

CZECHOSLOVAKIA

HRAZDIRA, C.L.; SKALNIK, J.; HANAK, L.; NEZVAL, J.; VESELSKY, K.;  
HRAZDIROVA, V.; Neurological Clinic, Medical Faculty, Palacky  
University (Neurologicka Klinika Lek. Fak. PU), Olomouc.

"Some Results of Epidemiological Investigation in Multiple Sclerosis."

Prague, Ceskoslovenska Neurologie, Vol 30, No 1, Jan 67, p 71

Abstract: It was found that among the patients suffering from  
multiple sclerosis there were 10 times as many who were affected  
by tuberculosis in the past than the average of the total  
population. The same results were found in respect to strepto-  
coccal infection. In very few cases pregnancy could be blamed  
for the onset of the disease; however, in 1/3 of cases of preg-  
nancies in women suffering from the disease there was a definite  
deterioration of the condition. Lumbar puncture had no immediate  
adverse effect, but in 12% of the cases extended difficulties  
appearing at a later period were detected. No references. Sub-  
mitted at the Meeting of the Neurological Section, Slovak Branch,  
at Kosice 16 - 18 Jun 66.

1/1

SURNAME, Given Names

Country: Czechoslovakia

Academic Degrees:

Affiliation:

Source: Ceskoslovenska Hygiena (Journal of Hygiene), Vol V,  
No 9, Prague, Nov 1960, Page 564.

Data:

NEZVAL, J.

Affiliation: Institute of Hygiene, comprised of the medical  
Faculty, Brno.

Data: Author of "The Action of Polyamides on the Human Organism,"  
Source, Page 564.

HALACKA, K.

Affiliation: Director of the Institute of Hygiene, comprised of the Medical  
Faculty in Brno.

RODVA, J.; TROBRY, J.

Determination of temperature coefficients of *Neisseria meningitidis* and pentadecyl trimethylammonium chloride (septonex) as compared with heptyn and cetavlon. *J. Hyg. Epidemiol. Microb. Immunol.* 1964.

Department of Hygiene and Epidemiology, Medical Faculty, Slovak University, Bratislava.

NEZVAL, J.

Some aspects of the enhancing effect of etoplenebanic acid on the bactericidal activity of the quaternary ammonium compound Septonex. *J. Hyg. epidem. biol.* 8 no.4:450-455 1961.

1. Department of Hygiene and Epidemiology, Faculty of Medicine, Purkyne University, Brno.

HALACKA, K.; NEZVAL, J.; tech. spol. BENESOVA, J.

On the possibility of the use of Septonex for decontamination in the food industry. Cesk. hyg. 7 no.5:305-312 Je '62.

1. Katedra hygieny a epidemiologie lekarske fakulty University J. E. Purkyne, Brno.

(ANTISEPTICS QUATERNARY AMMONIUM therapy)  
(FOOD PROCESSING INDUSTRY)

NEZVAL, Jaroslav; STEPANEK, Miroslav; NEJEZCHLEBA, Jaroslav

Experiment with the use of quaternary ammonia salt Septonex for decontamination of the DA 100 milking machine. Prum potravin 13 no.12:638-642 D '62.

1. Universita J.E.Purkyne, katedra hygieny a epidemiologie lekarske fakulty, Brno (for Nezval). 2. Vysoka skola zemedelska, katedra pro hygienu a technologii potravin, veterinarni fakulta, Brno (for Stepanek). 3. Okresni veterinarni zarizeni, Brno (for Nejezchleba).

NEZVAL, Jaroslav; TABORSKY, Ivan

Determination of trace amounts of Septonex by measuring surface tension. Scr. med. fac. med. Brunensis 35 no.5:235-242 '62.

1. Katedra hygieny a epidemiologie lekarske fakulty -- University JEP

Prednosta: doc. MUDr. et RNDr. Karel Halacka.

