

32578

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S/044/61/000/012/034/054  
C/11/0333

**AUTHORS:** Pak, K. A., Makarov, P. M.

**TITLE:** The original of the image of a function

**PERIODICAL:** Referativnyy zhurnal Matematika, no. 12, 1961, 72,  
abstract 12B/20. ("Sb. nauchn. rabot Mosk. s.-kh.  
akad. im. K. A. Temiryazeva", 1961, 14, 215-218)

**TEXT:** The original  $f(\tau)$  of the function

$$F(s) = \frac{1}{s^2} \exp(-x \sqrt{s/a + k^2})$$

under the transformation

$$F(s) = \int_0^{\infty} f(\tau) e^{-s\tau} d\tau$$

is exhibited.

[Abstracter's note: Complete translation.]

Card 1/1

PAK, K. I., Cand Agric Sci (diss) -- "Foxtail sophore, pink polygonum, European bindweed, and 'white-maned' thistle: their agrobiological characteristics and measures to combat them under the conditions of Alma-Ata Oblast". Alma-Ata, 1960. 20 pp (Committee on Higher and Inter Spec Educ of the Council of Ministers Kazakh SSR, Kazakh State Agric Inst), 200 copies (KL, No 11, 1960, 13)

PAK, K.P., kand.sel'skokhozyaystvennykh nauk.

Ways of increasing the fertility of Solonetz soils [with summary  
in English]. Izv. TSKhA no.5:63-90 '57. (MIRA 11:1)  
(Solonetz soils) (Soil fertility)

CA PAK, K. P

19

Increasing the productivity of solonchaks with irrigation  
under conditions of grass sod in the rotation. I. N. Antipov,  
K. P. Pak, and V. N. Filippov. *Sov. Agr. Sci.*  
9, No. 2, 48-53 (1951). A review of 15 years of investiga-  
tions on ameliorating solonchaks by means of gypsum, grass  
culture, and irrigation. It is shown that under certain  
conditions, especially in the presence of sulfates, it is not  
imperative to wash out the salts. U.S. Info.

ANTIPOV-KARATAYEV, I.N., akademik; PAK, A.P., kand. sel'skokhozyaystvennykh

Transform Solonetz soils into fertile land. Zemledelie 7 no.11:  
44-50 N '59 (MIKA 13:3)

1. AN Tadzhikskoy SSR (for Antipov-Karatayev). 2. Pochvennyy institut  
AN SSSR (for Pak).  
(Solonetz soils)

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>
Antipov, Karalayev, I. I.	"Development of Science in the USSR"	Institute of Scientific Research
... ..	...	...
... ..	...	...
... ..	...	...

80: W-30604, 7 July 1954

PAK, K.P., kand.sel'skokhozyystvennykh nauk

Importance of green manure crops in improving Solonetz soils.  
Zemledelie 6 no.10:19-22 0 '58. (MIRA 11:11)  
(Solonetz soils) (Green manuring)

USSR/Soil Science - Tillage. Amelioration. Erosion.

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1413

Author : Pak, K.P.

Inst : ~~Timiryazevsk. s.-kh. akad.~~ Timiryazev Agricultural Academy

Title : Ways of Increasing the Fertility of Solonetz Soils

Orig Pub : Izv. Timiryazevsk. s.-kh. akad., 1957, No 5, 63-90

Abstract : Experiments have been conducted since 1935 at Malo Uzen' base on average columnar solonetz soils, where  $\text{CaCO}_3$  was found at a depth of 30 cm. Best results were obtained with deep treatment of the soil (plowing to a depth of 35 cm with subsoil plowing to 15 cm). Deep plowing contributed toward a reduction in the alkalinity of the soils, formation of a more extensive spread of the root area, increase in porosity and water permeability of the soils, and general improvement of

Card 1/2



CA PAK, K.P.

15

**Agrotechnical basis for the amelioration of solonchaks under irrigation** M. G. Chuzhevskii and N. P. Pak. *Doklady Vsesoyuz. Ucheb. Nauch.-Issled. Inst. Zemledel. Mash. Stroyen.* 16, No. 7, 3 (1951) - Deep plowing brings to surface CaCO<sub>3</sub> and frequently also some gypsum; these affect the solonchak attributes of the surface soil - dispersion as a result of Na in exchange complex - and ameliorate the soil. This system together with perennial grass culture, has proved to be more effective than surface gypsum applications. J. S. Jull.

**Traces of elements in agriculture** J. Wind (Centr. Inst. Landbouwk. Onderzoek, Wageningen, Holland). *Maandblad Landbouwk. Onderzoek* 8, 223-33 (1951) - A general review of the effect of the presence and lack of the following elements in the soil on plant growth and grazing animals: B, Cu, Zn, Mn, Mo, Fe, Co, and I.

I. C. Jansen

ANTIPOV-KARATAYEV, I.N. [deceased]; PAK, K.P.

Chernozem soils and their improvement under irrigation and  
dry conditions. Pochvovedenie no.10:1-6 O '65.

(MIRA 18:11)

1. Pochvennyy institut imeni Dokuchayeva.

PAK, Konstantin Pakhomovich

"Melioration of Black Alkali Soils (solontsy) of the Chestnut Zone";

**dissertation for the degree of Doctor of Agricultural Sciences  
(awarded by the Timiryazev Agricultural Academy, 1962)**

**(Izvestiya Timiryazevskoy Sel'skokhozyaystvennoy Akademii, Moscow, No. 2,  
1963, pp. 232-236)**

7/11/1 1

KYDYBOV, M., nauchnyy sotrudnik; BATYRCHAYEV, I.; LOPINA-SHENDRIK, M.D.;  
KALBAYEV, A.; IMANAKUNOV, B.; SULAYMANKULOV, K., kand.khim.nauk;  
DUYSHENALIYEVA, N.; AKBAYEV, A.; KAZIYEV, K.; GOLOVIN, P.I.;  
BAKASOVA, Z.; KOVALENOK, Z.P.; SHELUKHINA, N.P.; BUGUBAYEV, A.B.,  
starshiy prepodavatel'; BAYBULATOV, E.B., mladshiy nauchnyy  
sotrudnik; FILIPPOV, N.A., mladshiy nauchnyy sotrudnik; MAMBETA-  
KUNOV, T., aspirant; IMANKULOV, A., aspirant; TURMAMBETOV, S.,  
mladshiy nauchnyy sotrudnik; MUKHAMEDZIYEV, M.M., nauchnyy sotrudnik;  
KONURBAYEV, A.O.; PAK, L.V.; HUDAKOV, O.L.; TOKTOSUNOV, A.;  
KULAKOVA, R.I.; ASHIRAKHMANOV, Sh., aspirant; ALYSHBAYEV, B.;  
SULTANALIYEV, A.; AKHMETOV, K.; POLONOVA, A.P.; NIKITINSKIY, Yu.I.;  
SHAMBETOV, S.Sh.; DZHUMBAYEV, B.O., nauchnyy sotrudnik; DRUZHININ,  
I.G., red.; ANOKHINA, M.G., tekhn.red.

