

VISHNYAKOVA, Ye.G. (Moskva, K, Krivokolenny per., d. 8 kv. 18); VISHNYAKOVA,
V.V. (Moskva, V-261, Leninskiy prosp. d. 81, kv.87); MURAV'YEVA, N.I.
(Moskva, D-67, Volokolamskoye shosse, d. 80, kv.71); ASSONOVA, N.K.
(Moskva, I-41, prosp. Mira, d. 48, kv.22)

Treatment of mastopathy with microdoses of potassium iodide. Vop.
onk. 10 no.10:88-93 '64. (MIRA 18:8)

1. Iz endokrinologicheskogo otdeleniya (zav. - kand.med.nauk O.V.
Svyatukhina) i laboratorii biokhimii (zav. - prof. V.S.Shapot)
Instituta eksperimental'noy i klinicheskoy onkologii AMN SSSR
(direktor - deystvitel'nyy chlen AMN SSSR prof. N.N.Blokhin).

AUTHORS: Trapeznikov, A.A.; Assonova, T.V. 69-20-3-24/24

TITLE: Investigation of the Strength and High Elastic Properties of Rubber Solutions and of Their Vulcanizates at Increased Deformation Rates (Issledovaniye prochnostnykh i vysokoelasticheskikh svoystv rastvorov kauchuka i ikh vulkanizatorov pri povyshennykh skorostyakh deformatsii)

PERIODICAL: Kolloidnyy zhurnal, 1958, vol XX, Nr 3, pp 398-399 (USSR)

ABSTRACT: The investigation of the strength and high elastic properties of rubber solutions and their vulcanizates is important for determining the structure and structure formation of these solutions and vulcanizates. An elasto-viscosimeter with oscillographic recording and an elasto-relaxometer were used to measure these properties. In Figure 1, the values for a 6% rubber solution in decalin are presented. The ultimate deformation under shearing conditions attains a value of 5,000%. Figure 2 shows that vulcanization of a 2% rubber solution augments the elastic deformation to 4,000 - 5,000%. There are 2 graphs and 3 Soviet references.

ASSOCIATION: Institut fizicheskoy khimii AN SSSR, Moskva (Institute of Physical Chemistry of the AS USSR, Moscow)

SUBMITTED: March 25, 1958

Card 1/1

1. Rubber solutions--Elastic properties 2. Rubber solutions
--Deformation

5(4)

SOV/69-21-4-18/22

AUTHOR: Trapeznikov, A.A. and Assonova, T.V.

TITLE: Stress-Strain, High Elasticity and Viscosity Properties of Rubber Solutions

PERIODICAL: Kolloidnyy zhurnal, 1959, Vol XXI, Nr 4, pp 485-491 (USSR)

ABSTRACT: This is an investigation of the stress-strain, high-elasticity and viscosity properties of 4, 6 and 10% natural-rubber solutions in decalin which was not subjected to special purification. The authors plotted stress-strain curves with the aid of a complex elastoviscometer permitting oscillograph recording [reference 8]. The investigation was carried out at rates of deformation $\dot{\epsilon}$ varying from 14 to 5,000 sec^{-1} . The authors considered it necessary to investigate the strength properties of the concerned system at $\dot{\epsilon}$ values, which exceed the rate of relaxation of the system. It was found that the curves (graph 1) prior to transition to the stage of stationary flowing of the system as a viscous liquid pass through a maxi-

Card 1/3

SOV/69-21-4-1B/22

Stress-Strain, High Elasticity and Viscosity Properties of Rubber Solutions

mum which corresponds to the ultimate strength of the system. Moreover, the ultimate shear deformation breaking (up to 10,000%) was determined. The obtained curves are similar in form to those of solid rubber. It was further found that for rubber solutions of various concentrations ϵ_r (ultimate shearing strain) increases linearly at a rate of deformation $\dot{\epsilon}$. This dependence is expressed by a general curve (graph 4). With the aid of an elastorelaxometer (model 2) [reference 9] the inverse (high-elastic) deformation in a 4% rubber solution was measured at rates of deformation of 143 and 1,142 sec^{-1} (graph 5). It was found that the maximum values of elastic deformation represent 770 and 1.100% respectively. On the whole the found properties give evidence of a structure and its demolition in rubber solutions. The structure is determined by Van der Waals forces and the genesis of weak relaxing nodules of the network. In addition, the above-mentioned linear increase of ϵ_r points to the eminent role of the relaxation properties of the rubber chains themselves. There are 5 graphs and 14 refer-

Card 2/3

SOV/69-21-4-18/22

Stress-Strain, High Elasticity and Viscosity Properties of Rubber Solutions
ences, 13 of which are Soviet and 1 German.

ASSOCIATION: Institut fizicheskoy khimii AN SSSR (Institute of Physical
Chemistry of the AS USSR)
Laboratoriya oleokolloidov i monosloyev Moskva (Laboratory of Oleo-
colloids and Monolayers), Moscow

SUBMITTED: 15 March 1958

Card 3/3

Report presented at the 1st All-Union Congress of Theoretical and Applied Mechanics, Moscow, 27 Jan - 3 Feb '60.

1. A. A. Abkhazi, A. F. Kostin, Ye. A. Shvets (Soviet); Superplasticity of polycrystalline alloys and the basis for improving their mechanical properties.
2. A. A. Abkhazi, Ye. A. Kostin, Ye. A. Shvets (Soviet); Best trends in service stresses and viscoplastic solids.
3. E. L. Aronson (Soviet); Torsion of cylindrical rods.
4. E. L. Aronson (Soviet); Torsion of cylindrical rods and rods with longitudinal cracks.
5. E. L. Aronson (Soviet); Torsion of cylindrical rods and rods with longitudinal cracks.
6. A. A. Abkhazi, Ye. A. Kostin, Ye. A. Shvets (Soviet); Buckling of thin-walled tubes under torsion.
7. A. A. Abkhazi (Soviet); Some relations between the stability of rods and cylindrical problems in the theory of plates.
8. Ye. A. Kostin, Ye. A. Shvets (Soviet); Experimental investigation of plane elastic-plastic problems by means of photoelastic methods.
9. A. A. Abkhazi, Ye. A. Kostin, Ye. A. Shvets (Soviet); Some aspects of the theory of plates.
10. A. A. Abkhazi (Soviet); Non-dimensional bodies of equal strength.
11. E. L. Aronson (Soviet); Asymmetrical vibration of an elastic shell.
12. A. A. Abkhazi (Soviet); On the theory of anisotropic shells.
13. E. L. Aronson (Soviet); Stability analysis of a reinforced shell.
14. E. L. Aronson (Soviet); Stability analysis of a reinforced shell under axial compression.
15. E. L. Aronson (Soviet); The stress distribution in a heavy shell under axial compression.
16. E. L. Aronson (Soviet); The stress distribution in a heavy shell under axial compression.
17. E. L. Aronson (Soviet); The stress distribution in a heavy shell under axial compression.
18. E. L. Aronson (Soviet); The stress distribution in a heavy shell under axial compression.
19. E. L. Aronson (Soviet); The stress distribution in a heavy shell under axial compression.
20. E. L. Aronson (Soviet); The stress distribution in a heavy shell under axial compression.
21. E. L. Aronson (Soviet); The stress distribution in a heavy shell under axial compression.
22. E. L. Aronson (Soviet); The stress distribution in a heavy shell under axial compression.
23. E. L. Aronson (Soviet); The stress distribution in a heavy shell under axial compression.
24. E. L. Aronson (Soviet); The stress distribution in a heavy shell under axial compression.
25. E. L. Aronson (Soviet); The stress distribution in a heavy shell under axial compression.
26. E. L. Aronson (Soviet); The stress distribution in a heavy shell under axial compression.
27. E. L. Aronson (Soviet); The stress distribution in a heavy shell under axial compression.
28. E. L. Aronson (Soviet); The stress distribution in a heavy shell under axial compression.
29. E. L. Aronson (Soviet); The stress distribution in a heavy shell under axial compression.
30. E. L. Aronson (Soviet); The stress distribution in a heavy shell under axial compression.
31. E. L. Aronson (Soviet); The stress distribution in a heavy shell under axial compression.
32. E. L. Aronson (Soviet); The stress distribution in a heavy shell under axial compression.
33. E. L. Aronson (Soviet); The stress distribution in a heavy shell under axial compression.
34. E. L. Aronson (Soviet); The stress distribution in a heavy shell under axial compression.
35. E. L. Aronson (Soviet); The stress distribution in a heavy shell under axial compression.
36. E. L. Aronson (Soviet); The stress distribution in a heavy shell under axial compression.
37. E. L. Aronson (Soviet); The stress distribution in a heavy shell under axial compression.
38. E. L. Aronson (Soviet); The stress distribution in a heavy shell under axial compression.
39. E. L. Aronson (Soviet); The stress distribution in a heavy shell under axial compression.
40. E. L. Aronson (Soviet); The stress distribution in a heavy shell under axial compression.
41. E. L. Aronson (Soviet); The stress distribution in a heavy shell under axial compression.
42. E. L. Aronson (Soviet); The stress distribution in a heavy shell under axial compression.
43. E. L. Aronson (Soviet); The stress distribution in a heavy shell under axial compression.
44. E. L. Aronson (Soviet); The stress distribution in a heavy shell under axial compression.
45. E. L. Aronson (Soviet); The stress distribution in a heavy shell under axial compression.
46. E. L. Aronson (Soviet); The stress distribution in a heavy shell under axial compression.
47. E. L. Aronson (Soviet); The stress distribution in a heavy shell under axial compression.
48. E. L. Aronson (Soviet); The stress distribution in a heavy shell under axial compression.
49. E. L. Aronson (Soviet); The stress distribution in a heavy shell under axial compression.
50. E. L. Aronson (Soviet); The stress distribution in a heavy shell under axial compression.

TRAPEZNIKOV, A.A.; ASSONOVA, T.V.

High elastic, strength, and relaxation properties of natural
rubber solutions. Koll. zhur. 26 no.5:617-624 S-C '64.

