

RADUSHKEVICH, L.V.; KOLGANOV, V.A.

Use of drying oil fogs in studying filtration of aerosols.
Zhur. fiz. khim. 38 no.3:806-808 Mr '64. (MIRA 17:7)

RADUSHKEVICH, L.V.; KOLGANOV, V.A.

Method of evaluating aerosol filters by means of polydispersed
aerosols. Zav. lab. 30 no.11:1365-1367 '64 (MIRA 18:1)

1. Institut fizicheskoy khimii AN SSSR.

RADUSHKEVICH, L.V.; KOLGANOV, V.A.

Investigation of aerosol filtration with the aid of a model filter.
Koll. zhur. 27 no.1:95-100 Ja-F '65. (MIRA 18:3)

I. Institut fizicheskoy khimii AN SSSR, Moskva.

KOLGANOV, V.I.

Study and classification of reservoir rocks. Geol. nefti 1 no.2:
36-40 F '57. (MLBA 10:8)

(Petroleum geology)

KAPISHNIKOV, A.L.; SADRISLAMOV, M.M.; KOLGANOV, V.I.

Using field data for calculating oil recovery factors. Trudy
VNII no.24:141-156 '59. (MIRA 13:5)
(Petroleum geology)

KOLGANOV, V.I.

Effect of lowering of bottom pressure below the saturation pressure
on oil recovery. Trudy VNII no.25:146-153 '59. (MIRA 15:4)

1. Gosudarstvennyy vsesoyuznyy issledovatel'skiy i proyektnyy
institut neftyanoy promyshlennosti.

(Oil reservoir engineering)

KOLGANOV, V. I.

Cand Tech Sci - (diss) "Study of the petroleum yield of coal-bearing and Devonian levels of deposits of Kuybyshevskaya Oblast: Zel'nenskiy, Strel'nenskiy, Yabloneviy Gorge, and the Gubinskiy." Kuybyshev, 1961. 16 pp; (Ministry of Higher and Secondary Specialist Education RSFSR, Kuybyshev Industrial Inst imeni V. V. Kuybyshev); 150 copies; price not given; (KL, 10-61 sup, 215)

KAPISHNIKOV, A.L.; KOLGANOV, V.I.

Analysis and prospects for developing the oil pool in the layer B₂
of the Zol'nyy Ovrage field. Trudy Giproostoknefti no.3:214-232
'61. (MIRA 14:12)
(Kuybyshev Province--Oil fields--Production methods)

KAPISHNIKOV, A.L.; KOLGANOV, V.I.; YEGURTSOV, N.N.

Analysis of the development of the oil pool in the layer B₂ of the
Strel'nyy Ovrage field. Trudy Giprovoostoknefti no.3:233-244 '61.
(MIRA 14:12)

(Kuybyshev Province--Oil fields--Production methods)

KOLGANOV, V.I.

Maximum oil recovery from sand layers in a water drive pool. Trudy
Giprovostoknefti no.3:262-273 '61. (MIRA 14:12)
(Oil reservoir engineering)

KOLGANOV, V.I.

Water encroachment and oil recovery as exemplified by the layer E₂
of the Zol'nyy Ovrage field. Trudy Giproostoknefti no.3:274-298
'61. (MIRA 14:12)

(Kyrgyzshev Province--Oil reservoir engineering)

KOLGANOV, V.I.

Evidence of phase permeability in the displacement of oil by water
in the layer B₂ of the Zol'nyy field. Trudy Giprovtoknefti no.3:
299-306 '61. (MIRA 14:12)
(Kuybyshev Province--Oil field flooding)

KOLGANOV, V.I.

Effect of well spacing on the oil recovery. Trudy Giproostoknefti
no.3:307-321 '61. (MIRA 14:12)
(United States--oil fields--Production methods)

SURGUCHEV, Mikhail Leont'yevich; SAZONOV, Boris Fedorovich; KOLGANOV,
Yenedikt Ivanovich; PETROPOL'SKAYA, N.Ye., red.; DURASOVA,
V.M., tekhn. red.

[Effectiveness of modern petroleum production methods] Effek-
tivnost' sovremennykh metodov razrabotki neftiannykh zalezhei.
Kuibyshev, Kuibyshevskoe knizhnoe izd-vo, 1962. 91 p.

(MIRA 15:7)

(Kuibyshev Province—Oil fields—Production methods)

GUBANOV, A.I.; KOLGANOV, V.I.; SAZONOV, B.F.; ZHUKOV, D.M.

Effect of forced production on the water encroachment and
oil recovery as illustrated by the development of the
Iablonovyy Ovrage field. Neft. khoz. 40 no.6:37-42 Je '62.
(MIRA 15:6)
(Samara Bend--Oil fields--Production methods)

KAPISHNIKOV, A.L.; KOLGANOV, V.I.

Studies of oil recovery on the fields of the Samara Bend. Trudy
Giprovostoknefti no.5:102-117 '62. (MIRA 16:8)

(Samara Bend--Oil reservoir engineering)

YEGURTSOV, N.N.; KOLGANOV, V.I.; GADALIN, I.Ye.

Practice in the study of wells using the hydroacoustic method
in the Krasnoyarsk and Belozërka fields. Trudy Giprovoŝtoknefti
no.5:129-133 '62. (MIRA 16:8)

(Kuybyshev Province--Oil field flooding)

KOLGANOV, V.I.; SOKHACHEVSKAYA, I.A.; YEGURTSOV, N.N.; SHUSTEF, I.N.

Analysis of the development of the producing layer B₂ of the Lower Carboniferous coal-bearing horizon in the Krasnoyarsk and Belozherka fields. Trudy Giprovostoknefti no.5:177-190 '62.
(MIRA 16:8)
(Kuybyshev Province--Oil reservoir engineering)

KOLGANOV, V.I.

Estimating the residual withdrawable oil reserves with water drive.
Nefteprom. delo no.8:3-6 '64. (MIRA 17:12)

1. Gosudarstvennyy institut po proyektirovaniyu i issledovatel'skim
rabotam neftedobyvayushchey promyshlennosti vostochnykh rayonov
strany.

KOLGANOV, V.I.

Accuracy in investigations of productive capacity from electro-
metric data. Nefteprom. delo no.8:6-8 '64. (MIRA 17:12)

1. Gosudarstvennyy institut po proyektirovaniyu i issledovatel'skim
rabotam neftedobyvayushoney promyshlennosti vostochnykh rayonov
strany.

KOLGANOV, Venedikt Ivanovich; SURGUCHEV, Mikhail Leont'yovich;
SAZONOV, Boris Fedorovich

[Flooding of oil wells and beds] Obvodnenie neftiannykh
skvazhin i plastov. Moskva, Nedra, 1965. 262 p.
(MIRA 18:2)

KOLGANOV, V.I.; SURGUCHEV, M.L.; YEVGRAFOV, N.A.

Results of the study of oil recovery from layer B₂ of the Zol'nyy
Grag field by zonal water encroachment; water encroachment
isochrons. Geol. nefti i gaza 9 no.4:14-19 Ap '55.

(MIRA 18:8)

1. Gosudarstvennyy institut po proyektirovaniyu i issledovatel'skim
rabota neftedobyvayushchey promyshlennosti vostochnykh rayonov
strany, kuybyshev.

KOLGANOV, V. V.

USSR/Electricity - Transmission Lines Conductors

Jul 50

"Discharge From the Cable to the Conductor in the Span of a Power Transmission Line,"
A. I. Dolginov, Cand Tech Sci, V. V. Kolganov, Engr

"Elek Stants" No. 7, pp 36-37

In the stormy season of 1949 an instantaneous discharge between cable and conductor occurred in center of span of 110-kv power transmission line. Describes and mathematically explains the accident. Points out that danger of discharge increases considerably if distance between cable and conductor is reduced, and recommends this distance be specially checked where possible.

