOCIATION: none

Card 2/3

L 14314-65

ACCESSION NR: AT4048071 0

SUBMITTED: 15Jul64   ENCL: 00   SUB CODE: MM

NO REF SOV: 008   OTHER: 003   ATD PRESS; 3136

Card 3/3

CHECHULIN, D. [N.]

11067

/Cities - Moscow 5105.0300   Sep 1947

"Architecture of Moscow," D. Chechulin, Chief
Architect of Moscow, Deputy to the Supreme Soviet of
the USSR, 6 pp

"Arkh i Stroi" Vol II, No 2

Discussion of Moscow architecture in glowing lan-
guage. Photographs of streets and public buildings.
Other articles in same issue contain more photographs
of buildings, bridges, streets, etc.

10   11067

CHECHULIN, D.N., glavnyy arkhitektor Moskvy.

The building of Moscow. Gor.khoz.Mosk. 21 no.9:19-30 S '47.   (MLRA 6:11)
     (Moscow--History) (Moscow--Building) (Building--Moscow)

CHECHULIN, D.N.

CHCHULIN, D. N.

21226   Chechulin, D.N.   Ocherodnyye zadachi moskovskikh arzhitektorov Gor Khoz-vo Moskvy, 1949, No. 5, s. 1-10.   *Recurrent problems of Moscow architects   ?   in Moscow*

SO: LETOPIS ZHURNAL STATEY - Vol. 28, Moskva, 1949

1. CHECHULIN, D. N.

2. USSR 600

4. Public Buildings - Moscow

7. 32-story administrative building in Zarad'ye, Gor. khoz. Mosk, 23, No. 7, 1949.

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

CHECHULIN, D.N.

Improve the organisation of designing and planning. Gor.khoz.
Mosk. 34 no.12:9-12 D '60.
(MIRA 13:12)

1. Deystvitel'nyy chlen Akademii stroitel'stva i arkhitektury SSSR.
(Moscow--City planning)
(Architecture--Designs and plans)

CHECHULIN, D.N.

Prospects for rebuidling the oldest part of the center of Moscow.
Gor.khoz.Mosk. 35 no.4:4-9 Ap '61.   (MIRA 14:5)

1. Deystvitel'nyy chlen Akademii stroitel'stva i arkhitektury SSSR.
                    (Moscow—City planning)

CHECHULIN, G.   A.

Burovoy agregat ZIV-75 (Drilling unit ZIV-75). opisaniye i rudovodstvo po eksploatatsii
Sostavili B. S. Logov, S. P. Shtoda, <u>G. A. Chechulin</u>. Moskva, Gosgeolizdat, 1952.
112 p. daigrs., tables. At head of title: Russia. Ministerstvo Geologii.

N/5
741.311
.L8

CHECHULIN, G   A

Burovoy agregat ZIV-150 (Drilling unit, ZIV-150) opisaniye i rukovodstvo po eksploatatsii.
S. P. Shtoda, G. A. Chechulin. Moskva, Gosgeolizdat, 1952. 118 p. diagrs., tables.
At head of title: Russia, Ministerstva Geologii.

N/5
741.311
.L81

CHECHULIN, G.A.

The BM-2 drilling mast. Biul.tekh.-ekon.inform.Gos.nauch.-
issl.inst.nauch.i tekh.inform. no.3:10-12 '62.   (MIRA 15:5)
(Oil well drilling rigs)

ACCESSION NR: AT4042636   S/3104/64/000/005/0038/0047

AUTHOR: Shteynberg, M.M.(Doctor of technical sciences), Mirmel'shteyn, V. A.
(Engineer), Kodes, Ye. S. (Engineer), Chechulin, I. P. (Engineer)

TITLE: Effect of lanthanum on temper brittleness of structural steel

TOPIC TAGS: lanthanum, structural steel, chromium nickel manganese steel, alloy steel,
steel temper brittleness, molybdenum, steel brittleness, temper brittleness, steel
tempering

ABSTRACT: A previously published paper by V. A. Mirmel'shteyn and M. M. Shteynberg
showed that lanthanum depresses the reversible temper brittleness of 30KhGN chromium-
nickel manganese structural steel. This article considers the problem in greater detail.
Tests were performed with five samples: the first was used as a standard; the second,

Card   1/3

ACCESSION NR: AT4042636

third and fourth contained 0.15, 0.25 and 0.35% lanthanum, considering a 30% loss; the
fifth sample has 0.25% molybdenum in order to compare its effect on temper brittleness
with that of lanthanum.   Lumps of lanthanum were added to the molten alloy with intensive
mixing.   All samples were homogenized at 1150C and then normalized and passed through
high tempering, after which they were hardened.   One part of the samples was hardened
from a temperature of 870C in a salt bath for 20 minutes.   The second part was subjected
to hardening with overheating in a barium chloride bath.   The samples hardened in the salt
bath had a grain size of 8 (standard scale), the other group had a grain size of 6, except
for sample IV (grain size 5).   The samples were then tested at temperatures from +60 to
-80C.   Analysis of the tests showed that lanthanum lowers the tendency of 30KhGN
chromium-nickel-manganese structural steel toward reversible temper brittleness, pre-
venting fracture between the grains and significantly increasing the viscosity temperature
safety factor.   The best results were obtained with about 0.2% lanthanum.   The results of
the tests described in the present article corroborate those mentioned in the cited one by
V. A. Mirmel'shetyn and M. M. Shteynberg.   The authors recommend additional work on the

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following problems: a) the influence of lanthanum on other grades of steel; b) the best flow process for melting and deoxidation of steel and introduction of lanthanum; c) the influence of lanthanum on the temper brittleness of steel; d) the combined influence of lanthanum and molybdenum as well as lanthanum and tungsten on the temper brittleness of steel; e) influence of lanthanum on other properties of steel connected with grain size, in partic- ular durability at high temperatures. Orig. art. has: 3 figures and 3 tables.

ASSOCIATION: Nauchno-issledovatel'skiy institut tyazhelogo mashinostroyeniya, Ural'skiy mashinostroitel'ny*y zavod, Sverdlovsk (Scientific Research Institute for Heavy Machine Building, Urals Machine Design Plant)

SUBMITTED: 00

SUB CODE: MM

NO REF SOV: 002

ENCL: 00

OTHER: 000

Card 3/3

LEVIN, L.N., inzh.; CHECHULIN, N.A., inzh.