[Papers by junior scientists of the Academy of Sciences of the  
Kirghiz S.S.R.] Trudy molodykh nauchnykh rabotnikov AN Kirgizskoi  
SSR. Frunze, 1958. 411 p. (MIRA 12:3)

(Continued on next card)

KYDYNOV, M.---(continued) Card 2.

1. Akademiya nauk Kirgizskoy SSR, Frunze.
  2. Institut khimii AN Kirg.SSR (for Kydynov).
  3. Kirgizskiy gosudarstvennyy universitet (for Bugubayev).
  4. Institut geologii AN Kirg.SSR (for Baybulatov).
  5. Institut vednogo khozyaystva i energetiki AN Kirg.SSR (for Filippov).
  6. Otdel fiziki i matematiki AN Kirg.SSR (for Mambetkunov, Imankulov).
  7. Institut zoologii i parazitologii AN Kirg.SSR (for Turmambetov).
  8. Kirgizskiy meditsinskiy institut (for Mukhamedziyev).
  9. Otdel pochvovedeniya AN Kirg.SSR (Ashirakhmanov).
  10. Institut botaniki AN Kirg.SSR (for Alyshbayev, Sultanaliyev, Akhmetov, Polenova, Nikitinskiy).
  11. Institut istorii AN Kirg.SSR (for Dzhumbayev).
- (Science--Collections)

PAK, F.

General assembly of the Geographic Society of Slovenia.  
Geogr obz 10 no.1/2:24-25 '63.

PAK, Mirko

Today's economic importance of hanging brooks in the Dravsko  
Polje region. Geogr vest 36:75-79 '64 [publ. 65].

ARSHON, I.S.; PAK, M.A. (Moskva)

Uniqueness theorem for harmonic functions in a half-space.  
Mat. sbor. 68 no.1:148-151 S '65. (MIRA 18:9)



1. The first part of the document is a list of names and titles of the members of the committee. The names are listed in alphabetical order. The titles are listed in the order in which they appear in the document.

2. The second part of the document is a list of the names and titles of the members of the committee who were present at the meeting. The names are listed in alphabetical order. The titles are listed in the order in which they appear in the document.

3. The third part of the document is a list of the names and titles of the members of the committee who were absent from the meeting. The names are listed in alphabetical order. The titles are listed in the order in which they appear in the document.

PAK, M.I.; YEREMENKO, Yu.A.; LUKIN, Yu.T.; TSOY, A.Kh.

Characteristics of an argon-filled spark chamber. Prib. 1  
tekh. eksp. 8 no.6:52-54 N-I '63. (MIRA 17:6)

1. Institut yadernoy fiziki AN KazSSR.

L 4513-66 EWT(1)/EWT(m)/FOC/T/EWA(h) IJP(c) GS/GM

ACCESSION NR: AT5022839

UR/0000/65/000/000/0271/0275

36  
33  
0+1

AUTHOR: Pak, M. I.; Lukin, Yu. T.

TITLE: Spark counter for cosmic ray recording

SOURCE: Vsesoyuznoye soveshchaniye po kosmofizicheskomu napravleniyu issledovaniy kosmicheskikh luchey. 1st, Yakutsk, 1962. Kosmicheskiye luchy i problemy kosmofiziki (Cosmic rays and problems in cosmophysics); trudy soveshchaniya. Novosibirsk, Redizdat Sib. otd. AN SSSR, 1965, 271-275

TOPIC TAGS: cosmic ray measurement, radiation counter, spark chamber, calorimeter

ABSTRACT: The paper describes the design and experimental study of the efficiency of a large-area spark chamber operating simultaneously with an ionization calorimeter and photoemulsions. An analysis of the operating conditions produces the optimum values of parameters (including pulse voltage, pulse delay, and gap size) for the 23x30 cm<sup>2</sup> spark counter under consideration. Results show that 1) the counter efficiency does not depend on the electric field intensity alone, but also on other design parameters; and 2) a 23x30 cm<sup>2</sup> spark counter with a 1.5 mm gap can be used successfully in conjunction with ionization calorimeters for the study of high energy cosmic rays. "The authors thank A. A.

Card 1/2

09010064

L 4513-66

ACCESSION NR: AT5022839

3

Yenin and S. K. Vasil'yevskaya for continuous help during the construction and tuning up of the experimental device and the carrying out of the measurements." Orig. art. has: 1 formula and 5 figures.

ASSOCIATION: Institut yadernoy fiziki AN KazSSR (Institute of Nuclear Physics, AN Kaz-SSR)


SUBMITTED: 28Oct64

ENCL: 00

SUB CODE: AA , EM

NO REF SOV: 003

OTHER: 003



Card 2/2

PAK, M.I.; LUKIN, Yu.T.

Spark counter for recording cosmic-ray particles. Trudy Inst.  
iad. fiz. AN Kazakh. SSR 6:105-111 '63. (MIRA 16:10)

SECRETARY OF DEFENSE  
WASHINGTON, D.C. 20301  
OFFICE OF THE SECRETARY OF DEFENSE  
ATTENTION: DIRECTOR OF THE OFFICE OF  
DEFENSE INTELLIGENCE ACQUISITION  
WASHINGTON, D.C. 20301  
1. [Illegible]

KOSOV, A.P.; MAGAY, L.I.; NIKULIN, B.K.; PAK, M.S.; RUDAKOV, G.M.;  
SAYFI, E.Kh.; SERGIYENKO, V.A.; SOKOLOV, P.A.; SPIRIDONOV,  
P.V.; SHPOLYANSKIY, D.M.; TIKHONOVA, I., red.

[Overall mechanization and cultivation practices for cotton  
crops] Kompleksnaia mekhanizatsiia i agrotekhnika khlop-  
chatnika. Tashkent, Gos.izd-vo Uzoekskoi SSR, 1964. 407 p.  
(MIRA 17:11)

1. Sredneaziatskiy institut mekhanizatsii i elektrifikatsii  
sel'skogo khozyaystva. 2. Sredneaziatskiy institut mekhani-  
zatsii i elektrifikatsii sel'skogo khozyaystva (for all  
except Tikhonova).

PAK, M. S., Cand Tech Sci -- (diss) "Study of the basic ~~per-~~  
~~formance~~ ~~and~~ ~~features~~ of tractor cultivators ~~in~~ the irrigated  
cultivation of cotton." Tashkent, 1958. 15 pp with graphs  
(Min of Higher Education USSR, Tashkent Inst of Engineers of  
Irrigation and Mechanization of Agriculture TIIIMSKh), 150  
copies (KL, 35-58, 108)



PAK, M.T., vrach

Organization of tuberculosis care in the Tyura-Kurgan District  
of Namangan Province. Med.shur.Uzb. no.6:16-17 Je '58.

(MIRA 13:6)

1. Oblastnoy tuberkuleznyy dispanser, Tyura-Kurganskogo rayona  
Namanganskoy oblasti.

(TYURA-KURGAN DISTRICT--TUBERCULOSIS)

PAK, N.; SULKOVSKAYA, M.A., red.; MUSHYAKOVA, L., tekhn.red.

