

SHPAK, Raisa Lukinichna; TKACHENKO, V.I., otv. red.; SORONBAYEVA,  
N.V., red. izd-va; POPOVA, M.G., tekhn. red.

[Annual cycle in the development of some tulips of  
Kirghizistan] Godovoi tsikl razvitiia nekotorykh tiul'pa-  
nov Kirgizii. Frunze, Izd-vo Akad.nauk Kirgizskoi SSR,  
1963. 65 p. (MIRA 16:7)  
(Kirghizistan--Tulips)

SHIFAK, S.

It was demonstrated while checking. Voen. znan. 41 no.6:25 Je  
195. (MIRA 12:5)

1. Nachal'nik shitsba grazhdanskoy oborony Kamenskogo mashino-  
stroitel'nogo zavoda, Kamensk Rostovskoy oblasti.

BUNIN, K.P.; SHPAK, T.M.

Graphitization of pure iron carbide alloys. Dop. AN URSSR no.2:132-135  
'54. (MIRA 8:4)

1. Chlen-korrespondent Akademii nauk USSR (for Bunin) 2. Institut  
chernoi metalurgii AN URSSR i Dnipropetrovs'kiy metallugichniy institut  
im. I.V.Stalina.

(Cast iron—Metallography)

*SHPAK, T.M.*

USSR/Miscellaneous

Card 1/1 : Pub. 61 - 12/23

Authors : Bunin, K. P., and Shpak, T. M.

Title : About graphitization of pure ferro-carbon alloys

Periodical : Lit. proizv. 3, 26-27, May-June 1954

Abstract : A hypoeutectic white cast-iron containing C, Mn, Si, S and P was investigated to determine the graphitization process of this alloy. Experiments showed that the narrow link-process of graphitization consists of separating the less-active Fe atoms from these areas of the bed die where the graphite inclusions originate and develop. The formation of graphite in the pores of the initial cast iron is at first very rapid because this is not connected with the Fe-atom separation and the rate of filling up these pores with graphite is determined by the rate of diffusion transfer of C in the austenite from the surface of the cementite, which dissolves in the austenite. Six USSR references (1950-1953). Illustrations.

Institution : ...

Submitted : ...

*SHPAK, T. M.*

USSR/ Physics - Metallurgy

Card 1/1 Pub. 22 - 17/51

Authors : Bunin, K. P.; Taran, Yu. N.; and Shpak, T. M.

Title : Concretion of spheroidal graphite inclusions in cast iron

Periodical : Dok. AN SSSR 101/1, 65-67, Mar 1, 1955

Abstract : Microscopic studies of several cast iron samples showed that each spheroidal graphite inclusion found in the samples appears to be a polycrystalline body composed of radially elongated pyramidal graphite crystals the bases of which coincide with the surface of the inclusion and the apexes converge in its center. The mechanism of formation of complex graphite inclusions in gray and pig iron was observed as being perfectly identical. It was established that the compact graphite inclusions in the cast iron are concretions originating during the solidification or annealing of the cast iron. Nine references: 6 USSR and 3 USA (1947-1954). Illustrations.

Institution : The I. V. Stalin Metallurgical Institute, Dniepropetrovsk

Presented by : Academician G. V. Kurdyumov, July 3, 1954

BUNIN, K.P.; TARAN, Yu.N.; SHPAK, T.M.

The form of graphite inclusions in modified magnesium pig  
iron. Dop. AN URSR no.5:443-445 '56. (MLRA 10:2)

1. Institut chornoi metalurgii Akademii nauk URSR,  
Dnipropetrovs'kiy metalurgiyiny institut.  
(Cast iron)

BUNIN, K.P.; GRECHNYI, Ya.V.; MALINCHKA, Ya.N.; TARAN, Yu.N.; BEL'CHENKO, G.I.;  
POGREBNYY, E.N.; DANIL'CHENKO, N.M.; YATSENKO, A.I.; RBPIN, A.K.;  
BARANOV, A.A.; SHPAK, T.M.

Is metastable austenite possible at a point higher than  $A_1$ ?  
Izv.vys.ucheb.zav.; chern.met. no.10:143-144 0 '58.  
(MIRA 11:12)

1. Dnepropetrovskiy metallurgicheskiy institut i Institut chernoy  
metallurgii AN USSR.

(Austenite) (Phase rule and equilibrium)

SHPAK, T.M., inzh.

Determining moments of inertia in rails subjected to twisting.  
Trudy DIIT no.27:273-282 ' 58. (MIRA 12:1)  
(Railroads--Rails--Testing)



SHPAK, V. A.

"The Present and Future of Logging Techniques"

(New Developments in the Methods and Techniques of Geological Exploration)  
Leningrad, Gostoptekhizdat, 1958. 423 p. (Series: Its: Sbornik truaŋov I)

SHPAK, V.A.

Logging methods and prospects for developing them. Trudy  
VITR no.1:334-340 '58. (MIRA 12:1)  
(Logging (Geology))

SHPAK, V. A..

FD 166

USSR/Chemistry - Detection of Potassium

Card 1/1

Author : Shpak, V. A., and Novikov, P. I.

Title : Use of the properties of the radioactive isotope of potassium for the determination of the potassium content in samples and directly in rock occurrences.

Periodical : Khim. prom. 3, 11-15 (139-143), April-May 1954

Abstract : Describe work on the detection and determination of potassium at a natural potassium salt deposit by measuring the beta-radiation and gamma-radiation emitted by the radioactive isotope. Illustrated by 3 graphs and a chart listing experimental results.

BOL'SHAKOV, M...; SHPAK, V.G.; DRUZHININ, I.P., otv. red.; SKRIPKINA, Z.I.,  
red.izd-va; ANOKHINA, M.G., tekhn. red.

[Water power resources of the Kirghiz S.S.R.] Vodnoenergeticheskie  
resursy Kirgizskoi SSR. Frunze, Izd-vo Akad. nauk Kirgizskoi SSR,  
1960. 226 p. (MIRA 14:11)

(Kirghizistan--Water resources development)

SHPAK, V.G.

Some indices of the yearly distribution of the discharge of  
Kirghiz rivers. Izv. AN Kir. SSR. Ser. est. i tekhn. nauk 4  
no. 5:19-26 '62. (MIRA 16:4)

(Kirghizistan--Rivers)

4

114

PROCESSED AND REPRODUCED UNDER

The use of magnesium sulfate in the psychiatric clinic.  
Y. M. Shpak. *Sov. Vrachnyi Zhur.* 41, 360-5(1937);  
*Chem. Zentr.* 1939, I, 2239.—Treatment of dementia  
praecox by injection of hypertonic MgSO<sub>4</sub> solns. (5 g. of

20% soln.) is recommended especially when used  
in combination with scopolamine.

... Moore

ANNALS METALLOGICAL LITERATURE CLASSIFICATION

1939-1940  
1941-1942

SHPAK, V. M.

25277. SHPAK, V. M. Ob Odnem Vegetativnom Simptome Pri Obliteriruyushchem Endarteriite. Nevropatologiya I Psikhatriya, 1949, No. 4, S. 28-29

Shcherbatenko, S. I. O Lechenii Abstsessov Legkikh Massivnykh Dozami Sul'fonamidov, SM 25222

SO: Letopis' No. 33, 1949

SHPAK, V. M.

20155 SHPAK, V. M. O magnezial'nom lechenii morfinizma. Vracheb. delo.,  
1949, No. 6, stb. 555-56

SO: LETOPIS ZHURNAL STATEY, Vol. 27, Moskva, 1949.





SHFAN, V. A.

Psychiatry

Treatment of pre-senile psychoses by interrupted prolonged sleep in combination with biogenous stimulants. Zhur., nevr., i psikh., 52, no. 8, 1952.

Monthly List of Russian Accessions, Library of Congress, November 1952. Unclassified.

SHPAK, V.M.

Investigations on physiologic mechanisms of prolonged sleep in the treatment of neuroses and of certain psychoses. Zh. vysshei nerv. deiat. 3 no.4:584-591 July-Aug 1953. (GIML 25:4)

1. Department of Psychiatry of Stalino Medical Institute and Stalino Oblast Psychoneurological Hospital.

SHPAK, V.M.