Portable machine tools for parquet work. Mekh.stroi. 19
no.3:27 Mr '62.   (MIRA 15:3)
                        (Road rollers)

EXCERPTA MEDICA Sec 18 Vol 3/3 Cardio. Dis. Mar 59

776. **The reactivity of the cardiac blood vessels in man in coronary insufficiency**
(Russian text) CHECHULIN S. *Arkh. Patol.* 1958, 20/4 (40-44) Graphs 2

Experiments were carried out in 34 isolated hearts, 7 to 37 hr. after death, according
to Kuljabko's method (no further information). Eleven hearts were obtained from
patients who had died from myocardial infarction, 12 hearts were 'stenocarditic'
and 11 originated from accident cases (traumatic hearts, controls). Either euphyllin
or nitroglycerin in different concentrations was added to Andrejev's perfusion fluid
(no further information). Hearts with coronary insufficiency often show a biphasic
reaction (narrowing in the 1st stage). The functional motility of the cardiac vessels
and the change of their tone are significantly less pronounced in the hearts with
coronary failure than in the traumatic hearts.   Brandt – Berlin (V, 6, 18)

CHECHULIN, V.A., YESIN, O.A.

"Studies on Cathode Process occuring During Slags Electrolysis,"
lecture given at the Fourth Conference on Steelmaking, A.A. Baikov Institute of
Metallurgy, Moscow, July 1-6, 1957

Chechulin, V.A.

PA - 2913

AUTHOR: YESIN,O.A. and CHECHULIN,V.A.
TITLE: Electrolysis of $CaO-Al_2O_3-SiO_2$ Melts. (Elektroliz rasplavov
         $CaO-Al_2O_3-SiO_2$, Russian).
PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol 113, Nr 1, pp 109 - 111
         (U.S.S.R.)
         Received: 5 / 1957   Reviewed: 7 / 1957

ABSTRACT: There are only few published references concerning this problem.
         It was proved that FARADAY's law is satisfied in the case of
         oxygen-elimination, as CO and CO_2 on the carbon anode. In order to
         collect the products of the cathode-process, liquid pig-iron and
         copper were used as cathodes. Charcoal-crayons served as anodes.
         The experiments were carried out in a tripartite cell of molten
         magnesia.

         The occurrence of bivalent silicon in the slag was observed on
         frequent occasions and the shape of the corresponding polarization-
         curves proves the possibility of a re-charge. The relatively
         diffusion of the bivalent silicon into the catholyte mirror and its
         oxidation by the furnace-temperature up to 4-atomicity reduce the
         silicon yield per current-unit. The lower utilization of current
         in the case of the discharge of Al and Mg compared to Si, is qualita-
         tively in line with the constancy of these oxides, or, more precisely,
         expressed, with the rising value of the standard-isobar-potential

Card 1/2

PA - 2913

Electrolysis of $CaO-Al_2O_3-SiO_2$ Melts.

computed with respect to the binding-energies of these oxides with the melts and the formation heat of intermetallic compounds with the cathode (FeSi, Cu_2Mg etc.). Data concerning the anodic solution of silicon in the sediments of various composition are then given. It takes place with yields of 90 - 104 % per current-unit. This fact as well as the possibility of obtaining high cathode-yields per current-unit prove that FARADAY's law is satisfied in the case of the electrolysis of melts of $CaO-Al_2O_3- SiO_2$.
(3 illustrations, 2 tables, and 9 citations from Slav publications)

ASSOCIATION: Ural Polytechnic Institute S.M.KIROVS
PRESENTED BY: I.P.BARDIN, Member of the Academy
SUBMITTED: 1.10.1956
AVAILABLE: Library of Congress.

Card 2/2

76-32-2-18 32

AUTHORS: Yesin, O. A. , Chechulin, V. A.

TITLE: Cathode Polarization in the Separation of Silicon, Iron and
              Sodium From Oxide-Melts (Katodnaya polyarizatsiya pri vydelenii
              kremniya, zheleza i natriya iz oksidnykh rasplavov)

PERIODICAL: Zhurnal Fizicheskoy Khimii, 1958, Vol. 32, Nr 2, pp. 355-360
              (USSR)

ABSTRACT: The cathode polarization in $CaO - Al_2O_3 - MgO$ melts with
              small additions of SiO_2, $Fe_2O_3 + FeO^{2-}$ as well as with Na_2O
              for comparative purposes was investigated. The measurements
              were carried out at 1400-1500°C according to the commutator
              method (Reference 2). The cathode polarization η in the se-
              paration of sodium, silicon and iron from the oxide melts
              was measured. It was found that the quantity η does not de-
              pend on the electrode material, that it decreases in mixing
              and that it follows the equation for the concentration pola-
              rization. It is shown that in the cases investigated the pola-
Card 1/2   rization is dependent on the slowed down diffusion of the

76-32-2-18/38

Cathode Polarization in the Separation of Silicon, Iron and Sodium From
Oxide-Melts

sodium ion and of the 3- and 2-valent iron ions in the elec-
trolyte. Summarizing the authors state that the concentration
polarization in oxide melts is widely spread. This is con-
nected with the small values of the diffusion coefficients,
as the diffusion in them is not greater than in aqueous so-
lutions. The shape of the curves, the mutual position of the
element separation potentials and the observed proportionali-
ty of the boundary amperages with the concentrations permit
to speak of the possibility of a high temperature polaro-
graphy in oxide melts. There are 4 figures, and 10 references,
8 of which are Soviet.

ASSOCIATION: Ural'skiy politekhnicheskiy institut im. S. M. Kirova, Sverdlovsk
                 (Ural Polytechnical Institute imeni S. M. Kirov, Sverdlovsk)

SUBMITTED: November 3, 1956

                 1. Cathodes (Electrolytic cell)--Polarization   2. Iron
                 --Separation   3. Silicon--Separation   4. Sodium--Separation
                 5. Electrolytes--Properties

Card 2/2

SOV/137-58-9-18461D

AUTHOR: Chechulin, V. A.

TITLE: Electrolysis of Blast-furnace Slags (Elektroliz domennykh shlakov)

ABSTRACT: Bibliographic entry on the author's dissertation for the degree
of Candidate of Technical Sciences, presented to the Ural'skiy
politekhn. in-t (Ural Polytechnic Institute), Sverdlovsk, 1958

ASSOCIATION: Ural'skiy politekhn. in-t (Ural Polytechnic Institute),
Sverdlovsk

1. Slags--Electrolysis

Card 1/1

CHECHULIN, V.A.; YESIN, O.A.

Effect of additions on the electrolysis of molten slags.
Trudy Ural.politekh.inst. 73:48-56 '58.
          (Electrolysis)   (Slag)   (MIRA 12:8)

CHECHULIN, V A

PHASE I BOOK EXPLOITATION   SOV/5035

Vsesoyuznoye soveshchaniye po stekloobraznomu sostoyaniyu. 3d, Leningrad, 1959.