[*"Avangard" Collective Farm*] Kolkhoz *"Avangard."* Moskva, Gos.  
izd-vo sel'khoz.lit-ry, 1950. 70 p. (MIRA 13:8)  
(Chilii District--Collective farms)

SHEVCHENKO, F., prof.; AKHTAMOV, A., dotsent; ARIPOV, S., nauchn.  
sotr.; PAK, N., nauchn. sotr.; NAVRUZOV, M., zhurnalist;  
TANKHELSON, A., zhurnalist; KOCHEROV, V., red.; BAKHTIYAROV, A.,  
tekhn. red.

[I.P.Pavlov Samarkand State Medical Institute] Samarkandskii  
gosudarstvennyi meditsinskii institut im. akademika I.P.Pavlova;  
kratkii spravochnik. Tashkent, Gos. izd-vo Uzbekskoi SSR, 1962.  
25 p. (MIRA 16:8)

1. Samarkandskiy gosudarstvennyy meditsinskiy institut (for  
Aripov, Pak).

(SAMARKAND--MEDICAL COLLEGES)

PAK. N., inzhener.

Form for making reinforcement frames. Stroitel' no.1:  
16 Ja '57.

(MLRA 10:2)

(Concrete conduits)

SECRET

CONFIDENTIAL

S/126/62/014/006/019/020  
E073/E420

AUTHORS: Ivlev, V.F., Pak, N.G., Kan, S.V.  
TITLE: Hysteresis loops in flat ferromagnetic films  
PERIODICAL: Fizika metallov i metallovedeniye, v.14, no.6, 1962,  
938-940

TEXT: There are no literary data on the hysteresis of isotropic films. To fill this gap ferromagnetic films were investigated which were produced by thermal evaporation of iron and of an alloy (17% Fe, 80% Ni, 3% Mo) from a tungsten crucible. The metallic vapour beam was at an angle of  $15^\circ$  to the substrate. Relatively thick iron films were deposited on glass discs (heated to  $300^\circ\text{C}$ ) in a magnetic field of 100 Oe, by evaporation from an electrically heated iron wire. The metal layer was not covered by a layer of a dielectric. The magnitude and the direction of the magnetization vector changed during cyclic remagnetization and hence the flux of reflected polarized light also changed. Using the longitudinal Kerr effect by revolving the specimen or the remagnetization equipment relative to the plane of incident light a series of loops could be obtained from a single film in the same way as if mutually perpendicular measuring coils were used. There  
Card 1/3

Hysteresis loops ...

S/126/62/014/006/019/020  
E073/E420

was good agreement between the hysteresis loops obtained for the same film, magneto-optically and by current methods. The rectangularity of hysteresis loops and the coercive force of a 2100 Å thick film showed no appreciable change on changing the angle between the direction of remagnetization and the plane of the incident light. Iron films exceeding 1000 Å were shown to be isotropic. The hysteresis behaviour of iron and molybdenum permalloy films, vacuum-deposited from tungsten crucibles indicated that they were uniaxially anisotropic. Hysteresis loops of 2100 and 450 Å thick iron films, recorded from various sections of the films, showed that in the isotropic films the coercive force of both sections was 6 and 7 Oe, whilst in the anisotropic films (vacuum-deposited from crucibles) the respective values were 27.7 and 30.8 Oe. The differences in the coercive force of individual sections of the thin films were explained by the irregular distribution of the nonuniformities. A correspondence was observed between the behaviour of the hysteresis loops and the domain structure. Remagnetization in isotropic films was by boundary displacement. The domain structure in very thin iron

Card 2/3

Hysteresis loops ...

S/126/62/014/006/019/020  
E073/E420

films was anisotropic. There are 3 figures.

ASSOCIATIONS: Institut fiziki SO AN SSSR  
(Physics Institute SO AS USSR)  
Krasnoyarskiy pedinstitut  
(Krasnoyarsk Pedagogic Institute)

SUBMITTED: April '10, 1962

Card 3/3



S/120/63/000/001/033/072  
E039/E072

**AUTHORS:** Pak, N.G. and Kan, S.V.

**TITLE:** A magneto-optical method for the presentation of hysteresis loops of ferromagnetic films on an oscilloscope

**PERIODICAL:** Pribory i tekhnika eksperimenta, no. 1, 1963, 133-134

**TEXT:** The apparatus consists of optical and electronic units. Light from a 400 W lamp is polarized and allowed to fall on the ferromagnetic film, which is mounted horizontally between two 16-cm diameter Helmholtz coils. These coils produce a field of ~150 Oe at the sample. The angle of incidence is 60° and the reflected light is polarized at an angle which depends on the magnetization of the sample. With cyclic remagnetization (at 50 c.p.s.) the value and direction of the angle of rotation of the plane of polarization changes continuously. The reflected light is passed through an analyzer and onto a photomultiplier, the output from which is fed to the vertical plates of the oscilloscope. The signal for the horizontal plates is taken from the Helmholtz coil circuit. The rotation of the plane of polarization for an  
Card 1/2

A magneto-optical ....

S/120/63/000/001/033/072  
12039/E072

Iron film is 0.5 to 0.7 $\mu$  and somewhat smaller for permalloy. Hysteresis loops can be obtained for permalloy films with diameters of not less than 5  $\mu$ m. The effect of magnetization on domain structure is illustrated. This method is simple and can be used over a wide range of frequencies and temperature. There are 4 figures.

ASSOCIATION:

Institut fiziki CO AN SSSR  
(Institute of Physics, SO AS USSR)

SUBMITTED:

April 7, 1962

Card 2/2

15370-66 BTT(1)/EWP(e)/EWT(m)/T/EWP(t)/EWP(b) IJP(c) JD/GG  
ACC NR: AP8904471 SOURCE CODE: UR/0048/86/030/001/0071/0074  
AUTHOR: Markov, V.S.; Prokopenko, V.S.; Pak, N.G.; Vasil'yev, G.G.  
ORG: Krasnoyarsk State Pedagogical Institute (Krasnoyarskiy gosudarstvennyy pedagogicheskiy institut)  
TITLE: Oscilloscope display of the hysteresis loops of separate parts of a film  
Transactions of the Second All-Union Symposium on the Physics of Thin Ferromagnetic  
Films held at Irkutsk 10 July to 15 July, 1984

54  
53  
B

21.44.55

21.44.55

6.44.55

SOURCE: AN SSSR. Investiya. Seriya fizicheskaya, v.30, no. 1, 1986, 71-74  
TOPIC TAGS: ferromagnetic film, magnetic thin film, Faraday effect, Kerr effect, hysteresis loop, magnetic anisotropy,

ABSTRACT: Equipment employing the Faraday or Kerr effect is described with which one can display on an oscilloscope screen the hysteresis loop of a small region of a ferromagnetic film. In the authors' apparatus a spot of polarized light from several millimeters to several tens of microns in diameter was focused on the investigated film and the reflected or transmitted light (depending on the thickness of the film) was collected, passed through an analyzer, and focused on a photomultiplier. The signal from the photomultiplier was applied to the vertical axis of an oscilloscope, to the horizontal axis of which there was applied a signal proportional to the magnetizing field. A number of exploratory experiments were performed and hysteresis loops are

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L 35370-66

ACC NR: AP8004471

presented. By recording both the longitudinal and transverse hysteresis loops with different orientations of the film it is possible to map the direction of the anisotropy axis in different parts of the film. The accuracy with which the direction of the local anisotropy axis can be determined is at least great as can be obtained with the technique of D.O. Smith (J. Appl. Phys., 32, 70 (1961)), which requires observation of the domain structure. (Orig. art. has: 8 figures.

