Card 2/2

ACC NR: AP5447 3.   SOURCE CODE:

AUTHOR: Al'tman, A. B. (Candidate of technical sciences)...; Glagolev, P. A.
(Candidate of technical sciences); Rastanayev, I. O. (Engineer)

ORG: none

TITLE: Metal-ceramic materials for magnetic circuits of electrical machinery

SOURCE: Elektrotekhnika...

TOPIC TAGS: metal ceramic material, electric machine

ABSTRACT: An investigation of Fe-Al and Fe-Si metal-ceramic alloys carried
out in VNIIEM is briefly reported. Pressed and sintered in the mold magnetic
wedges of these compositions were tested: 12% Al - 88% Fe, 16% Al - 84% Fe,
18% Al - 82% Fe, 4% Si - 96% Fe, 6.5% Si - 93.5% Fe; fields of 0.5-10...
applied. Magnetic and mechanical characteristics for the above compositions...

Card 1/2   UDC: 621.313.04...

L 39731-66
ACC NR: AP6007338

having 5 to 29% porosity are tabulated. The magnetic characteristics of the 84% Fe were practically stable after heating to 300°C for 100 hrs. The resistivity of the above alloys is 2—3 times as high as that of iron. The metal-ceramic wedges were electrically insulated from the iron. The 12% Al – 88% Fe 3-mm thick wedges (maximum permeability, 44) were tested in 3-phase, AU–51–2, squirrel-cage, 20-hp motors. The introduction of these wedges did not affect practical characteristics of the motors. Orig. art. has 1 figure and 4 tables.

SUB CODE: 9 / SUBM DATE: none / ORIG REF: ...

L CC   EWT(π)/EWP(w)/EWP(t)/ETI   IJP( )   JD/HW/JH

ACC NR: AP6022907   SOURCE CODE: UR/0292/66/000/004/0033/0035

AUTHOR: Al'tman, A. B. (Candidate of technical sciences); Gladyshev, P. A.
(Candidate of technical sciences); Garina, I. M. (Engineer); Kozlova, T. A. (Engineer)

ORG: none

TITLE: Metal-ceramic type "Magnico" magnets with high coercive force

SOURCE: Elektrotekhnika, no. 4, 1966, 33-35

TOPIC TAGS: permanent magnet material, magnetic coercive force

ABSTRACT: The composition and properties of two new permanent-magnet materials are
described: (1) Composition, (7.4--8)% Al, (30--40)% Co, (4.5--6)% Ti, 14% Ni,
3.5% Cu, rest, Fe; curves illustrate the effect of composition on magnetic properties;
the best properties obtained are: coercive force, 1080 amp/cm; remanence, 0.8 tesla;
maximum magnetic energy product, 0.019 j/cm^3; high stability of this material is
noted -- the flux of nonaged specimens practically did not change in 330 days;
(2) Composition, 7.5% Al, 14% Ni, 38% Co, 4% Cu, 7.5 Ti; rest, Fe; its magnetic
properties: coercive force, 1600 amp/cm; remanence, 0.75 tesla; energy product,
0.02 j/cm^3. Conventional powder-metal processing was employed; the isothermic
hardening in magnetic field and two-step tempering were used. Mechanical properties
of the above materials are also reported. Orig. art. has: 6 figures and 1 tables.

SUB CODE: 09 / SUBM DATE: none / ORIG REF: 002 / OTH REF: 001

Card 1/1   UDC: 621.318.2.001.3

GLADYSHEV, P.L.

Some vectorcardiographic and electrocardiographic changes in mitral
defects of the heart. Sov.med. 25 no.12:56-61 D '61. (MIRA 15:2)

1. Iz kafedry fakul'tetskoy terapii (zav. - prof. M.V.Burgsdorf)
Chelyabinskogo meditsinskogo instituta (rektor - dotsent P.M.Tarasov).
         (MITRAL VALVE—DISEASES)   (ELECTROCARDIOGRAPHY)
                    (VECTORCARDIOGRAPHY)

GLADYSHEV, F.L.

Electrocardiographic equivalents of "systolic" and "diastolic" stress on the ventricles in acquired vitia cordis. Kardiologiia 2 no.2: 24-29 Mr-Ap '62.

(MIRA 15:4)

1. Iz kafedry fakul'tetskoy terapii (zav. - prof. N.V.Burgsdorf) Chelyabinskogo meditsinskogo instituta (dir. - dotsent P.M.Tarasov).
   (ELECTROCARDIOGRAPHY)   (HEART--DISEASES)

GLADYSHEV, P.L.

Topographic value of precardiac leads in rheumatic defects of
the heart. Sov. med. 25 no.2:34-37 F '62.   (MIRA 15:3)

1. Iz kafedry fakul'tetskoy terapii (zav. - prof. M.V. Burgsdorf)
Chelyabinskogo meditsinskogo instituta (dir. - dotsent P.M.
Tarasov).

(RHEUMATIC HEART DISEASE)
(ELECTROCARDIOGRAPHY)

skoye otdel
Ministerstva
organizatsii

KHENKIN, M.L., kand. tekhn. nauk; NIKONOROVA, A.I., kand. tekhn. nauk; GLADYSHEV, S.A., inzh.; BOLOTOVA, Ye.P., inzh.; SOBOLEVA, N.P., inzh.

Stainless steel for thin-walled castings. Lit. proizv. no.11: 3-5 N '65.   (MIRA 18:12)

L 26030-66   EWT(m)/EWA(d)/T/EWP(t) IJP(c)   JD/HW

ACC NR: AP6008863   SOURCE CODE: UR/0128/65/000/011/0003/0005

AUTHOR: Khenkin, M. L. (Candidate of technical sciences); Nikonorova, A. I.
(Candidate of technical sciences); Gladyshev, S. A. (Engineer); Bolotova, Ye. P.
(Engineer); Soboleva, N. P. (Engineer)

ORG: none

TITLE: Stainless steel for thin-walled castings

SOURCE: Liteynoye proizvodstvo, no. 11, 1965, 3-5

TOPIC TAGS: metal casting, martensite steel, copper, corrosion resistance, tempering,
austenitic steel, steel, stainless steel/ ØKh15N4D3L stainless steel, 35L steel

ABSTRACT: The steel used for thin-walled and intricate castings of parts of preci-
sion machinery and devices must display a high resistance to atmospheric corrosion
without requiring a protective coating, a satisfactory fluidity, a high dimensional
stability, adequate physico-mechanical properties, and a satisfactory machinability.
Of the standard stainless steels not one satisfies the entire set of these requirements.
Cr-Ni austenitic steels have a high corrosion resistance but a low fluidity, while
martensitic-class steels have a low corrosion resistance but an insufficient fluidity.
Hence it is normally necessary to employ for these purposes 35L steel despite the
highly undesirable necessity of coating it electrochemically with zinc. Of the elements

Card 1/2   UDC: 621.74.045:669.14.018.8

L 26030-66

ACC NR: AP6008863

enhancing the fluidity of stainless steels, Cu is the most effective. In this con-
nection, six melts of the newly developed ØKh15N4D3L martensitic stainless steel (up
to 0.08% C, 0.8% Si, 0.7% Mn, 14.5-17% Cr, 3-4% Ni and 3-4% Cu) were tested for flu-
idity, as a function of temperature and shape of metal. Tests of various intricate
thin-walled (1.5 mm thick) castings confirmed the definitely satisfactory casting pro-
perties of this steel -- high fluidity and absence of hot cracking. Since steels used
for thin-walled and precision castings also must satisfy high requirements with re-
spect to corrosion resistance in non-coated state, high dimensional stability, and
machinability, these properties were also investigated for ØKh15N4D3L steel as com-
pared with 35L steel. Findings: the dimensional stability of ØKh15N4D3L steel is such
that, after its air quenching from 1020°C, 2-hr treatment with cold at -70°C and 2-hr
tempering at 600°C, this steel remains stable in time even in the presence of tempe-
rature fluctuations of from ±150°C to -40°C. Compared with 35L steel, ØKh15N4D3L steel
displays superior strength properties (1.5-2 times higher) as well as superior cor-
rosion resistance and superior machinability (30-40% higher). Thus ØKh15N4D3L steel
may be accepted as a replacement for 35L steel.which previously had to be used for
this purpose. Orig. art. has: 6 figures, 4 tables.