1. Institut fizicheskoy khimii AN SSSR, Moskva.

(MIRA 17:10)

L 5084 265 (277) 1/1984 (1)

5/0089/04/078/005/0017/0021

SOURCE: Kolloidnyy Zhurnal, v. 26 no. 5 1964, 517-524

TOPIC TAGS: natural rubber; flow; relaxation; deformation; shear stress

ABSTRACT: The study of rheological properties of polymers in solutions is of great importance. Little investigated concentrated solutions at high deformation rates under the conditions of possible development of large highly elastic deformations during the transition from the state of rest to the state of stationary flow present great interest. In this work investigations were made of natural rubber solutions in decalin. Studies have shown that small amounts of impurities in decalin have a great effect on the deformation properties. Decalin was thoroughly

Card 1/3

L 59641-55
ACCESSION NR: AP-10/15-105

purified by passage through a silica gel column to complete removal of polar impurities. During the increase of concentration of natural rubber from 2 to 20% the magnitude of maximum elastic deformation E_{max} may be correspondingly assigned deformation and expansion λ and λ_{max} respectively. It was found that there exists an exponential relationship between the strength, viscosity and concentration of solution. The rate of disappearance of high elastic deformation at its relaxation at given deformations as well as its development at different deformation rates have been investigated. The rate of relaxation continuously decreases with increase of the concentration of natural rubber. For the given case the shear stress relaxes much more rapidly than the high elastic deformation. Orig. art. has: 2 tables and 4 figures.

ASSOCIATION: Institut fizicheskoy khimii AN SSSR (Institute of Physical Chemistry, USSR)

L 59611-65
ACCESSION NR: AIP4645-005

SUBMITTED: 16Aug63

NR REF SOV: 012

ENCL: 00

OTHER: 000

SUB CODE: MT, GC

Card 3/38/0

L 16669-65

EWI(m)/RFF(c)/WFP(j) Pc-L/Pr-L AEDC(a)/SSD/AFWL/ASD(f)-2 RM

ACCESSION NR: AP4045408

S/0069/64/026/005/0640/0644

AUTHOR: Assonova, T. V.; Trapeznikov, A. A.

TITLE: Effect of polar additives on high elastic deformation, structural strength and viscosity of natural rubber solutions in decaline

SOURCE: Kolloidny*y zhurnal, v. 26, no. 5, 1964, 640-644

TOPIC TAGS: elastic deformation, natural rubber, shear stress, viscosity, elasticity, decaline, butanol

ABSTRACT: The effect of 0.05-2% additions of n-butanol on the properties of 2% solution of natural rubber in decalin have been investigated. In order to exclude polar impurities in decalin it was purified by passing it through a silica gel packed column. Measurements were conducted on an elastorelaxometer with recording of stress curves as a function of deformation on the screen of an oscillograph. It was found that in the starting solution as well as in solutions containing n-butanol the high elastic deformation increases with increase of the overall de-

Card 1/2

I 16669-65

ACCESSION NR: AP4045408

formation, passes through a maximum, e_{max} , and approaches a constant value $e = e_{es}$, which corresponds to a stationary flow in which $e_{es} = e_{max}$. Addition of as little as 0.2-0.3% of *n*-butanol to decalin solution of rubber also lowers significantly the shear stress prior to stationary flow and also the viscosity during the stationary flow. The high elastic deformations measured in the initial stages of deformation at a rate of 39-1200 sec^{-1} are very sensitive to polar additives. The effect of polar additives, especially at low concentrations, results from their destructive action on the lattice nodes. Such a destructive effect is ascribed to the adsorption mechanism and the effect of the entropy factor becomes significant only at higher concentrations of the additive. Orig. art. has: 7 figures

ASSOCIATION: Institut fizicheskii khimii AN SSSR (Institute of Physical Chemistry AN SSSR)

SUBMITTED: 16Aug63

ENCL: 00

SUB CODE: MT, GC

NO REF SOV: 009

OTHER: 000

Card 2/2

S/126/62/013/004/012/022
E111/E435

AUTHORS: Livshits, L.S., Panich, S.I., Assonova, Ye.A.
TITLE: Influence of alloying on the concentration of dissolved carbon in ferrite
PERIODICAL: Fizika metallov i metallovedeniye, v.13, no.4, 1962, 572-576

TEXT: The relation between carbon solubility in ferrite and the concentration of different alloying elements (which affects welding processes, ageing, etc) was investigated for manganese (0.12% C, 0.41 to 2.68% Mn), chromium (0.10% C, 0.10 to 2.00% Cr), molybdenum (0.10% C, 0.25 to 3.00% Mo), tungsten (0.11% C, 0.59 to 3.22% W), vanadium (0.12% C, 0.25 to 1.68% V) and niobium (0.10% C, 0.41 to 1.69% Nb) steels, using the internal-friction method. Specimens were heat treated to obtain a close approximation to equilibrium for the carbide/solid-solution phases. For each alloying element increasing concentration was accompanied by decreasing internal-friction peak maximum. Increase in alloying-element concentration beyond a critical value had little effect on the decrement-versus-temperature plot. A steel alloyed
Card 1/2

Influence of alloying ...

S/126/62/013/004/012/022
E111/E435

with 0.25 and 0.46% aluminium was also studied to provide an indication of the effect of dissolved nitrogen: there was no difference between the two curves. The experimental conditions did not permit a direct quantitative study of the effect of the alloying elements on dissolved-carbon concentration in ferrite. This information was obtained indirectly by making certain assumptions and showed that the elements can be arranged in the following order in decreasing effect for a given element/carbon atomic ratio on the dissolved-carbon concentration: niobium, vanadium, tungsten, molybdenum, chromium, manganese. The given values of the effect for different values of the ratio has practical importance for deciding the effect of alloying on ageing, for instance. There are 2 figures and 1 table.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut po stroitel'stvu magistral'nykh truboprovodov
(All-Union Scientific Research Institute for the Construction of Main Pipelines)

SUBMITTED: August 1, 1961

Card 2/2

LOZINSKIY, M.G.; ANTIPOVA, Ye.I.; ASSONOVA, Ye.A.; MILITINA, I.I.

Strength of nickel at room and elevated temperatures as affected by the specific structural state arising in high-temperature thermomechanical treatment. Dokl. AN SSSR. 144 no.6:1289-1292 Je '62. (MIRA 15:6)

1. Institut mashinovedeniya Gosudarstvennogo komiteta Soveta Ministrov SSSR po avtomatizatsii i mashinistroyeniyu. Predstavleno akad. A.A.Bocharoyu.

(Metals at high temperatures) (Nickel)

(Bocharoyu)

ASSONOVA, Ye.A., inzh.; LOZINSKIY, M.G., doktor tekhn.nauk

Effect of temperature on hardness changes and the elasticity
modulus of alloys in the system Fe - Ni. Metalloved. i
term. obr. met. no.10:11-15 0 '62. (MIRA 15:10)

1. Institut mashinovedeniya Gosudarstvennogo komiteta Soveta
Ministrov SSSR po avtomatizatsii i mashinostroyeniyu.
(Iron-nickel alloys - Testing)
(Metals, Effect of temperature on)

POPOVA, L.I.; ASSORINA, I.A.; BAKALO, V.Ya.; VYKHODTSEV, I.V., red.;
ANOKHINA, M.G., tekhn.red.

[Recommendations for establishing meadows on the Dzhety-Oguz
Upland of Kirghizistan] Kyrgyz SSRin Zheti-Oguz raionunun
syrtynnda chop chabyndylardy tuzuu boluncha rekomendatsiia.
Rekomendatsii po sozdaniu senokosov na Dzhety-Oguzskikh
syrtakh Kirgizskoi SSR. Frunze, Izd-vo Akad.nauk Kirg.SSR,
1959. 44 p. (MIRA 12:11)

1. Akademiya nauk Kirgizskoy SSR. Institut botaniki.
(Dzhety-Oguz District--Pastures and meadows)

ASSORINA, Iraida Aleksandrovna; POPOVA, L.I., kand. biol. nauk,
otv. red.

[Biology of seeded perennial grasses in the Alpine region of
the central Tien Shan] Biologiya mnogoletnikh seiannykh trav
v usloviakh vysokogor'ia Tsentral'nogo Tian'-Shania. Frunze,
Izd-vo AN Kirg.SSR, 1963. 132 p. (MIRA 17:7)

1. Rukovoditel' statsionara Instituta botaniki AN Kirgiz.SSR
(for Popova).

L 37629-66 EWT(m)/EWP(v)/T/EWP(t)/ETI/EWP(k) JD/HM
ACC NR: AP6011269 SOURCE CODE: UR/0413/66/000/006/0124/0124

INVENTOR: Assorov, A. V.; Bereznikov, Yu. I.; Lotsmanov, S. N.

ORG: none

TITLE: Packing for use in contact-reactive brazing. Class 49, No. 180071

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 6, 1966, 124

TOPIC TAGS: brazing, metal brazing

ABSTRACT: This Author Certificate introduces a packing for use in contact-reactive brazing which is placed between the metals to be brazed. The packing contains a reactive metal which takes part in the formation of the liquid phase. To improve the quality of the brazed joint by reducing the liquid phase formation rate, 70-97% of the packing is of nonreactive metal which takes no part in the formation of the liquid phase. [LD]

SUB CODE: 11/ SUBM DATE: 22Jan64

Card: 1/1 vmb

UDC: 621.791.367.04

453040 V. F.
ASSOROV, F.

~~Problem of reducing fire hazards in the British marine. Mor. flot~~
18 no.1:28-29 Ja '58. (MIRA 11:1)

1. Ekonomist otдела Ministerstva morskogo flota.
(Great Britain--Merchant marine)
(Ships--Fire and fire prevention)

TURCHIN, P.; ASSOROV, F., ekonomist.