Stekloobraznoye sostoyaniye; trudy Tret'yego vsesoyuznogo soveshchaniya Leningrad, 16-20 noyabrya 1959 (Vitreous State; Transactions of the Third All-Union Conference on the Vitreous State, Held in Leningrad 16-20 November 1959) Moscow, Izd-vo AN SSSR, 1960. 591 p. Errata slip inserted. 3,200 copies printed. (Series: Its: Trudy)

Sponsoring Agencies: Institut khimii silikatov Akademii nauk SSSR. Vsesoyuznoye khimicheskoye obshchestvo imeni D.I. Mendeleyeva and Gosudarstvennyy ordena Lenina opticheskiy institut imeni S.I. Vavilova.

Editorial Board: A.I. Avgustinik, V.P. Barzakovskiy, V.P. Bryukhanov, M.A. Bezborodov, O.K. Botvinkin, V.V.Vargin, A.G. Vlasov, K.S. Yevstrop'yev, A.I. Lebedev, M.A. Matveyev, V.S. Molchanov, B.L. Myuller, Ye.A. Porey-Koshits, Chairman, K.A. Toropov, V.A. Florinskaya, A.K. Yakhkind, Ed. of Publishing House: I.V. Suvorov; Tech. Ed.: V.T. Bochever.

PURPOSE: This book is intended for researchers in the science and technology of glasses.

COVERAGE: The book contains the reports and discussions of the Third All-Union Conference on the Vitreous State, held in Leningrad on November 16-19, 1959. They deal with the methods and results of studying the structure of glasses, the relation between the structure and properties of glasses, the nature of the chemical bond and glass structure, and the crystallochemistry of glass structure, and silica, mechanics of vitrification, optical properties and glass structure. A number of the reports deal with the dependence of glass properties on composition, the tinting of the electrical properties of glasses are also discussed, and chemical properties of glasses and radiation effects, and mechanical, technical, and chemical properties of glasses. Other papers treat glass semiconductors and soda borosilicate glasses. The Conference was attended by more than 300 delegates from Soviet and East German scientific organizations. Among the participants in the discussions were N.V. Solomin, Ye. V. Kuvshinskiy, Yu.A. Guster, V.P. Pryanishnikov, Yu. Yu. Gotlib, O.P. Mchedlov-Petrosyan, G.P. Mikhaylov, S.M. Petrov, A.M. Lazarev, D.I. Levin, A.V. Shatilov, R.I. Pleshchinskiy, P.Ya. Bokin, E.K. Keller, Yu.A. Byurganovskaya, A.A. Kalesov, M.M. Skornyakov, Z.G. Pinkor, and O.S. Molchanova, Kunetsor, V.P. Pozdnev, R.S. Shevelevich, and O.S. Molchanova, Kunetsor, V.P. Pozdnev, R.S. Shevelevich, addressed by Professor I.I. Kitaygorodskiy, Minsk (Institute of Physics, Academy of Sciences, Belorusskaya SSR, Minsk). The final session of the Conference was addressed by Professor I.I. Kitaygorodskiy, Laboratory of Physical Chemistry of Silicates of the Institut obshchey i neorganicheskoy khimii AN SSSR, Minsk (Institute of General and Inorganic Chemistry, Academy of Sciences, Belorusskaya SSR, Minsk), Institut vysokomolekulyarnykh soyedineniy AN SSSR(Institute of High Molecular Compounds, AS USSR), Gosudarstvennyy institut stek-loyoloknа (State Institute for Glass Fibers), Gosudarstvennyy institut elektrotekh-nicheskogo stekla (State Institute for Electrical Glass), Sibirskiy fiziko-tekhnicheskiy institut, Tomsk (Siberian Physicotechnical Institute, Tomsk),Leningrad-skiy gosudarstvennyy universitet (Leningrad State University), Moskovskiy khimiko-tekhnologicheskiy institut (Moscow Institute of Chemical Technology),Leningradskiy tekhnologicheskiy institut im. Lensoveta (Leningrad Technological Institute imeni Lensovet), Belorusskiy politekhnicheskiy institut (Novocherkassk Institute, Minsk), Novocherkasskiy politekhnicheskiy institut (Sverdlovsk Polytechnic Institute), and Sverdlovskiy politekhnicheskiy institut of Silicate Polytechnic Institute). The Conference was sponsored by the Institute of Silicate Chemistry AS USSR (Acting Director - A.S. Gotlib), the Vsesoyuznoye khimicheskoye obshchestvo im.   D.I. Mendeleyeva (All-Union Chemical Society imeni D.I. Mendeleyev), and the Gosudarstvennyy ordena Lenina opticheskiy institut imeni S.I. Vavilova (State "Order of Lenin" Optical Institute imeni S.I. Vavilov). The 15 resolutions of the Conference include recommendations to organize a Center for the purpose of coordinating the research on glass, to publish a new periodical under the title "Fizika i khimiya stekla" (Physics and Chemistry of Glass), and to join the International Committee on Glass. The Conference thanks A.A. Lebedev, Academician, Professor, and Chairman of the Organization of Conference; Ye.A. Porey-Koshits, Doctor of Physics and Mathematics, Member of the mittee; Ye.A. Porey-Koshits, Doctor of Physics and Mathematics, Member of the Organizational Committee; and R.L. Myuller, Doctor of Chemical Sciences, Member of the Organizational Committee. The editorial board thanks O.K. Bartenev, M.V. Vol'kenshteyn, L.I. Demkina, D.P. Dobychin, S.F. Dubrovo, V.A. Ioffe, and B.T. Kolomiyts. References accompany individual reports.

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Card 8/22

CHEGULIN, V. A. and TSAREVSKIY, B. V.

"A Thermodynamic Analysis of Gaseous Reactions in the Casting Moulds"

report presented at the 7th Conference on the Interation of the Casting Mould and the Casting, sponsored by the Inst. of Mechanical Engineering, Acad. Sci. USSR, 25-28 January 1961.

CHECHULIN, V. A., TSAREVSKIY, B. V., and ICHEL, S. I.

"An Investigation of the Physical-Chemical Interaction of Alloys with Molding Materials"

report presented at the 7th Conference on the Interaction of the Casting Mould and the Casting, sponsored by the Inst. of Mechanical Engineering, Acad. Sci. USSR, 25-28 January 1961.

CHECHULIN, V.A.; TSAREVSKIY, B.V.

        Gas reactions in the foundry mold. Lit.proizv. no.7:38-41 Jl '61.

