

KRUPAUER, KAMIL

CZECHOSLOVAKIA / Chemical Technology, Chemical Products H
and Their Application, Part 2. - Cer-
amics, Glass, Binders, Concretes. -
Glass.

Abs Jour: Ref Zhur-Khimiya, No 18, 1958, 61730.

Author : Kamil Krupauer

Inst : Not given.

Title : Contribution to Question of Studying Mechanical
Properties and Thermal Stability of Sight
Glasses.

Orig Pub: Chem prumysl, 1957, 7, No 11, 607 - 609.

Abstract: A study of mechanical properties of flat round
sight glasses (G) 215, 265 and 315 cm in dia.
depending on the pressure (1 to 7 atm) and
thickness (8 to 20 mm) and of their thermal sta-
bility at heating and rapid cooling was carried
out. Their chemical composition was (by weight)

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000826720016-9

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CZECHOSLOVAKIA / Chemical Technology, Chemical Products H
and Their Application, Part 2. - Cer-
amics, Glass, Binders, Concretes. -
Glass.

Abs Jour: Ref Zhur-Khimiya, No 18, 1958, 61730.

Abstract: SiO₂ - 73.7%, Al₂O₃ - 0.83%, Fe₂O₃ - 0.035%,
CaO - 6.4%, MgO - 0.04%, Na₂O + K₂O - 18.02%,
SO₃ - 0.22%, Cl - 0.1% and As₂O₃ - 0.6%. The
round G-s were preliminarily checked with a pol-
aroscope in order to establish whether the stress-
es were distributed uniformly in them, after
which they were fastened in rubber rings and
water was pumped with a hand operated piston
pump increasing the pressure at the rate of 4
atm per min. until cracks appeared in the glass.
The experimental results were plotted as graphs
with coordinates pressure and G thickness (at a
constant diameter); the following dependence was

CZECHOSLOVAKIA / Chemical Technology, Chemical Products H
and Their Application, Part 2. - Cer-
amics, Glass, Binders, Concretes. -
Glass.

Abs Jour: Ref Zhur-Khimiya, No 18, 1958, 61730.

Abstract: derived: σ is = $200 / 160 (1.5 - t)^2$, where t is
the thickness of the glass within the range from
0 to 1.5 cm. The mechanical strength of glasses
decreases with the increase of their diameter.
The test of the thermal stability showed that
the glasses stand temperature shocks of $45 \pm 5^\circ$
without breaking down; the admissible rate of
heating depends on the G thickness: it is 12°
per min. at 8 mm thickness and 2° per min. at
20 mm thickness.

Card 3/3

KRUPAUER, Vladimir, inz., CSc.

Research on fish culture in the seven-year plan. Vest ust
zemedel 10 no.10/11:408-410 '63.

1. Vyzkumny ustav rybarsky a hydrologicky, Vodnany.

DARONYAN, S.; KRUPCHANOV, L.

Award of the M.V.Lomonosov prizes for 1953. Vest.Mosk.un.8 no.9:171 S '53.
(MLBA 6:11)
(Moscow University--Prizes)

ACCESSION NR: AP4022900

S/0148/64/000/003/0179/0184

AUTHORS: Krupchatnikov, L. S.; Tseytlin, V. Z.

TITLE: Influence of surface cold working on the heat resistance of chromium nickel alloy

SOURCE: IVUZ. Chernaya metallurgiya, no. 3, 1964, 179-184

TOPIC TAGS: chromium nickel alloy, alloy EI617, cold working, heat resistance, tensile strength, isothermal heating, hardness ductility

ABSTRACT: This investigation of the influence exerted by cold working on the heat resistance of chromium-nickel alloy EI617 was undertaken in order to verify and expand the existing data. Cold work was applied by the ball-impact method described by N. I. Kuz'min (Novyy method otdelki poverkhnosti detaley naklepnyvaniyem, Informatsionno-tekhnicheskii listok N. 14, 1952. Vsesoyuznoye obshchestvo po rasprostraneniyu politicheskikh i nauchnykh znaniy). Flat and cylindrical samples were tested on a revolving table. By measuring the hardness on an oblique section, the depth of cold work influence was determined to be 0.9-1.0 mm. Surface hardness

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ACCESSION NR: AP4022900

exceeded core hardness by 41.4% and diminished with depth. The degree of cold work effect on the cylindrical samples was determined as the ratio: Volume (after cold work)/Volume (original) = 0.77. Residual compressive surface stresses produced by cold working were measured to be 51 kg/mm² by the method of M. N. Davidenkov (ZhTF, 1931, vy* p. 1). The process of cold working also produced slip lines in the metal structure. The samples were heated isothermally and held at temperatures of 600-1000C for 100 hours. Some residual stresses persisted, even after 100 hours at 800C. Slip lines began to diminish at 800C and disappeared at higher temperatures. Phase separation along grain boundaries became more intense as the time of exposure to high temperatures was increased. The thickness of the hardened metal was not affected by treatment at 600C, but diminished greatly at 900C. After 100 hours at 1000C the hardness was uniform throughout the sample. The progressive diminution of hardness with increase of temperature is shown on Fig. 1 of the Enclosures. Cylindrical samples, 8 mm in diameter and 40 mm long, were investigated for their tensile strength, one part being tested in the original condition and another after cold working. Experiments were conducted at 600, 700, 800, and 900C. Time-to-failure and ductility (necking) were recorded. It was determined that cold working slightly lowers the strength of this alloy, as shown in Fig. 2 of the Enclosures.

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ACCESSION NR: APL022900

The influence of cold working on the ductility is more pronounced, but diminished at higher temperatures. The relation between the temperature and necking is presented in Fig. 3 of the Enclosures. Orig. art. has: 8 figures.

ASSOCIATION: Moskovskiy institut elektronnoy mashinostroyeniya (Moscow Institute of Electronic Machine Construction)

SUBMITTED: 22Apr61

DATE ACQ: 10Apr64

ENCL: 02

SUB CODE: ML

NO REF SOV: 005

OTHER: 000

-Card 3/5

L 4301-66 EWT(1)/FCC GW

ACCESSION NR: AT5022877

UR/2789/65/000/063/0031/0036
551.551.5;551.557.5

AUTHORS: Krunchatnikova, T. P.; Litovchenko, V. P.

TITLE: Computing the distribution of turbulence in jet streams

SOURCE: Tsentral'naya aerologicheskaya observatoriya. Trudy, no. 63, 1965.
Voprosy dinamiki atmosfery (Problems of atmospheric dynamics), 31-36

TOPIC TAGS: turbulence coefficient determination, turbulence, turbulent flow,
turbulent jet, jet stream, approximation method

ABSTRACT: The authors study the problem of determining the parameters of turbulence in jet streams. The investigation takes into account the nonuniformity of the wind field in the horizontal plane. A first approximation to the solution of the system of equations for jet streams is taken for the case where the members

$\frac{\partial u}{\partial t}$, $\frac{\partial v}{\partial t}$, $u \frac{\partial u}{\partial x}$, $u \frac{\partial v}{\partial x}$, $v \frac{\partial u}{\partial y}$ and $v \frac{\partial v}{\partial y}$ are small with respect to the other members of the equation of motion; a further assumption is that the direction of the geostrophic wind is essentially invariant with altitude. The equations of motion under these circumstances may be written as

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L 4301-66

ACCESSION NR: AT5022877

$$k(x, y) \frac{\partial^2 u}{\partial z^2} + 2\omega_z v = 0$$

$$k(x, y) \frac{\partial^2 v}{\partial z^2} - 2\omega_z (u - u_g) = 0$$

$$\int_0^H \left[\left(\frac{\partial u}{\partial z} \right)^2 + \left(\frac{\partial v}{\partial z} \right)^2 \right] dz - \int_0^H \frac{k}{T} (\gamma_s - \gamma) dz = 0$$

$$v(z)|_{z=H} = 0$$

where axis x is in the direction of jet stream flow, y is the perpendicular horizontal axis, and z is the vertical, positive in the upward direction. The functions $u(x, y, z)$ and $v(x, y, z)$ are the real wind components; $k(x, y)$ - the turbulence coefficient which is viewed as being independent of altitude z ; $u_g(x, y, z)$ is the velocity of the geostrophic wind. Boundary conditions are

$$\frac{\partial u}{\partial z} = \frac{\partial v}{\partial z} = 0 \text{ at } z=0$$

$$u(z) \neq \infty, v(z) \neq \infty \text{ at } z \rightarrow \infty$$

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ACCESSION NR: AT5022877

The solution of this system for $z > 0$ is

$$u(x, y, z) = \frac{ab(x, y)}{2a(n^2 + 1)} e^{-az} [(n-1) \cos az + (n+1) \sin az] + \frac{b(x, y)}{n^2 + 1} e^{-az}$$

$$v(x, y, z) = \frac{ab(x, y)}{2a(n^2 + 1)} e^{-az} [(n+1) \cos az - (n-1) \sin az] - \frac{nb(x, y)}{n^2 + 1} e^{-az}$$

where

$$b(x, y) = (u_m - u_1) \left(\frac{r}{r + x |g|} \right)^2 e^{-y} = (u_m - u_1) f(x, y),$$

$$n = \frac{k^2}{2\omega_s},$$

$$a = \sqrt{\frac{\omega_s}{k}}.$$

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ACCESSION NR: AT5022877

The dimensionless parameters m and n are related to the turbulent layer thickness $2H$ by the equations

$$(n+1) \cos m - (n-1) \sin m = \sqrt{2n} e^{(1-\sqrt{2n})m}$$

$$m = \frac{n(\sqrt{2n}-1)+1}{M\sqrt{2n}(n^2+1)\{1+(1+\sqrt{2n})^2\}} f^2(x, y)$$

$$m = aH$$

$$M = \frac{\kappa \beta}{(u_m - u_1)^2 a^2}$$

The function $f(x, y)$ is related to m and n as plotted in Figure 1 on the Enclosure, where the parametric curves correspond to variations of x and y . Further curves are plotted to indicate the variation of turbulence coefficient with $f(x, y)$ and M . Figure 2 on the Enclosure is a three-dimensional plot of the parameter variation in the x - y plane. Orig. art. has: 3 figures and 6 equations.