Scientific conferences of the Department of Psychiatry of the Stalin  
Medical Institute in 1952. Zhur.nevr.i psikh. 53 no.11:904 N '53.

(MLBA 6:12)

(Psychiatry)

SHPAK, V.M.; KARSHENBAUM, R.I.

Observations of the use of niacin in treating certain psychoses.  
Zhur. nevr. i psikh. 54 no.8:671-677 Ag '54. (MLRA 7:9)

1. Kafedra psikhiiatrii Stalinskogo meditsinskogo instituta i  
oblastnoy psikhonevrologicheskoy bol'nitsy.  
(NICOTINIC ACID, therapeutic use,  
psychoses)  
(PSYCHOSES, therapy,  
nicotinic acid)

SHPAK, V.M.

Clinical results of dimedrol therapy in schizophrenia; preliminary communication. Zhur. nerv. i psikh. 54 no.9:769-772 S '54.

(MIRA 7:9)

1. Kafedra psikhiiatrii Stalinskogo meditsinskogo instituta.

(SCHIZOPHRENIA, therapy,  
diphenhydramine)

(DIPHENHYDRAMINE, therapeutic use,  
schizophrenia)

57 P. 110, 111

EXCERPTA MEDICA Sec.2 Vol.9/9 Physiology, etc. Sept 56

4222. SHPAK V.M., KARSHENBAUM R.I. and LYAKSUTKINA M.F. Med. Inst.,  
Stalino. \*Ionophoresis with nicotinic acid (Russian text)  
KLIN. MED. (Mosk.) 1955, 33/9 (92)

Ionophoretic application of 0.25-1% solutions of nicotinic acid was tried in cases of neurological disturbances and hypertension. The active electrode was placed in various positions. After galvanization with 2-20 ma. a vasodilator reaction was observed; this then decreased but reappeared 5 min. after the end of the application. Particularly good results were obtained in hypertensive patients; daily application over the solar plexus with 8-15 ma. for 2 periods of 10 min. with an interval of 5 min. was followed by a definite fall of blood pressure which was maintained for a long time.

Rašková - Prague (II, 15\*)

SHPAK, V.M.; KARSHENBAUM, R.I.; LYAKSUTKINA, M.F.

Observations of electrophoresis with nicotinic acid. Vop.kur.,  
fizioter. i lech. fiz. kul't. 22 no.2:34-36 Mr-Ap '57. (MIRA 11:1)

1. Iz kafedry psikiatrii (zav. - dotsent V.M.Shpak) Stalinskogo  
meditsinskogo instituta (dir. - dotsent A.M.Ganichkin)  
(ELECTROPHORESIS) (NICOTINIC ACID)



PEREL'MAN, A.A. (Tomsk); FREYEROV, O.Ye. (Moskva); SHPAK, V.M. (Kalinin);  
TORUBAROV, S.V. (Moskva); DETENGOF, F.F.

Discussion. Probl.sud.psikh. 9:230-235 '61. (MIRA 15:2)  
(NEUROSES) (MENTAL ILLNESS) (INSANE, CRIMINAL AND DANGEROUS)

SHPAK, V.M. (Kalinin)

Influence of the summation of stimuli in stuporous states of  
varying etiology. Probl.sud.psikh. 9:291-297 '61.

(MIRA 15:2)

(STUPOR)

SHPAK, V.M., dotsent

Treatment of insomnia with neuroleptic drugs. Trudy KGMI no.10:491-  
494 '63. (MIRA 18:1)

1. Iz kafedry psikhiiatrii (zav. kafedroy - dotsent V.M.Shpak)  
Kalininskogo gosudarstvennogo meditsinskogo instituta.

8(2)

SOV/91-59-3-8/22

AUTHOR: Shpak, V.N., Engineer

TITLE: A Light and Sound Signaling Circuit with Central Removal of the Sound Signal (Skhema svetovoy i zvukeyovoy signalizatsii s tsentral'nyy m "yemom zvukeyovogo signala)

PERIODICAL: Energetik, 1959, Nr 3, pp 18-19 (USSR)

ABSTRACT: The author refers to the signaling system described in the article "Skhema svetovoy i zvukeyovoy signalizatsii na postoyannom i peremennom toke" ( A Lay-Out of Light and Sound Signaling on Direct and Alternating Current), by Engineer Yu.I. Novozhilov, published in "Energetik", 1957, Nr 9. He states that this system has a number of drawbacks, e.g.: the necessity for a hand reset switching-over to the operational position after fixing the broken-down circuit; the connection of a pilot lamp in the sound relay circuit (a burned-out lamp will put the whole signaling system out of order); the necessity for separate

Card 1/2

SOV/91-59-3-8/22

A Light and Sound Signaling Circuit with Central Removal of  
the Sound Signal

testing of the work condition of each circuit in the system. Subsequently, the author describes his own signaling system for alternating current up to 220 Volts with an unlimited number of signaling points and central removal of the sound signal. In conclusion, he states that his system--although based on a working principle analogous with the system described in the article "Skhema preduprezhdayushchey signalizatsii" (A Warning Signaling Lay-Out), by Engineer V.A. Protopopov, published in "Energetik", 1957, Nr 12--has the following advantages: 1) the system can be used for both direct and alternating currents of any voltage; 2) use of simple, small-size, relays in the system without the need for any remodeling; 3) automatic adjustment of the system to the operational conditions after repairing the broken down circuit. There is 1 circuit.

Card 2/2

S/057/60/030/04/02/009  
B004/B002

AUTHORS: Yavor, S. Ya., Shpak, Ye. V., Minina, R. M.

TITLE: Cylindrical Magnetic Lenses With an Antisymmetric Plane

PERIODICAL: Zhurnal tekhnicheskoy fiziki, 1960, Vol. 30, No. 4,  
pp. 395-404

TEXT: First, the authors discuss the course of electron paths in anti-symmetric systems, and the position of the linear image. They derived the vector potential of a lens consisting of two linear, parallel conductors of infinite length, through which currents of equal intensities flow in the same direction (two-conductor lenses, Fig. 1). The voltage distribution measured and calculated according to equations (3) and (4), in the magnetic field of such a lens, is shown in Fig. 2. Fig. 3 gives the arrangement of a four-conductor lens, and Fig. 4 shows its field calculated according to equation (5), and the respective experimental values. In the case of two-conductor lenses, integral (7) and the Khurgin equation (8) are given for electron paths lying in the central plane. Fig. 5 gives the paths calculated for different initial angles  $\alpha_0$  between

Card 1/3

✓C

Cylindrical Magnetic Lenses With  
an Antisymmetric Plane

S/057/60/030/04/02/009  
B004/B002

electron path and axis  $z$ . The conditions for the position of the image center are discussed, and in Fig. 6 the projections of four electron paths on the  $xz$ - and  $yz$  planes are represented. Equation (8) is numerically integrated according to Shtermer's method (Ref. 9). Table 1 gives the image coordinates of 4 keV electrons. In the case of four-conductor lenses, integral (9) and the Khurgin equation (10) are also given for the electron paths of the central plane. The paths of the central plane are likewise shown (Fig. 7) as well as their projections on the planes  $xz$  and  $yz$  (Fig. 8), and the image coordinates are given in Table 2. In Fig. 9 the authors show the scheme of their experimental setup for the investigation of electron optical properties of the lenses. The 4 keV electron beam with a divergence angle of  $5^\circ$  was directed into a vacuum chamber by means of an electron gun, and the image was observed on a sliding fluorescence screen. The horizontal and vertical components of the earth's magnetism were compensated by two solenoids for the fields of which equations (11) and (12) are given. Four lenses consisting of coils wound upon square brass frames of 1 m length and different widths, were tested. The measuring results are in good agreement with the calculations (Figs. 2-4). The images observed, are also described. ✓

Card 2/3

Cylindrical Magnetic Lenses With  
an Antisymmetric Plane

S/057/60/030/04/02/009  
B004/B002

Figs. 10 and 11 show the dependence of the ampere windings of the lenses on the image coordinate  $\xi_b$ . When a critical value of the current intensity is attained, the electrons fly back, and the lense acts as a mirror. There are 11 figures, 2 tables, and 9 references: 8 Soviet and 1 British.