PA 162T26

TEST AND INSPECTION PROCESSES AND PROPERTIES MOORE

100 AND 4TH DECEES

KOLGANOV V.V.

SA

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621.315.1 : 621.316.93

1754. Discharge from an overhead earth wire to a conductor at the middle of a transmission line span. A. I. DOLGONOV AND V. V. KOLGANOV. *Elektrichesvo*, No. 11, 84-5 (Nov., 1950) *In Russian*.

This digest of a paper in *Elektr. St.*, No. 7, 1950, reports a lightning stroke to an overhead earth wire which discharged to the highest conductor of a 2-circuit, 3-ph., 110 kV line crossed on steel towers. A differential protective relay disconnected the line at both ends. Careful investigation disclosed only

considerable melting of the earth wire and the top conductor, and it is concluded that the breaking of the wire was due to severe overheating of its strands. This is a very rare failure and in general there is no need to increase the clearance between the earth wire and top conductor above 4 m in spans of ~ 200 m.

I. LUKASZKIEWICZ

ASB-512 METALLURGICAL LITERATURE CLASSIFICATION

FROM SOURCE

CLASSIFY ONE ONLY

CLASSIFY ONE ONLY

KAZAK, N.A.; KOLGANOV, V.V.

Longitudinal compensation equipment in 380-kv networks in Sweden.
Energ.biul. no.2:31-3 of cover F '56. (MLRA 9:5)
(Sweden--Electric power distribution)

KAZAK, K.A.; KOLGANOV, V.V.

Protection against lightning, static charges and corrosion in
refineries and chemical plants in the United States. Energ.bul.
no.6:26-28 Je '56. (MLRA 9:8)
(United States--Lightning protection)
(Chemical Industries--Safety measures)
(Corrosion and anticorrosives)

KOLGANOV, V.Z.

NIKITIN, S.Ya.; SMOLYANKIN, V.T.; KOLGANOV, V.Z.; LEBEDEV, A.V.; LOMKATSI,
G.S.

[Dispersion of slow neutrons into ortho- and para-deuterium] Ras-
seianie medlennykh neutronov na orto- i para-deiterii; doklady,
predstavlennye SSSR na Mezhdunarodnuu konferentsiu po mirnomu
ispol'zovaniu atomnoi energii. Moskva, 1955. 12 p. [Microfilm]
(Deuterium) (Nuclear physics) (MIRA 9:3)

DIATROPTOV, D. B., KOLGANOV, V. Z., LEBEDEV, A. V., NIKITIN, S. Ya.,
SMOLYANKIN, V. T. and SOKOLOV, A. P. (Acad. Sci. USSR)

KOLGANOV, V. Z.

"Slow Neutrons Scattering by Ortho- and Para-Tritium,"

paper submitted at the All-Union Conf. on Nuclear Reactions in Medium and Low Energy Physics, Moscow, 19-27 Nov 57.

SOV-120-58-1-4/43

AUTHORS: Kolganov, V. Z., Lebedev, A. V., Nikitin, S. Ya. and Smolyankin, V. T.

TITLE: A Liquid Hydrogen Bubble Chamber (Zhidkovodorodnaya puzyr'kovaya kamera)

PERIODICAL: Pribory i Tekhnika Eksperimenta, 1958, Nr 1, pp 31-34 (USSR)

ABSTRACT: The construction of a working liquid hydrogen bubble chamber is described. The volume is 1 litre and the diameter 10 cm. The chamber was designed as a pilot experiment to obtain information which would be useful in the design of a much larger one. A section through the chamber is shown in Fig.1. The working volume of the chamber and the hydrogen reservoir are completely separated. The closed working volume of the chamber is surrounded by a hydrogen bath connected to the hydrogen reservoir. In this way good screening of the chamber from thermal radiation is achieved and the problem of temperature stability is simply resolved by the stabilisation of the pressure in the reservoir. An important feature of the chamber is the method of mounting of the glass

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SOV-120-58-1-4/43

A Liquid Hydrogen Bubble Chamber.

walls of the chamber. This is illustrated in Fig.2. The Pyrex windows are mounted on copper washers as shown in the latter figure and this was found to be very satisfactory. The method of illumination is described and is illustrated in Fig.3. A typical oscillogram of the working cycle is shown in Fig.4. The chamber can be kept at the lower pressure for 30 to 40 milliseccs but this time can be varied. The re-establishing of the pressure to the upper value takes approximately 15 milliseccs. Normally, the upper pressure is 7 atm and the lower 3 atm. A series of photographs was also taken with pressure reductions down to 1 to 2 atm. Special experiments have shown that the sensitive time is not less than 40 milli secs. The repetition frequency of the working cycle is about 7 to 10 cycles per minute. Fig.5 shows a photograph of tracks obtained in the neutron beam of a synchrocyclotron obtained in studies of π -meson formation in n-p collisions. The following persons collaborated:
A. N. Yershov, N. A. Zubkov, V. A. Beketov, Ye.F. Lokhaneva,

Card 2/3

SOV-120-58-1-4/43

A Liquid Hydrogen Bubble Chamber.

N. I. Makarov, A. P. Sokolov, G. S. Lomkatsi, G. I. Blinov
and Yu. S. Krestnikov. There are 5 figures, no tables and
9 references, of which 6 are English, 3 Soviet.

SUBMITTED: July 3, 1957.

1. Bubble chambers--Design
2. Bubble chambers--Materials
3. Bubble chambers--Performance
4. Hydrogen (Liquid)--Applications
5. Neutrons--Detection

Card 3/3

SOV-120-58-1-6/43

AUTHORS: Belonogov, A. V., Zel'dovich, A. G., Kolganov, V. Z.,
Landsberg, L. G., Lebedev, A. V., Nikitin, S. Ya.,
Smolyankin, V. T., Sokolov, A. P.

TITLE: A Photographic Setup for Large Hydrogen Bubble Chambers
(Sistema fotografirovaniya dlya bol'shikh vodorodnykh
puzyr'kovykh kamer)

PERIODICAL: Pribory i Tekhnika Eksperimenta, 1958, Nr 1, pp 38-41
(USSR)

ABSTRACT: A photographic setup for hydrogen bubble chambers of large dimensions is quite different from that for Wilson and diffusion chambers. In particular, a gas bubble in liquid hydrogen scatters light mainly in the forward direction, most of it between 0 and 10°, say (cf Fig.1) so that it is impossible to photograph the tracks at 90° to the incident light as is done in the usual chambers. For small bubble chambers the photographs may be taken with direct transmission in which the source of light is on the one side of the chamber and the photographic camera on the other (Refs.3-5). However, it is very difficult to use this system with a large hydrogen chamber since it is desirable not to employ large glasses as it is difficult to mount these on the main body of the chamber. The present

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SOV-120-58-1-6/43

A Photographic Setup for Large Hydrogen Bubble Chambers.

authors have therefore developed a method of illuminating and photographing on one side of the chamber only. This method was tried on the working hydrogen chamber described in Ref.5 (this issue) and is shown in Fig.2. The back wall of the chamber was in the form of a spherical mirror, at the centre of curvature of which the source of light was placed. The light reflected from this mirror is focussed back again at the source and does not enter the objective of the photographic camera (B in Fig.2). The light which after reflection is scattered by the bubbles does enter the photographic camera and gives rise to the track images (Fig.3, facing p.35). The main disadvantage of this method is that in addition to the real images one gets the virtual images as well but these can be recognised by inspection or by a measurement of track co-ordinates by means of 2 stereo-photographs (the virtual image lies behind the mirror). A calculation of the scattered light as a function of angle,

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SOV-120-58-1-6/43

A Photographic Setup for Large Hydrogen Bubble Chambers.

the result of which is shown in Fig.1, is given in a mathematical appendix. There are 5 diagrams, no tables and 7 references, of which 4 are English and 3 Soviet.