SUB CODE: 11, 13   /   SUBM DATE: none/   ORIG REF: 00

Card   2/2

GLADYSHEV, S.G., dessignator

Lavsan blend f.... . .   'n shirts. Tekst.prom. 23 no.11:34-36
N '63.   (MIRA 17:1)

1. Naro-Fominskaya pryadil'no-tkatskaya fabrika.

LYUBINSKIY, N.I.; SHIRYAYEV, I.N.; KNIZHNIKOV, M.G.; GLADYSHEV, S.S.; KIVER,
    V.F.; SPARIN, V.I., agronom

    Use advanced cultivation practices for sunflowers. Zemledelie 27
    no.4:47-51 Ap '65.   (MIRA 18:4)

    1. Orenburgskaya oblastnaya sel'skokhozyaystvennaya opytnaya
    stantsiya (for Lyubinskiy). 2. Predsedatel' kolkhoza imeni
    Kirova, Oktyabr'skogo rayona, Orenburgskoy oblasti (for Shiryayev).
    3. Predsedatel' kolkhoza "Pamyat' Il'icha" Dinskogo rayona, Krasno-
    darskogo kraya (for Knizhnikov). 4. Glavnyy agronom kolkhoza "Pamyat'
    Il'icha", Dinskogo rayona, Krasnodarskogo kraya (for Gladyshev).
    5. Starshiy agronom Pologskogo proizvodstvennogo upravleniya,
    Zaporozhskoy oblasti (for Kiver).

GLADYSHEV, V.

Internatioral colloquium on oscillographic polarography with
alternating current. Zav.lab 28 no.1:125 '62.

(MIRA 15:2)

(Czechoslovakia—Polarography—Congresses)

GLADYSHEV, V.

Technical maintenance of ships by advanced crews. Rech.
transp. 24 no.7:28-29 '65.   (MIRA 18:8)

1. Nachal'nik sluzhby sudovogo khozyaystva Volzhskogo
ob"yedinennogo rechnogo parokhodstva.

Moscow State U. and Physics Inst. in Lebedev, AS USSR

86753

7,6/50

21.5300 (1144, 1138, 1425)

AUTHORS: Gladyshev V. A. and Katsaurov L. N.

TITLE   A Vapour Jet Counter of Charged Particles

PERIODICAL   Pribory i tekhnika eksperimenta 1960 No 6
             pp. 113 - 114

TEXT   In a number of nuclear studies (for example in the
case of scattering of protons Jeutrons, etc at energies
below about 300 keV) it is necessary to record charged
particles having low energies. The detection of such
particles meets with serious experimental difficulties
because it is necessary to use very thin windows separating
the counting region from the target chamber in which a very
high vacuum must be maintained. These difficulties can be
avoided if a jet of vapour is used instead of the usual
working gas in the counter   Fig. 1 shows a schematic drawing
of such a counter   The counter is essentially a single-
stage oil-diffusion pump. A tungsten wire 0.1 mm in diameter
and 1 cm long is introduced into the vapour jet so that the
glass sphere at the end of the tungsten wire is in the plane

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S/120/60/000/006/029/045
E032/E314

A Vapour Jet Counter of Charged Particles

of the end of the nozzle. The inner surface of the
condenser (25 mm in diameter) in the region of the wire is
either silvered or covered with a thin layer of copper.
This surface serves as the cathode and the wire serves as
the anode. The effective window thickness of such a counter
is practically determined by the temperature of the walls in
the neighbourhood of the entrance part into its working
volume. This effective thickness is defined as the thickness
of the oil vapour behind the front section of the window
When the walls are at 70 $^{\circ}$C the effective window thickness

is 10 - 20 $\mu g/cm^2$. By reducing the temperature it can
apparently be reduced to tenths or even hundredths of $\mu g/cm^2$.
However, this is associated with a reduction in the
working volume of the counter. The operation of this counter
in the proportional region was checked using α-particles from
a Po source. α-particle pulses had amplitudes of between
0.01 and 0.5 V so that normal amplifying apparatus could be
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86753
S/120/56/000/006/029/045
D070/E314

On Jet Counter of Charged Particles

It was found that with an amplification of about 10^4 signal-to-noise level was sufficiently high. The pulses of length of the order of 1 μs and voltages of the order of a few V are found to be satisfactory.
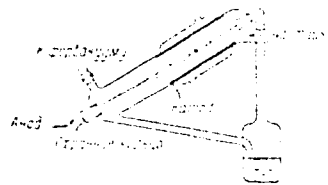
There is 1 figure.

ASSOCIATION: Fizicheskiy Institut AN SSSR
(Physics Institute of the AS USSR)

96753

A Vapour Jet Counter of Charged Particles

SUBMITTED: October 20, 1959

Card 4/4

S/120/62/000/001/002/061
E032/E514

AUTHORS: Gladyshev, V.A., Katsaurov, L.N. and Kuznetsov, A.N.

TITLE: On the use of a jet of vapour as a target for
              producing nuclear reactions

PERIODICAL: Pribory i tekhnika eksperimenta, no.1, 1962, 20-22

TEXT: In nuclear physics it is frequently necessary to have
a thin target capable of withstanding large ion currents.   The
present authors report an investigation of the possible use of a
jet of vapour for this purpose.   The principle of the apparatus
employed is illustrated in Fig.1.   The vapour was introduced
into a vacuum chamber through the nozzle 3   and was condensed by
the liquid-nitrogen-cooled trap 4,5.   Water vapour was employed
as the working substance.   The density of vapour in the central
part of the jet was investigated by placing small rings inside
the vapour trap and measuring the amount of water condensed on
each of them.   The experimental results obtained suggest that the
water vapour jet does not follow the laws of gas dynamics.
Empiral formulae are reported for the density distribution in the

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On the use of a jet of vapour ...   S/120/62/000/001/002/061
E032/E514

jet.   With a pumping speed of 1000 litres/sec and a vacuum of
10^{-5} mm Hg it is possible to release 0.1 g/sec through the nozzle.
If it is assumed that the velocity of the jet approaches the
velocity of sound, then the thickness of the vapour target turns
out to be of the order of 2 μg/cm^2.   For 2 MeV protons the
corresponding energy loss is of the order of 600 eV. However, in
the latter case a considerable amount of vapour still misses the
trap and enters the vacuum chamber. In order to obtain thicker
targets, it is necessary to use vapours of liquids whose vapour
pressure at, say, room temperature is 10^{-5} - 10^{-6} mm Hg, or to
develop new types of nozzles which would confine the jet to a
smaller angular range. It is stated that vapour targets having
a thickness of a few keV can be produced for use with a focused
beam having a cross section of about 1 cm^2.   There are 5 figures.

SUBMITTED: August 24, 1960

Card 2/3

AUTHOR: Gladyshev, V. A.: Katsaurov, L. N.; Kuznetsov, A. N.; Martynova, L. P.;
Moroz, Ye. M.