ASSOCIATION: Fiziko-tehnicheskiy institut AN SSSR Leningrad (Institute of Physics and Technology of the AS USSR, Leningrad)

SUBMITTED: August 24, 1959

✓C

Card 3/3



ACCESSION NR: AP4009920

S/0057/64/034/001/0053/0059

AUTHOR: Fishkova, T.Ya.; Shpak, Ye.V.; Yavor, S.Ya.

TITLE: Charged particle escape from a reflected electron discharge

SOURCE: Zhurnal tekhnicheskoy fiziki, v.34, no.1, 1964, 53-59

TOPIC TAGS: gas discharge, reflected electron discharge, charged particle escape, anomalous charged particle escape, discharge in magnetic field

ABSTRACT: The transverse escape of charged particles from a gas discharge in a longitudinal magnetic field was investigated. Electron reflecting electrodes were provided at the two ends of the discharge region to increase the ionization. Except for the higher degree of ionization achieved, the experiments were similar to those reported by J.F.Bonnal, G.Brifford and C.Manus (Phys.Rev.Lett.6,665,1961; Report No.9 at the Salzburg Conference,1961), and similar anomalous results were obtained. The discharge tube was 200 cm long and 17.8 cm in diameter. The two reflecting electrodes were 11.6 cm in diameter and were separated by 105 cm. One reflector carried a hot cathode 2 or 3 cm in diameter. The discharge current was received by one or more cylindrical anodes somewhat smaller in diameter than the reflecting electrodes.

Card 1/3

ACC.NR: AP4009920

When a single anode was employed, it was provided with two wall probes, one located midway between the two reflecting electrodes, and one located 16 cm from this midpoint. With the discharge tube filled with argon at  $5 \times 10^{-4}$  to  $10^{-3}$  mm Hg, discharge currents up to 10 A at potentials up to 500 V were observed in longitudinal magnetic fields up to 2100 Oe. The degree of ionization was determined from the attenuation of 3.2 cm and 0.85 cm microwaves. Ionizations up to 7% were deduced from the 3.2 cm measurements. A highly ionized filament was produced on the axis of the discharge by admitting gas through an opening in the center of one of the reflectors. The ionization in this filament was estimated from the 0.85 cm microwave measurements at 50% or greater. When several anodes were employed, the current to the central anode was negative (preponderance of negatively charged particles collected), and the currents to the remaining anodes were positive. The currents to all the anodes behaved in a similar way as the magnetic field was varied: when the field was increased from zero the current would first decrease (in absolute value), reach a sharp minimum at a small value of the field, increase to a broad maximum, and finally decrease again at high fields. The positive ion current to the central wall probe of the single anode was measured as a function of the longitudinal magnetic field while the total discharge current was held constant by adjusting the applied potential or the cathode temperature. In these measurements the probe was kept

Card <sup>2/3</sup>

ACC.NR: AP4009920

30 V negative with respect to the anode. The positive ion current first increased with increasing field, then decreased to a broad minimum, and finally increased again at high fields. The initial increase and subsequent decrease of the ion current are briefly discussed. The anomalous increase of the ion current at high field strengths is not explained. Orig.art.has: 8 figures.

ASSOCIATION: Fiziko-tekhnicheskiy institut im.A.F.Ioffe AN SSSR, Leningrad (Physical-Technical Institute, AN SSSR)

SUBMITTED: 12Nov62

DATE ACQ: 10Feb64

ENCL: 00

SUB CODE: PH

NR REF SOV: 002

OTHER: 003

3/3  
Card

ACCESSION NR: AP4040307

S/0057/64/034/006/1037/1039

AUTHOR: Shpak, Ye.V.; Yavor, S.Ya.

TITLE: A pseudo-axially symmetric system of four iron-free magnetic quadrupole lenses

SOURCE: Zhurnal tekhnicheskoy fiziki, v.34, no.6, 1964, 1037-1039

TOPIC TAGS: electron optics, electron lens, magnetic quadrupole lens

ABSTRACT: In continuation of earlier work on systems of quadrupole lenses having axially symmetric first order optical properties (A.D.Dymnikov, S.Ya.Yavor, ZhTF, 33,851,1963; A.D.Dymnikov, T.A.Fishkova and S.Ya.Yavor, Izv.AN SSSR, Ser.fiz.27,1131, 1963), several iron-free magnetic quadrupole lenses of the type shown schematically in Fig.1 of the Enclosure were constructed and tested. The conductors parallel to the z axis were equidistant, and the angle  $\alpha$  was accordingly  $90^\circ$ . The peculiar distribution of the windings was adopted in an effort to minimize the z-component of the field on the axis and to improve the distribution of the x- and y-components. The optical properties of the lens were calculated in the thin conductor approximation, and the formula is given for calculating the object and image distances. Seven-

Card 1/4

ACCESSION NR: AP4040307

ral lenses of aperture (2R) 7.0 and 12 cm and lengths (l) from 14.5 to 41.2 cm were tested with 4 to 7 keV electrons on the electron optical bench, both singly and in three pseudo-axially symmetric combinations of four lenses each. The windings of these lenses measured approximately  $11 \times 11 \text{ mm}^2$  and had 50 or 64 turns. Agreement between the measured and calculated properties indicated that the thin lens approximation was adequate for these lenses. The relation between the currents in the inner and outer lenses required to achieve pseudo-axial symmetry was determined experimentally for each of the three combinations; the measurements were in agreement with the theory. The focal length and the position of the unit planes of one of the combinations were also determined as functions of the current in the outer lenses; these measurements also agreed with the theory. A comparison of pseudo-axially symmetric systems with different lengths and separations of the component lenses, and a discussion of the selection of these parameters for optimum performance are promised for the future. "The theoretical curves were calculated by A.D.Dy\*mnikov and T.Ya.Fishkova, to whom the authors convey their gratitude." Orig.art.has: 5 formulas and 3 figures.

Card 2/4

ACCESSION NR: AP4040307

ASSOCIATION: Fiziko-tekhnicheskiy institut im.A.F.Ioffe AN SSSR Leningrad (Physico-technical Institute, AN SSSR)

SUBMITTED: 24 Oct63

DATE ACQ: 18Jun64

ENCL: 01

SUB CODE: EM, OP

NR REF SOV: 002

OTHER:000

Card 3/4

ACCESSION NR: AP4040307

ENCLOSURE: 01

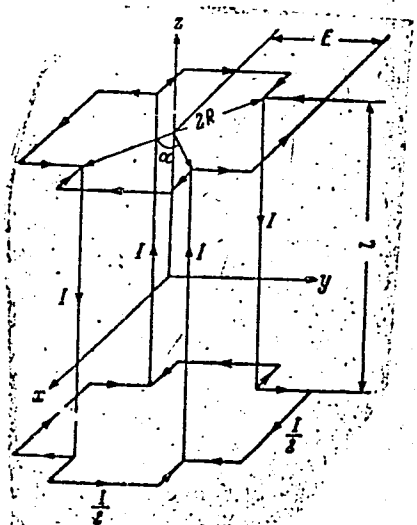


Fig.1. Iron-free magnetic quadrupole lens

Card 4/4

L 19016-65 EWT(1)/T/EEC(b)-2 IJP(c)/AFWL/AFETR/SSD(a)/AFMD(t)/SSD/BSD/ASD(a)-5/  
AS(mp)-2/ESD(dp)/ESD(gs)/ESD(t)

ACCESSION NR: AP4049041

S/0057/64/034/011/2003/2007

AUTHOR: Shpak, Ye.V.; Yavor, S.Ya.