SUB CODE: 20

SUBM DATE: 00

ORIG. REF: 001

OTH REF: 001

JS  
2/3

ACC NR: AP6033057 (N) SOURCE CODE: UR/0120/00/001000/001000

AUTHOR: Markov, V. S.; Pak, N. G.; Prokopenko, V. S.; Vasilyev, G. G.

ORG: Krasnoyarsk Pedagogical Institute (Krasnoyarskiy pedinstitut)

TITLE: Anisotropy dispersion, thickness and coercive force of ferromagnetic films

SOURCE: Fizika i metallov i metallovedeniye, v. 22, no. 2, 1966, 312-313

TOPIC TAGS: ferromagnetic film, magnetic coercive force, magnetic anisotropy, magnetic property

ABSTRACT: The authors study the interaction between  $H_c$  and the angular macrodispersions of anisotropy for alloy films containing 80% Ni, 17% Fe and 3% Mo, 200-900 Å thick. The films were produced by condensation in a vacuum on a glass substrate using tungsten wire vaporizers. The magnetic characteristics of the components and of the entire film were determined by the oscillographic local hysteresis loop method. The results show that angular macrodispersion of anisotropy may contribute to the coercive force of the films. The lack of macrodispersion control could account for the variation in experimental relationships between  $H_c$  and the thickness of the ferromagnetic film. Orig. art. has: 2 figures, 1 table. c

SUB CODE: 20/ SUBM DATE: 07Sep65/ OTH REF: 003

Card 1/1

UDC: 539.216.2:538.248

PAK, N.G.; KAN, S.V.

Domain structure and coercive force of thin films at different  
field frequencies. Izv. AN SSSR. Ser.fiz. 3. no.1:1982. p.1-7.  
(NIA 100)

1. Institut fiziki Sibirskogo otdeleniya AN SSSR i Krastovyy gosudarstvennyy pedagogicheskiy Institut.

MARCOV, V. ...

(Sociology of ...)

1. ...

ACCESSION NR: AP4034063

S/M26/64/017/004/0623/0624

AUTHORS: Fak, N. G.; Rusova, S. G.

TITLE: Influence of ultrasonic oscillations on some magnetic properties of thin films

SOURCE: Fizika metallov i metallovedeniye, v. 17, no. 4, 1964, 623-624

TOPIC TAGS: ultrasonic oscillation, magnetic property, thin film, permalloy film, iron film

ABSTRACT: The influence of supersonic oscillations on the magnetic properties of thin films (susceptible to various vibrations produced with the help of computer equipment) was investigated. The films were produced by sprinkling powdered material onto glass plates (heated to 200C) in a vacuum of  $10^{-5}$  mm Hg in a magnetic field of 100 ergs. Some of the samples were subjected to supersonic vibrations (frequencies of 20 kilohertz). These films exhibited no new features, except for a tendency to establish a ferromagnetic domain structure with somewhat more parallel boundaries when demagnetized in an alternating field. The

Card 1/2



ACCESSION NR: AP4034063

domain structure and the hysteresis loops were investigated by the magneto-optical method described by N. G. Pak and S. V. Kan (Pribery\* i tekhnika eksperimenta, 1963, No. 1, 133). Neither the loops nor the structure changed noticeably in the absence of a field; the structure, however, changed substantially in a fixed constant field. The demagnetization of a permalloy film containing 17% Fe, 80% Ni, and 3% Mo (1300 Å thick) in a constant field of 0.8 erg started at the edges and spread over the film as the intensity of oscillations increased. Similar behavior of the domain structure was also observed on the iron films, but more intensive oscillations were required because of the higher coercive force involved. In general, the ferromagnetic properties of films proved more resistant to external mechanical influences than those of massive samples. Orig. art. has: 4 photographs.

ASSOCIATION: Institut fiziki SO AN SSSR (Institute of Physics, SO AN SSSR)

SUBMITTED: 25Jul63

DATE ACQ: 20May64

ENCL: 00

SUB CODE: EN

NO REF SOV: 003

OTHER: 001

Card 2/2

AP4010312

S/0048/64/028/001/0157/0160

AUTHOR: Pak, N.G.; Kan, S.V.; Savchenko, M.K.

TITLE: Hysteresis loops and domain structure of ferromagnetic films at different temperatures [Report, Symposium on Questions of Ferro- and Antiferromagnetism held in Krasnoyarsk, 25 June to 7 July 1962]

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v.28, no.1, 1964, 157-160

TOPIC TAGS: thin films, ferromagnetic films, hysteresis loop, domain structure, cobalt, iron, molybdenum permalloy, coercive force, magnetic anisotropy

ABSTRACT: Although there have been many experimental investigations of the temperature dependence of the magnetic properties of ferromagnetic films, most of these, however, have been concerned with the temperature dependence of the saturation magnetization. Yet the temperature dependence of other magnetic properties of thin films are also of interest, particularly in view of the fact that thin film memories are required to operate at temperatures in the range from -100 to 300°C. The present work was concerned with investigation of the hysteresis loops and domain structure of thin films of iron, cobalt and Mo permalloy (17% Fe, 80% Ni and 3% Mo)

Cord 1/3

AP4010312

at different temperatures. The domain structure was observed by means of the meridional Kerr effect. The permalloy and cobalt films were prepared by vacuum evaporation from a tungsten crucible in a 100 Oe field. The iron films were evaporated directly from an iron wire heated by passage of current. The films were deposited on cover glasses heated to 150°C. The vacuum curing the evaporation operation was about  $8 \times 10^{-6}$  mm Hg. The hysteresis loops were recorded in the direction of the axis of easy magnetization for different directions of the applied field. The hysteresis loops for a 1600 Å thick cobalt film at temperatures from 20 to 320°C and different directions of the switching field are reproduced in a figure. At room temperature the best squareness ratio and the greatest value of the coercive force in the easy magnetization direction are observed with the field applied in the same direction ( $\alpha = 0^\circ$ ). Slight rotation of the reversing field gives rise to distortion of the horizontal sections of the loop, which is indicative of rotation processes. With increase in temperature the loops narrow. The initial properties of the film are not re-established upon cooling to room temperature. The behavior of Mo permalloy films is different: these films retain their anisotropy after heating and cooling. The coercive force versus temperature curves obtained for the different films are reproduced in Fig.1 of the Enclosure. Photographs of the domain structure of 1600 Å thick cobalt and iron films in the process of magnetization re-

Card 2/13

AP4010312

versal at different temperatures are reproduced in the text. On the basis of the experimental results it is concluded that cobalt films become isotropic at about 320°C but do not return to the initial anisotropic state upon subsequent cooling. Permalloy films, on the contrary, regain their initial properties after cooling. In iron films, there form two mutually perpendicular groups of domains. Orig.art.has: 4 figures.