ASSOCIATION: Tsentral'naya aerologicheskaya observatoriya (Central Aerological Observatory)

SUBMITTED: 00

ENCL: 04

SUB CODE: ES

NO REF SOV: 004

OTHER: 000

Card 4/8

L 4301-66

ACCESSION NR: AT5022877

ENCLOSURE: 01

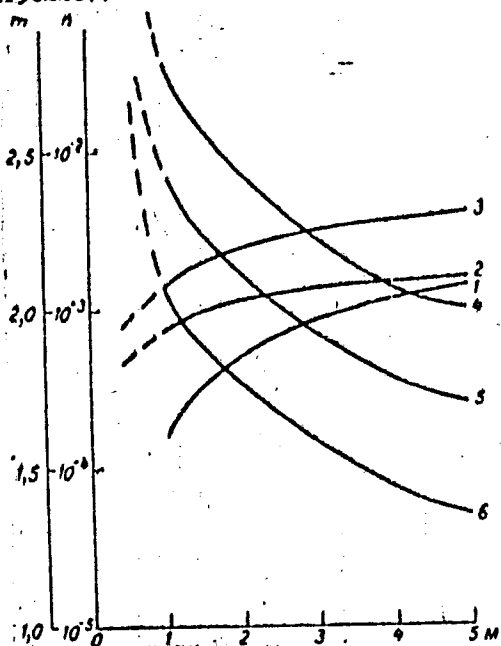


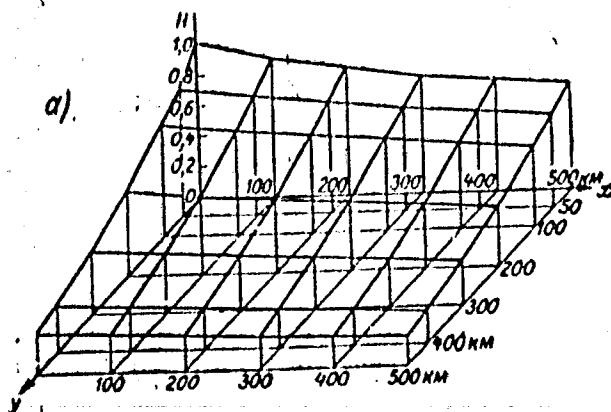
Fig. 1. Variation of dimensionless parameters m and n with the number M and the function $f(x, y)$

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L 4301-66

ACCESSION NR: AT5022877

ENCLOSURE: 02



to card 7/8

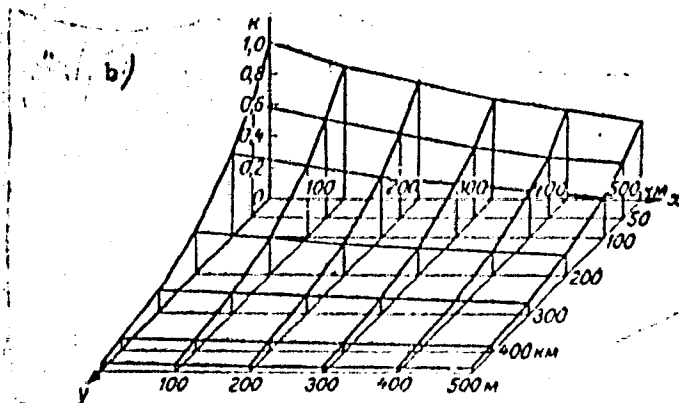
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L 4301-66

ACCESSION NR: AT5022877

ENCLOSURE: 03

from card 6/8



Card 7/8

to card 8/8

L 4301-66

ACCESSION NR: AT5022877

ENCLOSURE: 04

from card 7/8

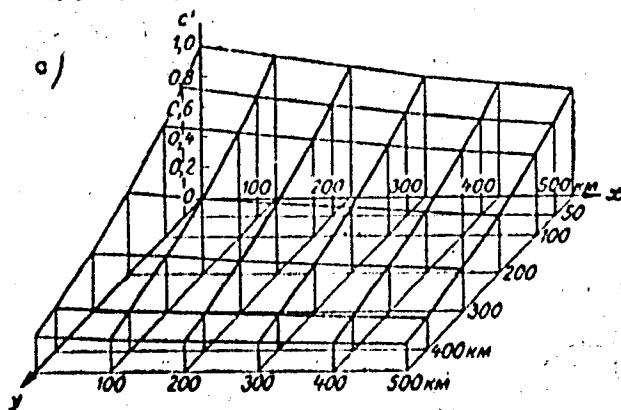


Fig. 2.
Spatial distribution of the turbulent layer $H(a)$, the turbulence coefficient $k(b)$, and the wind gust $c(c)$

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ACC NR: AP6015757

SOURCE CODE: UR/0048/66/030/005/0754/0757

AUTHOR: Vertsner, V.N.; Gerling, V.E.; Zenov, B.K.; Krupchatkin, V.D.; Omelin, V.M.; Solov'yov, A.M.; Toporkov, S.A.; Ustimonko, V.V. 10
12

ORG: none

TITLE: An x-ray microanalyzer featuring recording without a crystal ¹⁶ Report, Fifth All-Union Conference on Electron Microscopy held in Sverdlovsk 6-8 July 1965 ¹⁷

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no. 5, 1966, 754-757

TOPIC TAGS: x ray analysis, proportional counter, special purpose computer

ABSTRACT: An x-ray microanalyzer is described in which the x rays are recorded directly with a proportional counter without the use of a crystal diffraction x-ray spectrometer. This type of recording has the advantages of simplicity and high sensitivity, and the disadvantage of low resolving power. The electron-optical system of the instrument provides a 3-5 μ diameter probe with a current of about 1 μ A. Adjustment is facilitated by an optical microscope with a resolution of 3 μ and a working distance of 19 mm, which can be focused by means of a lever without breaking the vacuum. Type CPM-1 sealed off proportional counters as well as flow-type counters have been employed with this instrument. These counters with their associated circuits cannot resolve the K lines of neighboring elements. When the concentrations of neighboring elements

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L 36551-66

ACC NR: AP6015757

is to be determined, the counting rate versus pulse height curve is resolved mathematically into three curves, each representing the contribution of one of three neighboring elements. This resolution is effected automatically by a computing circuit, the operating principle of which is described and is based on a modification of the technique proposed by R.M.Dolby (Proc. Phys. Soc., 73 81 (1959)). The error in determining concentrations of neighboring elements is about 20 %; this large error is due to the long time required for the determination (at least 40 minutes) together with the instability of the proportional counter, the amplifier, and the differential discriminators. When the elements to be determined differ in atomic number by more than 4 or 5 units the different K lines are directly resolved and the error of the determination is not more than 5 %. Under these conditions the computing circuit can be used as a three-channel pulse analyzer for the simultaneous recording of the K line intensities of three different elements. Orig. art. has: 3 formulas and 5 figures.

SUB CODE: 20/

SUBM DATE: 00/

ORIG REF: 000/

OTH REF: 005

Cord 2/2/m.p

KRUPCHATNIKOV, V.M.

Use of multispeed electric motors in ventilating installations.
Vod. i san. tekhn. no.12:30-32 D '58. (MIRA 11:12)
(Electric motors) (Ventilation)

KRUPCHATNIKOV, V.M.

Calculation of heating apparatus in single-pipe heating systems
with closing sections for operation with superheated water. Vod.
i san. tekhn. no.9:24-29 8 '60. (MIRA 13:11)
(Hot-water heating)

KRUPCHATNIKOV, V.M.

Use of froth air washers in air-conditioning installations.

Vod. i san. tekhn. no.5:25-29 My '61.

(MIRA 1A:6)

(Air conditioning)

AMERICAN NUMBER 009849

BOOK EXPLORATION

198.25 : 553.76

Valentin Michaylovich

During work with radioactive substances (Ventilyatsiya pri rabotakh
s radioaktivnymi veshchestvami) Moscow, Akademiya Nauk SSSR, 1974.
128 p. 21 cm. 150,000 copies printed.

Author: Valentin Michaylovich, safety engineer, Institute of
Physics, Industrial Center, VNIIE.

This is one of the first books on the subject of
ventilation in the field of nuclear energy.
It is written in a simple and accessible style.
It is intended for a wide circle of readers.
It will be useful to all who work with
radioactive substances.

NOTES:

Foreword -- 3
Ch. I. Brief information on radioactive substances and their effect on the
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AM5000840

CONTENTS (continued)

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...

ACCESSION NR: AT4038393

S/2789/64/000/054/0074/0079

AUTHOR: Krupchatnikova, T. P.

TITLE: Turbulence in the vicinity of jet streams

SOURCE: Tsentral'naya aerologicheskaya observatoriya. Trudy*,
no. 54, 1964. Atmosfernaya turbulentnost' (Atmospheric turbulence),
74-79.

TOPIC TAGS: atmospheric turbulence, jet stream, vertical wind
profile, turbulent layer, jet stream turbulence

ABSTRACT: The article describes the results of a theoretical
study of the turbulence characteristics of a jet stream. This
work is based on previous studies by Laykhtman and others and on
the formulas they derived. Their principal assumptions are that
the geostrophic wind is a function of altitude, that the coeffi-
cient of turbulent exchange k varies exponentially in the vertical
plane of the jet stream, and that the stream is narrow. Formulas

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ACCESSION NR: AT4038393

are derived from which the vertical profile can be plotted and the thickness of the turbulent layer relative to the jet stream axis determined. Wind velocity profiles constructed with these formulas for the case when the coefficient of turbulent exchange close to the jet stream axis was $250 \text{ m}^2/\text{sec}$ and the vertical change in stream velocity with height was 0, 1/500, and 1/1000, showed that wind profiles differ significantly, depending on whether or not the turbulent exchange coefficient is variable or constant. The author thanks Professor D. L. Laykhtman for guidance in carrying out this work. Orig. art. has: 15 formulas and 1 figure.

ASSOCIATION: none

SUBMITTED: 00

DATE ACQ: 11Jun64

ENCL: 01

SUB CODE: ES

NO REF SOV: 003

OTHER: 000

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ENCLOSURE: 01

ACCESSION NR: AT4038393

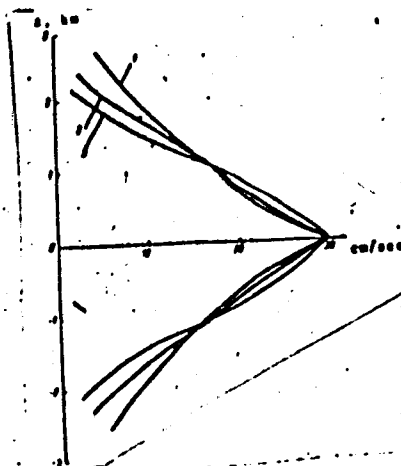


Fig. 1. Wind velocity profiles in jet stream, with $K_0 = 250 \text{ m}^2/\text{sec}$ and different values of β : 1 - $\beta = 0$; 2 - $\beta = 1/1000$; 3 - $\beta = 1/500$.

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CHERNOVA, V.S.; KUZ'MENKO, V.I.; GOL'DINOV, A.I.; KRUPCHINSKIY, A.A.;
KEPKO, P.N.

Design of a two-way pressure-type mechanical filter for the
purification of wter in water-condignioning units in electric power
plants. Suggestion by V.S. Chernov and others. Prom.energ.11
no.12:16-17 D '56. (MIRA 10:1)
(Feed-water purification) (Filters and filtration)

KRUPCHITSKIY, A. A.

RY

AUTHOR: Chernova, T. V.