TITLE: Concerning the input of ion beam into a cyclotron

SOURCE: International Conference on High Energy Accelerators. Dubna, 1963.
Trudy. Moscow, Atomizdat, 1964, 658-661

TOPIC TAGS: cyclotron, particle beam

ABSTRACT: The problem of the external injection of ions into a cyclotron remains
especially pressing in connection with the problem of the acceleration of polarized
ions, because the source of polarized particles, like some other complex sources,
cannot be situated at the center of the cyclotron. Since, in the case of external
injection, the acceleration begins with a certain initial energy, it is possible to
avoid a number of difficulties connected with the first revolutions in the central
portion of the cyclotron. One of the procedures for solving this problem is to in-
put the beam along the vertical axis of the cyclotron and turn it by an electro-
static deflecting system through 90° into the median plane. The most substantial
deficiencies, it seems, of axial input of the beam is the considerable losses and

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the complexity of the deflecting system. The present report indicates how it is
possible to realize external beam injection in the median plane of the magnet. This
can be done especially simply in sector cyclotrons. In a nonhomogeneous magnetic
field, charged particles experience a drift across the gradient of the magnetic
field. It is expedient to take advantage of this in the sector cyclotron by direct-
ing the beam of particles so that they drift up to the central region of the cyclo-
tron along the boundary of one of the sectors. In the central region it is possible
with the help of a cylindrical electrostatic field to transfer the particles to the
trajectory required later. In the case of a homogeneous magnetic field, which al-
most always holds true at the central region of sector cyclotrons, the minimum elec-
trical field strength ξ_{min} in the cylindrical condenser that is necessary for the
transfer of the particles from one trajectory to another can be represented by the
formula

where W is the kinetic energy of the particles in kev; R is the radius of curvature
(for a nonrelativistic single-charged ion, $R = 4.57 \cdot 10^3 \frac{\sqrt{W}}{B}$);

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ACCESSION NR: AT5007946

M is the mass of the ion in units of the mass of the nucleon; ϕ is the angle between the trajectories at the point of their intersection. As it turns out, it is possible to choose the place for injecting the particle beam such that it will always be focused on its path along the magnet sector. On the path to the central region of the cyclotron it is possible to describe a series of loops, and also the frequency of a particle's revolution (more precisely, the frequency of loop formation). The quality of the magnetic focusing of the particles is characterized by the ratio of the frequencies of the particles' horizontal and vertical oscillations to the mentioned frequency of loop formation. The radial focusing of the ions in the magnetic system considered almost does not differ from focusing in a homogeneous magnetic field. Similar considerations hold for the vertical focusing of the ions. The conditions for the stability of the vertical motion of the ions are characterized by inequalities involving the magnetic field in the gap between the sectors in the region of beam passage. In the case of the authors' cyclotron, there always exists a wide interval of initial distances of the beam from the sector boundary for which the injected ions can reach the central region of the cyclotron magnetic without experiencing defocusing. The experimental verification of the possibility of external injection by the considered method was carried out on a three-sector cyclo-

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ACCESSION NR: AT5007946

tron with straight sector borders (magnet diameter--720 mm; accelerated particles--
350 Kev deuterons). The experimental set-up and results are described in the pre-
sent report. Orig. art. has: 4 figures.

ASSOCIATION: Fizicheskiy institut imeni P. N. Lebedeva AN SSSR (Physics Institute
AN SSSR)

SUBMITTED: 26May64   ENCL: 00   SUB CODE: NP

NO REF SOV: 000   OTHER: 001

Card 4/4

L 45586-65   EWT(m)/EPA(w)-2/EWA(m)-2   Pab-10/Pt-7   LJP(c)   DM

ACCESSION NR: AP5009109   S/0089/65/018/003/0213/0218

AUTHOR: Gladyshev, V. A.; Katsaurov, L. N.; Kuznetsov, A. N.; Martynova, L. P.;
Moroz, Ye. M.

TITLE: Injection of an ion beam in a cyclotron

SOURCE: Atomnaya energiya, v. 18, no. 3, 1965, 213-218

TOPIC TAGS: cyclotron, accelerated particle injection, polarized ion acceleration,
sector cyclotron

ABSTRACT: It is shown that external injection of a beam in the median plane of a
magnet is possible, and is particularly easy to effect in sector cyclotrons. This

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ACCESSION NR: AP5009109

of the beam, to produce the correct drift of the particles in the central region,
and to bring the injected particles to the theoretical trajectory from which accel-

ASSOCIATION: None

SUBMITTED: 19Mar64   ENCL: 02   SUB CODE: NP

NR REF SOV: 000   OTHER: 002

Card 2/4

GLADYSHEV, V.A.; KUTSAROV, L.N.; KUZNETSOV, A.N.; MARK, Yu.M.; MALAYKINA, L.P.

Design of a spiral-coil 300 Kev. cyclotron with external injection.
Atom. energ. 19 no.5:442 N '65.

Magnetic field of a spiral-coil 300 Kev. cyclotron with external
injection. Atom. energ. 19 no.5:443 N '65.

L 27967-66   EWT(m)   IJP(c)

ACC NR: AP6017683   SOURCE CODE: UR/0089/65/019/005/0442/0442

AUTHOR: Gladyshev, V. A.; Katsaurov, L. N.; Kuznetsov, A. N.; Moroz, Ye. M.;   3/
Nechayeva, L. P.   B

ORG: none

TITLE: Construction of a 300 kev sector cyclotron with external injection (Entire article)

SOURCE: Atomnaya energiya, v. 19, no. 5, 1965, 442

TOPIC TAGS: cyclotron, particle accelerator target, deuteron, diffusion pump, cyclotron magnet, vacuum chamber/N-5T diffusion pump

ABSTRACT: With thin targets, accelerated particles can be used more effectively if additional acceleration is applied to them after they have pased through the target (. L. N. Katsaurov and V. G. Latysh, Trudy FIAN SSSR /Proceedings of the Physics Institute, Academy of Sciences USSR/, Vol 33, p 235 (1965)). A small ~300 kev deuteron sector cyclotron was constructed at the Physics Institute to test the feasibility of applying additional acceleration. Plans have been made to carry out a number of investigations with this cyclotron especially since it is equipped to inject ions into the median plane (V. A. Gladyshev, et al., Trudy Mezhdunarodnoy Konferentsii po Uskoritelyam /Proceedings of the International Conference on Accelerators, Dubna, 1963/, Moscow, Atmoizdat, 1964, p. 658. The cyclotron magnet assembly consists of three individual C-shaped

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L 27967-66·

ACC NR: AP6017683

O

·magnets. This design provides for a very deep azimuthal variation of the
_magnetic field without requiring additional windings between the sectors
and permits easy access to the chamber. The diameter of the magnet is 70 cm.
The pole pieces are sectors with straight edges and 66 deg. angles. The
supply current to the magnets is stabilized to 3×10^{-6}. Furthermore, the
field of each magnet is stabilized by an independent proton stabilization
circuit.

The pole pieces of the magnet serve partly as the covering of the vacuum
chamber, and the chamber itself consists of several parts. Its main part
has three triangular chambers made of brass, each bolted to the sides of the
secotr pole pieces of two adjacent magnets. Vacuum sealing is provided by
lead wire which is laid on the joints between the various parts and is squeezed
tight by special fittings. An N-5T type oil diffusion pump provides a vacuum
of $\sim 2 \times 10^{-6}$ mm Hg during operation with a beam.

Movable probes are available for observation of the beam. These probes
can be positioned in any point of the vacuum chamber at the desired angle to
the beam by virtue of a teflon sealed ball joint and a movable cross-bar
that has Wilson-type teflon seals.