Serious shortcomings in a much-needed book ("Physical and chemical methods of extinguishing fires on ships" by V.L. Poliakov. Reviewed by P. Turchin, F. Assorov). Mor. flot 18 no.9:30-31 S '58.
(MIRA 11:10)

1. Starshiy inzhener Glavnogo upravleniya sudovogo khozyaystva Ministerstva morskogo flota (for Turchin). 2. Otdel Ministerstva morskogo flota (for Assorov).

(Ships--Fires and fire prevention)
(Poliakov, V.L.)

ASSOROV, Feliks Georgiyevich; PONOMAREV, Ivan Makarovich; SHFIKOV,
Boris Izraylevich; MATYUSHINA, S.P., red.; TIKHONOVA,
Ye.A., tekhn. red.

[Fire extinguishing on merchant ships] Tushenie pozharov na
morskikh sudakh. Moskva, Izd-vo "Morskoi transport," 1963.
94 p. (MIRA 17:2)

L 2736-66 EWT(m)/T/EWA(m)-2
ACCESSION NR: AP5024336

UR/0367/65/002/002/0248/0249

AUTHOR: Assovskaya, A. S.; Lepekhin, F. G. 44.06

55
23
B

TITLE: Interaction between nuclei and π^- mesons with a momentum of 7.2 Gev/c

19.44.55

SOURCE: Yadernaya fizika, v. 2, no. 2, 1965, 248-249

TOPIC TAGS: pi meson, nuclear emulsion, strong nuclear interaction, particle cross section

ABSTRACT: The authors studied interactions between π^- mesons with a momentum of 7.2 Gev/c and the nuclei in a photographic emulsion when two relativistic particles are emitted which can be identified from geometric conditions for any number of slower particles. The experimental equipment is described. The OIYaI synchrophasotron was used as the radiation source. Nearly all events showed a large number of tracks from slower particles and could be described as interactions between the π -mesons and heavy nuclei in the emulsion. The particles were identified by measuring plural Coulomb scattering and relative ionization. There were 56 interactions between π -mesons and nuclei accompanied by emission of two relativistic particles accessible to identification. The results are tabulated. In this case of π -nuclear interactions charged K-mesons make up approximately 40% of the spallations. The cross sec-

Card 1/2

L 2736-56

ACCESSION NR: AP5024336

30

tions were evaluated for production of K^+ mesons with momenta from 200 to 1200 Mev/c at points with two relativistic tracks. This cross section was found to be 9.9 ± 4.7 millibarns. "The authors are grateful to L. V. Morozova, N. Turukhano, M. I. Trukhin, workers at the Radium Institute, I. F. Makarova, I. P. Przhemitskaya for participation in studying the emulsion chamber, and to N. N. Knyazeva, L. N. Tkach and M. G. Shchegel'skaya for help with the measurements and calculations." Orig. art. has: 2 tables. 44.5

ASSOCIATION: Fizikotekhnicheskiy institut im. A. F. Ioffe Akademii nauk SSSR (Physicotechnical Institute, Academy of Sciences, SSSR) 44.5

SUBMITTED: 26Mar65

ENCL: 00

SUB CODE: NP

NO REF SOV: 005

OTHER: 002

MLR
Card 2/2

88422

S/056/60/039/006/006/063
B006/B056

24.6900

AUTHORS:

Assovskaya, A. S., Ivanova, N. S.

TITLE:

Fragment Production on Photoemulsion Nuclei Under the Action of 80-Mev π^+ -Mesons

PERIODICAL:

Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960, Vol. 39, No. 6(12), pp. 1511-1516

TEXT: Photoemulsion nuclei were bombarded with 80-Mev π^+ mesons and the appearance of multiply charged particles was investigated. At this low pion energy, a knocking-out of multiply charged particles is impossible. Fragmentation cross section, angular, charge- and energy distributions of the departing fragments were determined, and the results obtained were compared with those obtained by using 280-Mev pions and high-energy nucleons. The fine-grained Π - π (P-R)emulsion supplied by the laboratory of N. A. Perfilov in the RIAN was irradiated on the synchrocyclotron of the OIYaI (Joint Institute of Nuclear Research) by means of a π^+ -meson beam of (80+5)Mev. The fragment charge was estimated according to the integral thickness of the track. Altogether, 108 fragmentation events were found, of
Card 1/3

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88422

Fragment Production on Photoemulsion Nuclei
Under the Action of 80-Mev π^+ -Mesons

S/056/60/039/006/006/063
B006/B056

which 64%, corresponding to the selection criteria, could be ascribed as reactions of π^+ with heavy and 36% of such with light nuclei. A comparison of the fragmentation cross sections measured (in 10^{-27} cm² for $Z \geq 4$) gave the following results:

E_{π^+}	80 Mev	280 Mev (Ref.3)
σ on heavy nuclei	1.2 ± 0.5	1.4 ± 0.5
σ on light nuclei	0.4 ± 0.2	0.56 ± 0.3

Charge-, energy-, and angular distribution are graphically represented. Also the angular distribution of the fragments accompanied by fast protons was investigated. The emission of a pion could never be established. From the results obtained and from a comparison with the theory the conclusion may be drawn that at such low pion energies the fragment production is preceded by a $\pi^+ + d \rightarrow p + p$ -reaction, i.e., the pion is absorbed by a quasideuteron in the nucleus, and only fast proton produced thereby is responsible for the fragmentation. The assumption of a fragment ejection
Card 2/3

88422

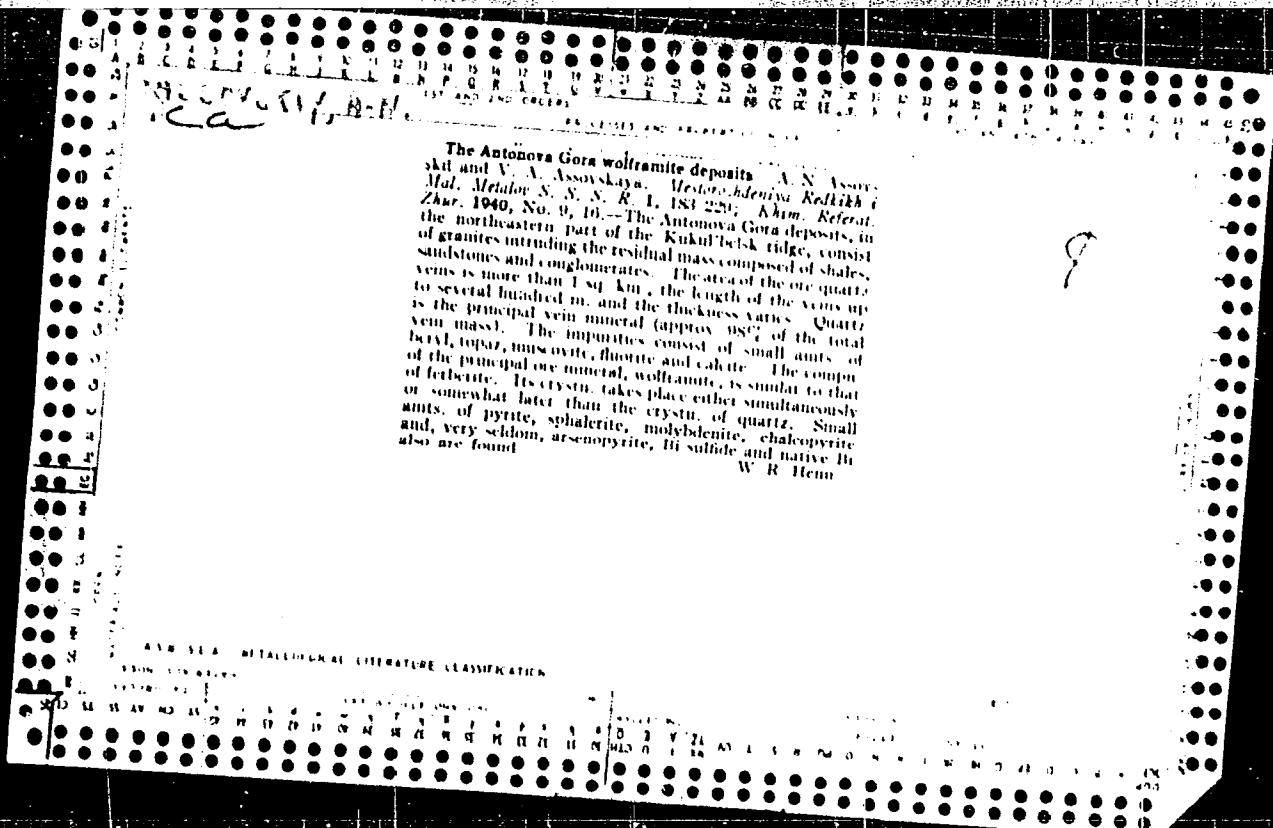
Fragment Production on Photoemulsion Nuclei Under the Action of 80-Mev π^+ -Mesons S/056/60/039/006/006/063
B006/B056

by protons is quite compatible with experimental results. The authors thank A. I. Mukhin for his help in the irradiation of emulsions, V. I. Ostroumov for taking part in the discussions, and Professor N. A. Perfilov for his interest. U. R. Arifanov and M. M. Makarov are mentioned. There are 5 figures and 8 references: 4 Soviet, 1 French, and 3 US.

ASSOCIATION: Radiyevy institut Akademii nauk SSSR
(Radium Institute of the Academy of Sciences USSR)

SUBMITTED: June 18, 1960

Card 3/3



NALIVKIN, D.V. [Nalyvkin, D.V.], glav. red.; BELYAYEVSKIY, N.A.
[Beliaievskiy, M.A.], zam. glav. red.; TIKHOMIROV,
V.V. [Tykhomyrov, V.V.], zam. glav. red.; ASSOVSKIY, A.N.
[Assovskiy, O.M.], red.; MEL'NIKOV, O.D. [Mel'nykov, O.D.],
red. [deceased]; PEYVE, A.V. [Peive, O.V.], red.; YANSHIN,
A.L. [Ianshyn, O.L.], red.; MALAKHOVSKIY, V.F. [Malakhovskiy,
V.F.], red. vypuska; YURK, Yu.Yu., prof., red.; MESYATS, Y.A.
[Misiats', I.O.], red.; BASS, Yu.B. red.; MALAKHOVSKIY, V.F.
[Malakhovskiy, V.F.], red.; NEKRASOV, G.I. [Nekrasov, H.I.],
red.; SLAVUTSKIY, M.B. [Slavutskiy, M.B.], red.; NIKITENKO,
E.I., red.