(7/30-53-1-15/53

TITLE: Problems Concerning the Water Conditions in Electric Power Plants (Voprosy vodnogo rezhima elektrostantsiy) Conferences in the Institute of Power Engineering (oveshchaniya v energeticheskou institute)

PERIODICAL: Vestnik Akademii nauk SSSR, 1958, Nr 9, pp. 117-119 (USSR)

ABSTRACT: From May 26 to May 28 a scientific technical meeting was held by the Komissiya para vysokikh parametrov pri Energeticheskou institute im. G. M. Krzhizhanovskogo (Committee for High Pressure High Temperature Steam of the Power Engineering Institute imeni G. M. Krzhizhanovskiy). Problems of water conditions and water treatment were dealt with as well as the guarantee of the purity of steam in atomic power plants. Representatives of academic and branch institutes as well as of universities and other interested organizations participated in the conference. It was found that these problems have hitherto not carefully enough been dealt with. The investigation of thermo-physical and physico-chemical processes which take place in atomic power plants is regarded as a

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SOV/30-58-2-45/51

Problems Concerning the Water Conditions in Electric Power Plants. Conferences in the Institute of Power Engineering

main problem of research. It was recommended to promote the further development of radiometrical laboratories and to intensify coordination. It was decided to call a meeting which will have to deal with problems of the method of measuring, control measuring devices and others. From June 24 to June 27 a conference was held by the Committee for High Pressure High Temperature Steam and the Ministerstvo elektrostantsiy SSSR i Moskovskoye otdeleniye Nauchno-tekhnicheskogo obshchestva energeticheskoy promyshlennosti (Ministry of Electric Power Plants USSR and the Moscow Department of the Scientific Technical Association of Power Industry). In this conference the problems of water treatment in thermal power plants for different steam pressure were treated. The following reports were delivered: N. S. Shkrob opened the conference and spoke about the present state and the prospects in the development of water treatment in electric power plants in general. V. M. Kvyatkovskiy, N. E. Gvozdev, Ye. N. Krasotkin and others described plants for water treatment. A. A. Krupchitskiy spoke about the planning of combined cationic plants. O. N. Shemyakina dealt with the purification of water

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SCY/20-58-2-45/31

Problems Concerning the Water Conditions in Electric Power Plants. Con-
ferences in the Institute of Power Engineering

by means of filtering by absorbents. F. G. Frokhorov reported on the results obtained in the course of industrial experiments with installations for chemical salt-elimination. A. V. Pashkov spoke about new "ionites" for plants of water treatment. V. F. Chernov, S. M. Gurvich and others reported on the planning of equipments for the salt-elimination by chemical means.

The members of the conference decided upon concrete measures in the field of production of special equipment, filtering material and reagents. Proposals were made concerning the improvement of purification of water. In universities more experts in this field are to be trained.

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KRUPCHITSKIY, A. A.

007/24-59-10-34/34

AUTHOR: Bolonchov, M. S.
TITLE: Conference on Water Preparation in Thermal Power Stations (O vodopodgotovke na teplovyykh elektrostantsiyakh)
PERIODICAL: *Investiya Akademii nauk SSSR. Otslenkiye tekhnikeskikh nauk*, 1996, 3F, 29, 159-160 (USSR)

ABSTRACT: During June 24-27, 1998, a conference took place on problems of water preparation in thermal power stations of high, intermediate, super-draft and super-critical pressures. The conference was convened by the Institute on Steam of Very High Parameters of the Power Research Institute, Academy of Sciences USSR, Irkutsk G. M. KGBR and the Joint Scientific Institute of Power Stations of the Power Industry. Over 400 representatives of scientific tech establishments and of power stations participated. In the section on design, setting and operation of combined plant with magnesium desalting, the following papers were presented in setting up and operation of water treatment plant with desalting by means of magnesium, V. N. Kozlov (OMREZ).
 2) Waste and tanks in the development of plant for magnesium desalting of water in thermal power stations, V. M. Krut'ko, V. N. Krut'ko, Ye. N. Krut'ko and V. A. Krut'kovskiy (TrT).
 3) Schemes of automation of plant with desalting by means of magnesium, Ye. N. Krut'ko and V. A. Krut'kovskiy (TrT).
 4) Problems of designing combined calcium water treatment plants with magnesium desalting, A. A. Krupchitskiy (Khar'kovskoe obdelyeniye TEP).
 5) Desalting of the water by means of filters, O. M. Shyrgain (VChES).
 6) Investigations of the process of magnesium desalting of water at elevated temperatures, L. M. Zhyl'ov (TrT).
 7) Investigation of method of desalting water, L. M. Zhyl'ov (TrT).
 8) Experience in testing setting and operation of chemical desalting plant, the following papers were presented:
 1) Results of investigations and of industrial tests of chemical desalting plant and prospects of their application in thermal power stations with super-draft and super-critical steam parameters, V. S. Kuznetsov (Khar'kovskiy atomenergoproekt).
 2) New trends for water preparation plant and prospects of their industrial manufacture, A. V. Lyubov (Khar'kovskiy atomenergoproekt).
 3) Problems of design of chemical desalting plant, V. S. Kuznetsov (Khar'kovskiy atomenergoproekt).
 4) Automation of plant with magnesium desalting, V. S. Kuznetsov (Khar'kovskiy atomenergoproekt).
 In addition local representatives were represented. It transpired that during recent years setting up of water treatment plants of super-draft and super-critical pressures and setting up of magnesium desalting plants in thermal power stations has been developing rapidly. Successful installation of magnesium desalting plants together with the setting up of other water treatment plants in boilers, setting up of magnesium desalting plants in boilers and setting up of other water treatment plants (115 atm) boilers in steam turbine power stations which operate with a low temperature (200-250°C) as well as setting up of magnesium desalting plants in thermal power stations of the highest and super-critical pressures

Card 3/3

KRUPCHITSKIY, A.A., inzh.

Design of combined cationite water-treatment installations with
desiliconization by means of magnesium [with summary in English].
Teploenergetika 6 no.3:61-66 Mr '59. (MIRA 12:4)

1. Khar'kovskoye otdeleniye instituta "Teploelektroproyekt."
(Feed-water purification)

MRUCHINSKIY, V.

Team of Kudrat Meliukov, Hero of Socialist Labor; Andreev kolkhoz of the Kitab District, Kashka-Dar'ya Province Tashkent, Gos. izd-vo UzSSR, 1954. 20 p.

SOV/96-59-3-13/21

AUTHOR: Krupchitskiy, A.A., Engineer

TITLE: Problems in the Design of Combined Cationite Water Purification Installations with Magnesia Desilication (Voprosy proyektirovaniya kombinirovannykh kationitovykh vodopodgotovitel'nykh ustanovok s magnezial'nyim obeskremlivaniyem)

PERIODICAL: Teploenergetika, 1959, Nr 3, pp 61-66 (USSR)

ABSTRACT: This article is based on a report read by the author to a conference on water purification for thermal power stations organised by the High-Pressure Steam Commission of the Power Institute Ac.Sc.USSR and others. The use of steam pressured of 140 atm and more somewhat limits the field of application of water purification installations with magnesia de-silication. In the case of condensing stations using these steam conditions, de-silication is replaced by de-salting or evaporation. Again, heat and power stations which deliver industrial process steam can only use a limited proportion of de-silicated water for make-up. In such stations the normal conditions of condensate return govern the water purification process

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SOV/96-59-3-13/21

Problems in the Design of Combined Cationite Water Purification Installations with Magnesia De-silication

used, whilst the emergency conditions of condensate return govern the output of the water purification plant. The feed-water standards established by the Ministry of Power Stations concern normal operating conditions. A particular case is then considered of a heat and electric power station with boilers operating at a pressure of 140 atm situated on the River Irtysh and the consequences that follow from the new standards are discussed. The conclusion is that in this instance the water purification plant should comprise two installations, one for de-salting and one for de-silication. If hot lime treatment is used, the ratio of the outputs of the two types of water purification plant is more favourable to de-silication. Where it meets the technical requirements, such a combined installation is considerably cheaper than other methods of water purification. When constructing a station, the de-salting installation should be built first, so that the boilers can be supplied whilst the station is being started up. The inclusion of de-silication facilities

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SOV/96-59-3-13/21

Problems in the Design of Combined Cationite Water Purification Installations with Magnesia De-silication

is much more advantageous in stations with boiler pressures of 100 atm and lower. By way of example, Table 1 gives calculated data of water purification plant for a particular heat and electric power station equipped having boilers operating at a pressure of 100 atm with an extension scheme involving boilers at a pressure of 140 atm. Design experience has shown that the obligatory use of standard designs has many disadvantages. It should suffice to standardise the water purification building and such individual components of the plant as affect the unloading of reagents regeneration circuit etc. The principal technological fundamentals of the design should conform to the particular conditions at the station. Difficulties have been caused by lime of poor quality. Such lime is usually unloaded by hand but by a new arrangement of lime warehouses the use of self-unloading wagons has become possible. A schematic diagram of the arrangement is seen in Fig.1. A similar scheme for unloading salts from

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SOV/96-59-3-13/21

Problems in the Design of Combined Cationite Water Purification
Installations with Magnesia De-silication

railway trucks is briefly described and illustrated schematically in Fig.2. Acid and caustic soda may be unloaded by means of centrifugal pumps or, if a syphon is used, it may be primed by an ejector operated by compressed air as shown in Fig.3. Methods of dispensing the reagents are then discussed. Ways of measuring out lime and coagulant are described and are illustrated diagrammatically in Fig.4 and 5 respectively. Because of the high outputs of modern water purification plant, large individual units are required; for example, clarifiers have been developed with an output of 400 cu m per hour. Other large plant is briefly described. Recent designs of de-silication installations provide for the following degree of automatic operation: output of the water purifiers is regulated stepwise, according to the level in the intermediate tanks; the necessary quantities of reagent are measured out automatically according to the flow of raw water; washing down of the mechanical filters and regeneration of the cationite filters is automatic and so is neutralisation of the acid

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SOV/96-59-3-13/21

Problems in the Design of Combined Cationite Water Purification
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waters. At present automatic control of water purification is very expensive and its full application to large water purification installations would be uneconomic. By way of illustration, economic calculations are made for three types of installation with the results shown in Table 2. Although a number of novel large installations have been made, some were initially inoperative because of design and constructional defects, which sometimes took a long time to overcome. It is considered necessary to ensure that only high-quality reagents are delivered, particularly lime and filtering materials; it is necessary to develop and organise the production of measuring apparatus, automatic instruments and other water purification equipment; a research centre is required to deal with problems of

Card 5/6

SOV/96-59-3-13/21

Problems in the Design of Combined Cationite Water Purification
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water purification and a special design organisation
should also be set up. There are 5 figures, 2 tables.

ASSOCIATION: Khar'kovskoye Otdeleniye Instituta "Teploelektroproyekt"
(Khar'kov Division of the "Teploelektroproyekt" Institute)

Card 6/6

KRUPCHITSKIY, A.A., inzh.

Peculiarities in the design of large capacity chemical water purification installations for heat and electric power plants with high loss of condensate. Teploenergetika 7 no.6:58-62 Je '60. (MIRA 13:8)

1. Khar'kovskoye otdeleniye Teploelektroproyekta.
(Feed-water purification)

19473 KRYVITSKIY, A. I. Stareyskiy raioniy hospital'. Izv. Lav. vuzov. hospital'a
Voorush. Gll. SSSR na. Akad. Burbenko. VII. S. N., 1947, S. 9-10.

SC: Letopis, No. 32, 1949.

KRUPCHITSKIY, Aleksandr Matveyevich

[Firstling of Russian medicine] Pervenets russkoi meditsiny.
Moskva, Voen.isd-vo, 1958. 170 p. (MIRA 12:3)
(MOSCOW--HOSPITALS)

BOGOMOLOV, I. A., KRITIN, S. Ya. and BOLKIN, V. P.

"(Part II) Dependence of Effective Number of Secondary Neutrons on Energy of Captured Neutrons".