The source, together with the accelerator tube, can be moved in the
median plane of the magnet, making it possible to vary the beam injection
point within the chamber.

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ACC NR: AP6017683

The accelerating voltage is produced on the dees by a generator that feeds energy to a quarter-wave spiral line made of copper pipe wound on a glass cylinder. Up to 20 kv are used on the dees for acceleration.

In addition to the structural design features (split magnet, diassemble-able vacuum chamber, spiral quarter-wave line), the cyclotron is equipped for external ion injection, which promises new ways of using polarized particle sources as well as other complex sources.   [JPRS]

SUB CODE: 20, 13 / SUBM DATE: 09Feb65 / ORIG REF: 002

Card 3/3   C C

L 27968-66   EWT(m)   IJP(c)

ACC NR: AP6017684

SOURCE CODE: UR/0089/65/019/005/0443/0443

AUTHOR: Gladyshev, V. A.; Katsaurov, L. N.; Kuznetsov, A. N.; Moroz, Ye. M.; Nechayeva, L. P.

ORG: none

TITLE: Magnetic field of a 300 kev sector cyclotron with external injection (entire article)

SOURCE: Atomnaya energiya, v. 19, no. 5, 1965, 443

TOPIC TAGS: cyclotron, cyclotron magnet, deuteron, galvanometer, betatron, nuclear resonance, magnetic field, motion equation, computer calculation

ABSTRACT: This paper presents data on the magnetic field of a sector cyclotron with a split magnet designed to accelerate deuterons to 300 kev. The sectors of the cyclotron are displaced radially from the center of the magnet, and the cylindrical core is mounted in the center. The required field is obtained by empirical selection of magnet parameters.
    Field measurements were made with the aid of a winding which is connected to a ballistic galvanometer and can be shifted step-wise. The winding, passing through the control points in the sectors, was shifted by 2 deg in azimuth and 1 cm radially. The field was measured in the control points by the nuclear resonance method.
    The field focussing properties of an isochronic cyclotron depends on the depth of azimuthal variation and is determined by the betatron oscillation

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L 27968-66

ACC NR: AP6017684   0

frequencies. The depth of the azimuthal variation is characterized by "flutter", which is defined as $F = (\langle B^2 \rangle - \langle B \rangle^2)/\langle V \rangle^2$.

When the radius in the given cyclotron is increased from 10 to 30 cm, flutter increases smoothly from 0.2 to 0.45. The amplitudes of the first and second harmonics of the field, characterizing the asymmetry of the magnetic field, are approximately one order smaller than the amplitudes that cause radial instability.

The equations of motion were integrated on a computer, with the measured filed of the cyclotron given in the form of tables. This provided complete data on the behavior of particles and orbital parameters in a real field.

During the work, equilibrium orbits were constructed for various energies, and the mean magnetic field along the equilibrium orbits was calculated. There is an insignificant difference between the field obtained and an iso-chronic field, and the phase shift during acceleration from 40 to 300 kev is 6 deg as the energy increases by 10 kev per revolution. The orbital properties are especially evident on the so-called phase ellipses, which close after N revolutions; N is related to the betatron frequencies Q_r and Q_z by the relations

$$N_r = (Q_r - 1)^{-1} \text{ and } N_z = (Q_z - 1)^{-1}$$

By constructing ellipses for various energies and for different beta-tron amplitudes it was possible to establish that the maximum permissible amplitude of radial oscillations, which is 3 cm for 50 kev, increases with increasing energy to 5-6 cm for energies above 100 kev. The betatron

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ACC NR: AP6017684

frequencies calculated on the computer from the phase ellipses indicate that focussing is adequate over the entire range of energies.

Machine computed betatron frequencies were compared with frequencies calculated for assumed circular obits. This comparison revealed that frequencies calculated by "smooth approximation" formulas, by formulas using harmonic field analysis, and formulas derived for an assumed stepwise field, differ from the computer results by 5 to 7%.

Analysis of the magnetic field indicates that the cyclotron design with split magnets easily produces an isochronic field with very deep azimuthal variation, providing good focussing for all orbits.

Orig. art. has: 1 formula. [JPRS]

SUB CODE: 20 / SUBM DATE: 29May65

Card 3/3

LEONT'YEVSKIY, Yevgeniy Sergeyevich; RENSKIY, Nikolay Mikhaylovich;
      KRYLOV, V.I., retsenzent; SHIMKO, K.N., retsenzent; GLADYSHEV,
      V.F., retsenzent; OSIPOV, L.L., retsenzent; TAREYEV, V.M.,
      prof.,doktor tekhn.. nauk, red.; VITASHKINA, S.A., red. izd-va;
      BODROVA, V.A., tekhn. red.

      [Marine engineering handbook for the operation of motorships]
      Spravochnik dlia mekhanika i motorista teplokhoda. Sost. E.S.
      Leont'evskii i N.M.Renskii. Moskva, Izd-vo "Rechnoi transport,"
      1961. 558 p.   (MIRA 15:2)
                  (Marine engineering) (Motorships)

RENSKIY, Nikolay Mikhaylovich, BRYKOV, S.K., kand. tekhn. nauk,
    retsenzent; GLADYSHEV, V.F., inzh., retsenzent; URLANG,
    F.D., kand. tekhn. nauk, red.; KAN, P.L., red.izd-va;
    RIDNAYA, I.V., tekhn. red.

    [Operation of principal engines of serially manufactured
    diesel river boats] Ekspluatatsiia glavnykh dvigatelei se-
    riinykh teplokhodov. Moskva, Izd-vo "Rechnoi transport,"
    1963. 119 p.   (MIRA 17:4)

BOGDANOV, N.F.; TIMOFEYEV, V.V.; PEREVERTSEV, A.N.; GLADYSHEV, V.P.

Obtaining a low-melting paraffin from diesel fuel fractions by
filter pressing and sweating. Trudy GrozNII no. 15:201-212
'63.   (MIRA 17:5)

STEPURO, S.I.; BOGDANOV, N.F.; GLADYSHEV, V.P.

Adopting a paraffin-distillate processing installation in
the new paraffin shop of the Grozny Petroleum Lubricant Plant.
Trudy GrozNII no. 15:195-200 '63.   (MIRA 17:5)

FREYDENZON, Ye.Z.; PUSHKASH, I.I.; ...., b.i.; ...., V.i.

Characterization of axing ....

.... ores from the .... deposit. Stal' 25 no.6:
492-497 Je '65.

1. ....

GLADYSHEV, V.I., inzh.

Behavior of sulfur during blast furnace smelting. Stal' 25
no.12:1074-1077 D '65.   (MIRA 18:12)

USSR/Analysis of Inorganic Substances   G-2

Abs Jour: Ref Zhur-Khimiya, No 6, 1957, 19561

Author   : V. P. Gladyshev, G. A. Tolstikov
Inst   : -
Title   : Colorimetric Determination of Thallium

Orig Pub: Zaved. Laboratoriya, 1956, 22, No 14, 1166 - 1168

Abstract: A violet compound, applicable to the colorimetric
           analysis, is produced at the interaction of Tl^{2+}
           in an acid medium with n-aminophenol. The weighed
           sample (0.05 - 0.1 g at Tl > 1%, 0.2 - 1 g at Tl
           0.1 - 1%, and 5 - 10 g at Tl 0.005 - 0.01%) is
           dissolved in diluted H_2SO_4 (1 : 1), evaporated
           until it is dry, the remainder is treated with
           water, the solution is filtered, the precipitate

Card 1/2   - 59 -

AUTHOR   Gladyshev, V.F.   32-3-8/52

TITLE: The Colorimetric Determination of Selenium and Tellurium in the
                  Dust of the Lead Industry (Kolorimetricheskoye opredeleniye
                  selena i tellura v pylyakh svintsovogo proizvodstva)