TITLE: Achromatic electromagnetic quadrupole lenses in which the electric and mag-  
netic field distributions on the axis do not coincide

SOURCE: Zhurnal tekhnicheskoy fiziki, v.34, no.11, 1964, 2003-2007

TOPIC TAGS: electron optics, electromagnetic quadrupole lens, chromatic aberration

ABSTRACT: One of the authors has previously collaborated in an investigation of  
combined electric and magnetic quadrupole achromatic lenses (V.M.Kel'man and S.Ya.  
Yavor, ZhTF 31,1439,1961; 33,368,1963) in which the distributions of the electric  
and magnetic fields along the axis are identical. Because of the difficulties of  
fabricating lenses that meet this condition, the previous treatment is now extended  
to the case in which the distributions of the two fields differ slightly. Only  
those cases are considered in which the distributions on the axis of both fields  
are rectangular, and either the two distributions are concentric, but one is longer  
than the other (i.e., extends a greater distance along the axis) by the small quan-  
tity  $2h$ , or the distributions have the same length, but their centers are separated

1/3



L 19016-65

ACCESSION NR: AP4049041

by the distance  $h$ . The case in which the electric field distribution is longer than the magnetic is discussed in some detail. The equations of the trajectories in image space are written (but not derived) to terms of order  $h$ , and from these are derived the conditions for vanishing the first order chromatic aberration of the image position, the lateral magnification, or the longitudinal magnification. The conditions are also derived that two of these aberrations simultaneously vanish. The remaining three cases were treated similarly, and the conditions are given for vanishing chromatic aberration of the image position for an object at infinity. These conditions are all of the form  $B_E^2/B_M^2 = (1 \pm hK)/2$ , where  $B_E^2$  and  $B_M^2$  are the "excitations" of the electric and magnetic portions of the lens respectively (i.e., the coefficients  $B^2$  in the differential equation  $u'' \pm B^2u = 0$  of the trajectory within the lens), the ambiguous sign is positive when a particle incident on the lens from the object encounters the magnetic field before the electric, and  $K$  is always non-negative. Orig.art.has: 23 formulas and 3 figures.

2/3

L 19016-65

ACCESSION NR: AP4049041

ASSOCIATION: Fiziko-tekhnicheskiy institut im.A.F.Ioffe AN SSSR, Leningrad (Physico-  
technical Institute, AN SSSR)

SUBMITTED: 30Mar64

ENCL: 00

SUB CODE: EM, OP

NR REF SOV: 001

OTHER: 000

3/3

L 52024-65 EWT(1) Pq-4 IJP(c)

ACCESSION NR: AP5012062

UR/0057/65/035/005/0947/0950

AUTHOR: Shpak, Ye.V.; Yavor, S.Ya.

TITLE: Achromatic electromagnetic quadrupole lenses with noncoincident axial field distributions. 2

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 35, no. 5, 1965, 947-950

TOPIC TAGS: electron optics, magnetic quadrupole lens, electrostatic quadrupole lens, chromatic aberration

ABSTRACT: This paper is a continuation of a previous paper by the same authors on the same subject (ZhTF, 34, 2003, 1964). The condition for achromaticity of the image position is calculated for a composite electrostatic and magnetic quadrupole lens in which both fields are rectangularly distributed on the axis but in which either the magnetic field extends farther along the axis than the electric field, or both fields have the same axial extend but are shifted axially with respect to each other. The achromaticity conditions are compared with that previously obtained for the case that the electric field extends farther along the axis than the magnetic. The theoretical achromaticity conditions were tested experimentally with a pre-

Card 1/2

L 52024-65

ACCESSION NR: AP5012062

viously described (ZhTF, 34, 1037, 1964) 20.7 cm long 6 cm aperture magnetic quadrupole lens and a 2.6 cm aperture electrostatic quadrupole lens of the same length consisting of a metal cylinder with 6 mm wide slots cut on generatrices. By comparing the excitations of the two centered lenses required for achromaticity with the theoretical formula and using the previously determined form factor of the magnetic lens, the form factor of the electrostatic lens was determined; it was found to be within 2% of the value calculated on the assumption of infinitely narrow slots. The experimental achromaticity conditions for the shifted lenses were found to be in good agreement with the theoretical. When the achromaticity condition was fulfilled the position of the image shifted by only 2% when the energy of the focused particles was changed from 5 to 7.5 keV; for a purely magnetic lens the corresponding image shift was 120%, and for an electrostatic lens, 45%. Orig. art. has: 5 formulas and 3 figures.

ASSOCIATION: Fiziko-tehnicheskiy institut im. A.F.Ioffe AN SSSR, Leningrad  
 (Physico-technical institute, AN SSSR)

SUBMITTED: 01Oct64

ENCL: 00

SUB CODE: OP

NR REF SOV: 002

OTHER: 001

Card 2/2-pib

ACC NR: AP6032504

(A,N)

SOURCE CODE: UR/0413/66/000/017/0070/0070/

INVENTOR: Zhigach, A. F.; Sobolevskiy, M. V.; Sorokin, P. Z.; Sarishvili, I. G.;  
Shpak, V. S.; Vilesova, M. S.

ORG: none

TITLE: Preparative method for boron-containing polymers. Class 39, No. 185487

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 17, 1966, 70

TOPIC TAGS: ~~boron-containing polymer~~, liquid polymer, ~~low molecular weight polymer~~,  
chemical synthesis, glycol, polyester resin, decaborane, dicarboxylic acid

ABSTRACT: An Author Certificate has been issued for a method for preparing boron-containing liquid polymers with a molecular weight of 1500—3000 based on polyester-decaborilene [sic]. The method involves preparation of two individual low-molecular-weight esters by reacting at 180C: 1) di(hydroxymethyl)decaborilene [sic] with a dicarboxylic acid [unspecified]; and 2) the dicarboxylic acid with a glycol [unspecified]. The two esters are mixed, heated to about 200C, and held at this temperature in a inert gas for about 50 hr.

SUB CODE: 21, 07/ SUBM DATE: 21Jul62/

Card 1/1

UDC: 678.86.27

S/576/61/000/000/020/020  
E021/E120

AUTHORS: Kuznetsov, V.G., Yeliseyev, A.A., Shpak, Z.S.,  
Palkina, K.K., Skolova, M.A., and Dmitriyev, A.V.

TITLE: Study of the phase diagram and the electrical  
conductivity of the phases of the Ni-S, Ni-Se and  
Co-S systems

SOURCE: Soveshchaniye po poluprovodnikovym materialam, 4th.  
Voprosy metallurgii i fiziki poluprovodnikov;  
poluprovodnikovyye soyedineniya i tverdyye splavy.  
Trudy soveshchaniya. Moscow, Izd. vo AN SSSR, 1961.  
Akademiya nauk SSSR. Institut metallurgii imeni  
A.A. Baykova. Fiziko-tekhnicheskiy institut. 159-173.

TEXT: Information on the phase diagram and electrical  
conductivity of the phases of the systems Ni-S, Ni-Se and Co-S  
is important for the technology of extraction of nickel, cobalt,  
selenium and sulphur from their ores and also for the search for  
new semiconducting materials. The present investigation was  
therefore carried out. Detailed X-ray analysis, differential  
thermal analysis and measurements of density were carried out.

Card 1/4

3

Study of the phase diagram and the ... S/576/61/000/000/020/020  
E021/E120

Electrical conductivity in the range 20 to 440 °C was measured, and in general showed a steady fall as the temperature increased.

The results showed that in solid solutions based on  $\beta$ -NiSe or  $\beta$ -CoS with a defect nickel arsenide structure and a content of selenium or sulphur greater than 51.6 atomic %, a superlattice is formed. This is explained by ordering of defects in the lattice in Ni or Co positions. The following structures were found to exist:

$\text{Ni}_4\text{S}_{11}\text{Se}_x$  - hexagonal with parameters at 650°C of  
 $a = 5.43 \pm 0.01\text{kX}$ ,  $c = 12.02 \pm 0.01\text{kX}$  and  $c/a = 2.211$   
 $\text{Ni}_9\text{S}_8$  - hexagonal with  $a = 12.10 \pm 0.1\text{kX}$ ,  $c = 11.28 \pm 0.01\text{kX}$ ,  
 $c/a = 0.932$  in a lattice of six  $\text{Ni}_9\text{S}_8$  groups;  
 $\text{Ni}_6\text{Se}_5$  - hexagonal with  $a = 10.77 \pm 0.01\text{kX}$ ,  $c = 15.86 \pm 0.02\text{kX}$ ,  
 $c/a = 1.462$ ;  $\text{Ni}_2\text{Se}_2\text{O}$  - hexagonal with  $a = 7.95 \pm 0.01\text{kX}$ ,  
 $c = 9.76 \pm 0.01\text{kX}$ ,  $c/a = 1.227$ ;  $\beta$ - $\text{Ni}_3\text{Se}_2\text{O}$  - tetragonal with  
parameters at 650 °C of  $a = 7.60 \pm 0.01\text{kX}$ ,  $c = 6.22 \pm 0.01\text{kX}$ ,  
 $c/a = 0.818$ .