ASSOCIATION: Institut fiziki Sibirskogo otdeleniya Akademii nauk SSSR (Institute of Physics, Siberian Division, Academy of Sciences, SSSR); Krasnoyarskiy pedagogicheskiy institut (Krasnoyarsk Pedagogical Institute)

SUBMITTED: 00

DATE ACQ: 10Feb64

ENCL: 01

SUB CODE: FM, CP

NR RKF BW: 003

OTHER: 006

3  
Card 3/4

PAK, N. P.

Pak, N. P.

"Surgical Treatment of Echinococcal Disease of the Lungs." Kazakh State  
Medical Inst imeni V. M. Molotov. Alma-Ata, 1955. (Dissertation for the  
Degree of Candidate in Medical Science)

So: Knizhnaya letopis', No. 27, 2 July 1955

PAK, N.R., kand.meditsinskikh nauk

Analysis of the results of surgical treatment of appendicitis.  
Zdrav. Kazakh. 18 no. 2:10-13 '58. (MIRA 13:8)

1. Iz Dzhambul'skogo oblastnogo otdela zdravookhraneniya.  
(APPENECTOMY)

PAK, N.R.

Late results of surgery in pulmonary echinococcosis. Trudy Inst.  
klin.i eksp.khir. AN Kazakh.SSR 5:94-96 '59. (MIRA 13:5)  
(LUNGS--HUDATIDS) (SURGERY)

PAK, N. T.

PAK, N. T.- "Method of Teaching Handling of Russian Prepositions in Korean Seven-Year Schools." Acad Pedagogical Sci RSFSR, Sci Res Inst of Methods of Teaching, Moscow, 1955 (Dissertations for the Degree of Candidate of Pedagogical Sciences)

SO: Knizhnaya Letopis' N. 26, June 1955, Moscow



FISUN, V.M., inzh.; PAK, N.V., inzh.

Manufacture of sharply bent stamped and welded pipe bends  
made of stainless steel. Mont. i spets. rab. v stroi. 25 no.1:  
17-20 Ja '63. (MIRA 16:6)

1. Krasnoyarskiy zavod montazhnykh zagotovok tresta  
Sibtekhmontazh.

(Pipe fittings) (Steel, Stainless)

PAK, N.V.

Device for measuring heat flow. Izm. tekhn. no.6:20 Je '63.  
(Thermometers) (MIRA 16:8)

PAK, P.

Thermal installation for disinfection. Zashch. rast. ot  
vred. i bol. 10 no.8:28-30 '65. (MIRA 18:11)

1. Zaveduyushchiy laboratoriyey immuniteta rasteniy  
Belorusskogo instituta zemledeliya.

NIKONOVA, T.N., dotsent; BURENKOVA, L.V.; PAK, P.A.

Use of the operation of partial blood replacement in children  
with various forms of poisoning. Zdrav. kazakh. 22 no.1:37-42  
'62. (MIRA 15:3)

1. Iz kafedry detskikh infektsionnykh bolezney (zav. - T.N. Nikonova), kafedry patologicheskoy fiziologii (zav. - prof. O.S. Glozman) Kazakhskogo meditsinskogo instituta, Respublikanskoy stantsii perelivaniya krovi (glavnyy vrach - M.F. Pestereva) i 2-y infektsionnoy detskoy bol'nitsy (glavnyy vrach - F.S. Sakova).  
(POISONING)  
(BLOOD—TRANSFUSION)

PAF, P B, TEEKHOVA, N.V.

Increasing the safety in conducting repair operations in  
underground electrical systems with voltages exceeding 1,000  
volts. Nauch. soob. VostNII no.3:120-127 '63. (MIRA 17:5)

17a, I.B., Incl.

quantitative evaluation of the reliability of automated control  
systems in control systems. Izv. vuz. seriya. zav.; Ser. 25.00. 1974. No. 11  
117-124. 1974. (SIA 1174)

1. Institute of Machine Design and Control Systems. Recommendations  
on the organization of the production of control systems. Institute of  
Machine Design and Control Systems. Moscow, 1974.

MURAV'YOV, V.I., Reliability of Fak, 1974, 1975.

Reliability of Fak. Reliability of Fak, 1974, 1975.  
mines. Izv. Gos. univ. gorn. inzh. nauch. ts. 1974-1975. No. 1.

(MIRA 37110)

3. Kemerovskiy gornyy institut (for Murav'yov). 4. Vestnik  
nauchno-issledovatel'skiy institut (for Fak). Rekomendatsiya  
katedroy avtomatizatsii proizvodstvennykh protsessov Sverdlovskogo  
gornogo instituta.

PAK, P.B., inzh.

Dependability of the protection of automatic belt conveyors. Bezop.  
truda v prom. 8 no.10:7-9 0 '64. (MIRA 1964)