SUBMITTED: June 3, 1957.

1. Bubble chambers--Equipment
2. Particles--Photographic analysis
3. Photography--Applications

Card 3/3

SOV/120-58-4-6/30

AUTHORS: Kolganov, V. Z., Lebedev, A. V., Nikitin, S. Ya.,
Smolyankin, V. T. and Sokolov, A. P.

TITLE: A Liquid Deuterium Bubble Chamber (Puzyr'kovaya kamera s
zhidkim deyteriyem)

PERIODICAL: Priroda i tekhnika eksperimenta, 1958, Nr 4, p 30 and
1 plate (USSR)

ABSTRACT: In Ref.1 the authors described a working hydrogen bubble chamber. ~~An experiment~~, described in the present article, was made to discover whether it is possible to use deuterium as the working liquid in the chamber. Two difficulties had to be kept in mind. First, it was expected that the presence of β -active tritium in deuterium (10^{-8} to $10^{-9}\%$) would lead to a large number of short tracks in the liquid and thus produce a considerable background. Experiments on deuterium in a diffusion chamber have been unsuccessful precisely for this reason (Ref.2). Secondly, the critical pressure of deuterium (16.5 atm) is considerably higher than the critical pressure for hydrogen (12.8 atm). It is well-known (Ref.3) that the

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SOV/120-58-4-6/30

A Liquid Deuterium Bubble Chamber

normal superheating of the liquid is effected [takes place] when the pressure in the chamber up before expansion is equal to two-thirds of the critical pressure. This condition may be easily satisfied if the chamber and the bath is filled with liquid deuterium. However, if the bath is filled with liquid hydrogen and the chamber with liquid deuterium, then it is impossible to obtain pressures greater than 8 atm in the chamber. For this reason it was feared that on expansion the superheating of the deuterium would be insufficient and the liquid would be insensitive to radiation. Experiments made to elucidate all these points have shown that it is possible to use deuterium as the working liquid in the bubble chamber without any special purification. The construction and operation of the deuterium chamber is similar in many ways to that of the hydrogen chamber. The bath was cooled down to liquid nitrogen temperature and was filled with liquid hydrogen. The chamber was then filled with technical deuterium which was not specially purified to remove tritium. The pressure in the hydrogen bath was increased to 12.4 atm and was kept at that level. After the thermal equilibrium between the chamber and the bath was

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SOV/120-58-4-6/30

A Liquid Deuterium Bubble Chamber

reached, an expansion of the working volume was carried out. In the absence of radioactive sources in the vicinity of the chamber no tracks or bubbles appeared in the working volume. When a Co^{60} source was placed near the chamber, pictures similar to that shown in Fig. 1 were observed after expansion. L.G. Landsberg and N.I. Makarov are thanked for their help in the experiment. There is 1 figure, no tables and 3 references, 2 of which are Soviet and 1 English. The authors also express their thanks to B.N. Dmitriyevskaya, director of the hydrogen liqued action station of the Laboratory of Nuclear Physics Problems (Laboratoriya yadernykh problem) of OIYAI, and to N.B. Delone who supplied the deuterium.

SUBMITTED: October 26, 1957

Card 3/3

1 0000 45 EAT(w)/EPP(c)/EHP(t)/EWP(b)
AP4041007

Pr-1 IEP(c)/ATA ED
S/0120/54/001 03/11/63-0025

Uger, G. K.; Kolganov, V. Z.; Lebedev, A. M.;
Sokolov, A. P.

Methods of designing liquid-hydrogen engine chambers. (A review)

Library#: tekhnika eksperimenta, no. 3, 1964, p. 25

Variable chamber, liquid hydrogen engine chamber, variable chamber

Based on 1946-53 Soviet sources and technical systems, mostly
in Russian, the review covers these points: development of
the principal parts and their arrangement; conical
illumination at small angles; metals and their housings
~~and their low-temperature characteristics; illuminators, their expansion-~~
valves, and gaskets used to meet these conditions.

REF ID: A4041007

and piston expansion mechanisms; radiation screens; auxiliary
safety devices and safety problems. Tables: large liquid-
crystal numbers (7 American, 2 French, 1 USSR, 1 British, and 1 ZEP
one with these characteristics reported) - overall space dimensions,
number and arrangement of illuminating lamps and system,
piston gasket, thermostatic control, operating mode, piston stroke, exposure,
false radius of curvature, etc. 14 formulas, and 4 tables.

NO REF ROW

ACCESSION NR: AP4031146

S/0056/64/046/004/1245/1256

AUTHORS: Guzhavin, V. M.; Kliger, G. K.; Kolganov, V. Z.; Lebedev, A. V.; Marish, K. S.; Prokoshkin, Yu. D.; Smolyankin, V. T.; Sokolov, A. P.; Soroko, L. M.; Ts'ui Wa-ch'uang

TITLE: Pion production in pp collisions at 650 MeV energy

SOURCE: Zh. eksper. i teor. fiz., v. 46, no. 4, 1964, 1245-1256

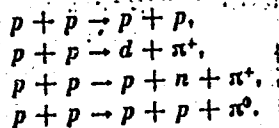
TOPIC TAGS: pion production, pion pion interaction, resonance scattering, Mandelstam representation, isotopic invariance

ABSTRACT: A liquid-hydrogen bubble chamber was used to investigate pion-nucleon correlations and the angle and energy distributions of pions produced by 650-MeV protons. The investigation was motivated by the few unanswered questions which the Mandelstam phenomenological resonance model (Proc. Roy. Soc. v. A244, 491, 1958) does not supply. Among these questions are the possibility that isospin is not con-

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ACCESSION NR: AP4031146

served and the role of the $(3/2, 3/2)$ resonance in pion production. Four reactions are investigated



The results of the investigation indicate that the experimental angular distributions of neutral and charged pions are consistent with the assumption of isotopic invariance. The contributions of πN -subsystem states with isospin $T_{\pi N} = 1/2$ and $3/2$ are measured and found to be $72 \pm 3\%$ in the latter case. The cross sections, the angular distributions, and energy spectra of the particles were determined by methods free of the influence of systematic errors inherent in experiments using particle counters. In addition, angle and energy

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ACCESSION NR: AP4031146

correlations were obtained in the three-particle processes (3) and (4); these characteristics could not be obtained by earlier procedures. The liquid-hydrogen bubble chamber makes it possible to carry out an exhaustive study of all pp scattering processes in a single experiment. It was confirmed that the cross section for pion pair production in this energy range is negligible. "In conclusion we thank the technicians and laboratory assistants for good operation of the liquid-hydrogen bubble chamber, the scanning group of ITEF headed by D. I. Tumanova, the scanning group of OIYaI who reduced the photographs, and also Ye. M. Landis and Ye. S. Gal'pern for setting up the program and performing the calculations on the electronic computer." Orig. art. has: 14 figures, 21 formulas, and 1 table.