[Study of the geology of the U.S.S.R.] Geologicheskaya izuchen-
nost' SSSR. Kiev, Naukova dumka. Vol.33. No.1. 1965. 68 p.
(MIRA 18:6)

MARKOVA, Ye.I.; ORLOVA, Ye.V.; ~~ASSOVSKIY, A.N.~~, redaktor; NEMANOVA, G.F.,
redaktor izdatel'stva; AVERKIYEVA, T.A., tekhnicheskij redaktor

[Mineral resources of Indonesia, Malaya, and Thailand] Mineral'nye
resursy Indonezii, Malaii i Tailanda. Moskva, Gos. nauchno-tekhn.
izd-vo lit-ry po geol. i okhrane nedr, 1956. 105 p. (MIRA 9:12)
(Asia, Southeastern--Mines and mineral resources)

ASSOVSKIY, A.N.

PHASE I BOOK EXPLOITATION

Akademiya nauk SSSR. Mezhdedomstvennaya postoyannaya komissiya po zhelezu.

243

Zhelezorudnaya baza chernoy metallurgii SSSR. (Iron Ore Reserves of Ferrous Metallurgy in the USSR) Moscow, 1957. 565 p. (Zhelezorudnyye mestorozhdeniya SSSR) 4,000 copies

EDITORS:

Editor-in-Chief: Bardin, I.P., Academician; Scientific Editors: Assovskiy, A.N.; Antipov, M.I.; Belyanchikov, K.P.; Yerofeyev, B.N.; Korzhinskiy, D.S., Academician; Koshelev, V.V.; Moskal'kov, Ye.F.; Meleshkin, S.M.; Orlov, I.V. (deceased); Pustovalov, I.V., Corresponding Member, AN SSSR; Samarin, A.M., Corresponding Member, AN SSSR; Skobnikov, M.L.; Smirnov-Verin, S.S.; Strumilin, S.G., Academician; Khlebnikov, V.B.; Shapiro, I.S. (editor of volume); Shevyakov, L.D., Academician; Shcherbakov, D.I., Academician; Yanshin, A.L., Academician. Editors of Publishing House: Kudashev, A.I.; Klimov, V.A. Technical Editor: Kiseleva, A.A.

Card 1/21

Iron Ore Reserves of Ferrous Metallurgy in the USSR (Cont.) 243
PURPOSE:

This book is devoted to setting forth the prospective plans for developing the USSR iron-ore reserves for use by the iron-and-steel industry for the next 15-20 years. Like the other volumes in the series of which it is a part, the book is intended to acquaint a large number of specialists with the results of geological surveys and research work on iron ores of the USSR. A comprehensive and up-to-date work of this sort is stated to be an urgent need, in view of directives of the Twentieth Congress of the USSR Communist Party to expand the production of pig iron, steel, and iron ore during the period 1956-60, and in view of the current shortage of available iron ore.

COVERAGE:

In issuing this volume, the Interdepartmental Permanent Committee on Iron, AS USSR, has endeavored to give a scientific analysis of the iron-ore reserves available to the USSR iron-and-steel industry, to describe the best means of utilizing individual ore deposits, particularly during the Sixth Five-Year Plan period (1956-60), and to indicate the nature of the research work required for an economic evaluation of those deposits which have not as yet been sufficiently studied.

Card 2/21

Iron Ore Reserves of Ferrous Metallurgy in the USSR (Cont.) 243
pig iron, of which 35,000,000 t are obtainable from currently
exploited deposits. More than 51% of the industrially signi-
ficant ores are located in the eastern regions of the USSR;
only 12% of them require no concentration. The expansion of
the USSR iron-ore industry can be achieved in the main only
through mining lean ores, [new] deposits of rich ores being
located principally in remote, thinly populated regions. Of
the 208,500,000 t. of prepared ore scheduled for production in
1970, 109,400,000 t. must be obtained from new deposits or from
new sections of old deposits, the major portion of which con-
sists of lean ores. Some 60 deposits are scheduled for active
exploitation by 1970. (Estimation of total iron-ore reserves
is as of 1 January 1956, whereas ore-quality evaluations,
statements on hydrogeological and mining conditions, and de-
scriptions of deposits and their vicinities are based on infor-
mation available as of 1 January 1955). Old and new deposits
scheduled for development are named and described (for names,
see Table of Contents). This volume was prepared by the follow-
ing bodies: the Interdepartmental Permanent Committee on Iron
(Mezhduvedomstvennaya postoyannaya komissiya po zhelezu) AS USSR
(AN SSSR); the All-Union Geological Center [Archives]

Card 4/21

Iron Ore Reserves of Ferrous Metallurgy in the USSR (Cont.) 243
(Glavruda MChM SSSR); Smirnov-Verin, S.S.; Shapiro, I.S.
Part II was edited in part by Assovskiy, A.N. (Director, VGF)
and Skobnikov, M.L. Part III was edited by Antipov, M.I.
(Director, Glavproyekt [Main Administration for the Planning
of Enterprises] MchM SSSR); Belyanchikov, K.P. (Director, Gipromez);
and Orlov, I.V. (deceased) (Chief Engineer, Gipromez). Others
assisting in the preparation of the volume are Zernova, K.V.;
Makarov, V.S.; Moklyarskiy, B.M.; Smirnova, M.M.; Skupnik, L.P.;
Kalganov, M.I. (Senior Scientist, IGYeM AN SSSR), and Polyakov, L.A.
(Senior Engineer, Gipromez).
For references, see Table of Contents.

Card 6/21

Iron Ore Reserves of Ferrous Metallurgy in the USSR (Cont.) 243

TABLE OF CONTENTS:

Preface

Introduction (Bardin, I.P., Academician) 5

PART I. ORIGIN OF IRON ORES. GENERAL SURVEY OF USSR IRON-ORE RESERVES 7

Ch. 1. Distinguishing Features of the Main Types of Sedimentary Iron Ores (Pustovalov, L.V.) 17

Fragmental iron ores 18

Residual iron ores (zone-of-weathering ores) 21

True sedimentary iron ores 23

Pre-Cambrian metamorphic iron ores 28

Catagenetic and infiltrated (metasomatic) ores 31

Ores of apparently sedimentary or disputed origin 33

Card 7/21

Iron Ore Reserves of Ferrous Metallurgy in the USSR (Cont.)	243
Ch. 1. Geographical Distribution, Degree of Exploration, and Classification of Iron-Ore Reserves	65
Ch. 2. Genetic Types of Deposits and Industrial Types of Iron Ores	70
Ch. 3. Quality, Quantity, and Industrial Use [by Region] of USSR Iron-Ore Reserves	74
Section 2. Characteristics of the Iron-Ore Deposits of the Western and Southern USSR	79
Ch. 1. Northwestern Regions	79
Deposits of the Kola Peninsula	79
Deposits of the Karel'skaya ASSR	88
Ch. 2. Northern Regions	101
Card 9/21	

Iron Ore Reserves of Ferrous Metallurgy in the USSR (Cont.)	243
<u>Section III.</u> Iron-Ore Deposits of the Eastern USSR	179
Ch. 1. The Urals	179
Northern group of deposits	184
Bogoslovsk group of deposits	190
Kachkanar group of deposits	194
Alapayevsk iron-ore region	212
Bakal group of deposits	231
Zigazinskiy Komarovo group of deposits	239
Orsk-Khalilovo group of deposits	242
Ch. 2. Western Siberia	248
Ch. 3. Krasnoyarskiy Kray and Tuvinskaya Avtonomnaya Oblast'	264
Angara-Pit iron-ore basin	273
Nizhnyaya Tunguska iron-ore basin	277
Irba group of deposits	281

Card 11/21

Iron-Ore Reserves of Ferrous Metallurgy in the USSR (Cont.)

243

Appendix II. Bibliography (263 references all USSR) 368

PART III. PROSPECTS FOR THE DEVELOPMENT OF THE IRON-ORE RESERVES
BY THE USSR IRON-AND-STEEL INDUSTRY (Brodakiy, V.B.;
Skibinskiy, Ye. S.; Finkel'shteyn, A.S.; Shirayev, P.A.;
Moskal'kov, Ye.F.; Smirnov-Verin, S.S.; Shapiro, I.S.) 379

Section I. Plan of Development and Geographical Distribution
of USSR Ferrous Metallurgy in the Period 1956-1970 379

Ch. 1. Volume of Iron-and-Steel Output Planned for 1956-1970 379

Ch. 2. Shifts in the Geographical Distribution and Breakdown
of Iron-and-Steel Production 382

Ch. 3. Development of New Ore and Fuel Sources 388

Card 13/ 21

Iron Ore Reserves of Ferrous Metallurgy in the USSR (Cont.)	243
<u>Section II.</u> Development of the USSR Iron-Ore Industry During the Postwar Period	410
Ch. 1. Scale of Output of Prepared Iron Ore	410
Ch. 2. Geographical Distribution of Iron-Ore Processing Enterprises	414
Ch. 3. Preparation of Ore for Smelting	422
Ch. 4. Ore-Mining Equipment	429
<u>Section III.</u> Industrial Value of USSR Iron-Ore Deposits; Choice of Suitable Supply Sources for Iron-and- Steel Plants.	433
Ch. 1. Ore Deposits of the Western USSR (European Part and Card 15/21 Transcaucasia)	433

243

Iron Ore Reserves of Ferrous Metallurgy in the USSR (Cont.)