Report appearing in 1st Volume of "Session of the Academy of Sciences USSR on the Peaceful Use of Atomic Energy, 1-5 July 1955", Publishing House of Academy of Sciences USSR, 1955.

SO: Sum 728, 28 Nov 1955.

(P.YE-MatL)
KROPCHITSKIY, P. A., Master ~~Sci~~ — (USSR) "Constants of U^{233} and Pu^{240} isotopes
for calculating nuclear reactors", Moscow, 1957. 10 pp, (Acad Sci USSR), 100 copies
(KL, No 39, 1957, p.94)

Krupchitskiy, P.A.

PA - 2305

AUTHOR:
TITLE:

KRUPCHITSKIY, P.A.
The Absorption Cross-section of Thermal Neutrons and the
Resonance Integral of the Absorption of Pu²⁴⁰. (Secheniye
pogloshcheniya teplovykh neytronov i rezonancnyy integral
pogloshcheniya Pu²⁴⁰, Russian).

PERIODICAL:

Atomnaya Energiya, 1957, Vol 2, Nr 3, pp 240 - 246 (U.S.S.R.)
Reviewed: 5 / 1957
Received: 4 / 1957

ABSTRACT:

Measurements were carried out on the heavy water reactor on the Academy of Science of the U.S.S.R. in two positions with different spectral composition of the neutron flux: Inside the lattice of the reactor (FERMI spectrum + thermal spectrum) and in the so-called thermal "well" ("column") of the reactor (almost thermal spectrum). The authors used plutonium with three different concentrations of the isotopes Pu²³⁹, Pu²⁴⁰, and Pu²⁴¹. The samples were immersed in the reactor and taken out again by means of an oscillator. The efficiency of the reactor specially switched off from automatic control fluctuated with the same period as the oscillations of the sample. There follows a description of the experimental device namely of the plutonium samples, the oscillator, the neutron chamber, the amplifier, and of the recording device. The series of measurements consisted of successive oscillations of samples. They occurred in the case of a moderate efficiency of the reactor (~300 Watt) without circulation of the heavy water by means of

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The Absorption Cross-Section of Thermal Neutrons and the Resonance
Integral of the Absorption of Pu²⁴⁰.

the heat exchanger. The following details are given: Investigation of linearity, dependence of the results on the oscillation period, determination of the coefficients k_1 and k_2 which determine the ratio between the flux of the resonance neutrons and the thermal neutrons in the "well" and in the lattice.

Measuring results are given in form of tables and in diagrams (averaged over some measuring series). In the case of samples of the weight chosen here there is no self-screening, a fact that agrees with theoretical estimates. The cross-sections of the absorption of neutrons by Pu²⁴⁰ for the "well" and for the lattice are $\sigma_{40}(\text{well}) = (560 \pm 35)$ barn and $\sigma_{40}(\text{lattice}) = (1010 \pm 120)$ barn respectively. Also the constants used for the computation of σ_{40} are given.

Discussion of the results: The here obtained cross-section of the absorption of thermal neutrons by Pu²⁴⁰ corresponds very accurately with the contribution made by the neutrons originating from the resonance level with the energy $E_r = 1,075$ to the cross-section corresponding to the thermal energy. This agreement indicates the

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The Absorption Cross-Section of Thermal Neutrons and the Resonance
Integral of the Absorption of Pu²⁴⁰.

absence of any strong levels of Pu²⁴⁰ in the case of energies lower than E_r down to negative energy values. The value of the cross-section Pu²⁴⁰ obtained here probably corresponds to the thermal energy of the neutrons $E_T = 0,025$ eV. (2 illustrations and 5 tables).

ASSOCIATION: Not given.
PRESENTED BY:
SUBMITTED: 22.9.1956
AVAILABLE: Library of Congress.

Card 3/3

Krupchitskiy, P.R.

13-4/40

AUTHORS: Bovin, V.V., Krupchitskiy, P.A., Pershin, I.I., Chirikov, B.V.

TITLE: Measurement of Primary Ionization Using the Method of Mean Gap Length in Wilson Chambers and Diffusion Chambers.
(Izmereniye pervichnoy ionizatsii po metodu sredney dliny prosвета v kamere Vil'sona i v diffuzionnoy kamere)

PERIODICAL: Izobry i Tekhnika Eksperimenta, 1957, Nr 3, pp.19-23
(and 1 plate) (USSR).

ABSTRACT: A detailed description is given of measurements of primary ionisation by the method of mean gap length between drops in tracks of particles in Wilson and Diffusion Chambers. The accuracy obtained was $\pm 10\%$ in the case of the Wilson Chamber (considerable overlapping; track length 10 cm) and $\pm 13\%$ in the case of the diffusion chamber (track length 2 cm). The following precautions must be taken in order to obtain such high accuracy. 1. 100% efficiency of condensation on ions is necessary (Ref.7). As a control on the efficiency of condensation particle tracks were separated into two parts by means of a field of 30 V/cm and a comparison of the number of drops

100-5-4/60

Measurement of Primary Ionization Using the Method of Mean Gap Length in Wilson Chambers and Diffusion Chambers.

down each of these components was carried out. Measurements were carried out on the positive component. Using this method, negative ions (in this case electrons) are separated out and this is useful since the efficiency of condensation on them is always less than 100% and can fluctuate considerably. Changes in the structure of tracks during separation into the two components (Ref.8) did not occur since electronegative admixtures were very small (less than 0.5% O_2). In order to guarantee 100% efficiency of condensation only the central part of the sensitive layer of the chamber was used. The temperature was stabilized.

2. In ionisation measurements it is necessary to use those parts of tracks which do not overlap strong droplet backgrounds.

3. Good illumination of tracks is essential. The Wilson chamber was illuminated by two flash lamps type MFK-600 and photography was carried out at an angle of 45° to the light beam on a highly sensitive 35 mm film (reduction 1:10, f:20). The diffusion chamber was illuminated continuously with the mercury lamp CBДM-250 . The photography

Card 2/3

120-3-4/40

Measurement of Primary Ionization Using the Method of Mean Gap Length in Wilson Chambers and Diffusion Chambers.

was carried out at an angle of 30° to the light beam. The objective of the photographic camera was controlled by a coincidence scheme using Geiger-Muller tubes.

4. High contrast films and developers were used. Fine grain developers are particularly undesirable.

5. Optimum magnification must be used in examining the tracks. The authors have used a magnification of 100. The measured value of primary ionisation for argon recalculated into minimum ionisation are in agreement with the values obtained by G.W. McClure (Ref.10). Similar agreement is obtained for air and carbon dioxide. The following values were obtained for the primary ionisation:-

Air:	21 ± 1.5 ions/cm
Argon	30 ± 2 ions/cm
Carbon dioxide	28 ± 2.5 ions/cm.

There are 7 diagrams, 3 tables and 14 references, 1 Russian, 10 English, 1 French and 1 German.

SUBMITTED: October 14, 1956.

AVAILABLE: Library of Congress.

Card 3/5

- 1. Cloud chambers
- 2. Ionization-Measurement
- 3. Photography

KRUPCHITSKIY, P.A.

89-10-8/36

AUTHORS

Belkin, V.F.; Krupchitskii, P.A.,
Orlov, Yu. V.

TITLE

Measuring Resonance Absorption of Neutrons in
Heterogeneous U/D₂O Systems.

PERIODICAL
ABSTRACT

(Ob izmerenii rezonansnogo pogloshcheniya neytronov v
geterogennykh sistemakh v uran - tyazheloy vode),
Atomnaya Energiya, 1957, Vol. 3, Nr 10, pp. 320-322 (USSR)
Into a tank filled with D₂O various uranium systems (square
lattices with a = 10,0; 6,3 and 3,4 cm; uranium rod
diameter 1,75; 1,1 and 0,568 cm) could be fitted. Besides,
a uranium converter of $\phi = 3$ cm, H = 10 cm was fitted into
the center which was irradiated with slow neutrons of the
Russian heavy water reactor. Indium foils, packed in
cadmium holders, were used as neutron detectors. The
coefficients α and Λ of the relation

$$- \Delta \mu \gamma = \gamma = \frac{\alpha}{8_3} (\rho^{3/2} + \Lambda \rho^2)$$

at $\alpha = 4,4 \text{ cm}^{1/2}$ and $\Lambda = 0,40 \text{ cm}^{-1/2}$. The expression
 $\gamma \rho^{-2/3}$ for the uranium D₂O system is, measured by means
of this method, lower than in the case of measuring by
other methods.

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Measuring Resonance Absorption of Neutrons in Heterogeneous U/D₂O Systems. 89-10-8/36

Further, the ratio of the neutron density in the lattice
center, opposite to the surface of the uranium rods, was
measured as well as for an uranium D₂O system (f_{η}) as also
for a Pb-D₂O system (f_{pb}). An average value of
 $0,050 \pm 0,015$ was obtained for $f_{\eta} - f_{pb}$. It was found that
by the introduction of a scattering substance (Pb) in the
lattice the uniform distribution of neutron density is
disturbed. The density on the surface of the uranium rods
is lower than in the center of the lattice.
There are 2 figures, 3 tables and 5 Slavic references.

None given.

April 23, 1957.
Library of Congress.

ASSOCIATION:
PRESENTED :
SUBMITTED:
AVAILABLE:

CARD 2/2

KRUPCHITSKIY, P.A.

21(8) PHASE I BOOK EXPLOITATION SOV/7593

International Conference on the Peaceful Uses of Atomic Energy, 2nd, Geneva, 1958.

Bolediye sovetskikh vobremenyakh yadernykh reaktorov i yadernykh energiy. (Reports of Soviet Scientists, Nuclear Reactors and Nuclear Power) Moscow, October, 1958. 707 p. (Series: Its Treaty, vol. 2) Brava slip inserted. 8,000 copies printed.

General Eds.: E.A. Dolzhenko, Corresponding Member, USSR Academy of Sciences; A.K. Kravtsov, Doctor of Physical and Mathematical Sciences, A.I. Lopyrevskiy, Member, Ukrainian SSR Academy of Sciences, Yu. I. Borilov, Corresponding Member, USSR Academy of Sciences, and V. I. Kursov, Doctor of Physical and Mathematical Sciences; Ed.: A.P. Alyub'yev; Tech. Ed.: Ye. I. Kozlov.

PURPOSE: This book is intended for scientists and engineers engaged in reactor designing, as well as for professors and students of higher technical schools where reactor design is taught.

CONTENTS: This is the second volume of a six-volume collection on the peaceful uses of atomic energy. The six volumes contain the reports presented by Soviet scientists at the Second International Conference on Peaceful Uses of Atomic Energy, held from September 1 to 13, 1958 in Geneva. Volume 2 consists of three parts. The first is devoted to atomic power plants under construction in the Soviet Union; the second to experimental and research reactors; and the third, which is predominantly theoretical, to problems of nuclear reactor physics and nuclear engineering. Yu. I. Kravtsov is the author of this volume. See SOV/2081 for titles of all volumes of the set. References appear at the end of the articles.