                                                    (MIRA 14:7)

           (Molding (Founding))   (Gases in metals)

CHECHULIN, V.A.; BOYARSHINOV, G.I.

Capillary interaction of the metal and the molding materials. Izv.
vys. ucheb. zav.; chern. met. 4 no.12:149-156 '61.   (MIRA 15:1)

1. Ural'skiy politekhnicheskiy institut.
                (Molding (Founding)) (Capillarity)

CHECHULIN, V.A.

Electrochemical properties of cupola slags. Lit.proizv. no.3:28-31
Mr '62.   (MIRA 15:3)

(Slag--Electric properties)

L 41562-65   EWP(z)/EWT(m)/EWP(b)/T/EWA(d)/EWP(t)   MJW/JD/HW
ACCESSION NR: AR4038997   S/0277/64/000/004/0007/0007

SOURCE: Ref. zh. Mashinostr. mat. konstr. i raschet detal. mash. Otd. vyp.,
Abs. 4.48.47

AUTHOR: Poruchikov, Yu. P.; Chechulin, V. A.

TITLE: Peculiarities of the technological properties of steel 30Kh10G10

CITED SOURCE: Sb. Novoye v liteyn. proiz-ve. Gor'kiy, 1963, 123-130

TOPIC TAGS: cavitation resistant steel, steel casting, stainless steel/steel 30Kh10G10

TRANSLATION: Steel 30Kh10G10 is recommended for the manufacture of castings
operating in environments producing cavitation failure. The cavitation resistance of
cast samples of the steel was 10 times as high as that of stainless steel of types 1Kh18N8L
and 2Kh13L.

SUB CODE: MM   ENCL: 00

cc
Cord   1/1

SINTSOV, V.A.; CHECHULIN, V.A.

Characteristics of the formation of laps on stainless steel castings. Izv. vys. ucheb. zav.; chern. met. 8 no.10:133-139 '65.
(MIRA 18:9)

1. Ural'skiy politekhnicheskiy institut.

CHECHULIN, V. I.

"Mixing Maize with Other Grains for Use as Cattle Feed," Korm. baza 3, No.2,1952.

GLAGOLEVA, V. V.; CHECHULIN, Yu. S.,

"Electron microscopy of experimental myocardial infarction."

report submitted for 3rd European Regional Conf, Electron Microscopy, Prague,
26 Aug-3 Sep 64.

CHECHULIN, Yu.S. (Moskva)

The reactivity of the coronary blood vessels in man in coronary
insufficiency [with summary in English]. Arkh.pat. 20 no.4:40-44
'58.   (MIRA 11:5)

1. Iz laboratorii patofiziologii i farmakologii serdechno-sosudistoy
sistemy (zav. prof. S.V. Andreyev) Instituta farmakologii i
khimioterapii AMN SSSR (dir.-deystvitel'nyy chlen AMN SSSR prof.
V.V. Zakusov)
        (CORONARY DISEASE, physiology
            coronary vessel reactivity to aminophylline & nitroglycerin,
            study on isolated human heart (Rus)
        (AMINOPHYLLINE, effects
            on coronary vessels of isolated human heart from coronary
            dis. patient (Rus)
        (NITRITES, effects
            glyceryl trinitrate on coronary vessels of isolated
            human heart from coronary dis. patient (Rus)

AUTHOR: Chechulin, Yu. S.   SOV/20-122-2-42/42

TITLE: Disturbance of Cardiac Vasotonicity in Patients Affected With
                Coronary Insufficiency (Narusheniye tonusa sosudov serdtsa
                cheloveka pri koronarnoy nedostatochnosti)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 122, Nr 2, pp 316-319
                (USSR)

ABSTRACT: Research carried out by several Soviet scientists (Refs 3 - 9,
                12, 16) led to the findings that the vascular system of
                various organs, in particular of the heart is able to react
                vigorously on poisons even several days after death. The
                blood vessels retain the traces of the functional disturbances
                which are found in life. The experience which has hitherto
                been collected concerning the functional state of the human
                coronary vessels in disturbances of the coronary circulation
                are by no means sufficient. This is an investigation of the
                reactivity of the coronary system in persons who died from
                a myocardiac infarct or during an attack of angina pectoris.
                In this connection remedies were used which are applied in
                the general clinical treatment of coronary insufficiency:
Card 1/4   a) nitroglycerin and b) euphyllin were found to have a dilating

SOV/2o-122-2-42/42

Disturbance of Cardiac Vasotonicity in Patients Affected With Coronary
Insufficiency

effect on the coronary system. They have a good curative ef-
fect in the case of both diseases in question. Two other
substances investigated: c) strophantin and d) digitalis
are used for the treatment of acute and chronic insufficiencies
of the heart caused by disturbances in the coronary circula-
tion. S. V. Andreyev suggested this investigation. 80 isolat-
ed human hearts were used. The author employed the method of
A. A. Kulyabko. The experiments were carried out with three
groups: 1) hearts of persons who died from different injuries
of the thoracic cavity, of the abdominal cavity, and of the
central nerve system. 2) The second group comprised hearts
of persons who died during an attack of stenocardy; 3) group
three comprised hearts of persons who did because of cardiac
infarcts. The hearts were investigated from 4 to 32 hours after
death. The duration of this period was of no importance. Nitro-
glycerin was administered in the following concentrations:
$1 : 2 . 10^6$ to $1 : 3 . 10^5$ (Table 1), euphyllin in concentra-
tions of $1 : 5 . 10^3$ to $1 : 2 . 10^3$, digitalis tincture
(activity: 4 units per ml)- $1 : 2 . 10^3$ and $1 : 10^3$, and
K-strophantin - $1 : 8 . 10^6$ to $1 : 10^6$. The A)"traumatic"
group (group I) and B) the "coronary" group (II.and III. group)

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SOV/2o-122-2-42/42

Disturbance of Cardiac Vasotonicity in Patients Affected With Coronary
Insufficiency

exhibited a considerable difference in the reaction of the
coronary vessels. In group A) a weakening of the tonicity
of the coronary vessels was found in 24 out of 31 cases. The
dilatation of the coronary vessels in group B) in many cases
(9 out of 15) began with a phase during which the vessels were
contracted. In individual cases this phase lasted very long
(4 - 8 minutes). The contraction amounted to 30 - 44 % below
the starting level. In group A) only in 4 cases out of 24 a
two-phase reaction was found. With euphellin the contracting
phase was shorter (2 - 4 minutes) and less pronounced
(Figs 2V and C). Digitalis regularly lead to a contraction of
the vessels which was greater in hearts which had suffered
from coronary insufficiency. The evidence presented leads to
the conclusion that the reactivity of the coronary vessels
in the case of an insufficiency is modified and distorted
in comparison to the reactivity of hearts of persons who
died from a trauma. Experiments with dogs showed that not
only the arteriosclerosis but also a necrotic center itself
Card 3/4   increases the tendency of the vessels to spasms. There are

SOV/2o-122-2-42/42

Disturbance of Cardiac Vasotonicity in Patients Affected With Coronary
Insufficiency

        2 figures, 1 table, and 16 references, 14 of which are Soviet.