(ANTISEPTICS QUATERNARY AMMONIUM) (FOOD INSPECTION)

(DARYING)

(SURFACE TENSION)

BRAZDOVA, Kvetuse; NEZVAL, Jaroslav; TABORSKY, Ivan; Tech. spoluprace:  
TOMEK, J.; KOCUROVA, J.; ZAJICOVA, V.

Our experiences with ethylene oxide disinfection. Scr. med.  
fac. med. Brunensis 36 no.4:181-186 '63.

1. Katedra hygieny a epidemiologie lekarske fakulty University  
JEP v Brne Prednosta prof. MUDr. et RNDr. Karel Halacka.  
(ETHYLENE OXIDE) (DISINFECTION)  
(BACILLUS SUBTILIS) (STAPHYLOCOCCUS)  
(MYCOBACTERIUM) (TEMPERATURE)



NEZVAL, Jaroslav; HRAZDIRA, Ivo; KOCIAN, Jozef

Changes in the permeability of isolated frog skin caused by Septonex and chemicals influencing its bactericidal action. Scr. med. fac. med. Brunensis 36 no.7:323-328 '63.

1. Katedra hyg. epid. lekarske fakulty University J.E. Purkyne v Brne (Vedouci katedry: prof. MUDr. et RNDr. K. Halacka); Katedra lekarske fysiky lek. fakulty University J.E. Purkyne v Brne (Vedouci katedry: zast. doc. MUDr. J. Stanek, CSc.) a Katedra farmakologie lekarske fakulty University J.E. Purkyne v Brne (Vedouci katedry: MUDr. J. Sajner, CSc.).

\*

SKOTAKOVA, Marie; NEZVAL, Jaroslav; SMEKAL, Emil

Contribution to the mechanism of the potentiating effect of ethylenediaminetetraacetic acid on the bactericidal activity of N-(alpha-carbethoxypentadecyl)-trimethylammonium chloride. Scr.med.fac.med. Brunensis 37 no.1:21-28 '64.

Contribution to the mechanism of the potentiating effect of ethylenediaminetetraacetic acid on the bactericidal activity of N-(alpha-carbethoxypentadecyl)-trimethyl ammonium chloride.

1. Katedra lekarske fysiky lekarske fakulty university J.E. Purkyne v Brne (vedouci:doc. MUDr. Jaroslav Stanek, CSc.)  
a Katedra hygieny a epidemiologie lekarske fakulty university J.E.Purkyne v Brne (vedouci:prof. MUDr. et RNDr.Karel Halacka).

\*

NEZVAL, J.; FRANG, Z.; FRANCOVA, V.; HORAKOVA, Z.; JANATA, V.

Toxicity and metabolism of labelled Septonex-C<sup>14</sup> in laboratory animals. Cesk. hyg. 10 no.3:241-244. My '65

1. Katedra hygieny a epidemiologii lekarske fakulty University J.E. Purkyne, Brno a Vyzkumny ustav pro farmacii a biochemii, Praha.

NEZVAL, J.

"Progressive Building in the USSR." p. 148

"Principles to be Used in the Elaboration of Regulations for the Building Industry."  
p. 164

"A Decree Concerning the Progressive Methods to be Used in Housing Construction  
Issued by the Ministry of Building Industry on April 7, 1953." p. 171 (Stavební  
Průmysl, Vol. 3, no. 7/8, Apr. 1953, Praha)

CC: Monthly List of East European Accessions, Vol. 3, no. 2, Library of Congress,  
Feb. 1954, Incl.

NEZVAL, J.

Ways in which Soviet theory and practice of assembly-line construction  
aid our building. p. 234.  
(POZEMNI STAVBY, vol. 2, no. 11, Nov. 1954, Praha)

SO: Monthly List of East European Accession, (EEAL), LC, Vol. 4,  
No. 11, Nov. 1955, Uncl.

NEZVAL, Jiri

Vyroba staveb. 1./dil/. (Production of Buildings Vol. 1; a university textbook. 2d rev. and enl. ed. illus., bibl.) For the students of the Faculty of Architecture and Building. Prague, SNTL, 1957. 289 p.