ASSOCIATION: Institut teoreticheskoy i eksperimental'noy fiziki GKAE (Institute of Theoretical and Experimental Physics, GKAE); Ob"yedinenny*y institut yaderny*kh issledovaniy (Joint Institute of

Card 3/5

ACCESSION NR: AP4031146

Nuclear Research)

SUBMITTED: 14Nov63

DATE ACQ: 07May64

ENCL: 01

SUB CODE: GP, NP

NR REF SOV: 013

OTHER: 003

Card 4/5

ACCESSION NR: AP4031146

ENCLOSURE: 01

Comparison of pion energy spectra

Number of cases

(interval)	Т _{п⁺} , MeV. (интервал)	Число случаев		$\frac{N(\cos^2 \theta_{\pi^+} < 1/2)}{N(\cos^2 \theta_{\pi^+} > 1/2)}$
		$N(\cos^2 \theta_{\pi^+} > 1/2)$	$N(\cos^2 \theta_{\pi^+} < 1/2)$	
0-20		4	10	$1,8 \pm 0,5$
20-40		11	17	
40-60		18	34	$2,2 \pm 0,4$
60-80		13	33	
80-100		18	52	$1,9 \pm 0,3$
100-120		26	31	
120-140		28	41	$1,7 \pm 0,3$
140-160		11	27	
160-180		0	1	
0-180		129	246	$1,9 \pm 0,2$
Average energy	Средняя энергия, MeV	93 ± 5	90 ± 5	

Card 5/5

AFWL/SSL/ASD/a-5/ASD/a-5 (EJ 61)
NR: AP4047868

S/0056/64/047/004/1228/1231

Guzhavin, V. M.; Kliger, G. K.; Kolganov, V. Z.; Lebedev, G.
Kharish, K. S.; Musin, M. A.; Prokoshkin, Yu. D.; Smolyankin,
Golov, A. P.; Soroko, L. M.; Ts'ui, Wa-chuang

¹⁷
Elastic proton scattering at 650 MeV

Journal eksperimental'noy i teoreticheskoy fiziki, v. 47,
1963, 1228-1231

proton proton scattering, elastic scattering, angular
scattering cross section, differential cross section

A total of 1767 events of elastic p-p scattering at 650 MeV were
registered with the liquid-bubble chamber of the ITEP,
the beam of protons with energy 650 ± 3 MeV. The equip-
ment and procedure were described by the authors elsewhere (ZhETF
1964); the proton scattering angles were measured with

NR: AP4047888

reprojector (A. T. Vasilenko et al. PTE, No. 6, 34, 1957).
A comparison of the present data with earlier results
The angular dependence of the differential cross section,
per angle intervals of 3°, is deduced from the results and
by means of an empirical polynomial. "In conclusion we
Saidin for help with the measurements on the reprojector
microscope, and L. I. Lapidus for a discussion of the results."
has: 2 figures, 2 formulas, and 1 table.

Ob"yedinenny*y institut yaderny*kh issledovaniy
(Institute of Nuclear Research)

Apr64

ENCL: 00

NP REF SOV: 566

OTHER: 001

GITGARTS, D.A., inzh.; KOLGANOV, Ye.P., inzh.

Automatic control of the power factor of an induction melting
apparatus. Elektrotehnika 35 no.4:36-38 Ap '64. (MIRA 17:4)

ENT(d)/ENT(m)/ENP(v)/ENP(t)/ENP(z)/ENP(x) Yf-4 JD
NR: AR5012844 UR/0137/65/000/003/B016/B016

Ref. zh. Metallurgiya. Abs. 3B102

Shulgarts, D. A.; Polishchuk, Ya. A.; Koiganov, Ye. P.

46
43
10

TITLE: Automation of the control system for electrical conditions in induction electric furnace IAT-6

SOURCE: Elektrotermiya. Nauchno-tekhn. sb. vyp. 39, 1964, 11-12

INDEXING: induction melting, electric furnace, induction furnace, power control equipment, power transformer, power consumption, high frequency automatic control system, automatic regulation, current control, voltage control, IAT-6 induction furnace

ABSTRACT: Induction melting electric furnaces are used for melting ferrous and non-ferrous metals and are fed by single phase step-up transformers. During the melting period, constant correction of conditions is required to prevent over-

period, constant correction of conditions is required to prevent over-

NR AR5012844

to achieve the highest capacity. In induction melting electric installa-
high frequency current from electric generators. the Kalininsk elec-
this plant has installed an automatic regulator which, however, is not

3

...this plant has installed an automatic regulator which, however, is not suitable for installations operating on an industrial frequency. The new regulator, developed by VNIETO for IAT-6 installations, assures interconnected control of current, and power factor, and maintains the maximum effective power throughout the whole time of melting. The accuracy of regulation of the power factor by the automatic regulator is not less than 4-5%. Control of current and voltage is effected automatically by switching in step transformers for the voltage and also by regulation of the power factor. The automatic regulator maintains the power factor at 0.88-0.92 for small currents and at 0.95-1.0 for currents close to the rated value. Introduction of the tested automatic regulator in an IAT-6 installation gives a 5% increase in capacity and a 10% reduction of specific power consumption. The annual economic benefit from IAT-6 is 5000 rubles.

Electrotehnika)

SUB CODE: MM, EE

ENCL: 00

GITGARTS, D.A., inzh.; POLISHCHUK, Ya.A., inzh.; KOLGANOV, Ye.P., inzh.

Automatic regulator for induction smelting systems using commercial frequencies. Elektrotehnika 36 no.5:30-32 My '65.

(MIRA 18:5)

S/120/60/000/005/034/051
E032/E314

AUTHORS: Kolganova, E.D. and Rabin, N.V.

TITLE: Measurement of the "Noise" of the M6V-9 (MBI-9) ²⁸
Microscope ¹

PERIODICAL: Pribory i tekhnika eksperimenta, 1960, No. 5,
p. 134

TEXT: The present paper reports measurements on the MBI-9 microscope, which were designed to determine whether this microscope can be used to measure multiple Coulomb scattering ¹⁹ of charged particles in photographic emulsions. Measurements were made of the stage noise $\bar{\epsilon}_{st}$ and a total noise $\bar{\epsilon}_{tot}$ defined by

$$\bar{\epsilon}_{tot}^2 = \bar{\epsilon}_{st}^2 + \bar{\epsilon}_{reading}^2 + \bar{\epsilon}_{grain}^2$$

for second and third differences.

The Michelson interferometer was used to determine the stage noise both for horizontal and vertical displacements. The results obtained are given in the table and in the figure.

Card 1/3

S/120/60/000/005/037/051
E032/E314

Measurement of the "Noise" of the MBI-9 Microscope

Data for the stage of the microscope Koritska MS-2 (Ref. 1) and the stage with glass guides are given for comparison. Fig. 1 shows that in the case of the horizontal displacement of the stage the noise increases in proportion to the cell-size ($\bar{\epsilon}_2 \sim t$). It should be noted that the vertical noise in the case of rough refocusing reaches up to $\sim 0.1 \mu$ for the second difference when $t = 10 \mu$. The total noise $\bar{\epsilon}_{tot}$ was determined using horizontal proton tracks corresponding to an energy of ~ 100 MeV. Measurements were made using two microscopes, amplifications of 15×60 and 15×90 , and cell sizes of 20 and 100μ for which true Coulomb scattering was small ($< 0.05 \mu$). The magnitude of the noise is independent of the magnification and the cell-size, and does not change very much from microscope to microscope. The mean value of the total noise is $\bar{\epsilon}_2 \approx 0.16 \mu$, $\bar{\epsilon}_3 \approx 0.28 \mu$.

Card 2/3

S/120/60/000/005/039/051
EO32/E314

Measurement of the "Noise" of the MBI-9 Microscope

These data make it possible to use the MBI-9 microscope in the measurement of multiple Coulomb scattering of particles having a momentum of ~ 100 MeV/c whose tracks have a dip angle of less than 10 deg. It should be noted that the MBI-9 microscope is very convenient to use so that the particle energy can be rapidly measured. ✓

There are 1 figure, 1 table and 2 references: 1 Italian and 1 Soviet.