Supply sources for plants of the Nizhniy Tagil-Kushva group	445
Supply source for the Chusovoy Plant	446
Supply sources for the old Urals plants	447
The Kachkanar group of deposits	449
The Kustanay magnetite deposits	450
The Kustanay limonite deposits	452
Supply source for the Kuznetsk (Stalinsk) Metallurgical Combine	452
Angara-Pit iron-ore basin	454
Angara-Ilim iron-ore basin	455
Baleginskoye iron-ore deposit	455
Supply sources of the Far East	455
Supply sources for the "Anurstal" Plant	457
Supply source for the Karaganda Plant	458

Card 17/21

Iron Ore Reserves of Ferrous Metallurgy in the USSR (Cont.) 243

Deposits of the central European USSR	484
Tula iron-ore region	484
Lipetsk iron-ore region	486
Kursk iron-ore basin (KMA)	487
Krivoy Rog iron-ore basin	491
Kerch' iron-ore basin	496
Dashkesan deposit	499
Deposits of the eastern USSR	500
Orsk-Khalilovo iron-ore region	500
Magnitogorsk deposit	502
Bakal iron-ore region	505
Techenskoye deposit	506
Akhtenskoye deposit	507
Tagil-Kushva iron-ore region	508
Titanomagnetite deposits under exploitation (including Kopanskoye deposit)	510

Card 19/21

Iron Ore Reserves of Ferrous Metallurgy in the USSR (Cont.) 243

<u>Section V.</u>	Over-all Indices of Output and Preparation of USSR Iron Ores	
	Volume of output of raw ore and yield of prepared ore	542
	Economic indices of output and preparation of USSR iron ores	542
	Conclusion	551
		560

AVAILABLE: Library of Congress

Card 21/21

NALIVKIN, D.V., glav. red.; BELYAYEVSKIY, N.A., zan. glav. red.;
TIKHOMIROV, V.V., zam. glav. red.; ASSOVSKIY, A.N., red.;
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[Study of the geology of the U.S.S.R.] Geologicheskaya izu-
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period 1951-1955] Ukrainskaya SSR (tsentral'nye i vostochnye
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on the well yield. Razved. i okh. nedr 23 no.7:47-53 J1 '57.

(MLRA 10:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut gidrogeologii i
inzhenernoy geologii.

(Wells)

ASSOVSKIY, G.N.

Paleozoic underground waters in the northern part of the Shilovo-Vladimir downwarping. Sov. geol. 2 no.5:119-129 My '59.
(MIRA 12:8)

I.Vsesoyuznyy nauchno-issledovatel'skiy institut gidrogeologii i inzhenernoy geologii.

(Ryazan Province--Water, Underground)
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V.N.; YEMEL'YANOVA, Ye.P.; SOKOLOV, S.S.; BERSENEV, I.I.; GROSHIN,
S.I.; MAKKAVEYEV, A.A.; MARINOV, N.A.; YEFIMOV, A.I.; ASSOVSKIY,
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B.S., red. izd-va; HYKOVA, V.V., tekhn. red.

[Methodological manual on hydrogeological surveying at the scales
of 1:1,000,000 - 1:500,000 and 1:200,000 - 1:100,000] Metodiche-
skoe rukovodstvo po gidrogeologicheskoi s"emke masshtabov
1:1000 000 - 1:5000 000 i 1:200 000 - 1:100000. Pod obshchei
red. A.A.Makaveeva i A.S.Riabchenkova. Moskva, Gos. nauchno-
tekh. izd-vo lit-ry po geol. i okhrane neдр, 1961. 318 p.
(MIRA 15:3)

1. Russia (1923- U.S.S.R.) Ministerstvo geologii i okhrany neдр.
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ASSOVSKIY, G. N.

Determining the proved reserves of artesian waters in narrow
river valleys. Vop. gidrogeol. i inzh. geol. no.20:94-98
'62. (MIRA 16:4)

(Water, Underground)

ASSOVSKIY, Igor' Vladimirovich; BULYGIN, N.I., red.

[Using direct flow hydraulic classifiers at enterprises
of the Glavlentstroimaterialy system] Ob opyte primeneniia
priamotchnykh gidroklassifikatorov na predpriatiiakh
sistemy Glavlentstroimaterialy. Leningrad, 1964. 19 p.
(MIRA 17:7)

ASSOVSKIY, N.

84-9-13/47

AUTHOR: Assovskiy, N., Deputy Chief of the Main Administration of GVF

TITLE: Let Us Improve the Quality of Training in Schools for the Personnel of Aeroflot (Povysim kachestvo podgotovki kadrov v uchebnykh zavedeniyakh Aeroflota)

PERIODICAL: Grazhdanskaya Avlatsiya, 1957, Nr 9, pp. 10-12 (USSR)

ABSTRACT: New equipment and technology necessitate certain readjustments in the educational and training program; for instance, after 25 years of service, the Po-2 type of aircraft has been replaced by the Yak-12, An-2 and helicopters. The main role in this re-education program is played by the schools of the GVF. The Kiyev Institute of the Aeroflot has increased its effort to prepare engineers and pilots for jet planes. The School of Advanced Pilotage (Shkola vysshey letnoy podgotovki) and training squadrons (uchebnyye eskadril'i) have trained pilots to fly the Il-14 and Il-12. By 1960, the number of students registered for various correspondence courses should triple, as compared with 1953. In 1957, the first group of graduates from correspondence courses, both technicians and engineers, will graduate at the Kiyev Institute of GVF. The engineering diplomas were bestowed upon: I. V. Orlovets, aircraft commander of a Tu-104; G. F. Zhukovskiy, chief of the LERM at the Kuybyshev airport; P. D. Loza, chief of the training department of the Krasnyy Kut aviation school (Krasnokutskoye letnoye uchilishche); N.N. Zhestkov, A. L. Pustovalov, and V.A. Il'in, foremen of the LERM at Vnukovo

Card: 1/3

64-9-13/47
Let Us Improve the Quality of Training in Schools for the Personnel of Aeroflot (cont.)
began on the Krasnoyarsk-Abakan-Kysyl line,
AVAILABLE: Library of Congress
Card: 3/3

ASSOVSKIY, N.

The main thing is quality. Grazhd. av. 22 no.1:14 Ja '65.
(MIRA 18:11)

1. Nachal'nik Upravleniya uchebnykh zavedeniy Ministerstva
grazhdanskoy aviatsii SSSR.

ASSAUL, N.F.

Dusting the edges of a field in controlling the pea weevil.
Zashch.rast.ot vred.i bol. 7 no.6:32-33 Je '62. (MIRA 15:12)

1. Zaveduyushchiy laboratoriyey entomologii Uladovo-Lyulinetskoy
opytno-selektionnoy stantsii.
(Ukraine--Pea weevil) (Dusting and spraying)

LIKHACHEV, V.A.; ASEUR, K.P.

Deformation of two-phase alloys. Fiz. met. i metalloved. 16 no.1: 97-101 JI '63.
(MIRA 16:9)

1. Leningradskiy fiziko-tekhnicheskoy institut imeni A.F. Ioffe AN SSSR.

(Nonferrous alloys--Metallography)
(Deformations (Mechanics))

5(4)

AUTHOR:

Assur, V. L.

SOV/6-59-6-6/22

TITLE:

From the Working Experience of Squad Nr 20 in 1958
(Iz opyta raboty otryada Nr 20 v 1958 godu)

PERIODICAL:

Geodeziya i kartografiya, 1959, Nr 6, pp 27-30 (USSR)

ABSTRACT:

In 1958, Squad Nr 20 fulfilled a great and extensive task which had nearly double the volume of 1957. For the first time, the squad carried out the field compilation survey for surveys on a scale of 1 : 5000. Besides, the squad carried out the examination and field test of the new optical theodolite, the 30- m mast signal, and the folding leveling tripods, as well as the building of a two-storied production place with 500 m² and central heating. Work was rendered difficult by unfavorable weather conditions. The Collective of the squad received an honorary diploma for the results obtained. A short report is given here as to how the squad succeeded in achieving this. The following organizations and people distinguished themselves at this work: the building brigade A. P. Prokhorov, the brigades M. S. Marchenko, N. A. Bankalov, M. G. Branchuk, N. K. Luzganov, A. V. Shtyler, the observer brigades

Card 1/2

From the Working Experience of Squad Nr 20 in 1958

SOV/6-59-6-6/22

K. A. Bogdanovich, V. Ya. Zakharov, S. G. Fomin, A. F. Shvetsov, the building squad M. T. Kalinin, the leveling squad A. P. Kamenskiy, the brigade Chief Technician N. I. Anikhovskiy, the levelmen of 1st order I. I. Tikhanushkin and V. S. Klimakhin, the students of the MIIGAik M. G. Kogan and G. V. Ryazantsev, the Chief Technician M. G. Kofman, the drivers V. M. Shugayev, I. I. Korneyev and N. I. Zharikov, and the levelman of 1st order I. P. Alekseyev. In 1958, the squad saved 26,900 rubles of direct expenses. The field work lasting until December reduced considerably the savings of the squad. In the central part of the European area of the USSR, field work should be finished by November. The squads must be equipped with cross-country motor trucks. Wood transport should be carried out from December until March as a rule. Geodetic squads should have indoor-service groups under the direction of a brigadier. Building squads should have no more than 5-6 men. These conclusions could be made on account of the working experience by this squad.

Card 2/2

ASSZONYI, Csaba

Graphic and numerical solution of one of the tasks of
mining establishments. Muszaki kozl MTA 32 no.1/4:
93-103 '63.

1. Nehezipari Muszaki Egyetem, Miskolc.

RICHTER, Richard, dr., okleveles bányamérnök, egyetemi tanár; ASSZONYI,
Csaba, okleveles gépészmérnök

Correlative measurements in steep-pitched mining areas. Bany
lap 98 no.4:238-240 Ap '65.

1. Chair of Mining of the Technical University of Heavy Industry,
Miskolc.

AST, Herman, inz. (Mose Pijade 4, Beograd)

Should our industrial production be founded on our own experiences and achievements, or on foreign licences?
Tehnika Jug 17 no.6:1023-1028 Je '62.

1. Visi savetnik Savezne industrijske komore, Beograd.

TIRATURYAN, Yu.N.; ASTABATYAN, K.A.; VARAGYAN, A.A.