Bibliograficky katalog, CSR, Ceske knihy, No. 33. 24 Sept 57. p. 726.

NEZVAL, J., doc., inz.

Scheme of building operations on split level multistoried buildings and on a group of houses of various heights. Poz stavby 11 no.2:95-98 '63.

1. Stavebni fakulta, Ceske vysoke uceni technicke, Praha.

NEZVAL, Jiri, doc., inz.

General repair and maintenance of houses in Prague. Poz stavby  
ll no.7:345 '63.



NEZVAL, Jiri, prof. inz.; JANC, Ladislav

Mass building methods. Poz stavby 12 no.10: Suppl. II kurs nove  
techniky a ekonomiky no.10:233-256 '64.

NEZVAL, Jiri, inz.

On vermiculite. *Geologicky priručník* no.11:326-329 N '63.

1. Geologicky priručník. Č. 11. str. 326-329. 1963.

NEIVA' GINA' 100 102

sixtieth birthday of Lieutenant Mikhail Sergeyevich Rudnikov.  
roz stavy 11.07.1957. 1957.

Po-4/Pac-2/feb GW/GS

ACCESSION NR: AT5011173

UR/0000/64/000/000/0187/0194

AUTHOR: Belinskiy, V. A.; Garadzha, M. P.; Nezval', Ye. I.

TITLE: Direct ultraviolet radiation at some points in the USSR

SOURCE: Mezhdomstvennoye soveshchaniye po aktinometrii i optike atmosfery. 5th, Moscow, 1963. Aktinometriya i optika atmosfery (Actinometry and atmospheric optics); trudy soveshchaniya. Moscow, Izd-vo Nauka, 1964, 187-194

TOPIC TAGS: ultraviolet radiation, radiation intensity, atmospheric ozone, wavelength dependence, annual variation, diurnal variation, atmospheric transparency

ABSTRACT: Preliminary results are reported of observations of the direct ultraviolet radiation (DUR) made with the Boyko quartz monochromator by the Meteorology Department, Moscow State University, and carried out systematically at Moscow since 1960 and under expedition conditions at a few points in the USSR. The possibility of using these observations for the measurement of the total ozone content is also considered. Graphs are presented of the dependence of the intensity of DUR on the height of the sun at wavelength  $< 0.35 \mu$ , the intensity of DUR beyond

60  
59  
QR+1

Moscow for various transparencies, the variation of DUR at various points

Card 1/2

L 44744-65

ACCESSION NR: AT5011173

at various solar heights and transparencies, the annual variation of DUR at Moscow, the variation of DUR in the summer and winter at Yevpatoriya, Kislovodsk, and Moscow at a solar height of 20°, the isopleths of the noontime values of DUR, the DUR at various points in the USSR at a height of 30°, the diurnal variation of the total ozone content at Karadag, and the decimal coefficients of error or attenuation of DUR at various points. Orig. art. has 11 figures and 8 formulas. (02)

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: 25 Nov 64

ENCL: 00

SUB CODE: ES, OP

NO REF BOV: 007

OTHER: 00

ATD PRESS: 3257



SOSNOVSKIY, Vladimir Petrovich; YAKIMOVA, A., ed.; NEN NOV,  
A.A., red.

[Finishing work in housing construction] Otdelovnye raboty  
v zhilishchnom stroitel'stve. Ioskarola, Mariiskoe knizhnoe  
izd-vo, 1963. 62 p. (MIRA 18:3)

~~Nez~~ NeZVANOV A. N V 663

**AUTHORS:** Ryabchenkov, A.V., Dr. of Chemical Sciences Prof.,  
Nikiforova, V. M., Candidate of Technical Sciences,  
Nezvanova, N. V. and Samulyenkova, V.D., Engineers.

**TITLE:** Experience of the Czechoslovak industry in protecting  
equipment exported to countries with tropical climates.  
(Opyt Chekhoslovatskoy promyshlennosti po zashchite  
oborudovaniya, eksportiruyemogo v strany s  
tropicheskim klimatom).