SUBMITTED: July 13, 1959

Card 3/3

VAYSENBERG, A.O.; KOLGANOVA, E.D.; RABIN, N.V.; PESOTSKAYA, Ye.A.

Ionization measurement in photoemulsions of type P. Prib. i
tekh. eksp. 6 no.2:57-59 Mr-Ap '61. (MIRA 14:9)
(Ionization) (Photographic emulsions)

VAYSENBERG, A.O.; SMIRNITSKIY, V.A.; KOLGANVA, E.D.

Study of the electron spectrum and asymmetry resulting from
 $\pi^- \rightarrow \mu^- + e^-$ decay in a nuclear photoemulsion. Zhur. eksp. i teor.
fiz. 40 no.4:1042-1049 Ap '61. (MIRA 14:7)
(Mesons--Decay) (Electrons)

VAYSENBERG, A.O.; KOLGANOVA, E.D.; MINERVINA, Z.V.

Angular distribution of μ -mesons in π - μ -decay. Zhur.ekspt'i
teor.fiz. 41 no.1:106-108 JI '61. (MIRA 14:7)

1. Institut teoreticheskoy i eksperimental'noy fiziki AN SSSR.
(Mesons) (Photography, Particle track)

Doc ID: A64047893

S/0036/64/047/004/1262/1269

Waysenberg, A. O.; Kelganova, E. D.; Kaban, N. V.

Mass spectrum of charged particles emitted upon absorption of negative pions by emulsion nuclei

14
Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 47, 1964, 1262-1269

AB: particle spectrum, negative pi meson, pion scattering, nuclear emulsion

This is a continuation of earlier work (Phys. Let. v. 2, 1962) and is aimed at obtaining more accurate data on the yields of different charged particles and their spectra. The work was done in nuclear emulsions, each measuring 100 x 100 x 0.4 mm, exposed to a low negative pion beam of the OJAI synchrocyclotron. Particle mass spectra were measured for the light (C, N, O)

I 12406 65

NR: AP4047893

(Ag, Br) emulsion nuclei. The emulsions were also exposed to negative pions (300 MeV). The results indicate that the yields of neutrons and tritons with energies ≥ 10 MeV from light nuclei integrated by slow negative pions are approximately 40 and 20%, respectively. The yield of neutrons with energies ≥ 20 MeV from heavy nuclei is close to 40% and is small for energies less than 10 MeV. Absorption of fast negative pions does not result in the emission of complex particles. A comparison of the results with calculations based on the direct-reaction theory shows that the experimental data are best described by the pole mechanism of a negative pion by a nucleon, if it is assumed that the emitted particle is the He^4 nucleus. "The authors are grateful to S. Shapiro for continuous interest and a discussion." Orig. contains 2 figures, 5 formulas, and 2 tables.

NR: None

NR: AP4047893

1 May 64

ENCL: 00

NP

NR REF SOV: 003

OTHER: 007

VAYSENBERG, A.O.; KOIGANOVA, E.D.; RABIN, N.V.

Measuring the masses of charged particles with a short residual
range in nuclear photographic emulsions. Priib. 1 tekhn. eksp. 9
no.4:71-75 JI-Ag '64. (MIRA 17:12)

VAYSENBERG, A.O.; KOLGANOVA, E.D.; RABIN, N.V.

Disintegration of photoemulsion nuclei by slow μ^- -mesons. IAd.
fiz. 1 no.4:652-658 Ap '65. (MIRA 18:5)

1. Institut teoreticheskoy i eksperimental'noy fiziki Gosudarstven-
nogo komiteta po ispol'zovaniyu atomnoy energii SSSR.

KOLGANOVA, Energiya Makarovna; KOLGANOV, Ivan Pavlovich; IVANOV, Yuriy Nikolayevich; SLUCHEVSKIY, G., red.; NIKOLAYEVA, T., tekhn. red.

[A trip across Kaliningrad Province] Puteshestvuite po Kalinigradskoi oblasti. Kaliningrad, Kaliningradskoe knizhnoe izd-vo, 1961. 220 p. (MIRA 14:10)
(Kaliningrad Province--Description and travel)

TAUEKIN, S., kand. tekhn. nauk; KOLGANOVA, M., inzh.

Fireproof and weatherproof paint. Pozh. delo 5 no.2:13-14 F '59.

(MIRA 12:3)

(Paint, Fireproof)

TAUBKIN, S., kand.tekhn.nauk; KOLGANOVA, M., inzh.

FAM fireproofing and water resistant coating. Pozh.delo 7
no.3:14 Mr '61. (MIRA 14:5)
(Fireproofing of wood)

I 7024-66 EWT(m)/EPR(e)/GWP(1)/T/ETC(m) HW/PM

APSO76835

SOURCE CODE: UR/0286/65/000/017/0121/0121

Author: S. I. Koiganova, M. N.

TOPIC: none

TITLE: A method for producing a fireproof coating. Class 75, No. 174537¹⁵

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 17, 1965, 121

TOPIC TAGS: fire resistant material, protective coating

ABSTRACT: This Author's Certificate introduces a method for producing a fireproof coating on wooden articles by treating the surfaces of the articles in an impregnating solution and then applying a varnish layer. The fireproofing properties of the coating are maintained while the grain of the wood is preserved by using about 25 wt. % potassium permanganate, about 13 wt. % kerosene catalyst, and about 1 wt. % water in the impregnation, while the varnish layer is produced by using a mixture of 90-95 wt. % nitrocellulose varnish and 10-5 wt. % chlorinated biphenyl.

UDC: 674.049.3

SUB CODE: HT/

SUBM DATE: 23Aug62/

ORIG REF: 000/

OTH REF: 000

Card 1/1

90

2

KOLGANOVA, M.N.; TAUBKIN, S.I.

Use of chloroprene latex in the manufacture of fire hose. Kauch.
i rez. 23 no.9:27-29 S '64. (MIRA 17:11)

1. Tsentral'nyy nauchno-issledovatel'skiy institut protivopozharnoy
oborony.

KOIGANOVA, N.S. (Moskva)

Some factors influencing the appearance of ventricular fibrillation during clinical death and resuscitation in acute hemorrhage in dogs. Pat. fiziol. i eksp. terap. 7 no.6:37-42
N-D '63. (MIRA 17:7)

1. Iz laboratorii eksperimental'noy fiziologii po ozhivleniyu organizma (zav. - prof. V.A. Negovskiy) AMN SSSR.

GURVICH, N.L.; KOLGANOVA, N.S.; SMIRENSKAYA Ye.M. (Moskva)

Restoration of cardiac activity in clinical death from acute blood loss complicated by ventricular fibrillation [with summary in English]. Pat.fiziol. i eksp.terap. 2 no.6:30-32 N-D '58.

(MIRA 12:1)

1. Iz laboratorii eksperimental'noy fiziologii po ozhivleniyu organizma AMN SSSR (zav. - prof. V.A. Negovskiy).

(HEMORRHAGE, exper.

induction of ventric. fibrill. & clin. death, restoration of cardiac activity in dogs (Rus))

(RESUSCITATION

clin. death induced by hemorrh. & ventric. fibrill., restoration of cardiac activity in dogs (Rus))

(VENTRICULAR FIBRILLATION, exper.

induced by hemorrh. & followed by clin. death, restoration of cardiac activity in dogs)

KOLGANOVA, N.S.