Horizontal semiautomatic machine for the manufacture of glass micropipettes. Zhur.eksp. i klin.med. 4 no.3:95-98 '64. (MIRA 18:1)

1. Institut fiziologii imeni akademika L.A.Orbeli AN Armyanskoy SSR.

YATSIMIRSKIY, K.B.; ASTACHEVA, A.A.

Use of thiourea solutions in volumetric analysis (thiocarbamidometry)
[with English summary in insert]. Zhur. anal. khim. 11 no. 4:442-446 11-Ag
'56. (MIRA 9:10)

1. Ivanovskiy khimiko-tekhnologicheskii institut.
(Urea) (Titration)

ASTASICHYEV, Vladimir Ivanovich, inzhener; YERIN, A.N., redaktor; NAKORYAKOVA,
K.M., redaktor; ROBLIN, G.D., tekhnicheskii redaktor.

[Closing off the Angara River at the Irkutsk Hydroelectric Power
Station] Perekrytie reki Angary v stvore Irkutskoi GES. Kuibyshev,
Orgenergostroi, 1957. 19 p. (MIRA 10:11)
(Angara River)

Astafieva, T. N.

1-704. Astafieva, T. N., Computation of water levels after a spillway leading with step (in Russian), Gidrotekhnicheskoe Stroitel'stvo, 4, 37-40, Apr. 1954.
Experiments established relations which may aid in computation of height of step assuring permanent surface form with free jump.
S. Kolupalla, USA

Hydrology

АСТАФИЧЕНА, Т.Н.

98-58-6-12/21

AUTHOR: Astaficheva, T.N., Candidate of Technical Sciences

TITLE: Calculation of the Conjunction of Water Heads by Surface Regime at the Outflow From Under the Gate on the Top of a Spillway Dam Equipped With a Pouring Lip (Raschet sopryazheniya b'yefov poverkhnostnym rezhimom pri istechenii iz-pod zatvora na grebne vodoslivnoy plotiny s noskom)

PERIODICAL: Gidrotekhnicheskoye Stroitel'stvo, 1958, Nr 6, pp 42-43 (USSR)

ABSTRACT: As a result of scientific research, a series of empiric functions was proposed for calculating the conjunction of upper and lower heads behind water-spilling dams. The application of these functions is possible only when the overflowing water passes freely over the top of the dam. Some of these functions could, in certain limits, be also used for calculations in cases where the outflow passes under the gate, on the top of the dam. The author describes research she did on the model of such a dam. In these tests, the zone of surface regime was determined for invariable outflow (different gate-openings) as well as for invariable level of upper water with different gate openings. A comparison of the results of both tests is shown in Graphs

Card 1/3

98-58-6-12/21

Calculation of the Conjunction of Water Heads by Surface Regime at the Outflow From Under the Gate on the Top of a Spillway Dam Equipped With a Pouring Lip

1 and 2. Experimental points for depths corresponding to the first and second critical regimes with various dimensions of gate opening and different levels of upper water are shown on Figure 1. The curves on the graph are built according to the following empiric functions:

$$\frac{t_1}{h_k} = 2.44 - 2.00 \frac{a}{P} + 0.82 \frac{a}{h_k} \left(\text{at } \frac{a}{P} \geq 0.2 \right) \text{ and}$$

$$\frac{t_2}{h_k} = 2.5 + 1.22 \frac{a}{h_k} - 2.55 \frac{a}{P}$$

where P - is the height of the waterspill; a - the height of pouring lip; h_k - the critical depth; t_1 - depth corresponding to the first critical regime and t_2 - corresponding to the second critical regime. This curve differs little from the points calculated by S.M. Slisskiy for depths corresponding to first critical regime with various dimensions of gate openings. (Figure 2).

Card 2/3

CHERTOUSOV, Mikhail Dmitriyevich, zasl. deyatel' nauki i tekhniki RSFSR, prof., dktor tekhn. nauk[deceased]; KOZHEVNIKOV, M.P., prof., doktor tekhn. nauk, red.; YAKOVLEV, M.A., starshiy prepod., kand. tekhn. nauk, red.; ASTAFICHEVA, T.N., dots., kand. tekhn. nauk, red.; KOSYAKOVA, G.N., dots., kand. tekhn. nauk, red.; MOZHEVITINOV, A.L., prof., red.; ZHITNIKOVA, O.S., tekhn. red.

[Hydraulics]Gidravlika; spetsial'nyi kurs. Izd.4., ispr. Moskva, Gosenergoizdat, 1962. 629 p. (MIRA 16:1)

1. Kafedra gidravliki Leningraskogo politekhnicheskogo instituta (for Kozhevnikov, Yakovev, Astaficheva, Kosyakova). (Hydraulics)

ASTAFICHEVA, T.N., kand. tekhn. nauk, dotsent

Power engineering interpretation of hydrostatic pressure.

Izv. vys. ucheb. zav.; energ. 7 no.2:104-107 F '64.

(MIRA 17:3)

1. Leningradskiy politekhnicheskii institut imeni M.I.
Kalinina. Predstavlena kafedroy gidravliki.

ASTAFIEV, A. S. [Antaf'yev, A. S.]

Weldability of the structural low-alloy steel. Analele metalurgie
15 no.4:128-142. O-D '61.

(Steel, Structural) (Welding research)

ASTAFUR V, A.R., Cond Tech Sci—(disc) "Study of electric ^{dielectric} ~~similarity~~ ^{properties} of
certain solid dielectrics of considerable thickness." *Trud.*, 1953. 17 pp
(Min of Higher Education USSR. *Trudak* Order of Labor Red Banner Polytch
Inst in S M. Kirev), 100 copies (M, 31-58, 100)

S/135/63/000/002/002/015
A006/A101

AUTHOR: Astaf'yev, A. S. Candidate of Technical Sciences

TITLE: On the weldability of steel

PERIODICAL: Svarochnoye proizvodstvo. no. 2, 1963, 6 - 8

TEXT: To improve the existing classifications of evaluating steel weldability, developed by the International Institute of Welding and IMET imeni A. A. Baykov, TsNIICM developed a new classification, consisting of three groups. Investigation tests (group 1), include direct and indirect methods of determining optimum chemical composition, final mechanical properties, and the properties of the weld-adjacent zone and the base metal. Acceptance tests (group 2) are made to verify the chemical composition of the steel and to compare varying toughness of the weld-adjacent zone at room and negative temperatures; technological tests (group 3) are carried out to determine the suitability of metals for the intended structures; these tests are to be performed at the Institutes. One of the main factors of determining the weldability of steel is the reaction of the base metal to the thermal welding process. The

Card 1/2

On the weldability of steel

S/135/63/000/002/002/015
A006/A101

Institute of Metallurgy imeni A. A. Baykov developed the IMET-1 method to determine indirectly the effect of the thermal process upon the base metal. In butt-welding sheets, the spots of the weld-adjacent zone are heated to different temperatures under the effect of the thermal welding cycles; these spots are located in the overheating, normalization, partial crystallization and disintegration zones. Corresponding to structural transformations in the heat-affected zone, the mechanical properties are also changed. The use of IMET-1 rod specimens for determining final properties in the heat-affected and disintegration zones makes it possible to characterize more completely the reaction of the base metal to the thermal welding cycle. Moreover, the small amount of metal required for the tests, makes it possible to evaluate this reaction as a function of individual components in the steel, varying the chemical composition of experimental heats. In this way it is possible to establish optimum contents of alloying elements and to recommend well weldable steel of optimum composition for large-scale trials. There are 2 figures.

ASSOCIATION: TsNIChM im. I. P. Bardina (TsNIChM imeni I. P. Bardin)

Card 2/2

ATABEKOV, I.G.

Utilization of Soviet ion-exchange resins for the purification of
plant viruses. Vop. virus 5 no.4:496-500 Je-Ag '60. (MIRA 14:1)
(VIRUSES) (ION EXCHANGE)

ATABEKOV, I.G.

Adsorption principles of preparative isolation of viruses with the aid
of nonpolar solvents. Vop. virus. 6 no.5:580-587 S-0 '61.

(MIRA 15:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut fitopatologii,
Moskva.

(VIRUSES)

ATABEKOV, I.G.

Ion exchange adsorption of phytopathogenic viruses. Vop. virus.
6 no.6:669-672 N-D '61. (MIRA 15:2)

1. Vsesoyuznyy institut fitopatologii.
(VIRUSES) (ION EXCHANGE RESINS)

ATABEKOV, I. G.; RAZVYAZKINA, G. M.; ANDRYUSHCHENKO, M. D.;
KOSMACHEVSKIY, A. S., doktor biolog. nauk

Brief reports. Zashch. rast. ot vred. i bol. 6 no.6:56-57
Je '61. (MIRA 16:4)

1. Nauchnyy rabotnik Izmail'skoy opytnoy stantsii (for
Andryushchenko). 2. Krasnodarskiy pedagogicheskiy institut
(for Kosmachevskiy).

(Plants, Protection of)

ATABEKOV, I.G.; NOVIKOV, V.K.

Adsorption of phytopathogenic viruses on "molecular" sorbents. Vop.
virus. 6 no.6:673-678 N-D '61.. (MIRA 15:2)

1. Vsesoyuznyy institut fitopatologii.
(VIRUSES) (SORPTION)

ATABEKOV, I.G.; PHELIN, V.A.

Solubilization phenomenon in solutions of phytopathogenic viruses.
Dokl.AN SSSR 144 no.2:446-448 My '62. (MIRA 15:5)

1. Vsesoyuznyy institut fitopatologii i Moskovskiy gosudarstvennyy
universitet im. M.V.Lomonosova. Predstavleno akademikom P.A.
Rebinderom.

(SOLUBILITY) (VIRUSES)

ATABEKOV, I.G.; NOVIKOV, V.K.; PEKHTIREV, V.V.