**PERIODICAL:** "Metalovedenie i Obrabotka Metallov" (Metallurgy and  
Metal Treatment), 1957, No.6, pp.59-63 (U.S.S.R.)

**ABSTRACT:** The authors of this paper became acquainted with Czech  
practice in a number of Czechoslovak works. In  
Czechoslovakia the corrosion conditions are sub-  
divided into the following four groups: very favourable  
(closed dry spaces); favourable (spaces in which  
atmospheric conditions act periodically); average  
conditions and difficult corrosion conditions  
(industrial atmosphere of seaside regions). Equipment  
intended for tropical climates is treated as being  
subjected to the most severe conditions of corrosion.  
Czech practice is described as regards protective  
painting, electro-plating (3-layer Cu-Ni-Cr plating,  
cadmium plating followed by chromating, zinc plating  
followed by chromating and in some cases by coating  
with lacquer), copper-plating, nickel-plating,

Card 175

663

Experience of the Czechoslovak industry in protecting equipment exported to countries with tropical climates. (Cont.)

chromating, cadmium-zinc plating, anodising of aluminium and its alloys, conservation and packing. Fundamentally the materials and technology do not differ greatly from those used for goods supplied to countries with temperate climates. The main differences are: the enamel is made one to two layers thicker; in the case of varnishing electrical equipment and machine tools, coating enamels are used which contain fungicide additions; oil bases are used having a high content of minium; in the case of synthetic enamels, enamels with aluminium powder as pigments are used and extreme care is taken to produce a good surface quality prior to coating. Highly qualified personnel is used for the painting and surface treatment work. For tropical conditions coatings consisting of copper-nickel-chromium layers of a total layer thickness of about 30 to 45  $\mu$  are widely used; cadmium coating (8 to 15  $\mu$ ) with subsequent chromating is used for springs; zinc coating (8 to 35  $\mu$ ) with subsequent chromating is used predominantly for small fixing components which after fitting are varnished. Vaselines with various



663

Experience of the Czechoslovak industry in protecting equipment exported to countries with tropical climates. (Cont.)

additions are used for conservation purposes. For protecting ferrous metals during storage and transportation a volatile inhibitor, dicyclohexo-aminonitride, is used.

AVAILABLE:

Card 3/3

NEZYM, Yu.S.

Attachment for turning spherical surfaces on lathes. Inform.tekh.sbor.  
no.1:27-29 '54. (MIRA 9:7)

1.Khar'kovskiy zavod transportnogo mashinostroyeniya.  
(Lathes--Attachments)

NEZYM, Yuriy Semenovich; NOVIK, O.M., red.; SHAFETA, S.M., tekhn.  
red.

[Struggle for a high title] U borot'bi za vysoke zvannia. Kyiv,  
Derzh. vyd-vo tekhn. lit-ry UNSR, 1961. 22 p. (MIRA 15:3)  
(Kharkov--Diesel locomotives)  
(Socialist competition)

NEZYM, Yu. S.

Designers mobilize resources. NTO 3 no.9:22-23 § '61.  
(MIRA 14:8)

1. Predsedatel' soveta Nauchno-tekhnicheskogo obshchestva  
Khar'kovskogo zavoda transportnogo mashinostroyeniya imeni  
V.A. Malysheva. (Kharkov--Diesel locomotives)

ACC NR: AP7002090

SOURCE CODE: UR/0103/66/000/012/001136820

AUTHOR: Nguyen Tkhuk Loan (Hanoi)

ORG: none

TITLE: Method for determining dynamic parameters of linear systems from transient-process oscillograms

SOURCE: Avtomatika i telemekhanika, no. 12, 1966, 67-70

TOPIC TAGS: ~~automatic control system~~ <sup>linear</sup> control system, ~~automatic control system~~ <sup>linear differential equation, linear system, oscillogram</sup>

ABSTRACT: Ya. Z. Tsypkin suggested to determine dynamic parameters of the systems describable by linear differential equations (of not higher than the 2nd order, from transient-process oscillograms (Trudy VLEN, no. 6, 1955). The present article tries to offer an analytical solution of the above problem; the differential equation of the n-th order is considered. The linear system is described by a differential equation whose solution provides a connection between ordinate  $x_k$  and n preceding ordinates. The time axis is subdivided into s segments, and a system of s-n equations is set up. Solution of this system yields the coefficients of the original differential equation. "In conclusion, the author wishes to thank S. G. Gerasimov and Ya. Z. Tsypkin for their valuable advice." Orig. art. has: 2 figures, 22 formulas, 1 table.