ASSOCIATION: Nauchno-issledovatel'skiy institut farmakologii i khimiotera-
               pii Akademii meditsinskikh nauk SSSR
               (Scientific Research Institute of Pharmacology and Chemical
               Therapeutics, Academy of Medical Sciences USSR)

PRESENTED: April 28, 1958, by N. N. Anichkov, Member, Academy of Sciences,
              USSR

SUBMITTED: April 15, 1958

Card 4/4

USCOMM-DC-60651

CHECHULIN, Yu.S. (Moskva)

Change in the vascular reaction of the human heart following
myocardial infarct and stenocardia [with summary in English].
Pat.fiziol. i eksp.terap. 2 no.6:21-25 N-D '58.   (MIRA 12:1)

1. Iz laboratorii patofiziologii i farmakologii serdechno-sosu-
distoy sistemy (zav. - prof. S.V. Andreyev) Instituta farmakolo-
gii i khimioterapii AMN SSSR.
        (MYOCARDIAL INFARCT, physiol.
            eff. of digitalis & strophanthin on blood vessls
            of isolated human hearts (Rus))
        (ANGINA PECTORIS, physiol.
            same)

CHECHULIN Yu, S.

EXCERPTA MEDICA Sec 5 Vol 12/1   Gen Pathology Jan 59

68. THE REACTIVITY OF THE CARDIAC BLOOD VESSELS IN MAN IN
     CORONARY INSUFFICIENCY (Russian text) - C h e c h u l i n Yu. S. -
     ARKH. PATOL. 1958, 20/4 (40-44) Graphs 2 ————————————
Experiments were carried out in 34 isolated hearts, 7 to 37 hr. after death,
according to Kuljabko's method (no further information). Eleven hearts were
obtained from patients who had died from myocardial infarction, 12 hearts were
'stenocarditic' and 11 originated from accident cases (traumatic hearts, controls).
Either euphyllin or nitroglycerin in different concentrations was added to
Andrejev's perfusion fluid (no further information). Hearts with coronary in-
sufficiency often show a biphasic reaction (narrowing in the 1st stage). The
functional motility of the cardiac vessels and the change of their tone are signific-
antly less pronounced in the hearts with coronary failure than in the traumatic
hearts.
                                                     Brandt - Berlin (V, 6, 18)

CHECHULIN, Yu.S.

Vasomotor activity of the coronary vessels of the heart in man
and dogs in disorders of the coronary circulation. Uch.zap.
Inst.farm.i khimioter. AMN SSSR no.2:165-186 '60. (MIRA 15:10)

1. Laboratoriya patofiziologii i farmakologii serdechno-sosudistoy
sistemy (zav. prof. S.V.Andreyev).
                    (CORONARY VESSELS)
                (CORONARY HEART DISEASE)

CHECHULIN, Yu.S.

Vasomotor activity of heart vessels and its disorders. Dokl. AN
SSSR 137 no.4:996-999 Ap '61.   (MIRA 14:3)

1. Predstavleno akademikom N. N. Anichkovym.
              (HEART—BLOOD VESSELS)

CHECHULIN, Yu.S.   (Moskva)

Catheterization of the coronary artery of the heart in dogs
without opening the thoracic cavity in a chronic experiment.
Pat. fiziol. i eksp. terap. 6 no.3:71-72 My-Je'62
                                        (MIRA 17:2)

1. Iz laboratorii patofiziologii i eksperimental'noy terapii
(zav. - prof. S.V. Andreyev) Instituta serdechno-sosudistoy
khirurgii AMN SSSR.

CHECHULIN, Yu.S.; VAN GO-SYAN [Wang Kuo-hsiang]

Cardiac artery cathetarization in chronic experiments with dogs.
Fiziol. zhur. 49 no.4:510-512 Ap '63.   (MIRA 17:4)

1. From the Laboratory for Pathologic Physiology and Experimental
Therapy, Institute of Cardiovascular Surgery, U.S.S.R. Academy
of Medical Sciences, Moscow.

AUTHORS: Dokukin, A. V., Konstantinova, Z. S., Chechulin, Yu. S., and Bukin, Yu. V.

TITLE: Effect of vitamin B_{15} (pangamic acid) on the resistance of the organism and its cardiovascular system to hypoxia

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 144, no. 3, 1962, 675 - 677

TEXT: Calcium and sodium salts of the natural homolog of pangamic acid (gluconodimethyl aminoacetate) were used to study the effect of B_{15} on the resistance of: (1) the organism of mice and rats to general asphyxia; (2) the myocard of cats and dogs to local hypoxia. (1) 150 - 500 mg B_{15}/kg was subcutaneously administered to 121 out of 245 mice 1 - 5 days before the experiment. The animals were then put into a hermetically sealed chamber and observed until they perished. Their average period of survival ...ded that of the control animals (p = 0.06). 13 rats were treated ... a subarachnoid dose of 10 mg B_{15}/kg in 0.05 ml 0.9% NaCl

Effect of vitamin B_{15}.......

S/020/62/144/003/050/050
B144/B112

(pH = 7.2) and 13 rats with 0.05 ml physiological solution only. Figs. 1A and 1B show the results obtained for both groups. (2) 10 out of 26 "devagated" cats whose left coronary artery was ligated at the branching point of the ramus descendens were administered 75 mg B_{15}/kg s. c. The blood pressure in the carotid artery and the onset of arrhythmia and fibrillation are illustrated in Fig. 1B. 200 mg B_{15} dissolved in 15ml physiological solution was administered to dogs through a catheter into the ramus descendens of the left coronary artery. The electrocardiogram revealed that B_{15} brought about a temporary incomplete restoration (elimination of ventricular extrasystoles). The experiments all prove the positive effect of B_{15}. There are 2 figures.

PRESENTED: December 21, 1961, by A. N. Bakulev, Academician

SUBMITTED: December 7, 1961

Fig.1. Survival of animals treated with B_{15} (thick line) and of control animals (thin line).
Card 2/2

ANDREYEV,S.V.; CHECHULIN, Yu.S.; KOBKOVA, I.D.; BUKIN, Yu.V.