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol. 24, Nr 3, pp. 275-278 (USSR)

ABSTRACT: At present selenium and tellurium are determined by the method
                  developed by S.T. Volkov /Ref.2/ or V.K.Zemel' Ref.3 . Recently
                  a method was described by F.V. Zaykovskiy in which ascorbic acid
                  is used. In the industrial dust selenium and tellurium are de-
                  termined according to S.Iu.Faynberg /Ref.1 , but this method of
                  determination takes three days. The present method is based upon
                  a suggestion made by Yilek et al. /Ref.5/, but selenium and tellu-
                  rium are decomposed in concentrated hydrochloric acid + some drops
                  of nitric acid. For the separation of the two elements a 10%
                  solution of thiourea in 2n hydrochloric acid was used, whereas the
                  other elements are removed by lead chloride. Results of separation
                  are shown by tables. Final determination was carried out colori-
Card 1/2   metrically, visually, or on a photocolorimeter ФЭК-М with blue

The Colorimetric Determination of Selenium and
Tellurium in the Dust of the Lead Industry   32-3-8/52

      filter. A process of analysis is described in detail. Comparative
determinations of dust samples were carried out by the Faynberg
method as well as by the method described, and it was found that
in the case of agreeing results a double saving of time was at-
tained. Results are shown in tables. There are 3 tables, and 7
references, 6 of which are Slavic.

ASSOCIATION: Kazakh State University (Kazakhskiy gosudarstvennyy universitet)

AVAILABLE: Library of Congress

    1. Lead dust–Selenium–Determination   2. Lead dust–Tellurium–
        Determination

Card 2/2

GLADYSHEV, V.P.; SONGINA, O.A.

Determination of selenium and tellurium in products of the lead
industry. Izv.AN Kazakh.SSR.Ser.khim. no.1:14-21 '59. (MIRA 13:6)

1. Kazakhskiy gosudarstvennyy universitet.
(Selenium--Analysis)
(Tellurium--Analysis)

GLADYSHEV, V.P.; TOLSTIKOV, G.A.

Polarographic reduction of meconic acid on a mercury electrode.
Izv.AN Kazakh.SSR.Ser.khim. no.1:47-54 '59.   (MIRA 13:6)

1. Kazakhskiy gosudarstvennyy universitet i Institut khimicheskikh
nauk AN KazSSR.
                    (Meconic acid)

5(2)

AUTHOR: Gladyshev, V. P.   SOV/75-14-1-16/32

TITLE: Determination of Elementary Sulfur by Extraction With Carbon
             Tetrachloride (Opredeleniye elementarnoy sery ekstragirovani-
             yem chetyrekhkhloristym uglerodom)

PERIODICAL: Zhurnal analiticheskoy khimii, 1959, Vol 14, Nr 1, pp 91-93
             (USSR)

ABSTRACT: The known methods of determining elementary sulfur take a long
             time and are difficult, and besides, various cations in most
             cases cause a considerable disturbance (Refs 1-3). The author
             developed a method of determining elementary sulfur in materials
             containing large quantities of sulfides of mercury and other
             metals, and further also oxides of arsenic and antimony, and
             various other sulfurous compounds (thiosulfates, sulfates, sul-
             fites, polythionates). The content of elementary sulfur in
             these objects amounted to 2-10%. Carbon tetrachloride was found
             to offer several advantages over carbon disulfide for the ex-
             traction of elementary sulfur. The solubility of elementary
             sulfur in carbon tetrachloride amounts to about 2% at 50°
             (Ref 5). The higher boiling point of carbon tetrachloride per-

Card 1/3   mits a more rapid extraction, and besides carbon tetrachloride,

Determination of Elementary Sulfur by Extraction   SCV/75-14-1-18/32
With Carbon Tetrachloride

unlike carbon disulfide, is not combustible. The results ob-
tained by determining elementary sulfur in artificial mixtures
and in rock by extraction with carbon tetrachloride agree well
with the results obtained by determination according to the
sulfite method (extraction with sodium sulfite solution and
jodometric determination of the thiosulfate formed). On the
basis of these results this new method was used for the analy-
sis of complex mixtures. Results were controlled by determin-
ations from various large weighed portions. It was found that
small quantities of elementary selenium and tellurium (up to
0.5%) do not influence this sulfur determination. The simple
method elaborated is suited for the analysis of materials, the
analysis of which by the methods hitherto known is very dif-
ficult. Carrying out of these determinations is very accur-
ately described in this paper. Preparation of samples for
analysis is the same as in the extraction of carbon disulfide
(Ref 1). If bitumen or other organic substances are present
in the material under investigation, elementary sulfur is not
gravimetrically determined after distilling off but by the
Card 2/3   sulfite method. There are 3 tables and 5 references, 4 of

Determination of Elementary Sulfur by Extraction   SOV/75-14-1-18/32
With Carbon Tetrachloride

          which are Soviet.

ASSOCIATION: Kazakhskiy gosudarstvennyy universitet, Alma-Ata (Kazakh State
               University, Alma Ata)

SUBMITTED: January 30, 1958

Card 3/3

GLADYSHEV, V.P.; KOZLOVSKIY, M.T.

Use of oscillographic polarography in the study of the anodic
oxidation of complex amalgams. Izv. AN Kazakh. SSR Ser. khim.
no. 2:61-66 '60.   (MIRA 14:5)
(Amalgams) (Polarography)

GLADYSHEV, V.P.; ILYUSHCHENKO, V.M.; KOZLOVSKIY, M.T.

Causes of sludge formation in the preparation of thallium by the
amalgam method. Izv. AN Kazakh. SSR Ser. khim. no. 2:67-74 '60.
(MIRA 14:5)

(Thallium)

32029

S/137/61/000/011/117/123
A060/A101

S 5300

AUTHORS   Gladyshev, V.P., Kiseleva, T.G.

TITLE   On the polarography of germanium

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 11, 1961, 9, abstract
                11K54. ("Tr. In-ta khim. nauk. AN KazSSR", 1960, 6, 184 - 195)

TEXT.   An investigation was carried out by the method of differential
oscillographic polarography on the restoring of ions of Ge^{+++} and Ge^{++} in non-
buffer solutions (for example, solutions of $(NH_4)_2SO_4$, NH_4Cl, $(NH_4)_3PO_4$, NH_4CNS,
Na_2CO_3, $LiCl$, KBr, KI, and others with additions of KCN and complexon III).
Mercury-drop and jet electrodes were utilized. It was established that in non-
buffer, neutral and weakly alkaline solutions, there occurs the restoration of
Ge^{+++}, as indicated by the presence of a notch in the neighborhood of -1.5 v
in the upper part of the curves dE/dt vs E, corresponding to the cathode pro-
cess. The process of restoring is irreversible and is of a kinetic nature.
In the presence of the NH_4^+ ion in the solution one observes a second wave in the

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On the polarography......

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S/137/61/000/011/117/123
A060/A101

region of -1.7 v, caused by the restoration of H^- ions. Ge^{++} is restored in solutions of KCl, KBr, and HCl of any concentration. If the III complex is added, the restoration does not occur in the solution of $(NH_4)_2CO_3$. The restoration process of Ge^{++} is reversible and is of a diffusion nature. The half-wave potentials are determined for G^{++++} and Ge^{++} against various backgrounds. There are 26 references.

N. Gertseva

[Abstracter's note: Complete translation]

Card 2/2

AUTHOR: Gladyshev, V.P.