It was shown that  $\text{NiS}_2$  has semiconducting properties. The phases  $\beta$ -NiS,  $\beta$ -NiSe and  $\beta$ -CoS with a nickel-arsenide structure and  $\beta$ -CoS,  $\beta$ -NiSe with a nickel-arsenide superlattice, and also

Card 2/4

Study of the phase diagram and the ... S/576/61/000/000/020/020  
E021/E120

The four most recent English language references read as follows:

- Ref. 7: T. Rosenqvist, J. Iron Steel Inst., 1954, v.176, 37.
- Ref. 16: M. Hansen. Constitution of Binary Alloys, 1958,  
2nd publication.
- Ref. 20: W.B. Pearson, Canadian J. of Physics, 1957, v.35, 8, 886.
- Ref. 23: M.A. Peacock, Amer. Mineralog., 1947, v.32, 484.

Card 4/4



ANIKANOVA, K.F.; SHPAK, Z.S.

Ways for improving the quality and increasing the durability  
of tractor tires. Trakt. i sel'khoz mash. no.5:14-15 My '65.  
(MIRA 18:6)

1. Nauchno-issledovatel'skiy institut shinnoy promyshlennosti.

BLAGOV, I.S.; KOTKIN, A.M.; SHPAKHLER, A.G.; ZEL'DIN, B.B.

Briquetting of coal fines by using heavy coal-tar for binder. Ugol' 28  
no.8:40-42 Ag '53. (MLRA 6:7)

1. Trest Ugleobogashcheniye (for Blagov).
2. Yuzhnaya inspektsiya Glavkoksa (for Kotkin).
3. Dnepropetrovskiy gornyy institut (for Shpakhler).
4. Mospinskiy briketnyy kombinat (for Zel'din). (Briquets (Fuel))

LEVIN, S.T.; SHPAKHLER, A.G.

Studying the enrichment factor of Dmitrievskiye coals in the  
Pavlograd-Petropavlovka area. Izv. DGI 29:178-193 '57. (MIRA 11:5)  
(Dnepropetrovsk Province--Coal--Analysis)

SOV/68-59-9-13/22

AUTHORS: Tsarev, M.N., Snpakhler, A.G., Korchagin, L.V., Pluzhnik, V.I., Zel'din, B.B. and Bul'shteyn, B.M.

TITLE: Utilisation of Pitch and Pitch Distillates as Binders for Briquetting Coal Fines.

PERIODICAL: Koks i khimiya, 1959, Nr 9, pp 45 - 49 (USSR)

ABSTRACT: Binding properties of pitches from various works and the application of pitch distillates as binders in briquetting coal fines was investigated. It was established that the binding properties of pitches from various works (properties, Table 1) differ considerably. Binding properties of pitches were correlated with their crushing strength. With increasing crushing strength the quality of the briquettes improves. The crushing strength of pitch depends on the content of free carbon and insoluble in carbon disulphide residue. Physico-chemical properties of pitches depend mainly on the composition of coking blends and tar distillation conditions. Pitch produced from a blend containing an increased proportion of lean coals contain more carbon disulphide insoluble residue and possess poorer binding properties. Pitch produced by batch distillation possess lower mechanical strength and poorer

Card 1/3

SOV/68-59-9-13/22

Utilisation of Pitch and Pitch Distillates as Binders for Briquetting Coal Fines

binding properties than those produced on continuous distillation plants. Liquid pitch distillates cannot be used directly as binders (due to their low viscosity). Additions of 20 - 30% of pitch distillates to pitch increases the quality of the briquettes due to a decrease in the melting temperature of pitch and a more uniform coating of coal grains. Preparation of water emulsion from mixtures of pitch and liquid pitch distillate (Table 4) and its application as a binder improves the quality of the briquettes and decreases the consumption of pitch. Oxidation of liquid pitch distillate with air transfers it into the solid state with a softening temperature about 60°C. The product so obtained possesses high binding properties and if used in a proportion of 8 - 10% (of coal) can replace pitch. Water emulsion can be produced from the oxidation product which when applied as a binder improves the quality of the briquettes. Additions of pitch distillate to the coal permits decreasing the proportion of binder (pitch) by 10 - 12%, (Table 7).

Card 2/3

SOV/68-59-9-13/22

Utilisation of Pitch and Pitch Distillates as Binders for  
Briquetting Coal Fines

There are 7 tables and 6 Soviet references.

ASSOCIATIONS: Stalinskiy sovnarkhoz (Staline Sovnarkhoz)(Tsarev);  
Dnepropetrovskiy gornyy institut (Dnepropetrovsk  
Mining Institute); (Shpakler, Korcragin, Pluzhnik);  
Mospinskaya briketnaya fabrika (Mospino Briquetting Works) (Zel'din,  
Bul'shteyn)

Card 3/3

AGULOV, Aleksey Pavlovich, kand.geol.-mineral.nauk, nauchnyy sotrudnik;  
ALEKSEYEV, Aleksey Mikhaylovich, dotsent, nauchnyy sotrudnik;  
BARYSH, Mariya Yakovlevna, inzh.-geolog, nauchnyy sotrudnik;  
DOMORATSKIY, Nikolay Aleksandrovich, dotsent, nauchnyy sotrudnik;  
LEVIN, Semen Timofeyevich, dotsent, nauchnyy sotrudnik; NESTERENKO,  
Petr Grigor'yevich, prof., nauchnyy sotrudnik; SHIROKOV, Aleksandr  
Zosimovich, prof., nauchnyy sotrudnik; SHPAKHLER, Abram Grigor'yevich,  
starshiy nauchnyy sotrudnik; OVCHAROVA, Z.G., red.izd-va; ROZENTSVEYG,  
Ye.N., tekhn.red.

[Atlas of Donets Basin coals] Atlas uglei Dneprovskogo basseina.  
Kiev, Izd-vo Akad.nauk USSR, 1960. 44 p.

(MIRA 13:12)

1. Dnepropetrovskiy ordena Trudovogo Krasnogo Znameni gornyy institut  
im. Artema (for all, except Ovcharova, Rozentsveyg). 2. Chlen-  
korrespondent AN USSR (for Shirokov).  
(Donets Basin--Coal geology)

SAVCHUK, S.V.; SHPAKHLER, A.G.; STRUYEV, M.I.; SAVKOVA, V.P.

Analysis and properties of Lvov-Volyn' Basin coals. Ugol.  
Ukr. 4 no.4:17-18 Ap '60. (MIRA 13:8)

1. Dnepropetrovskiy gornyy institut (for Savchuk, Shpakhler).
2. Trest Ukruglegeologii (for Struyev, Savkova).  
(Lvov-Volyn' Basin--Coal--Analysis)



AKSEL'ROD, E.I., dotsent; SHPAKHLER, A.G., starshiy prepaodavatel'

Briquetting coal and anthracite mixtures treated with fuel gases.  
Izv.vys.ucheb.zav.; gor.zhur. 5 no.9:165-168 '62. (MIRA 15:11)

1. Dnepropetrovskiy ordena Trudovogo Krasnogo Znameni gornyy  
institut imeni Artema. Rekomendovana kafedroy obogashcheniya  
poleznykh iskopayemykh.

(Briquets (Fuel))

SHPAKHLER, A.G.; AKSEL'ROD, E.I.; KOTKIN, A.M.; SOLOV'YEV, A.V.; ZEL'DIN, B.B.

Improving the manufacture technology in coal briquet plants.  
Ugol' Ukr. 6 no.2:17-19 F '62. (MIRA 15:2)

1. Dnepropetrovskiy gornyy institut (for Shpakhler, Aksel'rod).
2. UkrNIIUgleobogashcheniye (for Kotkin, Solov'yev).
3. Donetskkiproshakht (for Zel'din).  
(Briquets (Fuel))

SHPAHLER, A.G.; KORCHAGIN, L.V.; LEVIN, S.T.; BLAGOV, I.S.; KOTKIN, A.M.;  
SOLOV'YEV, A.V.