Belkin, I. M., Z. A. Krupchitskiy, M. S. Silyanov, and G. M. Rybnitskiy. Journal Neutron Density Distribution Along the Radius of Assemblies of Rod-shaped Heat Producing Elements (Report No. 2034)	199
Krasin, A. K., B. G. Dubovitskiy, N. R. Lantsov, Yu. Yu. Gluzher, S. L. Gombanov, A. V. Lasyov, L. A. Gerasova, V. V. Vasilov, Ye. I. Dolzhenko, and A. P. Semchenov. Studying the Physical Characteristics of a Beryllium-moderator Reactor (Report No. 2146)	255
Galman, A. D., S. A. Kozlovskaya, A. F. Kudik, Yu. G. Abov, V. P. Belkin, and Z. A. Krupchitskiy. Critical Experiment on an Experimental Heavy-water Reactor (Report No. 2036)	270
Marcink, O. I., V. Ya. Pukho, Ye. I. Pogudalina, V. V. Smolov, I. P. Truterev, S. T. Platonova, and G. I. Druzhina. Certain Problems in Nuclear Reactor Physics and Methods of Calculating Them (Report No. 2151)	288
Sinyutin, G. V. and V. M. Semerov. Determination of Control Rod Effectiveness in a Cylindrical Reactor (Report No. 2469)	313
Gelfand, Y. M., S. R. Fyrmberg, A. S. Frolov, and E. M. Chentsov. Solving the Monte Carlo Method of Random Sampling for Solving the Elastic Equation (Report No. 2141)	328
Lalstin, M. I. Neutron Distribution in a Heterogeneous Medium (Report No. 2159)	334
Kasarnovskiy, M. V., A. V. Stepanov, and F. L. Shchepov. Neutron Thermalization and Diffusion in Heavy Media (Report No. 2143)	351
Veynikh, A. I., V. S. Yermakov, and A. V. Lykov. Using the Onusager Theory for Studying Neutron Diffusion in the Absorbing Media of Nuclear Reactors (Report No. 2224)	366
Broder, D. L., S. A. Burkin, A. A. Rukusov, V. V. Levin, and V. F. Orlov. Studying the Spatial and Energy Distribution of Neutrons in Different Media (Report No. 2147)	374
Baitriyev, A. B. Boron Ionization Chambers for Work in Nuclear Reactors (Report No. 2083)	390
Kirillin, V. A., and S. A. Ushin. Experimental Determination of Specific Volumes of Heavy Water in a Wide Temperature and Pressure Range (Report No. 2471)	396

KRUPCHITSKY P.H.

912/100
8/120/54/900/000/000/000/008
8031/8411

Author: Yu.G. Baboyev, V.A. Buzhik, A.B. Zelenov, G.N. Zhuravskiy, E.D. Zhurav, Yu.F. and Zhuravskiy, K.S. Production of Polarized Neutrons by Reflection from a Cobalt Mirror

ABSTRACT: Theory & technical experiments, 1960, No. 4, pp. 51-55
TEXT: The method of obtaining polarized thermal neutrons by reflection from magnetic mirrors was described by Baboyev and Zhuravskiy (ibid. 1960, No. 3, pp. 17-21). In order to obtain neutrons with practically a single spin state it is necessary that the component of the induction B which is parallel to the surface of the mirror should be greater than a certain minimum value of B . This condition is satisfied practically all cases of pure cobalt if will have spins parallel to B . In the case of pure cobalt it will have spins strictly opposite, this is the condition for the quantity B_{\parallel} . Strictly speaking, this field in the gap of the magnet. According to Baboyev (ibid. 1960, No. 3, pp. 17-21) in 1700 gauss. As a result, the condition for complete polarization of neutrons reflected from a Cobalt Mirror

unpolarized mirror of pure cobalt can be written down in the form
(8 - 11) $\int 63X (8 - 11)$ (11)

The present authors have used these ideas to produce polarized neutrons. The experiment employed is shown schematically in Fig. 2. A magnet-arrangement was used consisting of a 100 mm diameter magnet with a length of 150 mm and a permeability of 110×10^6 . The distance from the center of the coil to the surface was 5 mm. The mirror was a cobalt mirror-polarizer was fixed between the magnet poles. The magnet-arrangement could be adjusted to the required position and in order to obtain a definite separation between the direct and the reflected beam, a special brass screen, which could be adjusted with the aid of a micrometer screw, was provided. The cobalt mirror was employed with a diameter of 100 mm \times 500 mm \times 40 mm. The cobalt was deposited electrolytically on a 5 mm thick copper plate. The analyzing mirror was held in another magnet and was also adjustable.
Card 2/4

KRUPCHITSKIY, E. A.

"Utilization of the Heavy Water Reactor TWR for Nuclear Physics and
Reactor Physics Experiments."

report presented at the Symposium on Programming and Utilization of Research
Reactors, IAEA, Vienna, 16-21 Oct 1961

KRUPCHITSKIY, P.A., kand. fiz.-mat. nauk, red.; ZAVODCHIKOVA, A.I., red.;
POPOVA, S.M., tekhn. red.

[Neutron physics] Neitronnaya fizika; sbornik statei. Moskva, Gos.
izd-vo lit-ry v oblasti atomnoi nauki i tekhniki, 1961. 371 p.
(MIRA 14:11)

(Neutrons)

33240

S/089/62/012/002/012/013
B102/B138

21.5110

AUTHORS: Abov, Yu. G., Belkin, V. F., Krupchitskiy, P. A.

TITLE: Criticality stand tests of a heavy-water reactor with rod-shaped fuel elements

PERIODICAL: Atomnaya energiya, v. 12, no. 2, 1962, 156 - 159

TEXT: It is hard to make accurate enough calculations for systems with porous fuel elements, as used in power reactors. A special test stand has been developed for checking theoretical results (Fig. 1), and used to find the critical size for heavy-water reactors with various different fuel rod systems. A scram system automatically stops chain reactions when criticality is exceeded. The critical dimensions of five types of working channels were determined in dependence on lattice pitch. Average weight of the fuel elements, uncoated uranium rods (density 18.80 g/cm^3) was $793.0 \pm 1\text{g}$. Criticality was determined from counting rate using four CHM-3 (SNM-3) neutron counters. The heavy-water temperature was kept at

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33240

Criticality stand tests of a ...

S/099/62/012/002/012/013
B102/B138

Fig. 1. Test stand for criticality experiments.

Legend: (1) inner tank 3.5 m high, 3 m in diameter coated outside with 0.5 mm Cd. (2) outer tank, (3) connecting pipe, (4) reflux valve, (5), (7) electrically operated gate valves, (6) pump, (8) water shedding valve, (9) dump tank, (10) water gage glass, (11), (13), (15) hand-operated valves, (12) "breather" line, (14) metering tanks with heavy water; (16) control rods (2 scram rods, 1 regulating rod), (17) neutron source, (18) boron neutron counters.

Fig. 2. Working channel.

Legend: (1) Steel attachment for uranium rods, (2) surrounding (Avial') tube, (3) shielding Avial tubes, (4) remote Avial lattice. ✓

Card 3/4 3

KRUPCHITSKIY, P.A.

"SOVIET PROGRESS IN NEUTRON PHYSICS." New York, Consultants Bureau, 1963
269 p., diags., graphs, tables.
Translated from the original Russian title: Neutronnaya Fizika, Moscow, 1961
Includes bibliographies.

ABOV, Yu. G.; KRUPCHITSKIY, P. A.; CRATOVSKIY, Yu. A.

"On the existence of internucleon potential nonconserving space parity."

reports submitted for Intl Conf on Low & Medium Energies Nuclear Physics,
Paris, 2-8 Jul 64.

ABOV, Yu.G.; KRUPCHITSKIY, P.A.; ORATCVSKIY, Yu.A.

Existence of an internucleon potential not maintaining spatial parity. IAd. fiz. 1 no.3:479-489 Mr '65. (MIRA 18:5)

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

L 1962-66 EWT(m)/T/EWA(m)-2

ACCESSION NR: AT5024122

UR/3138/65/000/348/0001/0015

AUTHOR: Vishnevskiy, M. Ye.; Galanina, N. D.; Semenov, Yu. A.; Krupchitskiy, P. A.;
Berezin, V. M.; Murysov, V. A.TITLE: Measurement of the difference in the masses of K_2^0 - and K_1^0 - mesonsSOURCE: USSR. Gosudarstvennyy komitet po ispol'zovaniyu atomnoy energii. Institut
teoreticheskoy i eksperimental'noy fiziki. Doklady, no. 348, 1965. Izmereniye
velichiny raznosti mass K_2^0 - and K_1^0 , 1-15

TOPIC TAGS: meson beam, K meson, pi meson

ABSTRACT: The value of the difference in the masses of K_2^0 - and K_1^0 -mesons was obtained by measuring the dependence of the intensity of coherent regeneration of K_1^0 -mesons in a beam of K_2^0 -mesons on the thickness of the regenerator (copper and aluminum). K_1^0 -mesons were recorded on the basis of the decay $K_1^0 \rightarrow \pi^+ + \pi^-$ with the aid of a magnetic spectrometer with scintillation counters and spark chambers. The distributions of the events over the mass of the decaying particle and angle between its momentum and the direction of the primary beam are given. In all, 196 events of coherently regenerated K_1^0 mesons were recorded. The value $\Delta m = (0.82 \pm 0.14) \hbar/\tau_1 c^2$ was obtained. "The authors thank Academician A. I. Alikhanov and

Card 1/2

L 1962-66

ACCESSION NR: AT5024122

10

S. Ya. Nikitin for their interest in the work, L. B. Okun' and I. Yu. Kobzarev for their discussion, L. L. Gol'din and members of the technical staff for supervising the operation of the accelerator, and A. K. Dubasov, V. N. Markizov, N. P. Naumov, V. N. Kuz'menkov, and Yu. S. Oreshnikov for assistance in setting up the apparatus and for carrying out the measurements." Orig. art. has: 4 figures, 1 formula.

ASSOCIATION: Institut teoreticheskoy i eksperimental'noy fiziki, Gosudarstvennyy komitet po izpolzovaniyu atomnoy energii (Institute of Theoretical and Experimental Physics, State Committee for Application of Atomic Energy)

SUBMITTED: 16Apr65

ENCL: 00

SUB CODE: NP

NO REF SOV: 005

OTHER: 005

MC
Card 2/2

ACC NR: AP6030156

(A)

SOURCE CODE: UR/0120/66/000/004/0195/0196

AUTHOR: Abov, Yu. G.; Bulgakov, M. I.; Gul'ko, A. D.; Yermakov, O. N.; Krupchitskiy, P. A.; Oratovskiy, Yu. A.; Trostin, S. S.

ORG: Institute of Theoretical and Experimental Physics, GKAE, Moscow (Institut teoreticheskoy i eksperimental'noy fiziki GKAE)

TITLE: Production of polarized beams of thermal neutrons by means of a pile of cobalt mirrors

SOURCE: ²⁷Pribery i tekhnika eksperimenta, no. 4, 1966, 195-196

TOPIC TAGS: neutron beam, thermal neutron, nuclear research reactor, cobalt, neutron polarization, collimator

ABSTRACT: A unit for the production of polarized neutron beams needed for experimental purposes is described. The unit, shown below, consists of a collimator and a pile of cobalt mirrors. The collimator, consisting of 10 convergent slits separated by vertical steel plates, is placed in the horizontal channel of a reactor. Each of the cobalt mirrors is backed by glass and the length of each mirror is made up of three separate units $350 \times 125 \times 3 \text{ mm}^3$ in size. The top and bottom ends of the mirrors are fitted into 10 slots bored through the connecting strips and clamped with wedge clamps so that each mirror has a corresponding slit in the collimator.