TITLE: Solubility of Metals in Mercury

ABSTRACT: Some technical uses of mercury (Refs 1-3) require a
            detailed study of metal solubility in it. The author
            tabulates published (Refs 4-6) solubility data for 18 °C
            and discusses proposed explanations for observed values
            (Refs 4, 9-11). These explanations he describes as
            qualitative and not applicable to all metals. He maintains
            that the main factor determining whether a given metal is
            soluble is the structure of its outer electron shell, the
            extent of solubility depends on various factors. The
            influence of the bonding energy of the crystal lattice
            he represents (because of absence of direct data) by a
            plot (Figure 1) of solubility (atomic %) against the heat
            of sublimation (from Refs 17, 18, 21): metals with lowest
            heats of sublimation have the highest solubility and
            conversely; those with intermediate heats have medium
            solubility. A similar relation (Figure 2) is obtained

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S/126/60/009/06/003/025
E111/E352

Solubility of Metals in Mercury

between solubility and the bonding energy of diatomic
molecules. Figure 3 shows the solubility (circles) and
primary ionisation potentials plotted against atomic
number· this shows that as ionization potential decreases
solubility increases. Table 2 presents published
(Refs 3, 24, 25, 29, 31) data for solubility and the closest
order structure (coordination number determined by neutron
diffraction methods) of solid and liquid (at temperatures
not over 40 °C above the melting points) metals; metals
with closest-order structure most similar to that of mercury
are the most soluble, and conversely. A further relation
discussed is that between solubility and the ratio of
(electron charge valency of ion) - (effective radius
of ion) (Refs 19, 32). The relations (Figure 4) depend
on the positions of the metals in the periodic table. The
aluminium sub-group shows an anomalously high solubility.
Sodium deviates from all the relations (Figures 1-4),
which the author attirbutes to the high ionization of its
atoms relative to those of other first group alkali
metals. From the anomalous position of barium in the

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Solubility of Metals in Mercury   E111/E352

relations the author considers the published values
for its solubility to be too low. Professor M.T. Kozlov.
Corresponding Member of the Ac.Sc. KazSSR, O.N. Songina,
Doctor of Chemical Sciences, and A.I. Zebreva, Docent,
assisted with advice and discussion on the work.
There are 4 figures, 2 tables and 52 references, 22 of
which are Soviet, 6 English and 4 German.

ASSOCIATION: Kazakhskiy gosudarstvennyy universitet im.
     S.M. Kirova   (Kazakh State University im. S.M. Kirov)

SUBMITTED: December 23, 1959

Card 3/3

GLADYSHEV, V.P.; KAL'VODA, R.

Rapid oscillographic polarography of chlorides. Zav. lab. 27
no. 12:1450-1452 '61.   (MIRA 15:1)

1. Kazakhskiy gosudarstvennyy universitet i Polyarograficheskiy
institut Chekhoslovatskoy Akademii nauk.
                (Chlorides)   (Polarography)

GLADYSHEV, V.P.

"Oszillopolarographische bestimmung con anionen."

Report submitted to the Oscillopolarography Course and Polarography Symp.
Jena, GDR   10-15 Sep 1962

GLADYSEV, V. P.

KALVODA, R.

no academic degree indicated

Polarographic Institute, Czechoslovak Academy of Sciences (Polarographisches
Institut, Tschechoslovakische Akademie der Wissenschaften), Prague

Prague, Collection of Czechoslovak Chemical Communications, Vol 27, No 10,
Oct 62, pp 2365-2371.

"Application of Oscillographical Polarography in Quantitative Analysis XIX"
"Behavior of Chlorides, Bromides and Iodines"

Co-author:

GLADYSEV, V.P., Polarographic Institute, Czechoslovak Academy of Sciences
   (Polarographisches Institut, Tschechoslovakische Akademie der Wissenschaften),
   Prague.

GLADYSHEV, V.P.

Direct oscillographic polarographic determination of sulfates.
Zav. lab. 28 no.9:1063-1065 '62.   (MIRA 16:6)

1. Kazakhskiy gosudarstvennyy universitet.
         (Sulfates)   (Polarography)

ROZHDESTVENSKAYA, Z.B.; GLADYSHEV, V.P.; SONGINA, O.A.

Oscillopolarographic investigation of the reduction of some oxygen-
containing anions in sulfuric acid solutions. Izv. AN Kazakh.
SSR. Ser. tekh. i khim. nauk no.2:8-14 '63.   (MIRA 17:2)

GLADYSHEV, V.P.

Reduction potentials of metals on a mercury electrode. Part 1:
Structure of metal atoms and the electrochemical behavior of
amalgams. Izv. vys. ucheb. zav.; khim. i khim. tekh. 6 no.3:
390-396 '63.   (MIRA 16:8)

1. Kazakhskiy gosudarstvennyy universitet imeni S.M. Kirova,
kafedra analiticheskoy khimii.
                (Amalgams--Electric properties)
                    (Reduction, Electrolytic)

GLADYSHEV, V.F.; KOZLOVSKIY, M.T.

Reduction of selenite ion and tellurite ion by zinc amalgam. Izv.
vys.ucheb.zav.;khim.i khim.tekh. 6 no.5:724-728 '63. (MIRA 16:12)

1. Kazakhskiy gosudarstvennyy universitet, kafedra analiticheskoy
khimii.

GLADYSHEV, V.P.

Reduction of oxygen on a mercury electrode in acid solutions.
Izv.vys.ucheb.zav.; khim. i khim. tekh. 6 no.6:938-944 '63.
(MIRA 17:4)

1. Kazakhskiy gosudarstvennyy universitet imeni S.M.Kirova, kafedra
analiticheskoy khimii.

GLADYSHEV, V.P.

Reduction potentials of metals on a mercury electrode. Part 2:
Nature of overvoltage in the reduction of metals on a mercury
electrode. Izv.vys.ucheb.zav.;khim.i khim.tekh. 6 no.5:762-767
'63.
                                                    (MIRA 16:12)

1. Kazakhskiy gosudarstvennyy universitet, Kafedra analiticheskoy
khimii.

AUTHOR: Gladyshev, V.P.

TITLE: Some laws governing the physicochemical properties of binary metal-mercury systems

PERIODICAL: Fizika metallov i metallovedeniye, v. 15, no. 2, 1963, 203 - 209

TEXT: Basing his conclusions on the analysis of published experimental data, correlated with theoretical considerations, the present author shows that the shape of the constitution diagrams of Hg-Me systems (where Me denotes a metal) is determined by the structure of the d-electron shell of the metal atom. When the outer d-shell of a metal is empty the liquidus of the constitution diagram of the system formed by Hg in this metal is typical of systems in which the two constituents readily interact to form intermetallic compounds. In contrast, the liquidus of systems formed by mercury and metals with completely filled d-shells changes gradually from the melting point of one component to that of the other. The transition metals, i.e. with incompletely filled outer d-shells, form with Hg systems that are characterized by

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Some laws governing ....

S/126/63/015/002/007/033
E193/E383

practically complete immiscibility in both solid and liquid states.
There are 2 figures.

ASSOCIATION: Kazakhskiy gosudarstvennyy universitet
                 im. S.M. Kirova
                 (Kazakh State University im. S.M. Kirov)

SUBMITTED: June 8, 1962

Card 2/2

GLADYSEV, V.P. [Gladyshev, V.P.]; SEDLAK, A. [translator]

Polarization of an electrode to extreme positive potential
in alternating current oscillographic polarography. Chem
zvesti 17 no.8:575-580   '63.

1. Kazakhskiy gosudarstvennyy universitet, Alma-Ata (for
Gladysev).

GLADYSEV, V.P. [Gladyshev, V.P.]; SEDLAK, A. [translator]

Oscillopolarographic examination of 3-hydroxy-4-pyrone
derivatives. Chem zvesti 17 no.8:581-585 '63.