1. Vostochnyy nauchno-issledovatel'skiy institut po bezopasnosti  
rabot v gornoy promyshlennosti.

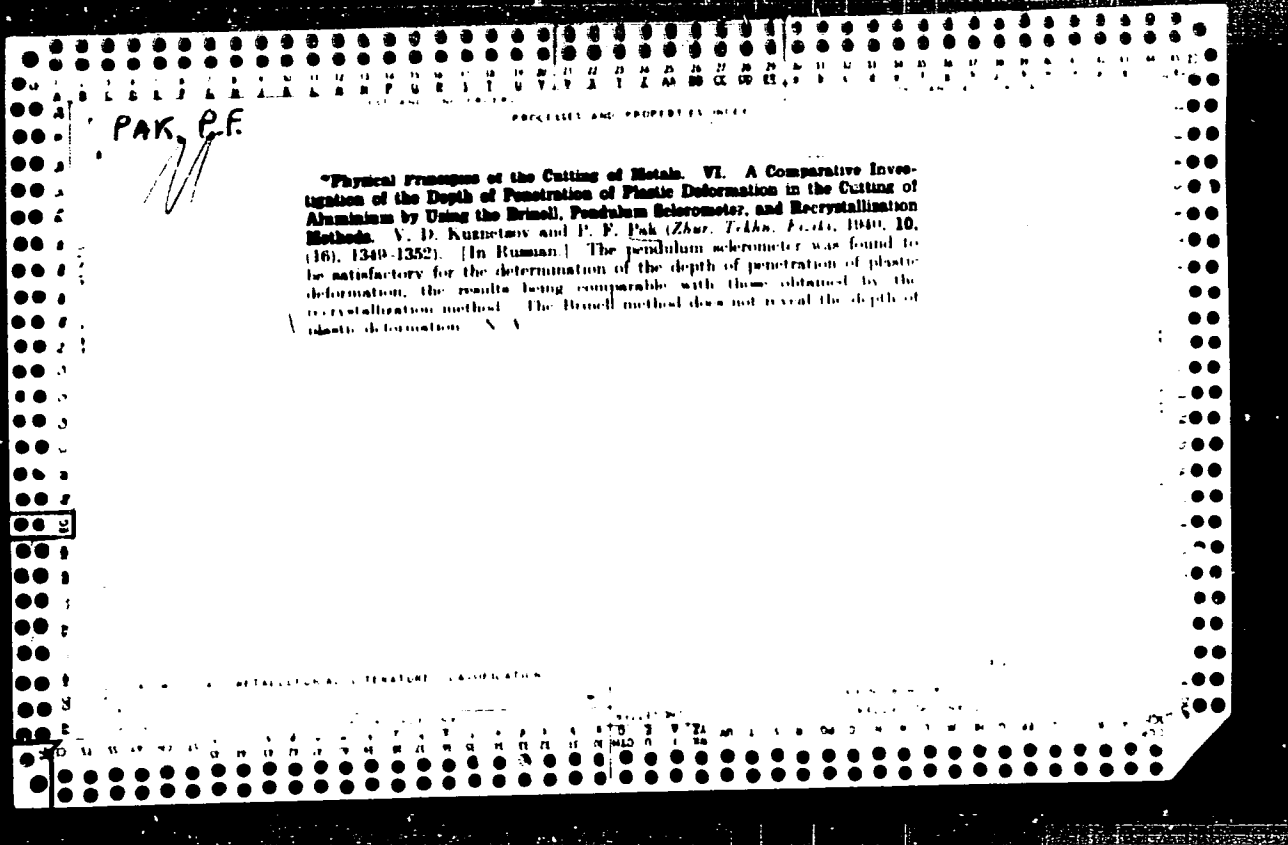


VERTYACHIKH, V.G., inzh.; DEMIDOV, V.Ya., inzh.; PAK, P.B., inzh.

Detection and removal of electric detonators and live cartridges.  
Bezop.truda v prom. 6 no.6:18-19 Je '62. (MIRA 15:11)

1. Vostochnyy nauchno-issledovatel'skiy institut po bezopasnosti  
rabot v gornoy promyshlennosti.

(Detonators--Safety measures)  
(Electronic apparatus and appliances)



PAK, P. V.

Pak, P. V. "Efficacy of fungicides and their use for fungicide treatment of grain," Selektsiya i sennovodstvo, 1967, No. 3, p. 11-13.

S. : 3566, 15 Yards 53, (State is 120 mal' in ...), No. 4, ...

PAK, P. V.

PAK, P. V. "Effect of Time of Harvesting and Methods of Drying Grain on Its Susceptibility to Fungus," Trudy Nauchno-Issledovatel'skogo Rabot Vsesoiuznogo Instituta Raschity Rastenii (a 1, 1937), part 1, 1937, pp. 124-125. L5aI

SO: SIA 61-90-53, 15 Dec. 1953

PAK, P. V.

PAK, P. V. "Kremnir and No. 1 hot water solution (for Seed Treatment),"  
Seleksiia i Semenovodstvo, vol. 16, no. 3, 1973, pp. 51-52. 612  
3e5

SO: SIRA SI-A-53, 15 Dec. 1973

LEV, Vasilii Tarasovich; PAK, Susan; BOYKO, A.N., red.; SOROKINA, Z.I.,  
tekh. red.

[Practices in obtaining high bast-fiber crops on the  
Sverdlov Collective Farm in the Verkhne-Chirchik District  
of Tashkent Province] Opyt polucheniia vysokogo urozhaia  
lubiarykh kul'tur v kolhoze im. Sverdlova Verkhne-  
chirchikskogo raiona Tashkentskoi oblasti. Tashkent, M-vo  
sel'skogo khoziaistva UzSSR, 1962. 34 p. (MIRA 17:2)

**ERGASHEV, K.A.; PAK, S.A.**

Disjunctive dislocations of the southern ~~Ag~~arak fold. Vop.geol.  
Uzb. no.2:160-164 '61. (MIRA 15:12)  
(Uzbekistan--Folds (Geology))

PAK, S.A.

A sequence which is reduced to the solution of a system of ordinary  
differential equations. Sib. mat. zhur. 3 no.4:569-574 J1-Ag '62.  
(MIRA 15:7)

(Sequences (Mathematics)) (Differential equations)



PAK, S.A.

Conditions for retaining the sign of Green's function in Sturm-Liouville's problem. Dokl. AN SSSR 148 no.6:1265-1267 F '63. (MIRA 16:3)

1. Izhevskiy mekhanicheskiy institut. Predstavleno akademikom I.M.Vinogradovym.

(Potential, Theory of) (Boundary value problems)

ALIYEV, R.G.; OSTROUMOV, V.V.; PAK, S.A.

Some properties of Galois functions. Izv. vya. shkol. zap. Mat.  
no.4:9-11 '64.

PAK, S.A.

Theorems on differential inequalities for multipoint boundary  
value problems. Prikl.metod.resch.diff.urav. no.2:106-114 '64.  
(MIRA 18:4)

PAK, S.A. (Izhovsk); CHICHKIN, Ye.S. (Izhovsk)

Existence of upper and lower bounds of solutions of the Cauchy problem  
for a second-order differential equation. Izv. vys. ucheb. zav.; mat.  
no.5:91-94 '64. (MIRA 17:12)

PULATOV, U.Yu.; PAK, S.D.; OSTROVSKIY, E.M.

Field experiments in impact compaction carried out in the canal  
M-2. Mat. po proizvod. sil. Uzb. no.15:221-231 '60.

(MIRA 14:8)

1. Sredneaziatskiy nauchno-issledovatel'skiy institut irrigatsii,  
Tashkent.

(Golodnaya Steppe--Irrigation canals and flumes)

(Soil stabilization)

PAK, S.G.

Dynamics of changes in blood protein fractions and lipoproteins  
in epidemic hepatitis; electrophoretic determination. Sovet.  
med. 27 no.9:39-47 S'63 (MIRA 17:2)

1. Iz kafedry infektsionnykh bolezney ( zav. - prof. K.V.  
Bunin) I Moskovskogo ordena Lenina meditsinskogo instituta imeni  
I.M.Sechenova i Klinicheskoy infektsionnoy bol'nitsy No.7 (glav-  
nyy vrach N.G.Zaleskver).

PAK, S.M.

Reproduction of *Trichomonas foetus* in culture. Trudy Inst. socl.  
AN Kasakh. SSR 14:185-187 '60. (MIRA 13:12)  
(*Trichomonas*)

IAK, S. M. Cand Vet Sci -- (diss) "On the biology of *Trichomonas foetus*  
Riedmuller, 1928. (Cultivation, reproduction and infection of small rodents,  
and the diagnosis of trichomonosis)" Alma-Ata, 1959. 20 pp (Min of Agr USSR.  
Alma-Ata Zoovet Inst), 150 copies (KL, 45-59, 148)



PAK, S.M.

Trichomonads from the intestines of the gerbil *Meriones erythraurus*. Trudy Inst.zool.AN Kazakh.SSR 12:82-85 '60. (MIRA 13:7)  
(Alma-Ata Province--Trichomoniasis)  
(Gerbils as carriers of disease)

PAK, S. M.