Characteristics of the surface denaturation of phytopathogenic
viruses. Vop. virus 8 no.5:600-605, '63 (MIRA 17:1)

S-0

1. Vsesoyuznyy nauchno-issledovatel'skiy institut fitopatologii.

ATABEKOV, I.G.; KARPENKO, G.A.; NOVIKOV, V.K.

Some adsorptive properties of calcium phosphate and their use in determining the nucleotide composition of ribonucleic acid. Biokhimiia 28 no.3:517-523 My-Je 63. (MIRA 17:2)

A. V. ASTAFUROV, A. V.
USSR/Physical Chemistry - Crystalc.

B-5

Abs Jour : Referat Zhur - Khimiya, No 1, 1958, 246

Author : A.V. Astafurov.

Inst : -

Title : Luminescence of Ice in Strong Electrical Field.

Orig Pub : Optika i spektroskopiya, 1957, 2, No 4, 540

Abstract : If voltage pulses of the wave front length of 3 to 4 .
. 10^{-7} sec and amplitude of above 70 kv were applied
to a metal electrode frozen in a piece of ice, lumines-
cence in the visible and ultraviolet regions of the
spectrum are observed. The visible luminescence disap-
pears several seconds later after the voltage has been
removed. The luminescence intensity rises with the tem-
perature drop.

Card 1/1

ASTAFUROV, A. V.

Astafurov, A.V. [Tomsk, Politekhicheskiy Institut (Polytechnical Institute)]
Electrical Breakdown of Thick Ice Layers by Pulses

(The Physics of Dielectrics; Transactions of the All-Union Conference on the Physics of Dielectrics) Moscow, Izd-vo AN SSSR, 1958. 245 p. 3,000 copies printed.

This volume publishes reports presented at the All-Union Conference on the Physics of Dielectrics, held in Dnepropetrovsk in August 1956 sponsored by the "Physics of Dielectrics" Laboratory of the Fizicheskiy Institut imeni Lebedeva An SSSR (Physics Institute imeni Lebedev of the AS USSR), and the Electrophysics Department of the Dnepropetrovskiy gosudarstvennyy universitet (Dnepropetrovsk State University).

ASTAFUROV, A.V.

Electric sparkover through thick specimens of rock salt, organic glass
and paraffin wax. Izv. vys. ucheb. zav.; fiz. no.2:131-137 '58.

(MIRA 11:6)

1. Tomskiy politekhnicheskij institut im. S.M. Kirova.
(Rock salt--Electric properties) (Glass--Electric properties)
(Waxes--Electric properties)

807/139-58-5-2/35

AUTHOR: Astafurov, A. V.

TITLE: Empirical Equations for the Dependence of the Breakdown Voltage on Duration of Application of the Field and on Thickness in Electrical Breakdown of Thick Solid Dielectrics (Empiricheskiye uravneniya zavisimosti probivnogo napryazheniya ot vremeni vozdeystviya napryazheniya i tolshchiny pri elektricheskoy probe tverdykh dielektrikov v bol'shikh tolshchinakh)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, fizika, 1958, Nr 5, pp 8-11 (USSR)

ABSTRACT: The paper was presented at the Conference of Higher Educational Establishments on Dielectrics and Semiconductors, Tomsk, February, 1958. The author deals with the dependence of the breakdown voltage U_{br} on the duration of application of the electric field and on the thickness (in the range 2-30 mm) of a dielectric. Investigations of the electrical breakdown of thin solid dielectrics (Refs.1-3) and the present author's work on thick dielectrics (Refs.4, 5), suggest that the break-

Card 1/4

SCV 109-98-5-2/35

Empirical Equations for the Dependence of the Breakdown Voltage on Duration of Application of the Field and on Thickness in Electrical Breakdown of Thick Solid Dielectrics

down mechanism is of the ionisation type, similar to that which occurs in gases. For gas, Gorev and Mashkileyson suggested (Ref.7) the following equation:

$$U_{br} = U_0 \sqrt{1 + \frac{T}{t}} \quad (1)$$

where U_0 is the breakdown voltage under constant field or the minimum pulse breakdown voltage, T is a constant with dimensions of time, and t is the time from the beginning of application of the field. Assuming that the breakdown mechanism in gases and solid dielectrics is similar, the author calculated voltage-time characteristics from the Gorev-Mashkileyson equation. Figs.1-4 show that this equation gives a satisfactory agreement between the experimental and calculated values both for a uniform field and for positive or negative pulses in the field of a point placed against a plane. Figs.1-4 give the voltage time curves for rock salt, ice, organic glass and paraffin wax respectively. The continuous curves represent experimental results and the dashed

Card 2/4

SOV/139-58-5-2/35

Empirical Equations for the Dependence of the Breakdown Voltage on Duration of Application of the Field and on Thickness in Electrical Breakdown of Thick Solid Dielectrics

curves give the values deduced from the Gorev-Mashkileyson equation. Dependence of the breakdown voltage U_b on the dielectric thickness d in breakdown of air and transformer oil is given by $U_{br} = Bd^n$, where B and n are constants. For solid dielectrics of considerable thickness the present author suggests

$$U_{br} = Ak \sqrt[4]{v_{0.5u} d^n} \quad (3)$$

where A is a constant which depends on the probability of breakdown, k is a coefficient which depends on the field configuration and the pulse polarity, $v_{0.5u}$ is the rate of rise of voltage at the point where the applied voltage is equal to $0.5 U_{max}$ (U_{max} is the pulse amplitude), and n is

Card 3/4

007/159-58-5-2/35

Empirical Equations for the Dependence of the Breakdown Voltage on Duration of Application of the Field and on Thickness in Electrical Breakdown of Thick Solid Dielectrics

a constant. Fig.5 gives the experimental (continuous curves) and calculated (dashed curves) dependences of U_b on the thickness d for rock salt, organic glass and ice. Fig.5 includes also curves for air taken from Ref.9. Eq.(3) is found to hold well within the range of ± 5 mm. This work was carried out under Prof.-Dr. A. A. Vorobyev. There are 5 figures and 9 Soviet references.

ASSOCIATION: Tomskiy politekhnicheskii institut, imeni S. M. Kirova
(Tomsk Polytechnical Institute imeni S. M. Kirov)

SUBMITTED; February 25, 1958.

Card 4/4

AUTHOR: Astafurov, A.V. 3-5B-7-17/36

TITLE: The "Problems" Laboratory - a Center of Scientific Researches
(Problemnaya laboratoriya - tsentr nauchnykh issledovaniy)

PERIODICAL: Vestnik vysshey shkoly, 1958, Nr 7, pp 57-58 (USSR)

ABSTRACT: This laboratory was created at the Tomsk Polytechnical Institute in 1957 under the general scientific direction of the Doctor of Physico-Mathematical Sciences A.A. Vorob'yev. It is concerned with the solving of different problems in the field of electricity. A weekly seminar is held, in which various questions are debated, and lectures delivered on the outstanding Soviet and foreign scientific achievements. The laboratory publishes a symposium of articles by its collaborators as well as other scientific books. Its collaborators have done much outstanding work. Dotsents P.A. Savin'sev and V.Ye. Avericheva, V.M. Belousov, A.D. Shchelokov, V.D. Kuchin, G.A. Andreyev, A.V. Astafurov, K.K. Sonchik and others are mentioned.

ASSOCIATION: Tomskiy politekhnicheskii institut imeni S.M. Kirova (The Tomsk Polytechnical Institute imeni S.M. Kirov)

Card 1/1

ASTAFUROV, A. V.

AUTHOR: Astafurov, A. V. 48-22-4-14/24

TITLE: Electric Breakdown of Thick Ice Layers by Pulses
(Elektricheskiy proboy tolstykh sloev l'da na impul'sakh)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya fizicheskaya, 1978,
Vol. 22, Nr 4, pp. 419-422 (USSR)

ABSTRACT: Usually the breakdown of solid dielectrics was investigated in samples, the thickness of which did not exceed from 1-2 mm. It is known, that in inhomogeneous fields, at a reduction of the thickness of the dielectric, its dielectric strength increases and that the polarizing effect almost vanishes (reference 1). The author made it his aim to obtain the dependence of voltage vs. time at a great thickness and the dependence of the breakdown strength on the thickness and to determine the polarization effect. River ice formed on natural conditions was selected as a model. The investigation of ice is of scientific interest because as the determination of electric characteristics of ice are necessary in the study of water-containing dielectrics. Figure 1 shows the voltage vs. time characteristics of ice in the breakdown of

Card 1/4

Electric Breakdown of Thick Ice Layers by Pulses

48-22-4-14/24

samples with a thickness of $d = 15$ mm in an inhomogenous field for both polarities of the pulse, as well as in the breakdown of samples with a thickness of $d = 10$ mm in an homogenous field at a positive polarity. Figure 2 shows the dependence of breakdown voltage on the thickness of the sample d for a pulse with a rise time of up to 10 microseconds $[U_{pr} = j(d)]$. Figure 3 shows the same dependence $U_{pr} = \Phi(d)$ for a pulse with a shorter rise time (up to 2 microseconds). All curves are based upon the statistical interpretation of the experimental results at a probability of breakdown of $\Psi = 90\%$. Figure 4 shows the dependence $U_{pr} = f(d)$, U_{pr} being given in kV, d in mm. The function representing voltage vs. time of ice in an homogenous and in an inhomogenous field give the same picture as do other dielectrics (reference 2). A marked increase of dielectric strength begins at a duration of exposition below 5 microseconds. The characteristics of ice as obtained by the author permit to compute the formation period and the velocity of development of the discharge. A table shows the results of these computations. The velocity of development

Card 2/4

Electric Breakdown of Thick Ice Layers by Pulses

48-274-14/24

of the discharge at a positive polarity of the pulse (reference 2) is greater than at a negative polarity in ice as well as in air. This leads to the assumption of a streamer (strimernyy) discharge character in solid dielectrics of great thickness. A strong luminescence of ice is observed at an application of high tension, (figure 6). Summary: The characteristic voltage vs. time of ice in the breakdown of a layer with a thickness of from 10-15 mm is similar to the same characteristics of solid dielectrics with a smaller thickness. The breakdown voltage of ice increases with an increase of d between 5-30 mm somewhat less than proportionally. In thicker dielectrics the velocity of the development of the discharge is considerably greater than in thin ones (reference 4). The author expresses his gratitude to A. A. Vorob'yev for supplying the theme and to G. A. Vorob'yev for valuable hints. There are 6 figures, 1 table, and 5 references, all of which are Soviet.