Briquetting coal and anthracite breezes in a cold state. Ugol'. prom.  
no.6:34-36 N-D '62. (MIRA 16:2)

1. Dnepropetrovskiy gornyy institut (for Shpakhler, Korchagin, Levin).
2. Ukrainskiy proyektno-konstruktorskiy i nauchno-issledovatel'skiy institut po obogashcheniyu i briketirovaniyu ugley (for Blagov, Kotkin, Solov'yev).

(Briquets (Fuel))

PELUSHKIN, V.I., kand. tekhn. nauk; SHUTAKHIN, A.S., inzh.

Emulsification of bitumen with the help of ultrasonic vibrations.  
Izv. vys. ucheb. zav.; gor. zhur. 7 no.10:174-178 '64. (MIRA 18:1)

1. Dnepropetrovskiy ordena Trudovogo Krasnogo Zvezdeni gornyy  
institut imeni Artema. Rekomendovana kafedroy obogashcheniya  
poleznykh iskopayemykh.

SHPAKHLER, A.G.; Prinimali uchastiye: FER'KOV, Yu.V., inzh.; SAL'NIKOV, V.Ye.

New binder for briquetting solid fuel fines in the cold state.  
Khim.i tekhn.topl. i masel. 10 no.1:32-34 Ja '65.

(MIRA 18:4)

1. Dnepropetrovskiy gornyy institut.

TANDURA, I.P.; ~~SHPAKIN, N.G.~~; ALEKSANDROV, L.A., redaktor; NIKITINA, V.N.,  
redaktor izdatel'stva; GORDIYENKO, Ye.B., tekhnicheskii redaktor

[Experience in setting fuel consumption norms for operations involved  
in well drilling] Opyt kooperatsionnogo normirovaniia raskhoda topli-  
va pri burenii skvazhin. Moskva, Gos.nauchno-tekhn. izd-vo lit-ry  
po geol. i okhrane nedr, 1954. 30 p. (MLRA 10:1)  
(Oil well drilling) (Diesel fuels)

NIKOLAYEV, N.P., inzh.; KUROPYATNIK, G.P., inzh.; ~~SHPAKLER, A.A., inzh.~~

A useful book. Transp.stroi. 10 no.4:59 Ap '60. (MIRA 13:9)  
(Building machinery--Maintenance and repair)

M

Country : USSR

Category: Cultivated Plants. Grains.

Abs Jour: RZhBiol., No 11, 1958, No 48872

Author : Luppov, M.T.; Sipakov, A.P.

Inst : Vitebsk Veterinary Inst.

Title : Corn in the Northern Regions of the Belorussian SSR.

Orig Pub: Uch. zap. Vitebskogo vet. in-ta, 1956, 14, No 1, 201-206

Abstract: This study deals with the agricultural technique (periods and methods of sowing and of cultivation) and biological characteristics of different varieties of corn in cultivating it for grain and for green feed. The cutting of the plants in July to a height of 15-25 cm is recommended. Sowing the corn together

Card : 1/2

M

Country : USSR

Category: Cultivated Plants. Grains.

Abs Jour: RZhBiol., No 11, 1958, No 48872

with vetch is also recommended when using the corn for green feed. The article gives the results of combining cobs with potatoes and clover aftermath for ensilage. -- V.A. Vnuchkova

Card : 2/2



Abs Jour: Ref Zhur-Biol., No 9, 1958, 40491.

Abstract: steamed potatoes in the ratio of 1:1. With 60% of silage in the ration, the coefficients of the digestibility of nutritive substances were: organic substance - 80.42%, protein - 51.97%. The nitrogen was utilized to the extent of 28% (of the ingested amount). In the groups with corn-potatoes and carrots-potatoes silage (40% of nutritiousness), the weight gain and profitable-ness were 12% higher. The carotene in the carrots-potatoes silage was preserved in full.

Card 2/2

52

APPROVED FOR RELEASE: 08/09/2001

CIA-RDP86-00513R001549920011-9

USSR/ Farm Animals: Swine

Abs Jour: Ref Zhur-Biol., No 9, 1958, 40490.

Author : Lemesh, V. F., Shpakov, A. P.

Inst : Not given.

Title : The Utilization of Corncobs in the Preparing of Combined Silage of High Nutritiousness for Pigs.

Orig Pub: V sb.: Kukuruz v BSSR, Minsk, 1957, 388-392.

Abstract: Before ensiling, the corncobs contained, by weight, 37% sheaths of leaves, 28% grain of milky-waxy ripeness, 33% stems, and 2% "silks". They were ensiled in rubble-concrete pits, in a chopped form, together with boiled potatoes, in equal amounts. In the "combined" silage, 1.58% of lactic acid and 0.56% of acetic acid

Card 1/2

SHPAROV, A.F., Cond Agr Sci--(Rus) "Combined <sup>10/10</sup> ~~with~~ in the Feeding  
of hogs." Vitebsk, 1950. 17 pp (Min of Agr USSR. Khark'ov Vet Inst),  
(H, 20-58, 112)

SHPAKOV, B.G., inzh.; PARSHIKOV, A.F., inzh.

Results of reconstructing slab mill "1150" at the Magnitogorsk  
Metallurgical Combine. Mont. i spets. rab. v stroi. 25 no.11:  
18-21 N '63. (MIRA 17:1)

1. Nauchno-issledovatel'skaya stantsiya Gosudarstvennogo tresta  
po montazhu metallurgicheskogo oborudovaniya v vostochnykh  
rayonakh.

SHAKOV, N. V. (ukr)

dissertation: "An investigation of the question of measures for improving the Construction of Residential Buildings in the Azerbaijanian SSR." Cand Tech Sci, Sci Res Institute of Construction Engineering, Academy of Architecture USSR, 2 Jul 54. (Vechernyaya Moskva, Moscow, 23 Jun 54)

SI: 313, 23 Dec 1954

SHPAKOV, B.V., kandidat tekhnicheskikh nauk. SHUMILOV, A.N., kandidat  
tekhnicheskikh nauk.

Reinforced concrete poles for electric railroad contact circuits.  
Transp.stroi. 6 no.1:22-24 Ja '56. (MLBA 9:5)  
(Electric lines--Poles)

SHPAKOV, B.V., kandidat tekhnicheskikh nauk.

Reconstruction of locomotive depots in England. Transp. (MLBA 9:10)  
stroi. 6 no.8:27-28 Ag '56.

(Great Britain--Railroads--Stations)

SHPAKOV, B.V., kandidat tekhnicheskikh nauk.

Prestressed reinforced transmission line supports. Energetik 5  
no.2:4-8 F '57. (MLRA 10:3)  
(Electric lines--Poles)  
(Reinforced concrete)

~~SHPAKOV, B.V.~~, kandidat tekhnicheskikh nauk.

Mechanical fishway for the dam at Torr Echelty (Scotland).  
Gidr.stroi. 26 no.6:56-57 Je '57. (MIRA 10:7)  
(Scotland--Dams)



*Справка к ст. 11-*

SHPAKOV, B.V., kand.tekhn.nauk

The Kariba Hydroelectric Power Station on the Zambezi River  
(Rhodesia). Gidr.stroi.26 no.12:45-46 D '57. (MIRA 10:12)  
(Kariba Gorge, Rhodesia--Hydroelectric power stations)

SHPAKOV, B.V., kand.tekhn.nauk.

Examples of the use of cathode protection of metals from corrosion.  
Gidr.stroi. 26 no.8:55-56 Ag '57. (MIRA 10:10)  
(United States--Pipe, Steel--Corrosion)

*SHPAKOV, B.V.*

KANUKOV, I.M., inzh.; SHPAKOV, B.V., kand. tekhn. nauk.

Making prestressed supports for contact systems. Bet. i zhel.-bet.  
no.3:93-96 Mr 58. (MIRA 11:3)  
(Electric railroads) (Electric lines (Poles))

ALEKSEYEV, A.P., kand.tekhn.nauk; BOGIN, N.M., kand.tekhn.nauk;  
SHPAKOV, B.V., kand.tekhn.nauk; SHURYGIN, V.P., kand.tekhn.nauk

Prestressed reinforced concrete three-stake poles with elastic  
cross pieces. Transp.stroi. 10 no.3:16-20 Mr '60.  
(MIRA 13:6)

(Electric lines--Poles)

SHPAKOV, B.V.