Trichomonas in the intestines of murine rodents of the Trans-Ili Ala-Tau. Trudy Inst. zool. AN Kazakh. SSR 16:38-41 '62.  
(MIRA 15:10)

(Trans-Ili Ala-Tau--Parasites--Rodentia)  
(Trans-Ili Ala-Tau--Trichomonas)

USSR/Zooparasitology - Parasitic Protozoa.

G.

Abs Jour : Ref Zhur - Biol., No 15, 1958, 67471

Author : Pak, S.M.

Inst : Academy of Sciences KazSSR

Title : The Problem of Cultivating *Trichomonas foetus* Riedmiller, 1928.

Orig Pub : Izv. AN KazSSR, ser. biol., 1957, No 2 (14), 66-70.

Abstract : 250 ml. of Ringer solution, 50 ml. of liver extract, and 0.5 g. of agar-agar were boiled in a water bath until the agar was dissolved; then, after filtration through a cotton gauze filter, it was sterilized for 30 minutes in an autoclave at a temperature of 120°. The pH of the nutrient medium was raised to 7.2-7.4 by adding a sterile 4% NaOH and HCl solution. After 30 ml. of sterile cow's blood serum and 300,000 units of penicillin had been added, the

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- 3 -

BOYEV, S.N., otv. red.; BONDAREVA, V.I., red.; GALUZO, I.G., red.;  
PAK, S.M., red.; SHEVCHENKO, V.V., red.; ALEKSANDRIYSKIY, V.V.,  
red.; KHUDYAKOV, A.G., tekhn.red.

[Parasites of farm animals in Kazakhstan] Parazity sel'skokho-  
ziaistvennykh zhivotnykh Kazakhstana. Alma-Ata, Izd-vo Akad.  
nauk Kazakhskoi SSR. Vol.1. 1962. 225 p. (MIRA 16:1)

1. Akademiya nauk Kazakhskoy SSR, Alma-Ata. Institut zoologii.  
(Kazakhstan--Veterinary parasitology)

PAK, S.M.

Materials on a morphological study of reproduction in *Trichomonas foetus* (Riedmuller, 1928) in artificial cultures. Trudy Inst. zool.  
AN Kazakh. SSR 9:210-221 '58. (MIRA 11:7)  
(*Trichomonas foetus*)

PAK, S.M.

Laboratory diagnosis of cattle trichomoniasis and experimental  
infection of small rodents with trichomonads. Trudy Inst. zool.  
AN Kazakh. SSR 9:222-227 '58. (MIRA 11:7)  
(Trichomonas foetus)

BALOBOLKIN, A.N., kand.tekhn.nauk; PAK, S.V., gornyy inzh.;  
BOCHKAREV, V.N., gornyy inzh.; BEREZIN, A.I.

Drilling slim diverted holes in the Kal'makyr Mine.  
Gor. zhur. no.6:74 Je '62. (MIRA 15:11)

1. Gornyy otdel AN UkrSSR (for Balobolkin, Pak,  
Bochkarev). 2. Nachal'nik Kal'makyrskogo rudnika  
(for Berezin).

(Anmalyk region--Boring)

LOSITSKIY, V.V.; PAK, S.V.

Principle of the monetary valuation of deposits as applicable  
to the choice of a mining system. Trudy Alt. Gornii AN Kazakh.  
SSR 9:153-160 '60. (MIRA 14:6)

1. Altayskiy gornometallurgicheskiy nauchno-issledovatel'skiy  
institut AN Kazakhskoy SSR.  
(Mining industry and finance)



LOSITSKIY, V.V.; PAK, S.V.

Selection of the method of developing the Nikolayevka deposit.  
Trudy Alt. GMI AN Kazakh. SSR 13:32-39 '62. (MIRA 16:3)  
(Altai Mountains--Mining engineering)

PAK, S.V.

Some problems in strip-mining operations in pits with a limited  
area. Trudy Alt. GMNII AN Kazakh. SSR 13:71-84 '62. (MIRA 16:3)  
(Strip mining)

PAK, S.V.

Quarries of building materials. Trudy Alt. GMI AN Kazakh. SSR  
13:27-31 '62. (MIRA 16:3)  
(East Kazakhstan Province--Quarries and quarrying)

FAK, S.V., RAZAMAT, V.V.

Use of horizontal holes on benches of varying height. For  
AN Uz. SSB. Ser. dokh. part 8 no. 69. 74. 164. (MIRA 1964)

1. Gornyy oddel AN UzSSR.

PAK, T.A.; KOGAN, V.B.

Checking and calculation of equilibrium between vapor and saturated solution in ternary systems. Zhur. fiz. khim. 38 no 9.2121-2127 S '64. (MIRA 17-12)

1. Institut prikladnoy khimii, Leningrad.

PAK, T.A.; KOGAN, V.B.

Method of checking and calculating equilibrium conditions in ternary systems by reducing them to binary systems. Part 4. Zhur.fiz.khim. 36 no.8:1524-1631 Ag '62. (MIRA 15:8)

1. Gosudarstvennyy institut prikladnoy khimii.  
(Systems (Chemistry)) (Phase rule and equilibrium)

PAK, T.A.; KOGAN, V.B.

Verification of liquid - vapor equilibrium in three-component  
systems with two liquid phases. Zhur. fiz. khim. 36 no.9:2046-  
2050 S '62. (MIRA 17:6)

S/076/63/037/001/007/029  
B108/B186

AUTHORS: Pak, T. A., Kogan, V. B. (Leningrad)

TITLE: Calculation of the liquid - vapor equilibrium in three-component systems with two liquid phases. VI

PERIODICAL: Zhurnal fizicheskoy khimii, v. 37, no. 1, 1963, 63-67

TEXT: Using the Duhem - Margulis equations for binary liquid systems the equations

$$\lg a_2 = [\lg a_2]_{x_2=0} - \int_{x_2=0}^{x_2} \frac{(x_1/x_2)' - (x_1/x_2)''}{(x_2/x_2)' - (x_2/x_2)''} d \lg a_1, \quad (3)$$

$$\lg a_3 = [\lg a_3]_{x_3=0} - \int_{x_3=0}^{x_3} \frac{(x_1/x_3)' - (x_1/x_3)''}{(x_3/x_3)' - (x_3/x_3)''} d \lg a_1, \quad (4)$$

are derived for the activities  $a_i$  of two liquid phases in a ternary system.  $x_i'$  and  $x_i''$  are the molar fractions of the  $i$ -th component in the

Card 1/2



PAK, T. I

DAKSHLEYGER, Ye. K., kandidat meditsinskikh nauk; TURANOVA, Ye.N.,  
kandidat meditsinskikh nauk; LUR'YE, S.S., kandidat meditsinskikh  
nauk; PAK, T.I.; LEVINA, F.A.; YEGOROVA, S.V.; ANDROSOVA, M.N.