Card 3/4

Electric Breakdown of Thick Ice Layers by Pulses

48-22-4-14/24

ASSOCIATION: Tomskiy politekhnicheskii institut im. S. E. Kirova
(Tomsk Polytechnical Institute named S. E. Kirov)

AVAILABLE: Library of Congress

1. Ice--Dielectric properties
2. Dielectric properties--Determination

Card 4/4

ASTAFUROV, A.V.

AUTHORS: Chuyenkov, V. A., ~~Astafurov, A. V.~~, Konarova, 48-22-4-10/24
Ye. A., Koritskiy, Yu. V., Odoyevskiy, V. A.

TITLE: Discussion on the Lectures Held by G. A. Andreyev; A. V. Astafurov; K. K. Sonchik; I. Ye. Balygin (*Prezhiya po dokladam: G. A. Andreyeva; A.V. Astafurova; K.K. Sonchika; I.Ye. Balygina*)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, 1958, Vol. 22, Nr 4, pp. 438-438 (USSR)

ABSTRACT: V. A. Chuyenkov maintains, that the experiments by Krasin, which were conducted at Tomsk show the opposite of the assertions by Balygin. For this reason the problem cannot be considered solved. The experiments by Astafurov proved to be interesting. A. B. Astafurov criticizes the lecture by Balygin. He maintains, that the fact of a double or treble breakdown of the liquid under a single pulse seems somewhat peculiar, in particular, as these subsequent breakdowns occur at a reduction of voltage. It is possible, that this phenomenon is due to the insufficiencies of the circuits. As the author performed no degassing of the liquid, the values of the breakdown voltage obtained by him are obviously too low. The physical process recorded on the oscillographs is dis-

Card 1/3

Discussion on the Lectures Held by G. A. Andreyev; A. V. 48-22-4-18/24
Astafurov; K. K. Sonchik; I. Ye. Balygin

torted because of gas inclusions. Ye. A. Koncrova states, that the experimental results obtained by Andreyev do not contradict the results obtained by her. Astafurov overlooked a fault in his work, consisting of an insufficient contact of the electrode and the ice. Yu. V. Koritskiy remarked, concerning the lecture by Andreyev, that it is inevitably necessary to take into account the dependence of dielectric strength upon the duration of the voltage application (exposure) in the examination of the rules governing electric breakdown. This was not done by the author. Another contradiction appears in the lecture, consisting of the fact, that the factor influencing the magnitude of the current previous to disruption has no influence on the dielectric strength in thermal breakdown. The lecturer said with respect to the lecture by Balygin, that it was a great drawback of the work not to purify sufficiently the samples of the investigated liquids. V. A. Odoyevskiy criticizes the work by A. A. Vorob'yev and his coworkers and is of opinion, that they dealt with the same subject in several variations, without analyzing the physics

Card 2/3

Discussion on the Lectures Held by G. A. Andreyev;
A. V. Astafurov; K. K. Sonchik; I. Ye. Balygin

48-22-4-18/24

of the mechanism. Their assertions have been refuted for
a long time.

AVAILABLE: Library of Congress

1. Scientific reports--Critic

Card 3/3

SOV/58-59-9-20518

Translation from: Referativnyy Zhurnal Fizika, 1959, Nr 9, p 147 (USSR)

AUTHORS: Astafurov, A.V., Vorob'yev, A.A., Vorob'yev, G.A., Kevroleva, K.M.

TITLE: The Volt-Second Characteristics of Solid Homogeneous Dielectrics

PERIODICAL: Izv. Tomskovo pilitekh. in-ta, 1958, Vol 94, pp 16 - 19

ABSTRACT: The authors measured the volt-second characteristics at sparkover in the homogeneous and inhomogeneous (one electrode being in the form of a point) field of a great number of solid dielectrics: single crystals of NaCl, KCl, KBr and KJ, single crystals of Seignette's salt, ice, foliated talc containing water of crystallization, porcelain and others. For the sparking voltage a value was selected at which sparkover occurred with a probability of 90%. In the case of all the dielectrics investigated, when samples having a thickness of 0.15 mm were exposed for $1 \cdot 10^{-7}$ sec or less, an increase in electric resistance was observed. The rise in sparking voltage under short exposures is caused by discharge delay. It is well-known (cf. RZhFig, 1959, Nr 1, 1174) that, in the case of exposures shorter than $(2 \cdot 3) \cdot 10^{-8}$ sec, the time delay is actually the time of forming the discharge $t_f \cdot t_f$ was ascertained from the voltage oscillogram. The average velocity

Card 1/2

SOV/58-59-9-20518

The Volt-Second Characteristics of Solid Homogeneous Dielectrics

of the propagation of the discharge was determined from the values of t_f and the thickness of the samples. The following conclusions were drawn: 1) for solid homogeneous dielectrics with high electric resistance ($\sim 10^6$ V/cm), v_{av} is of the order of 10^6 cm/sec; 2) in the case of a homogeneous field, the value of v_{av} is several times greater for thick samples (0.5 to 1.5 cm) than for thin samples (0.15 to 0.3 mm); 3) v_{av} is significantly greater for the positive than for the negative polarity of the point; and 4) v_{av} increases with an increase in overvoltage.

Yu.S.K.

Card 2/2

S/180/62/000/006/022/022
E193/E383

AUTHORS: Plaksin, I.N., Barysheva, K.F. and Astaf'yeva, A.V.
(Moscow)
TITLE: Recovery of rare-earth metals by the extraction method
PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye
tekhnicheskikh nauk. Metallurgiya i toplivo,
no. 6, 1962, 185 - 191

TEXT: The nature and chemical analysis of the experimental materials are given in Table 1. The first stage of the investigation comprised acid (HNO_3 or HCl) leaching tests in which the effect of the following factors on the recovery of rare-earth elements was studied: acid concentration; leaching temperature; solid/liquid ratio and leaching time. Two methods of leaching were tested: agitating the pulp for one hour at $80 - 90^\circ\text{C}$ and filtering the product; vacuum percolation for one hour at $70 - 80^\circ\text{C}$. The best results were obtained with a 50 - 60% nitric-acid solution, a liquid/solid ratio of 2:1 and leaching time and temperature of one hour and $80 - 90^\circ\text{C}$, respectively. 84-96% recovery was attained under these conditions. The extraction of
Card 1/5

Recovery of rare-earth

S/180/62/000/006/022/022

E193/E383

rare-earth metals from nitric-acid solutions with the aid of tributyl phosphate was studied in the second stage. The results of preliminary experiments showed that with increasing concentration of the rare-earth elements in the solution, both the separation coefficient and the recovery increased (in the case of a solution containing TR_2O_3 0.5-3.8%, Ca 0.2-2.5% and Fe 0.2-0.8% the recovery of TR_2O_3 amounted to 57%, the corresponding figure for Fe and Ca being 3-4% only). The addition of NH_4NO_3 to the solution increased the separation coefficient to 1.5-1.7, the recovery attained being 95%. Increasing the organic phase/water ratio increased both the separation coefficient and recovery of TR_2O_3 in tributyl phosphate. The presence of Ca, Fe, Mg, Mn and Al also increased the recovery of TR_2O_3 . The preliminary experiments were followed by tests on an industrial solution containing 1.96% TR_2O_3 , 2.5% CaO, 0.46% Fe and 18% HNO_3 . The organic phase/water ratio was 1:2, mixing time 10 min and settling time 1 hour. The results obtained after six extraction operations
Card 2/5

Recovery of rare-earth

S/180/62/000/006/022/022
E193/E383

are reproduced in Table 3. Based on these results, a method of extracting rare-earth metals from various starting materials was developed; the flow sheet of the process is given in the paper. Finally, the possibility of using tributyl phosphate to extract rare-earth metals directly from the pulp was studied. A crude, fluorite rare-earth metal concentrate, mixed with 50% HNO_3

solution (liquid/solid ratio = 1:1), was stirred for 15 min after which tributyl phosphate (organic phase/water ratio = 2:1) was added to the pulp. The pulp, heated to 80 °C, was agitated for one hour, cooled to 25 - 200 °C, agitated again for 10 min and then left to settle. Tributyl phosphate was then decanted and the second stage of extraction was carried out with a fresh quantity of tributyl phosphate. After two operations 79% recovery of TR_2O_3 was attained. This value could be increased to 89.4% by adding to the pulp 1% of Al_2O_3 in the form of aluminium nitrate. ↓

The difficulties in attaining a higher recovery by this method were apparently associated with losses of tributyl phosphate and this problem requires further study.

Card 3/5

Recovery of rare-earth

S/180/62/000/006/022/022
E193/E383

SUBMITTED: March 4, 1962

Table 1:

Product	Composition, %						
	TR ₂ O ₃	Fe	CaF ₂	CaO	SiO ₂	MgO	Mn
Crude fluorite-rare-earth concentrate	11.1	7.9	49.0	6.0	8.0	1.2	0.2
Rare-earth flotation concentrate	19.0	12.0	10.0	6.7	22.0	0.5	0.1
Rare-earth flotation biproduct	18.0	2.3	37.0	10.0	4.9	1.0	0.1

Card 4/5

Recovery of rare-earth

S/180/62/000/006/022/022
E193/E383Table 3:

Product	Content, g			Recovery, %		
	TR ₂ O ₃	CaO	Fe	TR ₂ O ₃	CaO	Fe
Tributyl phosphate	0.551	0.03	0.002	90.0	6.5	2.3
Water phase	0.039	0.43	0.084	10.0	95.5	97.7
Starting solution	0.390	0.46	0.086	100.0	100.0	100.0

Card 5/5