SUB CODE: 12, 13 / SUBM DATE: 18Apr66 / ORIG REF: 001 / OTH REF: 001

Card 1/1

UDC: 62-501.12

L 26666-66 EWT(1)/EWT(m)/EWA(d)/E/EWP(t) IJP(e) JD/HW

ACC NR: AP6010412

SOURCE CODE: UR/0126/66/021/003/0468/0469

AUTHORS: Miryasov, N. Z.; Nguyen T'au

49  
B

ORG: Moscow State University im. M. V. Lomonosov (Moskovskiy gosuniversitet)

TITLE: Magnetic and impulse properties of ferrites containing different amounts of Co subjected to thermomagnetic treatment

SOURCE: Fizika metallov i metallovedeniye, v. 21, no. 3, 1966, 468-469

TOPIC TAGS: ferrite, magnetic anisotropy, nickel compound, cobalt compound, zinc compound, chromium compound, alternating magnetic field, thermomagnetic field

ABSTRACT: The hysteresis parameters of a number of ferrites (having the general composition  $Co_x(NiZn)_{0.8-x}Cr_{0.2}Fe_2O_4$ , where  $x = 0.02, 0.04, 0.06, \text{ and } 0.08$ ) were determined as a function of the temperature and frequency of the applied field. The experimental results are summarized in graphs and tables (see Fig. 1). It was found that the relationship between  $S$  (the coefficient of magnetic reversal) and  $H_a$  (the anisotropy field) is similar to that reported by G. Ya. Smit and Kh. Veyn (Ferrity, M., III, 1962, section 63).

Card 1/2

UDC: 538.245

2

L 26666-66

ACC NR: AP6010412

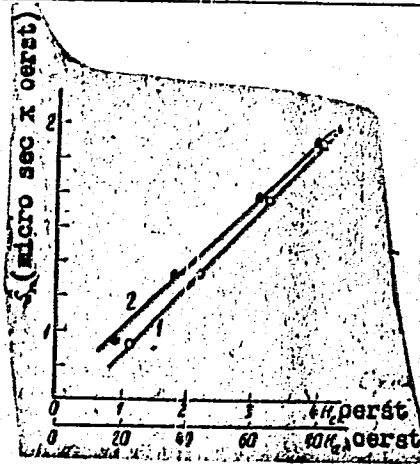


Fig. 1. Dependence of S on  $H_a$  (1) and  $H_c$  (2) where  $2H_c = H_m$ , and  $H_m$  is the value of the alternating magnetic field.

Orig. art. has: 2 graphs and 1 table.

SUB CODE: 20/      SUBM DATE: 10May65/      ORIG REF: 004/      OTH REF: 003

Card 2/2      BLC

L 26673-66 EWT(1)

ACC NR: AP6007174

SOURCE CODE: UR/0188/66/000/001/0066/0071

AUTHORS: Miryasov, N. Z.; Nguyen T'ya U

50  
B

ORG: Magnetics Department MGU (Kafedra magnetizma MGU)

TITLE: Magnetic and pulsed properties of a ferrite with induced uniaxial magnetic anisotropy

SOURCE: Moscow. Universitet. Vestnik. Seriya III. Fizika astronomiya, no. 1, 1966, 66-71

TOPIC TAGS: ferrite, magnetic anisotropy, uniaxial crystal, computer component, magnetic hysteresis, temperature dependence, magnetic permeability