Reactivity and metabolism of cardiac vessels during myocardial infarction. Cor vasa 5 no.1:18-29 '63.

1. The Institute of Cardiovascular Surgery, Academy of Medical Sciences, Moscow.
    (MYOCARDIAL INFARCT)   (CORONARY VESSELS)   (MYOCARDIUM)
  (PHYSIOLOGY)   (GLYCERYL TRINITRATE)   (AMINOPHYLLINE)
    (RIBONUCLEASE)   (ASPARTATE AMINOTRANSFERASE)
                (PROTEIN METABOLISM)

CHECHULIN, Yu.S.; GLAGOLEVA, V.V.

Ultrastructure of the heart at early stages of experimental myocardial infarct. Dokl. AN SSSR 158 no.2:484-487 S '64.

(MIRA 17:10)

1. Institut serdechno-sosudistoy khirurgii AMN SSSR i Institut biologicheskoy fiziki AN SSSR. Predstavleno akademikom N.N.Anichkovym.

ANDREYEV, Sergey Vasil'yevich; CHECHULIN, Yuriy Sergeyevich;
        KUDRIN, A.N., red.

        [Essays on the reactivity of the cardiovascular system]
        Ocherki po reaktivnosti serdechno-sosudistoi sistemy.
        Moskva, Meditsina, 1965. 372 p.   (MIRA 18:7)

CHECHULINA, L. I.

AUTHORS: Shubina, O. A. and L. I. Chechulina.   136-9-3/14

TITLE: Extraction of indium as a by-product from Darasun ores.
        (Poputnoye izvlecheniye indiya iz Darasunskikh rud).

PERIODICAL: Tsvetnye Metally, 1957, No.9, pp. 14-18 (USSR)

ABSTRACT: The presence of indium in Darasun ores was established
           in 1940 by V. I. Sobolevskiy and work aimed at extracting
           this element has been carried out by the Irgiredmet
           organization since 1955. The authors give analysis of the
           ores and concentrates and describe the concentration
           scheme used at the Darasun **enrichment** plant and the
           scheme for treating the collective concentrates. It was
           shown in experiments that with the gold-containing ores
           of the Darasun deposits with high zinc and indium
           contents a concentrate containing 290-300 g/ton of indium
           and 40-45% zinc (70% extraction) can be obtained by the
           selective flotation method adopted; the authors give
           details of the method. For the typical Darasun ores
           with 0.5% Zn and 2-3 g/ton of indium it was better to
           finish the selection by the production of a copper-lead-
           zinc concentrate, with 90% extraction of each of these
           elements and 70% extraction of indium. The indium content
Card 1/2 would amount to 65-70 g/ton and 10 to 15% each of copper,

Extraction of indium as a by-product from Darasun   ores. 136-9-3/14

lead and zinc. The method proposed for extracting indium
from the copper-lead-zinc concentrate is to use a
chlorinating roast with subsequent leaching with
sulphuric acid and chloride solution into which about 90%
of each of the elements passes. Gold is extracted from
the cake by cyaniding. The authors finally recommend the
testing of their proposals on a large scale. An
editorial note urges that the extraction of indium from
the various Soviet concentrates should be organised
centrally.
There are 2 figures and 6 tables.

ASSOCIATION: Irgiredmet.

AVAILABLE: Library of Congress.
Card 2/2   1. Ores-Deposits   2. Indium-Extraction

UZILEVSKIY, Vladimir Aronovich; CHECHULINA, N.A., red.

[Legend of the crystal egg; tale about a professor of television] Legenda o khrustal'nom iaitse; povest' o professore televideniia. Leningrad, Lenizdat, 1965. 271 p.
(MIRA 18:9)

CHECHULINA, M. N.

Chistyakov, N. M. and Chechulina, M. N. - "Research on the change in composition of organic substances in therapeutic muds of the Varzi-Yatchi Health Resort in the process of utilization and regeneration," Trudy Medinstituta (Izhev. gos. med. in-t), Vol. VII, 1949, p. 88-90

SO: U-3950, 16 June 53, (Letopis 'Zhurnal 'nykh Statey, No. 5, 1949).

CHECHULINA, Ts.A.

KHROMOV, B.M., professor; CHECHULINA, Ts.A.

Ways of spreading of the inflammatory process and topography
of pus discharge in spinal osteomyelitis. Ortop.travm. i
protez. no.2:3-10 Mr-Ap '55.   (MLRA 8:10)

1. Iz kafedry operativnoy khirurgii i topograficheskoy anatomii
(zav.prof. B.M.Khromov)Astrakhanskogo meditsinskogo instituta
     (OSTEOMYELITIS
          spine, inflamm. & pus discharging topography)
     (SPINE, diseases
          osteomyelitis, inflam.. & pus discharging topography)

CHECHULINA, TS A

USSR/Morphology of Man and Animals - (Normal and Pathologic).   S-3
           The Nervous System.

Abs Jour : Ref Zhur - Biol., No 3, 1958, 12406

Author   : Chechulina, Ts. A.
Inst   : -
Title   : Topographic and Anatomic Peculiarities of the Lumbar Divi-
             sion of the Sympathetic Trunk in Fetuses, Newborn and One
             Year Old Children.

Orig Pub : Jr. Astrakhansk. med. in-ta, 1956, 13, No 2, 236-241

Abstract   : A compressed structure of the lumbar division of the sym-
             pathetic trunk is characteristic for fetuses and one year
             old children. Adults have a large number of rami communi-
             cantes leading to a single spinal nerve, whereas there is
             only one ramus communicant for each nerve in children and
             the newborn. The number of visceral rami is smaller in
             fetuses, newborn and one year old children that in adults.
             It was determined that the veins are predominantly

Card 1/2

USSR / Human and Animal Morphology (Normal and Pathological).
    Nervous System. Peripheral Nervous System.

S

Abs Jour : Ref Zhur - Biologiya, No 9, 1958, No. 40809

Author   : Chechulina, Ye. A.
Inst   : Not given
Title   : Topographico-Anatomical Features of the Sacral Part
        of the Sympathotical Border Trunk in Fetuses, Neonates
        and Infants of the First Year of Life

Orig Pub : Arkhiv anatomii, gistol. i embriologii, 1957, 34, No 5,
        40-46

Abstract : One hundred preparations of fifty cadavers of fetuses
        sixteen to fifty cm long and of infants in the first year
        of life were studied, and also seven embryos 6.9 - 130 mm
        long, by the method of plastic reconstruction. The origin
        of the sacral part of the border trunk was first demon-
        strated in an embryo of 13.5 mm. It was demonstrated that

Card 1/2

USSR / Human and Animal Morphology (Normal and Pathological).   S
Nervous System. Peripheral Nervous System.