Resuscitation and its study; results of the scientific conference held
at the laboratory of Experimental Physiology of Resuscitation, on
October 23-25, 1957. Vest.AMN SSSR 13 no.2:83-85 '58. (MIRA 11:3)
(RESUSCITATION)

ZOLOTKRYLINA, Ye.S. (Moskva); RYABOVA, N.M. (Moskva); KOLGANOVA, N.S.
(Moskva); GURVICH, A.M. (Moskva)

Effect of the duration of cardiac massage on the condition of
the myocardium and on the restoration of vital activities.
Pat. fiziol. i eksp. terap. 6 no.6:22-28 N-D*62 (MIRA 17:3)

1. Iz laboratorii eksperimental'noy fiziologii po ozhivleniyu
organizma (zav. - prof. V.A. Negovskiy) AMN SSSR.

GURVICH, N.L.; KOLGANOVA, N.S.

Optimal form of impulses for electric stimulation of the heart¹
Biul. eksp. biol. i med. 51 no.5:30-32 My '61. (MIRA 14:8)

1. Iz laboratorii eksperimental'noy fiziologii po ozhivleniyu
organizma (zav. - prof. V.A.Negovskiy) AMN SSSR Moskva. Predstavlena
deystvitel'nym chlenom AMN SSSR V.V.Parinym;
(HEART) (HEART BLOCK)

ZOLOTKRYLINA, Ye. S.; KOLGANOVA, N. S.; RYABOVA, N. M.; PAVLOVA, T. Ya.

Treatment of hemodynamic disorders in traumatic shock and terminal states. Ortop., travm. i protez. no.12:9-16 '61.

(MIRA 15:2)

1. Iz Tsentra po lecheniyu shoka i terminal'nykh sostoyaniy pri bol'nitse im. S. P. Botkina (glavnyy vrach - prof. A. N. Shabanov, nauchnyy konsul'tant - prof. D. K. Yazykov) i laboratorii eksperimental'noy fiziologii po ozhivleniyu organizma (zav. - prof. V. A. Negovskiy) AMN SSSR.

(SHOCK)

KOLGANOVA, N. S.

Fibrillation and defibrillation of the heart during restoration of its activity following clinical death under conditions of hypothermia. Eksper. khir. no.3:15-21 '62. (MIRA 15:7)

1. Iz laboratorii eksperimental'noy fiziologii po ozhivleniyu organizma (zav. - prof. V. A. Negovskiy) AMN SSSR.

(DEATH, APPARENT) (HYPOTHERMIA) (HEART BEAT)

KOLGANOVA, N.S.

Effect of the method of cardiac resuscitation on the survival of dogs following fatal hemorrhage complicated by ventricular fibrillation. Biul. eksp. biol. i med. 59 no.2:40-43 F '65.

(MIRA 18:7)

1. Laboratoriya eksperimental'noy fiziologii po ozhivleniyu organizma (zav. - prof. V.A. Negovskiy) AMN SSSR, Moskva.

VEYTSMAN, L.N.; LANIN, F.I.; LEVIN, N.M.; KOLGANOVA, O.A.

Productivity of guinea hens kept in cages. Trudy Inst.gen.
no.20:249-256 '53.

(MLRA 7:1)

(Guinea fowl)

STRUKOV, I.T.; KOLGANOVA, O.A.; POTAPOVA, V.G.

Synthesis of new somnifacient preparations, tetridin and dimerin.
Med.prom. 13 no.9:9-12 S '59. (MIRA 13:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy
institut imeni S. Ordshonikidze.
(PYRIDINE) (PIPERIDINE)

GOLOVCHINSKAYA, Ye.S.; KOLGANOVA, O.A.; NIKOLAYEVA, L.A.; CHAMAN, Ye.S.

Synthesis in the series of purine derivatives. Part 4: Alkaline degradation of 1,3,9-trimethylxanthine derivatives. Zhur. ob. khim. 33 no.5:1650-1654 My '63. (MIRA 16:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut imeni S. Ordzhonikidze.
(Xanthine)

KOLGANOVA, T.

Our work practice. Den. i kred. 21 no.7:31-35 J1 '63.

(MIRA 16:8)

1. Upravlyayushchiy Teykovskim otdeleniyem Gosbanka Ivanovskoy oblasti.

(Teykovo—Banks and banking)

EPA(s)-2/CNT(m)/APE(c)/EER/ENP(i)/T Pc-4/Pi-4/Ps-4/Pt-10 RPL/
ASD(a)-5/RAEM(t)/ESD(t)/AFETP .M RM
NR AP4009832 S/0191/64-000-001-0024/0027

AUTHOR Golubkov, G. Ya.; Koiganova, V. A.

Effect of additions of polyalumoorganosiloxanes on the physical
properties of polydimethylpolyphenylsiloxanes

Plasticheskiye massy*, no. 1, 1964, 24-27

polydimethylpolyphenylsiloxane, polymethylpolyphenylsiloxane,
organosiloxane copolymer, polyalumoorganosiloxane, poly-
phenylsiloxane copolymer, physical properties, deformation,
composition, dielectric strength, electrical resistance

The changes in the properties of polydimethylpolyphenylsiloxanes
polymers with polyalumoorganosiloxanes were investigated in the
temperature interval. Polydimethylpolyphenylsiloxanes I and II are
II has the higher hardening temperature; II flows above 300C, I
flow above 450C; swelling of II in benzene vapors is reduced from

starts to flow above 450C; swelling of II in benzene vapors is reduced from

REF NR AP4009832

of I from 0.48 to 0.05. Addition of 2-15% polyortho phenylsiloxane cross-linking, the resulting copolymer undergoes no deformation on addition of 1-5% polyalumophenylsiloxane, does not flow at 450C. Addition of polyalumophenyl- or polyalumomethylphenyl-siloxane to I or II significantly raises the temperature at which decomposition starts and reduces loss, especially in copolymers with II. The decomposition is air sensitive once it starts, than in a nitrogen atmosphere. Addition of siloxanes does not make much difference in the dielectric strength of II. Comparison of the electric resistance, dielectric constants and loss show that polyalumophenylsiloxane does not have very high electrical properties. In the copolymers the dielectric losses increase with temperature somewhat more than in pure polymers I or II. Orig. figures and 1 equation.

REF None

REF 00

REF

ENCL 00

REF, EM

NO REF SOV: 004

OTHER 000

parameters. From these curves it is seen that although the stability of the 2 polymers differs at the lower weight loss it reaches agreement when the weight losses are stabilized (30%). Calculations were made assuming the rate of aging (i.e.,

NR: AP4012186

age in polymer properties on aging), followed the Arrhenius
law $\alpha_t = Ae^{-E/RT}$ using E, the activation energy, as 32 kcal./mole.

Calculations are in excellent agreement with experimental data.
The report has: 12 figures, 1 table and 1 equation.

ABSTRACT: None

CLASS: OO

ENCL: 03

REF:

NR REF SOV: 002

OTHER: 001

I 22608-66 EWP(e)/EWT(m) WH

SOURCE CODE: UR/0292/64/000/010/0015/0016

AUTHOR: Golubkov, G. Ye. (Candidate of technical sciences); Kolganova, V. A. 5

ORIG: none

TITLE: Electric properties of mica¹⁶ and mica-base materials at high temperatures

SOURCE: Elektrotehnika, no. 10, 1964, 15-16

TOPIC TAGS: mica, mica product, electric property, high temperature effect, resistivity, dielectric constant

ABSTRACT: The results are reported of an experimental investigation of the volume resistivity, loss angle, dielectric constant, and electric strength of mica, micaite, "micaplast" (phlogopite and inorganic bond), mica mat, and mica-glass cloth (mica mat, glass cloth, silicone bond); 50 x 50-mm, 0.1--0.2-mm thick specimens were tested at temperatures up to 500C. These findings are reported: (1) The volume resistivity of mica products at high temperatures is determined by mica; the resistivity of mica-glass cloth at 100--500C is by one order of magnitude higher than that of other materials; (2) The mica-mat $\tan \delta$ and ϵ at high temperatures are lower than those of other materials; (3) Thermal treatment of mica products improves the initial insulating properties of the above materials; at 500C the characteristics of treated and untreated materials are practically equal. Orig. art. has: 7 figures.