1. Kazakhskiy gosudarstvennyy universitet, Alma-Ata (for
Gladysev).

GLADYSEV, V.P. [Gladyshev, V P.]; ROZDESTVENSKAJA, Z.B. [Rozhdestvenskaya, Z.B.]; SEDLAK, A. [translator]

Oscillopolarographic examination of the reduction of selenite and tellurite anions. Chem zvesti 17 no.8:586-591 '63.

1. Kazakhskiy gosudarstvennyy universitet, Alma-Ata (for Gladysev and Rozdestvenskaja).

GLADYSHEV, V.

    Certain physical and chemical properties of metal - mercury
systems and D.I. Mendeleev's periodic table of elements.
Vest. Mosk. un. USSR 19 no. 57 '61.   (MIRA 17:5)

GLADYSHEV, V.P.

Oscillopolarographic examination of the persulfate anion
behavior on mercury electrodes. Coll Cz Chem 28 no.4:
997-1006 Ap '63.

1. Polyaroficheskiy institut, Chekhoslovatskaya akademiya
nauk, Praga; nastoyashchiy adres: Kazakhskiy universitet im.
S.M. Kirova, Alma-Ata, SSSR.

L 23081-65   EWT(m)/EWP(t)/EWP(b)   IJP(c)   JD

ACCESSION NR: AP4049824   S/0390/64/000/002/0003/0009

AUTHOR: Kozlovskiy, M.T.; Glady*shev, V.P.; Geynrikhs, K. Ya.; Tember, G.A.

TITLE: Preparation of high purity bismuth in an electrolyzer with bipolar amalgam electrodes

SOURCE: AN KazSSR. Izvestiya. Seriya khimicheskikh nauk, no. 2, 1964, 3-9

TOPIC TAGS: bismuth refining, electrolytic bismuth, electrolytic refining, amalgam electrode

ABSTRACT: The nuclear and semiconductor industries require bismuth with a purity of 99.9999%. Conventional refining methods by zonal melting combined with electrochemistry are extremely laborious. The authors therefore describe an effective method of refining

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L 23081-65

ACCESSION NR: AP4049824

deposited as metallic bismuth on a solid cathode of spectroscopically pure graphite with an area of 40 cm^2. Perchlorate (compartments 1, 2, 5) and alkali tartrate (compartments 3 and 4) solutions are used as electrolytes in which bismuth forms complex ions and is not

ASSOCIATION: None

SUBMITTED: 00   ENCL: 01   SUB CODE: MM, GC

NO REF SOV: 018   OTHER: 003

Card 2/3

1 compar. 2 compar. 3 compar. 4 compar. 5 compar.
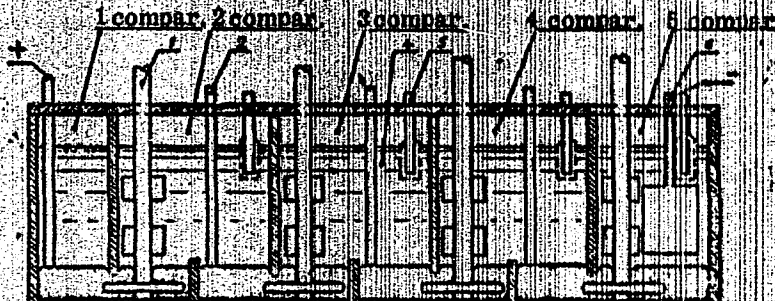
Figure 1.

Schematic diagram of the electrolyzer: 1 - mixer, 2 - graphite lead rod,
3 - amalgam, 4 - electrolyte, 5 - additonal cathode, 6 - cathode for pure
metal deposition

Card 3/3

TANEYEVA, G.V.; GLADYSHEV, V.P.

Oscillographic determination of acetaldehydes and crotonaldehydes
present together. Zhur. anal. khim. 19 no. 1:138-139 '64.
(MIRA 17:5)

1. Kazakhskiy gosudarstvennyy universitet imeni Kirova, Alma-Ata.

GLADYSHEV, V. P.

The Second All-Union Conference on the Preparation and Analysis of High-Purity Elements, held on 24-28 December 1963 at Gorky State University im. N. I. Lobachevskiy, was sponsored by the Institute of Chemistry of the Gorky State University, the Physicochemical and Technological Department for Inorganic Materials of the Academy of Sciences USSR, and the Gorky Section of the All-Union Chemical Society im. D. I. Mendeleyev. The opening address was made by Academician N. M. Zhavoronkov. Some 90 papers were presented, among them the following:

V. P. Gladyshev, L. A. Gudovskaya, A. I. Ivankova, and D. P. Synkova. Fluorimetric and oscillographic polarography methods for determining Te and Se, respectively, in high-purity bismuth, with sensitivity of 10^{-5} to $10^{-6}\%$.

KOZLOVSKIY, M.T.; GLADYSHEV, V.P.; GABDIKEK, A. Ya.; HEIR, M.A.

Separation of bismuth from lead and some other metals by the
amalgam method in perchloric acid electrolytes. Zhur. prikl.
khim. 37 no.11:2402-2407 N '64   (MIRA 18:1)

Kazakhskiy gosudarstvennyy univ n litel.

L 23490-65   EWT(m)/EWP(t)/EWP(b)   IJP(c)   JD
ACCESSION NR: AP5002189   S/0080/64/037/012/2606/2611

AUTHOR: Gladyshev, V. P.; Tember, G. A.; Geynrikhs, K. Ya.;
Kozlovskiy, M. T.
TITLE: Electrolysis in tartrate-alkali electrolytes Communication II in a series
of works on the separation of bismuth from lead and certain other metals by the

amalgam method

SOURCE: Zhurnal prikladnoy khimii, v. 37, no. 12, 1964, 2606-2611

TOPIC TAGS: electrolysis, bismuth amalgam electrolysis, tartrate alkali electrolyte, bismuth separation

ABSTRACT: The electrochemical behavior of bismuth amalgam in tartrate-alkali electrolytes and the separation of bismuth from other metals by anodic oxidation of their mixed amalgams in these electrolytes were studied. Examination on effects of compositions and electrolyte component concentrations showed that the

comprise APPROVED FOR RELEASE: Tuesday, September 17, 2002 as CIA-RDP86-00513R0005

Card 1/2

L 23490-65
ACCESSION NR: AP5002189

ed approximately two times by increasing the electrolysis temperature from 20 to
80C. The anodic oxidation of amalgams of a series of metals in the tartrate el-

ASSOCIATION: Kazakhskiy gosudarstvenny*y universitet (Kazakhsk State University)

SUBMITTED: 04Mar62   ENCL: 00   SUB CODE: GC

NR REF SOV: 006   OTHER: 001

Card 2/2

L 52263-65

ACCESSION NT: AT5012682

6

and Ba. Elements which codeposit with bismuth (Ag, Hg, Cu, Se, Te) are determined by direct spectrographic analysis or by means of organic reagents. In the amalgam method, the authors utilized cementation to separate bismuth from electronegative metals. This method of concentration was used in an oscillopolarographic determination of lead in bismuth. In addition to lead, thallium, indium, cadmium, zinc, tin, and manganese present in bismuth in amounts of up to $10^{-4}\%$ can be similarly determined. The sensitivity of the method is limited by the limits of applicability of the Nernst equation for amalgam electrodes to very dilute amalgams and by the formation of sparingly soluble intermetallic compounds between the metals and mercury." 'N. F. Zakharchuk, A. I.

USTIMOV, A.M., GLADYSHEV, V.P.