Estimating the tensile strength of anisotropic glass plastics.  
Plast.massy no.3:54-56 '62. (MIRA 15:4)  
(Glass reinforced plastics--Testing)

SHPAKOV, I.M., red.; ABDRAKHMANOV, M.I., red.; BABICHEV, R.I.,  
inzh., red.; BOGOYAVLENSKIY, V.F., red.; VALITOV, Z.G.,  
red.; ROMANOV, Yu.D., red.; SAYFULLEN, S.Sh., red.;  
ZAYNULLIN, I.K., tekhn. red.

[New devices for making gas analyses and automatically regulat-  
ing the temperature of various media] Novye pribory gazovogo  
analiza i avtomaticheskogo regulirovaniia temperatury razlich-  
nykh sred. Kazan', 1961. 169 p. (MIRA 15:7)

1. Tatar A.S.S.R. Samostoyatel'noye konstruktorsko-tehnologi-  
cheskoye byuro po proyektirovaniyu meditsinskikh i fiziologi-  
cheskikh priborov. 2. Glavnyy inzhener Samostoyatel'nogo kon-  
struktorsko-tehnologicheskogo byuro po proyektirovaniyu me-  
ditsinskikh i fizologicheskikh priborov (for Abdrakhmanov).  
(Scientific apparatus and instruments) (Thermostat)

SHPAKOV, I. <sup>V.</sup>, kandidat tekhnicheskikh nauk.

Unkilned facing tiles. Stroi.mat. 3 no.1:34 Ja '57. (MIRA 10:3)  
(Tiles)

SHIMAKI, I.V.

Railroad ties from a new material. Tr. from the Russian.

p. 28 (Zeleznicni Technika. Vol. 5, no. 11, Nov. 1957, Praha, Czechoslovakia)

Monthly Index of East European Accessions (EEAI) 18. Vol. 7, no. 2,  
February 1958



SKORODUMOV, G.Ye., kandidat tekhnicheskikh nauk; SMIRNOV, M.P., kandidat  
tekhnicheskikh nauk; SHPAKOV, I.V., kandidat tekhnicheskikh nauk.

Asbestos silicalcite ties. Put' 1 put.khoz. no.6:12-15 Je '57.  
(MIRA 10:7)

(Railroads--Ties)

SHIRAZ, I.V., Hard asbestos material, date.

Hard asbestos silicate material for making railroad ties. Spec.

LIHZE 12:11:1-50 19.

(Building materials)

(Railroads--Ties)

(NIRA 12:11)

YAKC/LEVV, S.; SHPAKOV, N. (g. Ivanovo)

For the honor of the artel mark. Prom.koop. 12 no.4:36 Ap '58.  
(Efficiency, Industrial) (MIRA 11:4)

SHPAKOV, N.M.

Nonlinear methods for controlling the scanning rate in image transmitting systems. Izv. vys. ucheb. zav.; radiotekh. 3 no.6:571-580 N-D '60. (MIRA 14:8)

1. Rekomendovana kafedroy televideniya Odesskogo elektrotekhnicheskogo instituta svyazi.  
(Television)

SHPAKOV, N. M., Cand Tech Sci -- "Development and study of  
expanding installations of systems for the transmission of  
stationary images with ~~a~~<sup>variable</sup> changeable speed of expansion."  
Len, 1961. (Min of Higher and Sec Spec Ed RSFSR. ~~Lenin~~<sup>Building</sup>  
Inst of Aviation Instrument ~~Construction~~) (KL, 8-61, 252)

- 342 -

35757

S/120/62/000/001/036/061  
E192/E382

24.6800

AUTHORS: Osherovich, A.L., Glukhovskiy, B.M. and Shpakov, N.S.

TITLE: Influence of temperature on the spectral sensitivity of photomultipliers

PERIODICAL: Priboiy i tekhnika eksperimenta, no. 1, 1962,  
149 - 154

TEXT: The temperature stability of the spectral sensitivity of photomultipliers is of importance when the multipliers are used in measuring equipment. This effect was therefore investigated experimentally for several types of tube. The investigated tube was mounted in a special, hermetically-sealed metal envelope, whose internal volume was kept dry by means of silica gel. The envelope together with a dewar flask were immersed in liquid air. The temperature of the photocathode of the tube was measured by thermocouples. In the case of the cathodes deposited on a solid metal base the thermocouples were soldered to the photocathode and the first emitter. In the tubes with semi-transparent cathodes the thermocouples were fixed on the outside surface of the bulb. The cooling rate of the photo-Card 1/4

Influence of temperature ....

S/120/62/000/001/056/061  
E192/E582

cathode could be varied between 20 and 120 °C/h. The same metal envelope was employed when investigating the photomultipliers at temperatures from +20 to +100 °C but it could be heated electrically. The same photomultiplier tube was investigated under photomultiplier conditions as well as a photo-element in order to evaluate the effect of temperature on the sensitivity of the cathode and the system of emitters. In the latter case, the first three emitters were connected together and were used as the anode. A special photomultiplier with a dewar flask was also constructed so that the temperature of the cathodes could be changed without varying the thermal operating conditions of the emitters. For each type of photomultiplier the spectral sensitivity  $\epsilon_\lambda$  was plotted as a function of the wavelength of the light illuminating the cathode. The following photomultipliers were investigated: 1) systems with Sb-Cs photocathodes deposited on a thick metal base, semi-transparent photocathodes on a chromium film and semi-transparent cathodes on glass; 2) systems with oxygen-caesium cathodes deposited

Card 2/5

Influence of temperature ....

S/120/62/000/001/036/061  
E192/E582

on a metal base and semi-transparent cathodes on glass;  
3) semi-transparent systems with Bi-Ag-Cs cathodes, and  
4) semi-transparent multi-alkaline (Sb-K-Na-Cs) cathodes.  
The measurements showed that the spectral characteristics of the same type of photomultiplier do not fully coincide but that the temperature influence on the sensitivity of a given type is qualitatively the same. A typical spectral-sensitivity curve is given in Fig. 2a. This is taken for the multiplier, type  $\text{C}\beta\gamma$ -17 (FEU-17) for the following conditions:  
curve 1 - for  $t = +17^\circ\text{C}$ ; curve 2 - for  $t = +91^\circ\text{C}$ ;  
curve 3 - photocathode only and for  $t = 17^\circ\text{C}$ ;  
curve 4 - for the tube and the photocathode at  $t = -185^\circ\text{C}$ .  
It is seen from the curves that cooling and heating of the tube produce a decrease in the spectral sensitivity at all the measured wavelengths; however, when the tube is cooled to  $-185^\circ\text{C}$  a second maximum is observed in the vicinity of 5500 A. The results of the measurements on the other types of tubes are illustrated in similar graphs. The effect of cooling on the

Card 3/5



Influence of temperature .... S/120/62/000/001/036/061  
E192/E382

signal-noise ratio of the tubes was also measured by using a  
monochromatic light signal source.  
The authors thank S.F. Rodionov for discussing the results.  
There are 7 figures and 1 table.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet  
(Leningrad State University)

SUBMITTED: June 20, 1960

Card 4/5

S/054/63/004/001/009/022  
B102/B186

AUTHORS: Rodionov, S. F., Verevkin, Yu. N., Shpakov, N. S.