Card 1/3

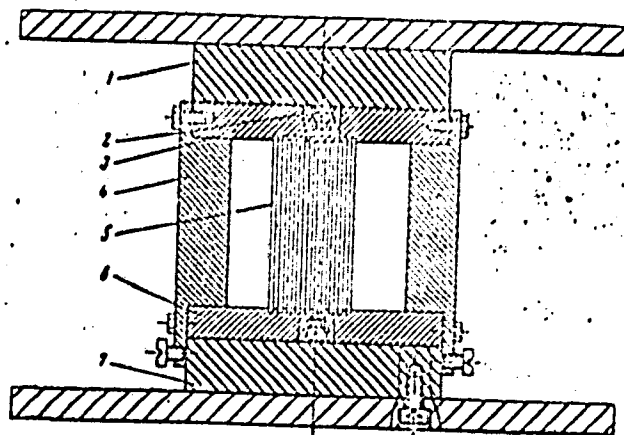
UDC: 539.1.078.539.125.5

ACC NR: AP6030156

The pile of mirrors is set into an electromagnet. The mean angle of beam incidence on a corresponding mirror is 7.5° and all neutron beams reflected by the mirrors converge at a distance of 4.5 m from the pile of mirrors. The incident and reflected beams are separated by means of a sliding screen system made of boron carbide situated near the target. The flow of polarized neutrons on a specimen with an area of $100 \times 10 \text{ mm}^2$ amounted to 3×10^7 neutrons/sec. The degree of neutron beam polarization amounted to $\sim 90\%$, and the polarization efficiency of 95%. The authors thank V. A. Beketov and N. S. Shatlovskaya for making the cobalt mirrors, Yu. Ya. Garrison for assembling the pile of mirrors, and A. I. Savushkin, V. K. Rissukhin, O. M. Svetlov, and I. L. Karpikhin for helping with the measurements. Orig. art. has: 1 figure.

Card 2/3

ACC NR: AP6030156



1. upper magnetic pole, 2. wedge clamp, 3. upper connecting strip, 4. side wall (brass), 5. cobalt mirror, 6. lower connecting strip, 7. lower magnetic pole

SUB CODE: 20, 18/ SUBM DATE: 31Jul65/ ORIG REF: 001/ OTH REF: 002

Card 3/3

030156

(A)

SOURCE CODE: UR/0120/66/000/004/0195/0196

AUTHOR: Abov, Yu. G.; Bulgakov, M. I.; Gul'ko, A. D.; Yermakov, O. N.; Krupchitskiy P. A.; Oratovskiy, Yu. A.; Trostin, S. S.

ORG: Institute of Theoretical and Experimental Physics, GKAE, Moscow (Institut teoreticheskoy i eksperimental'noy fiziki GKAE)

TITLE: Production of polarized beams of thermal neutrons by means of a pile of cobalt mirrors

SOURCE: Pribory i tekhnika eksperimenta, no. 4, 1966, 195-196

TOPIC TAGS: neutron beam, thermal neutron, nuclear research reactor, cobalt, neutron polarization, collimator

ABSTRACT: A unit for the production of polarized neutron beams needed for experimental purposes is described. The unit, shown below, consists of a collimator and a pile of cobalt mirrors. The collimator, consisting of 10 convergent slits separated by vertical steel plates, is placed in the horizontal channel of a reactor. Each of the cobalt mirrors is backed by glass and the length of each mirror is made up of three separate units $350 \times 125 \times 3 \text{ mm}^3$ in size. The top and bottom ends of the mirrors are fitted into 10 slots bored through the connecting strips and clamped with wedge clamps so that each mirror has a corresponding slit in the collimator.

Card 1/3

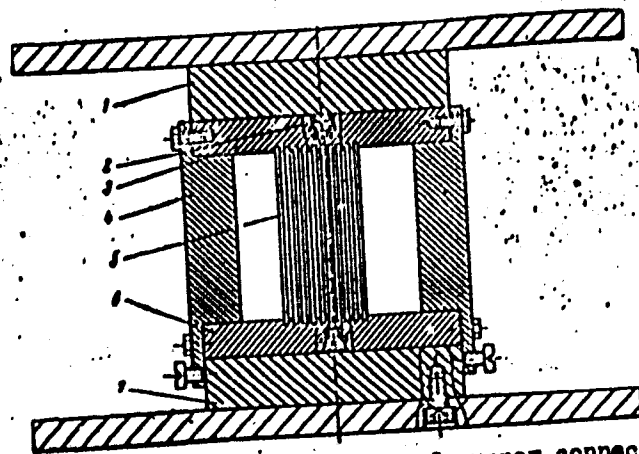
UDC: 539.1.078.539.125.5

ACC NR: AP6030156

The pile of mirrors is set into an electromagnet. The mean angle of beam incidence on a corresponding mirror is 7.5° and all neutron beams reflected by the mirrors converge at a distance of 4.5 m from the pile of mirrors. The incident and reflected beams are separated by means of a sliding screen system made of boron carbide situated near the target. The flux of polarized neutrons on a specimen with an area of $100 \times 10 \text{ mm}^2$ amounted to 3×10^7 neutrons/sec. The degree of neutron beam polarization amounted to — 90%, and the polarization efficiency of 95%. The authors thank V. A. Beketov and N. S. Shtolovskaya for making the cobalt mirrors, Yu. Ya. Garrison for assembling the pile of mirrors, and A. I. Savushkin, V. K. Rissukhin, O. M. Svetlov, and I. L. Karpikhin for helping with the measurements. Orig. art. has: 1 figure.

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ACC NR: AP6030156



1. upper magnetic pole, 2. wedge clamp, 3. upper connecting strip, 4. side wall (brass), 5. cobalt mirror, 6. lower connecting strip, 7. lower magnetic pole

SUB CODE: 20, 18/ SUBM DATE: 31Jul65/ ORIG REF: 001/ OTH REF: 002

Card 3/3

KRUCHINSKIY, Yu. I. and KUMAROV, S. S.

"Izmeneniye ponyatiya o dopolnitel'noy stenke k ravnym potrennykh
toploprovodov." (Use of the Concept of the Supplementary Shell in the
Calculation of Underground Heat Conductors). Leningrad, Central'nyy
Geotekhnicheskyy Institut im. I. I. Fel'dmana. Sbornik truzov (Collected
Works), No. 11, 1954.

RUDNIN, German Viktorovich; GUREVICH, T.V., retsenzent; KRUFÉ,
V.A., retsenzent; KULIK, M.S., otv. red.;
YASNOCORODSKAYA, M.M., red.

[Agricultural meteorology] Agrometeorologiya. Leningrad,
Gidrometeoizdat, 1964. 277 p. (MIRA 17:8)

KRUPEL'NITSKIY, M. K. (Lab. Asst.)

"Hexahedral Isolation Building for Animals." 2 figures
of the building.

Veterinariya, Vol. 38, No. 6, 1961. p. 77

Krupel'nitskiy, M. K. - Kamenets-Podol'sk Agricultural Institute.

KRUPEL'NITSKIY, M.K., laborant

Hexahedral isolation ward for animals. Veterinariia 38 no.6:
77-78 Je '61. (MIRA 16:6)

1. Kamenets-Podol'skiy sel'skokhozyaystvennyy institut.
(Quarantine, Veterinary)

KRUPEN', A.A., rayonnyy akusher-ginekolog

Simultaneous pregnancy and labor in a woman with a double uterus.
Zdrav. Belor. 5 no. 12:50 D '59. (MIRA 13:4)

1. Iz Uzdenskoj rayonnoj bol'nitsy Minskoy oblasti (glavnyy vrach
rayona M.M. Gerasimenko).

(PREGNANCY, PROTRACTED)

(UTERUS--ABNORMITIES AND DEFORMITIES)

KRUPEN', A.I., kand.tekhn.nauk

Types of intermediate yards used in connection with prolonged
tracks. Zhel.dor.transp. 40 no.10:48-50 0 '58. (MIRA 11:12)
(Railroads--Yards)

KRUPEN', A.I., kand. tekhn. nauk; MATYSEK, V.G.

Practices in building engineering structures during the construction of the Karaganda-Karagayly line. Transp. stroi. 15 no.3:15-17 Mr '65. (MIRA 18:11)

1. Nachal'nik mostopoyezda No.431 (for Matysek).

KRUPEN', A.I., kand.tekhn.nauk; ARTEM'YEV, V.I., inzh.; TUMARINSON, N.S.,
Inzh.

Laying and ballasting track on the Karaganda - Karagayly line.
Transp. stroi. 12 no.12:10-13 D '62. (MIRA 16:1)
(Railroads--Track)

KRUPEN', A.I., kand. tekhn. nauk; TSYUPA, V.S., inzh.

Results of building a roadbed, Transp.stroi. 13 no.10:6-8
0 '63. (MIRA 17:8)

KRUPEN', A.I., kand. tekhn. nauk; RODIONOV, I.P.

Building the Karaganda-Karagayly railroad line. *Tranzp. stroi.*
14 no. 1:10-12 Ja '64. (MIRA 17:8)

1. Glavnyy tekhnolog tresta Karagandastroyput'.

KRUPFN', A.I., kand. tekhn. nauk; NETREBA, S.S., inzh.

Experimental settlement of large-panel buildings. Transp. stroit.
14 no.11:32-34 N '64. (MIRA 18:3)

SUD*YENKO, G.M., inzh.; KRUPEN*, A.I., kand. tekhn. nauk

Experience in the fill construction of roadbed under the
second track on bogs. Transp. stroi. 15 no.9:6-8 S '65.
(MIRA 18:11)

KRUPEN, R.V., assistant

Effect of magnification of the image of a contact level
gauge on the precision and speed of its adjustment. Izv.
vys. ucheb. zav.; geod. i aerof. no.4:151-154 '63.

(MIRA 17:9)

1. Latviyskaya sel'skokhozyaystvennaya akademiya.

~~KRUPEN, R.V.~~

Testing levels by a plane-parallel plates. Geod. 1 kart. no. 4:26-
28 Ap '57. (MIRA 10:8)

(Surveying--Instruments)

KRUPEN, R.V.

Protection of geodetic signals. Geod.1 kart. no.2:30-31 F
'60. (MIRA 13:6)
(Surveying)

SLYUSARENKO, V.A., red.; KRUPENCHIK, B.B., red.; MELESHKIN, M.T.,
red.; VIRON, Ye.M., red.; KUVOLDIN, D.A., red.;
VITVITSKIY, M., red. izd-va; SYCHEVSKIY, I., red. izd-va;
NEDOVIZ, S., tekhn. red.