SUB CODE: 09 / SUBM DATE: none / ORIG REF: 003 / OTH REF: 001

Card 1/1

UDC: 621.315.613.t.001.4

GOLUBKOV, G.Ye., kand. tekhn. nauk; KOLGANOVA, V.A., inzh.

Electrical properties of mica and mica base materials at high
temperatures. Elektrotehnika 35 no.10:15-16 0 '64.
(MIRA 17:11)

KOLGATIN, D.F.; KOZLOV, N.F., inzh.

Conform to the technical specifications for the laying of continuous tracks. Put' i put.khoz. 7 no.12:3-6 '63. (MIRA 16:12)

1. Nachal'nik Kurovskoy distantzii puti Moskovskoy dorogi (for Kolgatin).
2. Kurovskaya distantsiya puti Moskovskoy dorogi (for Kozlov).

GRUMOV, L.K., kand. tekhn. nauk; KOLGATIN, D.F., inzh.; SHCHEPOTIN, K.I.,
inzh.

Expand the practice of important experiments. Put' 1 put. khoz.
9 no.9.16-17 '65. (MIRA 18:9)

KOLGATIN, D.F.

Use of asbestos ballast for the reconditioning of the roadbed.
Put' i put.khoz. 7 no.7:16 '63. (MIRA 16:10)

1. Nachal'nik Kurovskoy distantсии puti Moskovskoy dorogi.

KOLGATIN, D.F.

Machinery in snow protection and removal. Put' i put. khoz.
8 no.1:18 '64. (MIRA 17:2)

1. Nachal'nik Kurovskoy distantsii puti Moskovskoy dorogi.

KOLGATIN, D.F., inzh.

Putting an end to heaving. Put' i put. khoz. 9 no.12:30-31 '65.
(MIRA 19:1)

1. Stantsiya Kurovskaya, Moskovskoy dorogi.

KOLGATIN, N.N.

AUTHOR: Kolgatin, N.N., Glikman, L.A., Teodorovich, V.P. 32-9-21/43

TITLE: A Method for Long-Duration Tension Tests of Tube-Shaped Samples With Internal Hydrogen Pressures at High Temperatures (Metodika dlitel'nykh ispytaniy na razryv trubchatykh obraztsov pod vnutrennim davleniyem vodoroda pri vysokikh temperaturakh)

PERIODICAL: Zavodskaya Laboratoriya, 1957, Vol. 23, Nr 9, pp 1098-1101 (USSR)

ABSTRACT: A special plant and a special method of investigation, by which internal hydrogen pressures and the influence exercised by them on the refractoriness of the tubes (or, to be more accurate, upon their fatigue limit) are developed. There follows a description of the plants and of the experimental method. The sample is heated in an electric furnace up to the given temperature for 4-5 hours with a subsequent pause of 1 hour. Next, hydrogen is introduced through a valve until in the sample any pressure corresponding to the amount of tension in the walls of the sample is attained. The amount of this tension is computed according to a formula. In order to ascertain the influence exercised by hydrogen upon the fatigue limit analogous investigations were carried out in nitrogen. It is shown that hydrogen exercises a considerable influence upon the reduction of the fatigue limit of steel "20" at 400, 450 and 500°. At all test temperatures and different times needed for the tearing of

Card 1/2

A Method for Long-Duration Tension Tests of Tube-Shaped Samples With Internal Hydrogen Pressures at High Temperatures 32-9-21/43

the samples of steel "20" in hydrogen, the character of destruction was observed to be brittle. An investigation of the same type of steel in nitrogen during a relatively short duration of tearing showed that the destruction of the tubes was accompanied by considerable plastic deformation. It was found that the destruction of steel "20" with internal hydrogen pressure always takes place at the granular boundaries. The plant described permits a simultaneous investigation of a relatively large number of samples of tubes. There are 7 figures and 7 references, 3 of which are Slavic.

ASSOCIATION: Leningrad Institute for Petroleum Refining and for the Production of Artificial Liquid Fuels (Leningradskiy institut po pererabotke nefi i polucheniyu iskusstvennogo zhidkogo topliva)

AVAILABLE: Library of Congress

Card 2/2

KOLBATION, N. N.

307/2389

PLATE I BOOK EXPLANATION

Abstraktsiyu nauki USSR

Microtype problem: *trudovogo slozha*; short story (Some Problems in the Strength of Solids; Collection of Articles) Moscow: Izdatel'stvo AN SSSR, 1979. 508 p. Khrata slip inserted. 2,000 copies printed.

Ed. of Publishing House: V. I. Aver'yanov, Tech. Ed.: B. D. Poznyak; Editorial Board: A. P. Ioffe, Academician; O. V. Kurlyumov, Academician; S. E. Zhurkov, Corresponding Member, USSR Academy of Sciences; B. F. Kostantinov, Corresponding Member, USSR Academy of Sciences; P. F. Vitman, Doctor of Physical and Mathematical Sciences, Professor (Resp. Ed.); L. A. Gilman, Doctor of Technical Sciences, Professor; E. A. Elstin, Doctor of Physical and Mathematical Sciences; V. A. Serepov, Doctor of Technical Sciences; V. A. Fridman, Doctor of Technical Sciences, Professor; S. S. Ioffe, Candidate of Technical Sciences (Deputy Resp. Ed.).

XUMORUM: This book is intended for construction engineers, technologists, physicists and other persons interested in the strength of materials.

CONTENTS: This collection of articles was compiled by the Federalnyy Estimatsionno-Tekhnicheskii Nauki AN SSSR (Department of Physical and Mathematical Sciences) and the Fiziko-Tekhnicheskii Institut AN SSSR (Institute of Applied Physics, Academy of Sciences, USSR) in commemoration of the 80th birthday of Nikolay Nikolayevich Davidenkov, Member of the Ukrainian Academy of Sciences, Member and Head of the Odesk' Promyshlennyy Materialovyy (Department of the Strength of Materials) at the Institute of Applied Physics, Academy of Sciences, USSR. Founder of the Tekhnicheskoye Metallovedeniye (Department of Physical Metallurgy) at the Leningradskoye Metallovedeniye Institut (Leningrad Polytechnical Institute), recipient of the Stalin Prize (1953), the Order of the Red Banner of Labor (1954) and the Order of Lenin (1955). The articles deal with the strength of metals, phenomena of imperfect elasticity, temper brittleness, hydrogen embrittlement, brittleness, influence of deformation speed on the mechanical properties of metals, rupture of metals, and general problems of the strength of plasticity of metals, rupture of metals, and some other problems. Numerous personalities are mentioned in the introductory article of Professor Davidenkov. References are given at the end of each article.