TITLE: The eclipse effect in the  $O_3$  region of the solar spectrum

PERIODICAL: Leningrad. Universitet. Vestnik. Seriya fiziki i khimii,  
no. 1, 1963, 67-72

TEXT: After a short description of earlier observations of the eclipse effect (1952, 1954) the authors report on their own observations made during the total solar eclipse (February 15, 1961). Their ozonometric measurements were a part of the solar spectral research program of the Laboratoriya fotometrii NIFI LGU (Laboratory of Photometry of the NIFI LGU). The observations were made in Rostov (center of the belt of totality), in Vol'sk, Saratov oblast' (boundary of the belt) and in Roshchino, Leningrad oblast' (partial eclipse). The results are shown in Fig. 3. The logarithms of the relative intensities ( $\lambda_1=3100$ ,  $\lambda_2=3300$ ,  $\lambda_3=4100\text{\AA}$ ) of scattered light from the zenith are plotted versus time. The effect was for the first time observed with a cloudy sky. The experiments

Card 1/2

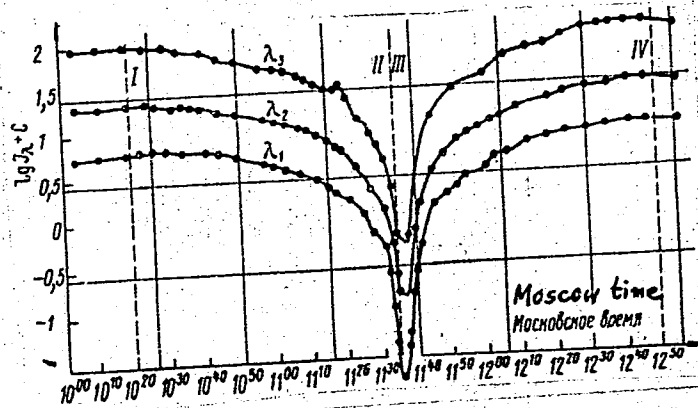
S/054/63/004/001/009/022  
B102/B186

The eclipse effect in the ...

verified the presence of an ecliptic effect resulting in a reduction of relative transparency of the atmosphere in the  $O_3$  spectral region. A "heliophysical" explanation of the effect yields only a qualitative result (DAN SSSR, 106, no. 4, 1956). Other explanations - e.g. the formation of selectively scattering aerosols - are also more or less unsatisfactory. There are 5 figures.

SUBMITTED: June 7, 1961

Fig. 3



Card 2/2

VEROLAYNEN, Ya.F.; OSHEROVICH, A.L.; SUSLOV, A.K.; SHPAKOV, N.S.

Observations of the ozone content during the total solar eclipse  
of July 20, 1963. Geomag. i aer. 5 no.1:113-120 Ja-F '65.  
(MIRA 18:4)

1. Leningradskiy gosudarstvennyy universitet, fizicheskiy institut.

L. 34 211-65 EWG(j)/EWT(1)/EWT(m)/EFT(c)/EWG(v)/EWG(m)EEC-4/EPR/EEC(t)/EWP(t)/  
 EWP(b)/EWA(h) Po-4/Ps-5/Pq-4/Pr-4/Ps-4/Pae-2/Pt-10/Pe-10/Pl-4 IJP(c) JD/GW 75  
 S/0203/65/005/001/0113/0120 73  
 ACCESSION NR: AP5005193

AUTHOR: Varolaynen, Ya. F.; Osherovich, A.L.; Suslov, A.K.; Shpakov, N.S.

TITLE: Observations of the ozone content during the total solar eclipse of 20 July 1963

SOURCE: Geomagnetizm i astronomiya, v. 5, no. 1, 1965, 113-120

TOPIC TAGS: upper atmosphere, ozone, solar eclipse, Hartley band, solar ultra-violet radiation, ozonometer

ABSTRACT: This article describes apparatus for the observation of direct and scattered solar ultraviolet radiation in the Hartley bands. This apparatus was used in observations of the total solar eclipse of 20 July 1963. The authors present curves of the change in intensity of direct and scattered radiation in the wavelength region of 3100, 3300, and 4100 Å during the period of the eclipse for two observation stations (Simushir and Petropavlovsk-Kamchatskiy). The apparatus used at the first station was a three-channel ozonometer for measurement of direct solar radiation and a single-channel ozonometer with detachable light filters for measurement of the radiation scattered by the region near the zenith. At the

Card 1/3

I. 34911-65

ACCESSION NR: AP5005193

second station, there was an identical single-channel ozonometer for measurement of the radiation scattered near the zenith. The ozonometers were attached to pilot-balloon theodolites, making it possible to point the instruments at the center of the solar disk. The radiation detectors were antimony-caesium end-window photomultipliers. An electrical circuit of the ozonometer is given, but there is little description of the instrument. The eclipse was total at the first station but only partial at the second. The formulas used in determining ozone content are cited. It is demonstrated clearly that there was an ozone eclipse effect where the phase was total, but none where it was partial. The method used in calculating darkening toward the limb of the solar disk is presented, because this factor must be taken into account for the results to have validity. The merit of the study is that identical methods and identical apparatus were used for observations at stations where meteorological conditions were different and where the phase of the eclipse was different. Possible explanations for the ozone eclipse effect are given. The authors thank S. F. Rodionov for valuable advice during preparations for and implementation of the investigation. Orig. art. has: 8 formulas, 6 figures and 4 tables. [08]

Card 2/ 3

L 34911-65

ACCESSION NR: AP5005193

ASSOCIATION: Fizicheskiy institut, Leningradskiy gosudarstvennyy universitet  
(Physics Institute, Leningrad State University)

SUBMITTED: 02Mar64

ENCL: 09

SUB CODE: AA

NO REF SOV: 013

OTHER: 009

ATD PRESS: 3212

Card 3/3

L 2792-66 FSS-2/EWT(l)/EWT(m)/FS(v)-3/EPF(c)/EEC(k)-2/EWA(d)/EWP(t)/EWP(b)

ACCESSION NR: AP5021355 LJP(c) JD/TT/GW

UR/0120/65/000/004/0171/0174  
551.508.552

AUTHOR: Bol'shakova, L. G.; Osherovich, A. L.; Rodionov, S. F.; Suslov, A. K.;  
Shpakov, N. S. 44.55 44.55 44.55 44.55 52 46 B

TITLE: Photoelectric ozonometers for studying vertical ozone distribution

SOURCE: Pribory i tekhnika eksperimenta, no. 4, 1965, 171-174 12,44,55

TOPIC TAGS: ozonometer, photoelectric ozonometer, ozone distribution

ABSTRACT: Two types of photoelectric ozonometers are compared, one with an orientation system and the other with a gypsum scattering screen. The system used in the sun-oriented ozonometer permitted it to be trained on the sun with an accuracy of  $\pm 5'$ . The ozonometer had two independent amplifier channels, for  $\lambda_1 = 3100 \text{ \AA}$  and  $\lambda_2 = 3300 \text{ \AA}$ ; signals from each channel were mechanically switched to a recorder. Monochromatic filters were used to increase measurement accuracy. The cesium-antimony phototubes had a spectral sensitivity limit of  $\sim 6500 \text{ \AA}$ , which eliminated the effect of the second maximum of filter transmission at  $\lambda = 7200 \text{ \AA}$ . The advantage of the screen-type ozonometer developed by the authors is that it needs no orientation system. It was found that a  $5^\circ$  nonperpendicularity of the screen to the opti-

Card 1/2



L 2792-66

ACCESSION NR: AP5021355

cal axis and a 20° deviation of the ozonometer from the vertical had no effect on the ratios of signal intensities  $I_1/I_2$ . In tests conducted at Karadag (Crimea) and Elbrus, direct and scattered radiation was measured almost simultaneously in the same ozonometer at various values of  $Z_0$ . Results on ozone distribution agree with those in the literature cited. This ozonometer is considered to be reliable and virtually unaffected by atmospheric conditions. <sup>12, 44, 35</sup> Orig. art. has: 7 figures, 1 table, and 2 formulas. 6

[TS]

ASSOCIATION: Leningradskiy gosudarstvennyy universitet (Leningrad State University)

SUBMITTED: 11Jan64

ENCL: 00

<sup>44,55</sup>  
SUB CODE: ES, EC

NO REF SOV: 007

OTHER: 005

ATD PRESS: 4103

BVK

Card 2/2

SHPAKOV, P.S.

Physiological significance of the sounds of the human voice.  
Zhur. vys. nerv. deiat. 14 no.2:239-246 Mr-Apr '64. (MIRA 17:6)

1. Physiological Laboratory, P.F.Leshaft Natural Science Research,  
Institute, Leningrad.

ZYKOV, V.A., inzhener; ~~SHPAKOV, V.I., inzhener.~~

PChM-4 receiver set. Vest.sviazi 16 no.2:5-6 F '56. (MLRA 9:7)

1.Laboratoriya Moskovskoy direksii radiosvyazi i radioveshchaniya.  
(Radio--Receivers and reception)

SHPAKOV, V.I., inzhener.

~~Organization and functioning of radiotelegraphic communication.~~  
Vest.sviazi 16 no.5:16-17 My '56. (MLRA 9:8)

1. Laboratoriya radiosvyazi Moskovskoy direktsii radiosvyazi i  
radioveshchaniya.  
(Telegraph, Wireless)