[First Soviet firms; from the work practice of the produc-
tion combines of the Lvov Economic Council] Pervye sovet-
skie firmy; iz opyta raboty proizvodstvennykh ob"edinenii
L'vovskogo sovmarkhoza. L'viv, Knyzhkovo-zhurnal'ne vyd-vo,
1962. 113 p. (MIRA 16:4)

1. Sekretar' L'vovskogo oblastnogo komiteta Kommunisticheskoy
partiy Ukrainy (for Slyusarenko). 2. Zaveduyushchiy promysh-
lennym otdelom oblastnogo komiteta Kommunisticheskoy partii
Ukrainy (for Krupenchik) 4. Nachal'nik proizvodstvenno-
tekhnicheskogo upravleniya L'vovskogo sovmarkhoza (for
Meleshkin) (Lvov Economic Region--Business enterprises)

KRUPENI, Ye.M., kandidat meditsinskikh nauk

A case of a total spontaneous pneumothorax of seven years duration.
Sov. med. 18 no.8:35 Ag '54. (MLRA 7:8)

1. Iz tuberkuleznogo otdeleniya fakul'tetskoy terapevticheskoy kliniki
(sav. prof. N.Ye.Kavetskiy) Kuybyshevskogo meditsinskogo instituta
(dir. prof. T.I.Yeroshevskiy)
(PNEUMOTHORAX
total, of 7 year follow-up)

KRUPENIK, P. I.

"Experiences in Supplying Petroleum Product Consumers" page 76, of the
book Petroleum Bases and Pipe Lines, Gostoptekhizdat, 1956

KRUPENIK, P. I.

MATSKIN, L.A.; KOVALENKO, K.I.; BABUKOV, V.G.; KONSTANTINOV, N.H.;
PONOMAREV, G.V.; PAL'CHIKOV, G.N.; PELENICHKO, L.O.; SHAMARDIN,
V.M.; GLADKOV, A.A.; BRILLIANT, S.G.; SHEVCHUK, V.Ya.; SOSHCHEI-
KO, Ye.M.; ALEKSANDROV, A.M.; BUNCHUK, V.A.; KRUPENIK, P.I.;
MAYEVSKIY, V.Ya.; YELSHIN, K.V.; GAK, Kh.A.; POTAPOV, G.M.;
KARDASH, I.M.; STEPURO, S.I.; KAPLAN, S.A.; SELIVANOV, T.I.;
YEREMENKO, N.Ya.; ZHUZH, A.D.; USTINOV, A.A.; GIRKIN, G.M.;
VOLOBUYEV, P.P.; CHERNYAK, I.L., nauchnyy red.; DESHALYT, M.G.,
vedushchiy red.; GENNAD'YEVA, I.M., tekhn.red.

[Combating losses of petroleum and petroleum products; materials
of the All-Union Conference on Means of Combating Losses of
Petroleum and Petroleum Products] Bor'ba s poteriami nefi i
nefteproduktov; po materialam Vsesoyuznogo soveshchaniya po bor'be
s poteriami nefi i nefteproduktov. Leningrad, Gos.nauchno-tekhn.
izd-vo nefi. i gorno-toplivnoi lit-ry, 1959. 157 p. (MIRA 13:2)

1. Nauchno-tekhnicheskoye obshchestvo nefyanoy i gazovoy pro-
myshlennosti.

(Petroleum industry)

CA KRUPENIKOV, H.I.

Chernozem-like soils among the solonchaks complexes of
Northwestern Kazakhstan and their utilization
Krupenikov, H.I. *Pochvedenie* (Pedology) 1951, 2:70-71.
Chemical data on the compn., pH, carbonates, org. matter,
and exchange capacity of chernozem-like soils prove their
relation to the zonal chernozem soils. J. S. Joffe

L 1856h-66 EWT(m)/EWP(w)/EWP(v)/T-2/EWP(k)/ETC(m)-6 EM
ACC NR: AP6006428 SOURCE CODE: UR/0143/65/000/010/0056/0062

AUTHOR: Deych, M. Ye. (Doctor of technical sciences, Professor); Kiselev, L. Ye.
(Engineer); Krupennikov, B. N. (Engineer) 50
B

ORG: Moscow "Order of Lenin" Power Engineering Institute (Moskovskiy ordena Lenina energeticheskiy institut)

TITLE: Effect of the departure angle on the characteristics of radially expanding turbine blading

SOURCE: *no.* IVUZ. Energetika, no. 10, 1965, 56-62

TOPIC TAGS: turbine blade, flow angle, turbine design

ABSTRACT: The characteristics of radial turbine blading with a d/l ratio of 2.5 were studied in subsonic air streams at departure angles of 9, 12, 15 and 18°. The wheels studied were made up of 30 vanes with a height $l=100$ mm and identical geometric characteristics in all cases with the exception of the departure angle. The flow parameters were measured in front of and behind the blading. Measurements were made at ten points between blades, in 15-25 sections along the height of the blade and at distances $x=5, 15, 25$ mm from the outlet edge of the blades which corresponds to

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ACC NR: AP6006428

$\bar{z}=z/b=0.125, 0.375, 0.625$. The resultant data were used for determining the distribution of the following parameters with respect to the height of the blading: breaking pressure p_{01} , static pressure p_1 , and flow departure angles α_1 and α_2 in the meridian direction. Angle α_1 is measured between the projection of velocity c_1 on the cylindrical surface and the direction of the periferal component of velocity c_{1u} ; angle α_2 is measured between the vector of velocity c_1 and its projection on the cylindrical surface. It was found that an increment in the effective angle of departure increases the difference between the static pressures at the periphery and root of the blading due to a reduction in energy losses and a corresponding increase in the velocity of the departing air at the root section. Measurements of departure angles α_1 show that they are greater than the effective departure angles. When the effective departure angle is increased, the difference between the average value of the measured angle and the effective angle is reduced, which may also be explained by a reduction in energy losses and less redistribution in the rate of air flow with respect to height. The average values of the meridian angles with respect to blading height $(\alpha_2)_{av}$ are a linear function of the effective departure angle: $(\alpha_2)_{av} = 0^\circ$ for $\bar{z}=0.125$ at an effective departure angle of 15° . At smaller effective departure angles, the average values of α_2 are positive, which corresponds to de-

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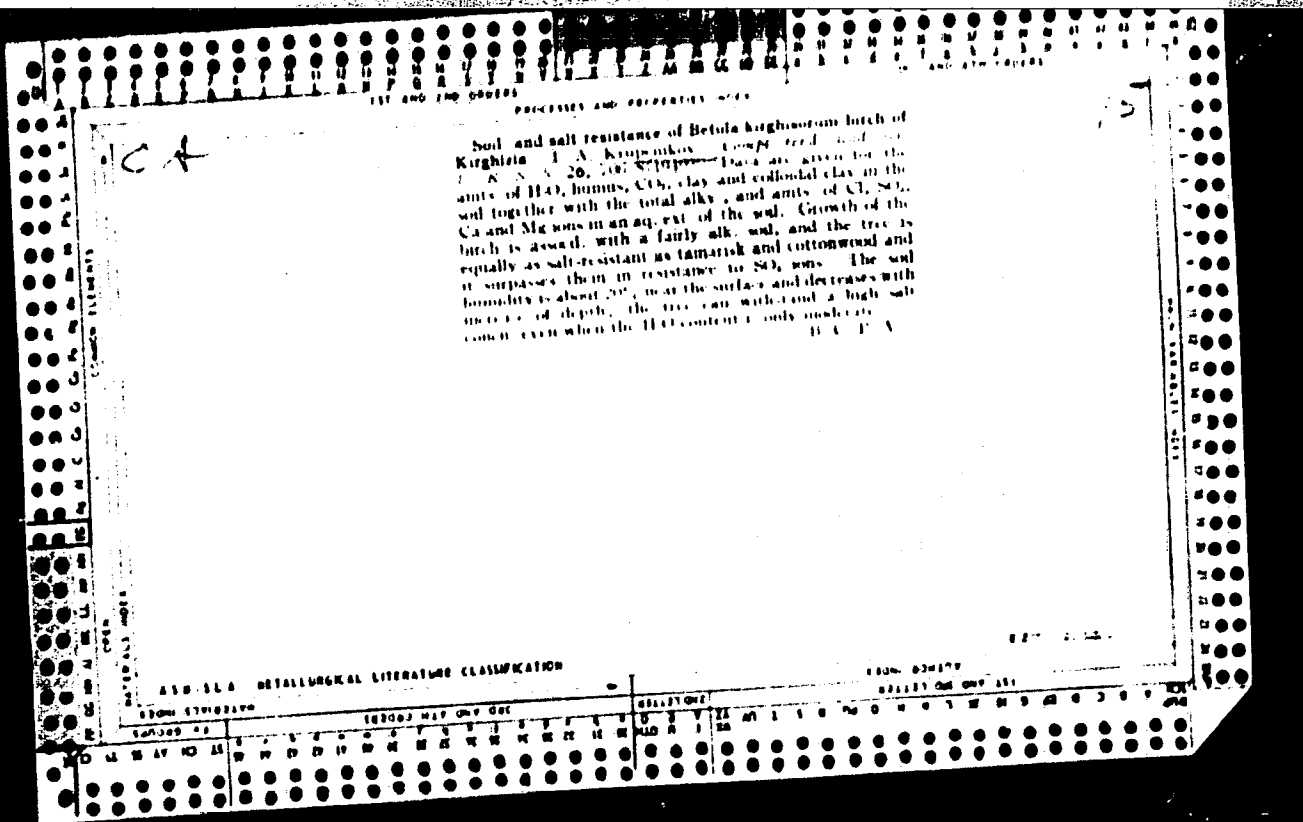
L 18564-66
ACC NR: AP6006428