ABSTRACT: This is a continuation of earlier work by one of the authors (Miryasov, with S. A. Sorokina, Fizika tverdogo tela v. 5, no. 9, 2641, 1963) dealing with the ferrite of composition  $Co_{0.02}Ni_{0.52}Zn_{0.26}Cr_{0.20}Fe_2O_4$  and its uniaxial magnetic anisotropy induced by magnetic annealing. The present paper is devoted to a

Card 1/2

UDC: 538.245

2



L 26673-66

ACC NR: AP6007174

more detailed investigation of the magnetic and pulsed properties of this ferrite in a certain temperature region. These properties are of interest from the point of view of its possible use in certain electronic computer and automation applications. The investigations were made on toroidal samples of various dimensions and consisted essentially of plotting the hysteresis loop at different temperatures, determining the times of pulsed reversal of magnetization, plotting the isotherms of the pulsed reversal of magnetization, and determining the temperature dependence of the initial permeability. The results showed that magnetically-annealed ferrites retain the permivar effect down to  $-40^{\circ}\text{C}$ , where the magnetic anisotropic constant of the ferrite reverses sign. The distortion of the rectangular hysteresis loop and its broadening at lower temperatures are probably due to a change in the magnetic structure, connected with this reversal of the sign. Above the transition temperature, the investigated ferrite has relatively large magnetic viscosity, and below the transition temperature the pulse properties of the sample exhibit many anomalies. The results are interpreted from the point of view of the theory of directed magnetic ordering. Orig. art. has: 5 figures, 1 formula, and 2 tables.

SUB CODE: 20/ SUBM DATE: 19Sep64/ ORIG REF: 001/ OTH REF: 003  
Card 2/2 BLC

L 27843-66 EWT(m)/T/ETA(m)-2

SOURCE CODE: UR/0367/55/002/003/0529/0532

ACC NR: AP6001160

AUTHOR: Dao Vong Dyk (Dao Vong Duc); Nguyen Van Kh'yeu (Nguyen Van Hieu)

9  
B

ORG: Joint Institute for Nuclear Research, (Ob'yedinennyi institut yadernykh issledovaniy)

TITLE: Electromagnetic decays and splitting of the masses of vector mesons in unitary symmetry 19, 44, 55

SOURCE: Yadernaya fizika, v. 2, no. 3, 1965, 529-532

TOPIC TAGS: vector meson, matrix element

ABSTRACT: The following electromagnetic decays of neutral vector mesons are considered:

- $\rho^0 \rightarrow \mu^+\mu^-(e^+e^-),$  (1)
- $\varphi \rightarrow \mu^+\mu^-(e^+e^-),$  (2)
- $\omega \rightarrow \mu^+\mu^-(e^+e^-)$  (3)

within the framework of the Gell-Mann and Ne'eman unitary symmetry model. It is shown that the probabilities of decays (1)-(3) are expressed via the mass renormalization constants of the vector particles, and hence, that the measurement of the probabilities of these decays permits the determination of the bare masses of the vector particles entering into a unitary octuplet interact with the same kind of persisting currents as the isovectorial and isoscalar

Card 1/2

L 27843-66

ACC NR: AP6001160

electromagnetic currents. This makes it possible to relate the matrix elements of decays (1)-(3) with the matrix elements of the diagrams of intrinsic energy of the corresponding vector mesons. Orig. art. has: 17 formulas.

SUB CODE: 20 / SUBM DATE: 04Feb / ORIG REF: none / OTH REF: 007

Card

2/2 TS

ACC NR: AP7008886

SOURCE CODE: UR/0367/66/004/004/0850/0852

AUTHOR: Bokov, O. G.; Nguyen Van Kh'eu--Nguyen Van Hieu; Sredniava, B.--Sredniava, B.