Gonorrhea among women reporting to obstetric and gynecological  
institutions. Vest. ven. i derm. no.3:41-44 My-Je '54. (MLRA 7:8)

1. Iz otdela gonorreii (sav. prof. I.M.Porudominskiy) otdela mikro-  
biologii (sav. prof. N.M.Ovchinnikov) Tsentral'nogo kozhno-venerolo-  
gicheskogo instituta (dir. kandidat meditsinskikh nauk N.M.Turanov)  
(GONORRHEA, epidemiology,  
\*Russia)

PAK, V. I Dr.

Rudnicnyye Ventilatornyye i Vodootlivnyye Ustanoovki (Ventilating and  
Water-Draining Installations in Mines)

428 p. 2.50

SO: Four Continent Book List, April 1954

L 63249-65 EWT(d)/EWA(d)/EWP(v)/EWP(k)/EWP(h)/EWP(l) Pf-4 GS

ACCESSION NO: AT5013045

UR/0000/64/002/000/0165/0170

27  
B+1

AUTHOR: Pak, V. (Novosibirsk)

TITLE: Thermoelectric methods for temperature measurement using storage devices

SOURCE: Vsesoyuznaya konferentsiya po avtomaticheskomu kontrolyu i metodam elektricheskikh izmereniy. 4th, Novosibirsk, 1962. Avtomaticheskii kontrol' i metody elektricheskikh izmereniy; trudy konferentsiy, t. 2: Teoriya izmeritel'nykh informatsionnykh sistem. Sistemy avtomaticheskogo kontrolya. Elektricheskiye izmereniya neelektricheskikh velichin (Automatic control and electrical measuring techniques; transactions of the conference, v. 2: Theory of information measurement systems. Automatic control systems. Electrical measurements of nonelectrical quantities). Novosibirsk, Redizdat Sib. otd. AN SSSR, 1964, 165-170

TOPIC TAGS: thermoelectric temperature gauge, temperature measurement 9M

ABSTRACT: Methods and devices for measuring mean temperature and temperature drop without introducing electrical insulation between the thermojunction and

Card 1/2

L 63249-65

ACCESSION NR: AT5013045

the body are described. The simplest two-thermocouple bridge circuit with a continuously-flowing current is found inadequate. A better circuit includes two thermocouples connected in opposition via two galvanometers. Another circuit includes a capacitor which is charged by one thermocouple and then discharged into another thermocouple, the residual voltage being measured by a photo-compensated amplifier and an automatic potentiometer; this method permits measuring the temperature drop between several thermocouples. A modification of this method with a cyclic switch and an L-type RC-filter permits measuring the mean temperature of a body by a number of thermocouples uninsulated from the body. Orig. art. has: 5 figures and 4 formulas.

ASSOCIATION: none

SUBMITTED: 17Nov64

NO REF SOV: 005

ENCL: 00

OTHER: 001

SUB CODE: EC, IE

*llc*  
Card 2/2

S/115/62/000/001/005/007  
E194/E355

**AUTHORS:** Pak, Vanbo and Krinskiy, Yu.P.

**TITLE:** Automatic equipment for calibrating platinoid-platinum thermocouples

**PERIODICAL:** Izmeritel'naya tekhnika, no. 1, 1962, 29 - 33

**TEXT:** The Novosibirsky gosudarstvennyy institut mer i izmeritel'nykh priborov (Novosibirsk State Institute of Measures and Measuring Equipment) has developed equipment for checking and calibrating platinoid-platinum thermocouples under dynamic conditions, which is better than equipment described in the literature. It can be used to measure directly the thermal e.m.f.'s of reference and test couples but is generally used to measure directly the difference between their readings. The equipment can calibrate four or five platinoid-platinum thermocouples at once under dynamic conditions in 40 to 50 minutes. The couples under test are securely fixed to a platinum wire and placed in a special low-inertia furnace, which consists of a heat-insulated nichrome strip wound on a porcelain tube. With a power of 6 kW a temperature of 1 200 °C can be reached in

Card 1/2

VARNELLO, V.V.; PAK, Vanbo

Measurement and its essential characteristics. Izv.tekh.

no.9:4-7 S '62.

(MIRA 15:11)

(Mensuration)

PAK, Vanbo; KRINSKIY, Yu.P.; BELYAYEVA, I.S.

Simple device for calibrating thermocouples made of noble metals  
under dynamic conditions. Izv.tekh. no.11:27-30 N '62.  
(MIRA 15:11)

(Calibration) (Thermocouples)

PAK, Vanbo

Thermoelectric method for measuring small temperature drops in  
conducting media. Zav.lab. 28 no.11:1349-1350 '62. (MIRA 15:11)

1. Novosibirskiy gosudarstvennyy institut mer i izmeritel'nykh  
priborov.

(Electric conductors) (Temperature--Measurement)



S/115/62/000/011/005/008  
E194/E155

**AUTHORS:** Pak, Vanbo, Krinskiy, Yu.P., and Belyayeva, I.S.

**TITLE:** A simplified equipment for calibrating noble metal thermocouples under dynamic conditions

**PERIODICAL:** Izmeritel'naya tekhnika, no.11, 1962, 27-30

**TEXT:** The НГМММ (NGMMP) has developed a simple and reliable equipment for calibrating thermocouples under dynamic conditions. It uses a normal single-coordinate recording potentiometer; the thermocouples are connected by a standard selector switch, and a low-inertia 2 kW furnace is used. It is possible to measure the difference not only between the thermocouples under test and the reference thermocouple, but also the difference of e.m.f. between electrodes of the same material, and from these results the e.m.f. between platinum and platinum/rhodium thermocouples may be calculated. A schematic diagram of the equipment is given and the principles of operation are fully described. The only non-standard part of the equipment is a changeover switch vibrating at a frequency of 80 c/s and switching two capacitors in the circuit of the thermocouple under test. If a six-position recording  
Card 1/2

A simplified equipment for ...

S/115/62/000/011/005/008  
E194/E155

potentiometer is used, four couples can be checked at once, the other two positions being used to record the output of the reference couple and a zero signal. Recordings are made every 5 seconds, the next couple being connected 1 second after the recording is made; thus four seconds elapse before the next reading, which is sufficient to establish equilibrium. The furnace is supplied through a motorised autotransformer which covers the voltage range in half an hour. It is best to calibrate whilst the furnace is cooling, and so the voltage is reduced from maximum to zero over a period of 30 minutes during which time the temperature falls to about 600-700 °C. With direct measurement of the difference in e.m.f. it is recommended to calibrate no more than four thermocouples at once or no more than two thermocouples if comparison is made by electrodes. The maximum error of calibration of a platinum-rhodium-platinum thermocouple on the equipment is  $\pm 5$  microvolts in the range 300-1200 °C. The method of working out the records is explained. There are 3 figures.

Card 2/2

PAF, Vanbo

Calculating basic parameters of the thermistorized telescope of a  
radiation pyrometer. Izv.tekh. no.1:33-35 b '61. (MIRA 1961,  
(Pyrometers)

PAK, V.A.; GOL'DSHMIDT, F.S.

Dot chart for the approximate calculation of imaginary specific  
electric resistance. Vop. vych. mat. i tekhn. no.1:200-210 '64.  
(MIRA 18:8)