Determination of molybdenum in lead. Trudy Kom. anal. krim. 15:275-78 '65. (MIRA 18:7)

L 42381-65

ACCESSION NR: AP5008687

ASSOCIATION: Kazakhskiy gosudarstvennyy universitet, Alma-Ata (Kazakh State

Card 2/2

GLADYCHEV, V.P., kand.khim.nauk

Use of sodium amalgam in electrochemical technology. Vest.
AN Kazakh. SSR 21 no.10:31-41 O '65.   (MIRA 18:12)

AUTHOR: Gladyshev, Ye.G.   (Moscow)   SOV/52-3-4-7/11

TITLE: On Multi-dimensional Stationary Random Processes
           (O mnogomernykh statsionarnykh sluchaynykh protsessakh)

PERIODICAL: Teoriya Veroyatnostey i Yeye Primeneniya, 1958,
           Vol 3, Nr 4, pp 458 - 462 (USSR)

ABSTRACT: Wald's expansion and the necessary and sufficient conditions
           for the regularity and the maximum regularity of
           n-dimensional stationary random processes with continuous
           time are obtained. The results are summarised in four
           theorems, the first of which is concerned with the expansion
           properties, the second and third with the regularity and
           the last with the maximum regularity. There are
           6 references, 4 of which are Soviet, 1 English and
           1 Scandinavian.

SUBMITTED: May 25, 1958

 Card 1/1

GLADYSHEV, Ye. G. (Moscow)

New limit theorem for random processes with Gaussian increments.
Teor. veroiat. i ee prim. 6 no.1:57-66 '61.   (MIRA 14:6)
(Limit theorems (Probability theory))

16.6100

AUTHOR: Gladyshev, Ye.G.

TITLE: Periodically correlated random sequences.

PERIODICAL: Akademiya nauk SSSR. Doklady, vol.137, no.3 1161, 1056-1059

TEXT: Definition: The random sequence x_n, n=0, ±1, is called
periodically correlated if $M|x_n|^2 < \infty$ for all n and there exists an
integral T so that for all n and

$$M x_n = M x_{n+T}, \quad M x_{n+\tau} \bar{x}_n = M x_{n+T+\tau} \bar{x}_{n+T} . \qquad (1)$$

T is called a period of the sequence x_n.

Below let $M x_n = 0$. The correlation function of x_n is

$$B(n,\tau) = M x_{n+\tau} \bar{x}_n , \qquad (2)$$

it has the representation

$$B(n,\tau) = \sum_{k=0}^{T-1} B_k(\tau) \exp\left(\frac{2\pi i k n}{T}\right). \qquad (3)$$

For an arbitrary integral k let $b_k(\tau) = B_{k+T}(\tau)$.

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Theorem 1: The function (3) is the correlation function of a periodically correlated random sequence then and only then if the matrix

$$B(\tau) = \| B_{jk}(\tau) \|_{j,k=0,\dots,T-1} \tag{4}$$

where

$$B_{jk}(\tau) = B_{k-j}(\tau)\exp(2\pi i j \tau /T) \tag{5}$$

is the correlation matrix of a certain T-dimensional stationary random sequence.

Another formulation: In order that (4) is the correlation function of a periodically correlated sequence it is necessary and sufficient that all $B_k(\tau)$, $k=0,\dots,T-1$ are representable by Fourier-Stieltjes integrals

$$B_k(\tau) = \int_0^{2\pi} e^{i\tau\lambda}\,dF_k(\lambda), \tag{6}$$

where $F_k(\lambda)$, $k=0,\dots,T-1$ are complex functions of bounded variation which are continuous from the left-hand, where for arbitrary λ_1 and $\lambda_2 \geqslant \lambda_1$ the increase $\mathcal{F}(\lambda_2)-\mathcal{F}(\lambda_1)$ of the matrix

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$$\mathcal{F}(\lambda) = \| F_{k-j}((\lambda - 2\pi j)/T) \|_{j,k=0,\ldots,T-1} \tag{10}$$

is a Hermitean non-negative definite matrix (for $k < 0$ and for $\lambda < 0$ or $\lambda > 2\pi$ the $F_k(\lambda)$ are defined by $F_k(\lambda) = F_{k+T}(\lambda)$, $F_k(\lambda + 2\pi) = F_k(\lambda) + F_k(2\pi)$, $F_k(0) = 0$ for all k).

From (3) and (9) there follows the representation

$$x_n = \int_0^{2\pi} e^{in\lambda} z(d\lambda), \tag{11}$$

where $z(\Lambda)$ is a random set function with the mathematical expectation 0 which satisfies

$$\mathsf{M} z(\Lambda) \overline{z(M)} = \sum_{k=-T+1}^{T-1} \int_{\Delta \cap (M - \frac{2\pi k}{T})} dF_k(\lambda) \tag{12}$$

($M - a$ is the set of the points $\mu - a, \mu \in M$).
The case of multi-dimensional periodically correlated random sequences $x_n = (x_n^1, \ldots, x_n^s)$ for which

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$$\mathbf{M} x_n^1 = \mathbf{M} x_{n+T}^1, \quad \mathbf{M} x_{n+\tau}^1 \overline{x_n^m} = \mathbf{M} x_{n+T+\tau}^1 \overline{x_{n+T}^=} \tag{14}$$

can be considered analogously.

Let H_x, $H_x(n)$ and $\overset{\circ}{H}_x(n)$ be the linear closures (in the quadratic mean) of the random terms $\{x_\tau, \ -\infty < \tau < \infty\}$, $\{x_\tau, \tau \le n\}$ and $\{x_\tau, \ \tau \not= n\}$. The random sequence x_n is called regular if $\bigcap\limits_n H_x(n) = 0$ and singular if $\bigcap\limits_n H_x(n) = H_x$. The regular sequence x_n for which for all n it holds $x_n \not\in H_n(n-1)$ is called completely regular. The sequence x_n is called minimal if $\min\limits_{h \in \overset{\circ}{H}_x(n)} |\mathbf{M} x_n - h|^2 = \sigma_n^2 > 0$ for all n.

Theorem 2: The matrix $\| dF_{jk}(\lambda)/d\lambda \|_{j,k=0,\ldots,T-1}$ is defined by

$$\left\| \frac{dF_{jk}(\lambda)}{d\lambda} \right\|_{j,k=0,\ldots,T-1} = TU^{-1}(\lambda) \frac{d\mathcal{F}(\lambda)}{d\lambda} U(\lambda) \text{ for almost all } \lambda, \tag{17}$$

where $d\mathcal{F}(\lambda)/d\lambda$ is the matrix of the derivatives of all matrix

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elements of $\mathcal{F}(\lambda)$, and $U(\lambda) = \|U_{jk}(\lambda)\|_{j,k=0,\ldots,T-1}$ is a unitary matrix depending on with the elements

$$U_{jk}(\lambda) = T^{-1/2} \exp\left(\frac{2\pi i jk - ik\lambda}{T}\right).$$

Theorem 3: A periodically correlated random sequence x_n is completely regular then and only then if 1) all $F_1(\lambda)$ are absolutely continuous;

2) $\det d\mathcal{F}(\lambda)/d\lambda > 0$ almost everywhere; 3) $\int_0^{2\pi} \ln \det \frac{d\mathcal{F}(\lambda)}{d\lambda} \, d\lambda > -\infty$.

Theorem 4: A periodically correlated random sequence x_n is minimal then and only then if 1) $\det d\mathcal{F}(\lambda)/d\lambda > 0$ almost everywhere;

2) $\int_0^{2\pi} \mathrm{Sp}(d\mathcal{F}(\lambda)/d\lambda)^{-1} d\lambda < \infty$.

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