Abs Jour   : Ref Zhur - Biologiya, No 9, 1958, No. 40809

In fetuses and infants, as opposed to adult men, the middle sacral artery lies closer to the right border trunk, that the type of communicating and visceral nerve branches is always concentric, and that the coccygeal ganglion is present less frequently. The size of the interganglionic branches is practically not related to the age of the fetus, and the number of the non-dividing ganglia is greater in fetuses of younger age.

Card 2/2

CHECHURIN, S.I.

The 1 161 high-speed screw-cutting lathe. Biul.tekh.-ekon.inform.
no.4:18-19 '59. (MIRA 12:7)
(Screw-cutting machines)

S/181/62/004/003/039/045
B101/B102

AUTHOR: Chechurin, S. N.

TITLE: The problem of the change in refractive index of semi-
             conductor films under intense illumination

PERIODICAL: Fizika tverdogo tela, v. 4, no. 3, 1962, 813 - 814

TEXT: A critical check was made of the results reported by K. Ishiguro
and T. Hayashi (see below) referring to the change in refractive index n
under intense illumination. Films of Ge, CdS, CdSe, TeO_2, PbS, Au or Pt
were sputtered onto object glasses in vacuum and illuminated with a
300-watt lamp. In the case of CdS illuminated through the glass there was
a slight band shift ($\delta n/n = 2 \%$) but in the case of Ge, $\delta n/n = 110 \%$, and
in the case of metallic films even higher values were obtained. Inter-
position of a water filter reduced the band shift by 50 - 66 %. If the
PbS film was transfered to a metal net no band shift was observed. It
was concluded from this that the effect observed by Ishiguro and Hayashi
may be ascribed to a change in the refractive index of the glass base
brought about by different thermal expansion of the parts uncovered and
Card 1/2

The problem of the change in...   S/181/62/004/003/039/045
B101/B102

covered by the film. On that assumption, all that they actually observed
was a different thermal effect of the light on the glass surface with and
without the film. This was confirmed by sputtering Ni-Cu thermocouples
onto the base. The former were calibrated. It was found that the
temperature difference between the bare glass surface and that coated with
Ge exceeds 10°C, which is enough to produce the effect observed by the
Japanese research workers. There are 2 figures, 1 table, and 3 non-Soviet
references. The three references to English-language publications read
as follows: K. Ishiguro, J. Phys. Soc. Japan, 8, 269, 1953; K. Ishiguro a.
T. Hayashi, J. Phys. Soc. Japan, 9, 387, 1954; W. Brattain a. H. Briggs,
Phys. Rev., 15, 1705, 1949.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet (Leningrad State
                University)

SUBMITTED: December 3, 1961

Card 2/2

37925

S/181/62/004/005/016/055
B125/B104

AUTHORS: Rogachev, A. A., and Chechurin, S. N.

TITLE: Field effect and photoconductivity in lead-sulfide layers

PERIODICAL: Fizika tverdogo tela, v. 4, no. 5, 1962, 1174 - 1179

TEXT: The field effect of light-sensitive PbS layers condensed on glass
and mica in vacuo is studied. An a-c method was used to measure the
dependence of conductivity on the field strength under quasi-equilibrium
conditions at room temperature. It is assumed that the conductivity of
the layer is mainly due to its particles contacting the backing. In the
range of 16 - 100 cycles, the oscillograms were independent of the
frequency of the modulating field. Illumination of the layer increases
the number of surface holes, shortens the relaxation time $\tau_{f.e.}$ of the
field effect, and slightly increases the h-f value μ_{hf} of the effective

mobility. If, in the absence of a field, the surface conductivity is of
the p-type, illumination shifts the curve of the field effect slightly to
the left, whereas _ considerable shift occurs with n-type conductivity.

Card 1/3

Field effect and photoconductivity...   . $S/181/62/004/005/016/055$
$B125/B104$

The real part Re $\mu_{eff} = \mu'_{eff}$ of effective mobility changes signs in some specimens, but is always positive at high frequencies. The reduced conductivity remained constant for several days when d-c voltages of up to 1500 v were applied. Photoelectrons are trapped in the surface layer of the photoresistors investigated. When an inversion layer appears on the surface, the minimum of the curve representing the field effect is shifted much more. The frequency dependence of the field effect is given by

$$\mu'_{s\phi\phi.} = \mu'_{p} - \frac{(\mu_{p} + \mu_{n})C_{n} + \mu_{p}C_{t}}{C_{n} + C_{p} + C_{t}} \cdot \frac{1}{1 + \omega^{2}\tau^{2}_{s.s.}} \mp \mu'_{eff} \qquad (3)$$

where μ_{n} is the electron mobility, and μ_{p} is the hole mobility; dQ_{c}, dQ_{v}, and dQ_{t} denote the variation in charge in the conduction band, valence band, and surface states, respectively, and ψ is the surface potential. The photoconductivity of the vacuum-condensed PbS layers is mainly due to the change in concentration of the majority carriers (holes) in the intermediate layers on illumination. Experiments on the frequency dependence of the field effect permit a quantitative evaluation of the effect of barriers on the photoconductivity of the layer in any concrete case. There are

Card 2/3

Field effect and photoconductivity...   S/181/62/004/005/016/055
                                          B125/B104

6 figures. . The most important English-language reference is: J. N. Zemel
a. J. Varela. Phys. a. Chem. of Solids, 14, 142, 1960.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet (Leningrad State
               University)

SUBMITTED: December 23, 1961

Card 3/3

L 14971-63   EWT(1)/EWG(k)/EWP(q)/EWT(m)/BDS/EEC(b)-2   AFFTC/ASD
ESD-3 Pz-4   AT/IJP(C)/JD
ACCESSION NR: AP3005353   s/0181/63/005/008/2365/2367

AUTHOR: Chechurin, S. N.   68

TITLE: The effect of a strong electric field on the absorption of hyperfrequency
electromagnetic radiation in photosensitive layers of lead sulfide

SOURCE: Fizika tverdogo tela, v. 5, no. 8, 1963, 2365-2367

TOPIC TAGS: electric-field semiconductor effect, low-carrier-mobility semicon-
ductor, lead sulfide semiconductor, semiconductor electric effect

ABSTRACT: The deviation from Ohm's law observed earlier in semiconductors
with high carrier mobility in the presence of strong electric fields has now
been detected in low-mobility semiconducting materials. Photosensitized layers
in lead sulfide samples showed decreased conductivity when placed in fields of
increasing intensity. The phenomenon is explained by changes in carrier mobility
induced by the stronger fields. "The author thanks I. V. Vinokurov for his help
in carrying out the measurements." Orig. art. has: 2 figures.