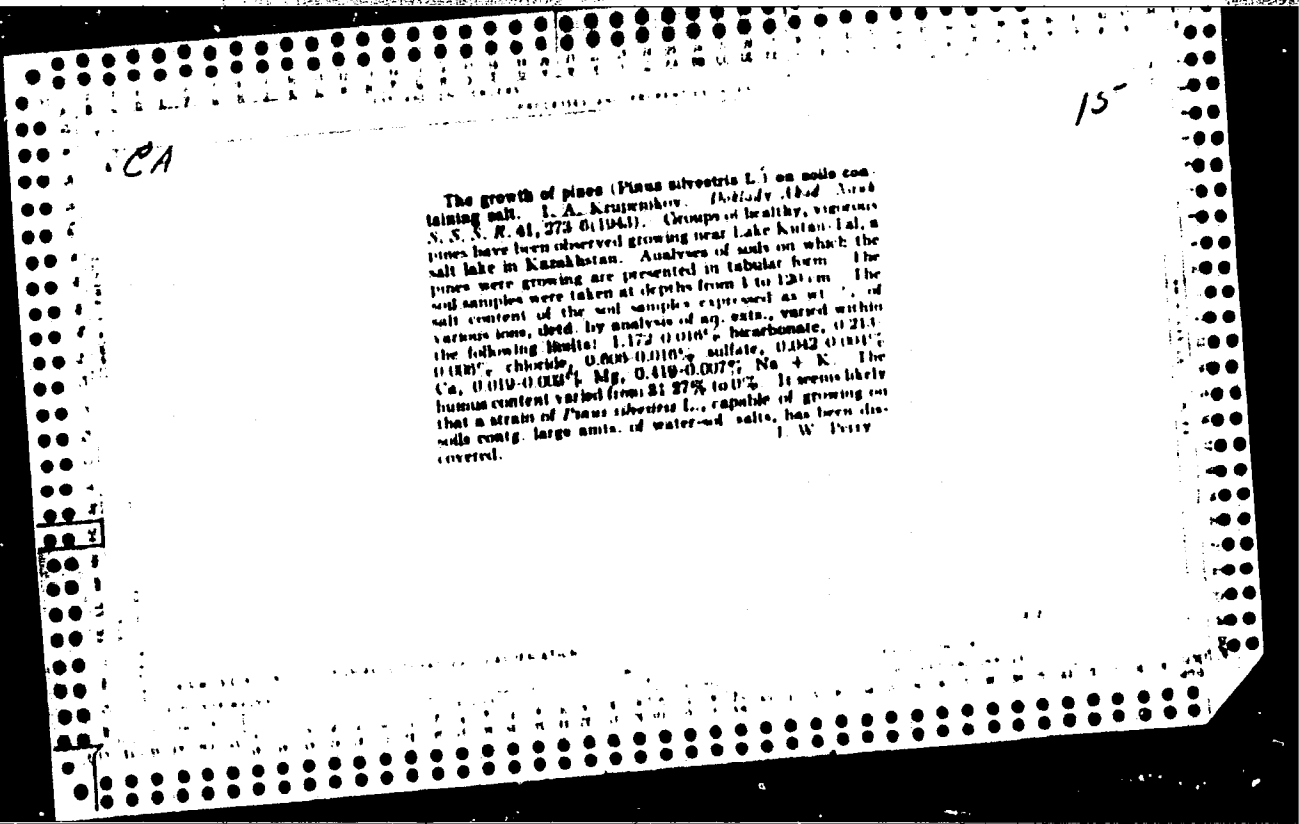
flection of the line of flow from the root to the periphery. This is due both to a high degree of twisting in the stream and to the highly developed region of energy losses in the lower half of the turbine blading. The effective departure angle has a considerable effect on the distribution of energy losses, particularly in the root section. There is a sharp reduction in energy losses with an increase in the effective angle of departure, especially at great distances from the vanes. Experimental data show a predetached flow and extremely high energy losses in radially expanding turbine blading arrangements with effective departure angles of less than 15°. Orig. art. has: 7 figures.

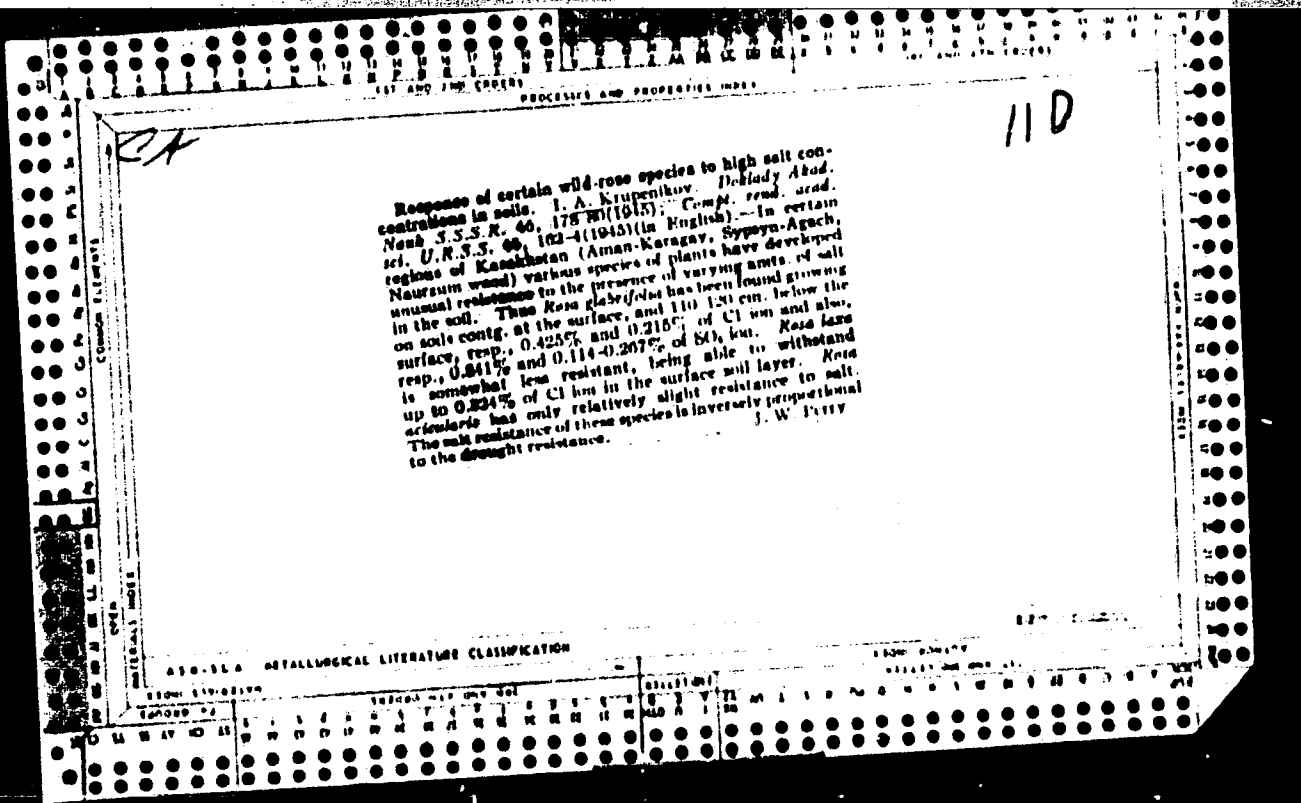
SUB CODE: 10,13/ SUBM DATE: 18Jul64/ ORIG REF: 000/ OTH REF: 000

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PROCESSES AND PROPERTIES INDEX

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BA

Ecological and biochemical characters of *Betula kizghizorum* Saw. Rydzg. resulting from the plant's adaptation to soils impregnated with salts. I. A. Krupnikova (Natl. Park of Naurzum, Kazakhstan, U.S.S.R., *Doklady Akad. Nauk S.S.S.R.* 47, 68-70, 1945). *Engl. transl. read. acad. sci. U.S.S.R.* 47, 64-66, 1945. *B. kizghizorum* grows on soils rich in sulfates, chlorides, and ammonium, with osmotic values up to 20 atm. Analysis of its leaves shows high content of H₂O, K, Cl, and especially lignin (69.1% of ash). Its H₂O-sol. fraction is very high and with high alkalinity index, much H₂O-sol. org. matter, moderate mineral content, and osmotic value of 21 atm. These properties persist when the tree is grown in soils low in salts, and show that a deciduous tree can exhibit physiol. and biochem. features of halophytes.

K. Starr Chester

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

110

CA

ABSTRACTS AND PROPERTIES INDEX

Salt resistance of aspen under natural conditions. I. A. Krupenikov (Naursum State Reserve, Kazakhstan). *Compt. rend. acad. sci. U.R.S.S.* 49, 377-80 (1945) (in English); cf. *C.A.* 39, 4017'. — *Populus tremula* grows on varied soils. A special salt-resistant ecotype, not exceeding 5-7 m. in height and with more succulent, greener, and thicker leaves was found on saline soils. These soils, of pH about 8.0, were rich in gypsum and sol. salts and contained as high as 60% CaCO₃, 8-23 g. Cl, and 2-34 g. sulfate per l. of soil soln. ($\frac{\% \text{ anion in dry soil}}{\% \text{ moisture in dry soil}} \times 1000 = \text{g./l. anions}$). The leaves had an ash content 1.5 times greater than those of the common aspen in a sandy habitat, greater Ca, P, and S and less K. the aq. exts. of the leaves of the saline aspen were higher in solid matter, titratable alk., Cl, S, Ca, Mg, and water-sol. org. substances, the last being the principal cause of the greater osmotic pressure of the cell sap. J. T. Sullivan

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

CA

11D

The resistance of *Tamarix* to salt in connection with its ability for selective storage of salts in the organs of assimilation. I. A. Krupenkov. *Doklady Akad. Nauk S.S.S.R.* 90, 765 (1977); *Chem. Zvest.* 104B, 1, 71. — Cf. the halophytes, *Tamarix* is especially interesting since it has the ability to free itself from excess salt by means of special "plants." A study was made of *Tamarix gracilis* and *T. australis*. Both plants showed almost the same chloride and sulfate contents in the green portions, although the specimens analyzed were grown on 2 different soils, one being a sulfate *solonchak* and the other a chloride *solonchak*. Thus *Tamarix* shows considerable selective capacity in spite of a high osmotic pressure. The soil had a max. salt content of 4.05% with a mean content of 1.8% in the region of the roots. Plants grown on soil having a max. Cl content of 1.8% (av. 0.8%) and a max. sulfate content of 1.4% (av. 1.2%) yielded an ext. (of the green plant) contg. Cl 1.2 and sulfate 8.5%. M. G. M.

KRUPENIKOV, I. A.
25745

Orazvitiu Stolovogo Vinogradarstva Na
Yuzhnom Beregu Kryma. Binodeliye I
Vinogradarstvo SSSR, 1948, No 6, S. 28-30

SO: LETOPIS NO. 30, 1948

PROBNIKOV, I. I.

1928. Vklucheniya za snezhnyy pokrovch v morskoye zapovednike siloy 1940-41
godu. Trudy nauch. gos. zapovednika, VII. 1, 1941, s. 4-10

SO: Letopis' Zhurnal' nykh Statey, Vol. 7, 1949

KRUPENIKOV, I. A.

PA 48/49T46

USSR/Geography
Salt Marshes

Mar/Apr 49

"Sora," I. A. Krupenikov, 122 pp

"Iz v-s Geograf Obshch" Vol LXXXI, No 2

Data is based on observation in Naurzum State Reservation. A sor, an unusual type of salt-marsh, is a flat, saucer-shaped depression about 1.5-3 meters below the sand surrounding it. Its plane is usually oval. Size varies greatly; usually, length does not exceed 500 meters and breadth 500. In spring and autumn, surface is covered with water. In summer, water evaporates

48/49T46

USSR/Geography (Contd)

Mar/Apr 49

and sor's surface is covered with a shining coat of salt. Discusses nature and origin of sora. Includes photograph, two graphs, six tables.

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CA

12

f Influence of insects on soil. I. A. Krupnikov. *Izv. Vuzov, Obshchestva Ispytatel'noy Otdel. Biol. 56*, No. 1, 15-8 (1954). Studies made in Nauroom National Preserve (N. E. Kazakhstan) showed that ants cause alkalization of acidic or neutral soils by their excretion. The minute beetle (*Ceratophyes pascuosa*) by digging in the sandy soil of deep manure-comtg. wells causes formation of humus layers at considerable depths (150-170 cm.) below the surface. These humus depots may contain 11-17% humus matter and serve as nutrient sources for plants. G. M. K.

KRUPENIKOV, I.A.

The Committee on Stalin Prizes (of the Council of Ministers USSR) in the fields of science and inventions announces that the following scientific works, popular scientific books, and textbooks have been submitted for competition for Stalin Prizes for the years 1952 and 1953. (Sovetskaya Kultura, Moscow, No. 22-40, 20 Feb - 3 Apr 1954)

<u>Name</u>	<u>Title of Work</u>	<u>Nominated by</u>
KRUPENIKOV, I.A.	"V.V. Dokuchayev"	Kishinev State University

80: W-30604, 7 July 1954