Davidenkov, N. N., B. G. Lazanyan, Ya. D. Shadrubov, and V. I. Kostantovich (Fiziko-Tekhnicheskii Institut AN SSSR-Institute of Applied Physics, Academy of Sciences Ukr. SSR, Kharkov). Low-temperature Polymorphism of Metals 61

Dukhan, S. G., and E. N. Ponomarevskiy (Institute of Applied Physics, Academy of Sciences, USSR, Leningrad). Time Dependency of Strength Under Different Load Conditions 66

Elshayev, A. Z., F. K. Gulyamov, A. A. Zhukhorovskiy, and B. F. Khabibullin. Influence of Stresses and Deformation on the Process of Diffusion 76

Fitas, B. T., and A. P. Alimova (Gosudarstvennyy Universitet imeni Gorb'eva, A. Khar'kov State University imeni Gorb'ya, Kharkov). Diffusion Group of Cast Specimens Prepared from Powdered Iron 87

Gryzhnev, M. G., and E. A. Yezhovskiy (Institut fiziki metallov UZAN SSSR, UZAN, Sverdlovsk). Influence of Metal Pyrolysis, Oxidation, and Deformation of Metals 93

Kocherzha, I. A. (Institut poprovednikov AN SSSR, Leningrad-Dept. of Applied Physics, Academy of Sciences, USSR, Leningrad). Relationship Between the Mechanical and Thermal Characteristics of Crystals 107

Garber, R. J., and I. I. Shubenko (Gosudarstvennyy pedagogicheskii Institut imeni G. S. Shverdlova, Kharkov). Strengthening of Rock Salt Crystals by Repeated Reverse Loading 111

Gryzhnev, M. G., and V. A. Taylor (Institute for Metal Physics, Ural Branch, Academy of Sciences, USSR, Sverdlovsk). Some Aspects of Stress Relaxation in Metals 116

Trubnikov, G. O., and Z. A. Paschenko (Politehnicheskii Institut imeni M. I. Kalinina, Leningrad). Increasing the Elastic Limit and Increasing the Plasticity of Metals During Cold Working and Tempering of Spring 120

Gilman, L. A., and E. E. Solov'eva (ITI po pererabotke uglei i polucheniya koksostroyeniya shchepki i koprii, g. Leningrad-Oblastskiy Nauchnyy Institut, Leningrad). Mixture of the Physical Field Point of Steel 130

307

KOLGATIN N. N

PLANS I BOOK INFORMATION SOV/JIS

Referred to: *zhurnal tekhnicheskoy fiziki*, No. 3 (Physical Metallurgy) Collection of Articles, No. 3, Minsk, 1959, 300 p., 3,200 copies printed.

Ed.: O. I. Ryzhin, Candidate of Technical Sciences; Literary and Tech. Ed.: E. I. Korovin.

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

CONTENTS: The articles report the results of investigations of 1) the effect of various factors on the susceptibility of constructional and heat-resistant steels and titanium alloys to brittle failure at various temperatures under various conditions of loading (long-time, short-time, cyclic, uniaxial, 2) alloying structure, and condition of alloys in terms of mechanical properties, and 3) systems of strengthening of steels and heat-resistant steels. The articles are accompanied by numerous Soviet and non-Soviet references. No illustrations are mentioned.

Editor: A. S., Doctor of Technical Sciences, Professor. Bureau of Steel-Enrichment Processes During Heating and the Effect of Alloying Elements on Steel

Topolov, Ye. D., Candidate of Technical Sciences; E. S. Zoloz, Engineer; and Ye. A. Kipovskiy, Technician. Effect of Nickel and Copper on Thermal Resistance of Chrome-Nickel-Titanium Constructional Steel 39

Buron, L. S., Doctor of Technical Sciences; and T. E. Mladin, Engineer. Mechanism of Hydrogen Enrichment in Steel 51

Orlovskiy, I. A., Doctor of Technical Sciences, Professor; E. E. Kozlovskiy, Candidate of Technical Sciences; and V. A. Kozlovskiy, Candidate of Technical Sciences. Causes in Mechanical Properties of Certain Steels Under the Action of Spontaneous High Temperature and Pressure 58

Kozlov, L. S., and Yu. B. Kuzin, Engineer. Investigation of the Mechanism of Hydrogen Enrichment of Titanium and Its Alloys 74

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TITLE: Sustained Strength of Steels During Investigation of Tubular Specimens Subjected to an Internal Pressure of Hydrogen at Elevated Temperatures (Dlitel'naya prochnost' staley pri ispytanii trubchatykh obraztsov pod vnutrennim davleniyem vodoroda pri vysokikh temperaturakh)

PERIODICAL: Metallovedeniye i Termicheskaya Obrabotka Metallov, 1959, Nr 3, pp 19 - 24 (USSR)

ABSTRACT: A.A. Zakharov (Ref 1) and Sh.N. Kats (Ref 2) have established that in certain calculations of the stresses in tubes subjected to internal pressures by a neutral medium, the sustained strength at elevated temperatures equals the sustained strength in ordinary tensile tests. Therefore, it is possible to use the results of sustained tensile tests for calculating the permissible stresses. In a number of cases, the permissible stresses can be chosen correctly only by taking into consideration the

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APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723820016-2"

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influence of the aggressive media which produce the internal pressures inside the tubes at the particular elevated temperatures. Of such aggressive media, hydrogen is of considerable importance. The authors of this paper have produced a test rig and evolved a method of testing for sustained failure of tubular specimens which are subjected to internal pressure of various media at elevated temperatures. This test rig has been described in earlier work of some of the authors of this paper (Ref 3). In the here described work it was applied for studying the sustained strength of tubular specimens of various steels subjected to internal pressure of hydrogen and nitrogen at elevated temperatures. As a neutral medium, molecular nitrogen was chosen which enabled evaluating the influence of hydrogen on the sustained strength of the tubes. The chemical compositions and the mechanical properties of the investigated (8) steels are entered in Tables 1 and 2. In addition to these, steel containing 6% Cr

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and supplementary additions of W, V, Mo and Nb was studied. Of the eight materials enumerated in Table 1, the tests on commercial iron were carried out at 450 °C and the respective results are graphed in Figure 1. A sharp drop in the sustained strength was observed for tubular specimens subjected to internal pressure of hydrogen; brittle failure with a pronounced intercrystallite character was observed, whilst in equal specimens subjected to internal pressure with nitrogen the failure was accompanied by appreciable plastic deformation and the failure was intracrystalline. The results for the other materials tested are also graphed. On the basis of the measured strength data for sustained loading for durations of 1 000 and 10 000 hours, it can be concluded that hydrogen has a considerable influence on the reduction of the sustained strength, particularly in the case of commercial iron and steel 20; at 450 °C these materials suffered a loss of 75 to 85% of their sustained strength. For low- and medium-alloy steels

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the drop in sustained strength was lower, amounting to 22 to 40% at 600 °C. Of the investigated low- and medium-alloy steels, the Soviet steel EI579 had the highest sustained strength at 600 °C, when subjected to hydrogen and nitrogen under pressure. An interesting feature of the results was that for this steel the sustained strength dropped with increasing wall thickness of the tubular specimens and this is attributed not only to the influence of ^{size} factor and surface defects but also to the more intensive influence of hydrogen as a result of the higher pressures which were applied to the thick-walled tubes (400 to 500 kg/cm² for wall thicknesses of 1.5-2 mm and 600 to 900 kg/cm² for wall thicknesses of 7 mm). The drop in sustained strength during loading by hydrogen under pressure at 600 °C was much lower (7-9% and 10-20%, respectively) for the high-alloy steels Kh12VMF and lKh18N9T. It can be considered an established fact that a drop in the

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sustained strength as a result of loading with hydrogen under pressure at elevated temperatures and pressures is caused basically by gradual "loosening" of the grain boundaries and weakening of the bonds between the crystallites which determine the sustained strength. There are 10 figures, 2 tables and 3 Soviet references.

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Changes in the mechanical properties of certain steels under
the effect of hydrogen at high temperatures and pressures.
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(Steel—Hydrogen content)
(Metals at high temperature)