ASSOCIATION: Leningradskiy gosudarstvenny*y universitet (Leningrad State Uni-
versity)

Card 1/2/

L 6704-65   EWT(1)/EWG(k)/EEC(t)   Pz-6   IJP(c)/ASD(a)-5/AFWL/APGC(b)/SSD/
AS(mp)-2/ESD(gs)/ESD(t)/RAEM(t)   AT
ACCESSION NR: AP4044949   S/0181/64/006/009/2750/2755

AUTHOR: Chechurin, S. N.

TITLE: Electric processes in intercrystallite layers of lead sul-
fide photoresistances

SOURCE: Fizika tverdogo tela, v. 6, no. 9, 1964, 2750-2755

TOPIC TAGS: lead sulfide optic material, photoresistance, photo-
conductivity, acoustic lattice vibration, carrier vibration, carrier
mobility, optical lattice vibration, recombination center

ABSTRACT: In view of the still disputed role of the intercrystal-
lite layers in the photoconductivity mechanism, the authors investi-
gated the conductivity of PbS photoresistances over a wide range of
electric fields using a pulsed method and a microwave method as
described by J. B. Arthur et al. (J. Electronics, v. 2, 145, 1956).
The deviation of the voltage-current characteristic of such photo-

Card   1/4

L 6704-65
ACCESSION NR: AP4044949

2

resistances from linearity was found to be due to the decrease in
the carrier mobility resulting from interaction between "hot" carrier
and acoustic lattice vibrations. Such a process occurs at fields
>50 V/cm. Another factor influencing the nonlinearity is the ex-
traction of the carriers from the intercrystallite layers. This
can occur at low fields (~10 V/cm), and results in a current pulse
with a characteristic inertial burst. The tendency of the dark
current to saturation is most probably connected with the excitation
of the optical vibrations of the lattice. The main contribution to
the sensitivity of photoresistances is made by the intercrystallite
layers. Photoresistances having two-valued voltage-current charac-
teristics with negative resistance sections were also observed. A
study of the processes leading to this ambiguity can cast light on
the nature of the recombination centers. "The author thanks A. A.
Rogachev for many valuable hints." Orig. art. has: 5 figures.

ASSOCIATION: Leningradskiy gosudarstvenny*y universitet (Leningrad

Card 2/4

L 6704-65
ACCESSION NR: AP4044949   0

State University)

SUBMITTED: 06Apr64   ENCL: 01

SUB CODE: OP, SS   NR REF SOV: 006   OTHER: 005

Card 3/4

L 6704-65
ACCESSION NR: AP4044949   ENCLOSURE: 01
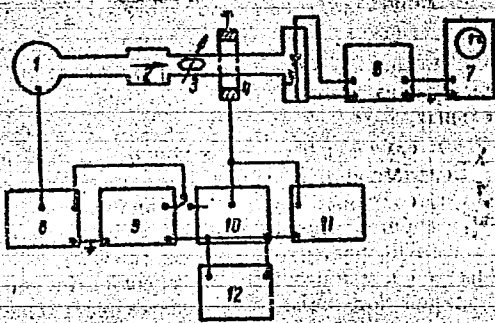
Fig. 1. Diagram of set-up

1 - Klystron, 2 - valve, 3 - attenuator,
4 - sample, 5 - detector, 6 - amplifier,
7 - oscilloscope, 8 - klystron power
supply, 9 - square wave generator,
10 - modulator, 11- voltmeter, 12 -
modulator power supply

Card 4/4

L 16794-66 EWT(d)/EWP(1) IJP(c) BB/GG

ACC NR: AT6005081   SOURCE CODE: UR/2563/65/000/256/0116/0120

AUTHOR: Stroganova, Ye. A.; Tarakukin, V. I.; Chechurin, V. L.

ORG: none

TITLE: Control circuit design based on the principle of current distribution

SOURCE: Leningrad. Politekhnicheskiy institut, Trudy, no. 256, 1965. Tsifrovyye izmeritel'nyye i upravlyayushchiye ustroystva (Digital measuring and control devices), 116-120

TOPIC TAGS: control circuit, switching circuit, digital computer

ABSTRACT: In the design of digital computers there is a need for the development of a general methodology for the establishment of control circuits based on the principle of current distribution (PCD). During the design of such control circuits it is expedient to divide them into units with rigid structure and those controlled by programs. The authors outline the requirements which must be satisfied for both types of units. A discussion is given on the design of 1) digital computer control circuits with rigid structure; 2) digital computer control circuits with programmed control; 3) a cycle
Card 1/2

L 16794-66

ACC NR: AT6005081   *O*

distributor; 4) a scaler; and 5) a branching circuit. The analysis shows that in the case
of PCD units expansion of the control system does not lead to an increase in the instru-
mentation of digital computer devices. Orig. art. has: 1 formula, 5 figures, and 2
tables.

SUB CODE: 09 / SUBM DATE: none / ORIG REF: 001

Card 2/2 *SM*

L 2538-66

ACCESSION NR: AP5023283

UR/0302/65/000/003/0063/0066
621.317.59:536.5

3/
B

AUTHOR: Bekker, B. Yu.; Boris, Ya. V.; Kyuzdeni, O. A.; Chechurina, M. N.

TITLE: Small contactless temperature-signaling device

SOURCE: Avtomatika i proborostroyeniye, no. 3, 1965, 63-66

TOPIC TAGS: signaling device

ABSTRACT: The authors developed a new transistorized temperature-signaling device which comprises: a measuring unit yielding the difference in voltages across a resistance thermometer and a slide-wire rheostat; a 3-stage amplifier; a phase-sensitive unit for producing a smooth voltage corresponding to temperature changes; and an output unit that produces a sinusoidal output voltage at an overall gain of over 1000. Continuous faultless operation of the device for 6000 hr is reported. These characteristics are claimed: stable operation between -40 and +60C under shock and vibration conditions; suitability for measuring low temperatures (to -200C) in combination with conventional (46—100-ohm) resistance thermometers, or high temperatures (to 1000C) with low-resistance (0.1—10-ohm) thermometers. Size of the experimental model is 244 x 178 x 118 mm. Orig. art. has: 2 figures and 12 formulas.   [03]

Card 1/1

L 2538-66

ACCESSION NR: AP5023283

ASSOCIATION: none

SUBMITTED: 00   ENCL: 00   SUB CODE: TD,EC

NO REF SOV: 002   OTHER: 001   ATD PRESS: 4/10

Card 2/2 ml