ORG: Joint Institute for Nuclear Research (Ob'yedinennyy institut yadernykh issledovaniy)

TITLE: Electromagnetic interactions of the X-meson in higher symmetries

SOURCE: Yadernaya fizika, v. 4, no. 4, 1966, 850-852

TOPIC TAGS: electromagnetic interaction, meson

SUB CODE: 20

ABSTRACT: Radiative decays of the ninth pseudoscalar meson X(960) are treated. Relations have been obtained between the coupling constants for single photon decays of the X-meson and the nonet of vector mesons and for the two-photon decays of the pseudoscalar meson nonet in the internally broken  $O(12)$ -symmetry scheme. Relations between the probabilities of the various processes are calculated. Orig. art. has: 5 formulas. [Based on authors' Eng. abst.] [JPRS: 39,658]

UDC: none

Card 1/1

NI, K.P.

Temperature reactions of the cutaneous blood vessels in children with chronic tonsillitis. Sov. zdrav. Kir. no.2:16-18 Mr-Apr '62.  
(MIRA 15:5)

1. Iz kafedry detskikh bolezney (zav. - prof. B.F.Shagan) Kirgizskogo gosudarstvennogo meditsinskogo instituta.  
(TONSILS--DISEASES) (BODY TEMPERATURE)  
(SKIN--BLOOD SUPPLY)

NI, K.P.

Unconditioned vascular reactions in healthy children from plethys-  
mographic data. *Pediatrics* no.7:9-11 '62. (MIRA 15:12)

1. Iz kafedry detskikh bolezney (zav. - prof. B.F. Shagan) Kir-  
gizskogo meditsinskogo instituta (rektor - zasluzhenny vrach  
respubliki F.N. Furgaziyeva).  
(PLETHYSMOGRAPHY) (REFLEXES)

NI, K.P.

Vascular reactions in chorea in children. Sov. zdorav. Kir. 1953  
(MIRA 1953)  
20-24 Mr-Apr 1953.

1. Iz kafedry pediatrii (zav. - prof. B.F. Shagan) Kirgizskogo gosudarstvennogo meditsinskogo instituta (rektor - chlen-korrespondent AN Kirgizskoy SSR V.A. Isabayeva) i Kirgizskogo nauchno-issledovatel'skogo instituta okhrany materinstva i detstva (dir. - kand. med. nauk A.A. Il'in).  
(CHOREA)

PONOMAREV, V.D.; NI, L.P.

Theory of filtration. J.appl. Chem. USSR '52, 25. 730-739. (MLRA 5:8)  
(BA-AI Je '53:511)



NI, L. P.

Chemical Abat.  
Vol. 48 No. 5  
Mar. 10, 1954  
Apparatus, Plant Equipment, and Unit  
Operations

*Chern*  
②  
Dependence of specific resistance in filtration on the diameter of particles and on porosity. V. D. Ponomarev and L. P. Ni. *Izvest. Akad. Nauk Kazakh S.S.R. No. 118, Ser. Khim. No. 6, 3-10 (1953)*.—The principles involved in resistance to flow in filtration are briefly summarized. The dependence of the resistance on particle size and porosity for ppts. of quartz and galenite agrees well with the theoretical calcn. made by the equation:  $r = k(1 - e)^3/d^2e^2$ , where  $k = 1/C$ ,  $C$  being the coeff. depending on the form of cross section of pores of the ppt. and on viscosity of the liquid;  $r$  is the specific resistance of the ppt. layer;  $d$  is the particle diam.;  $e$  is the porosity. For Fe oxide ppts. and for alumina an empirical equation is satisfactory:  $r = k(1 - e)^4/d^2e^2$ . The 1st group of particles have more porous structure than the 2nd group. G. M. Kosolapoff

NI, L. P.

(3) 4

Chemical Abst.  
Vol. 48 No. 6  
Mar. 25, 1954  
Apparatus, Plant Equipment, and  
Unit Operations

✓ The effect of viscosity of solutions of electrolytes on the specific resistance in filtration. V. D. Tomomacy and L. P. NI. ~~Invest. Akad. Nauk Kazakh. S.S.R. No. 118, Ser. Khim., No. 6, 11-15(1953).~~ —For many ppts. the resistance to filtration varies proportionally to the viscosity of the soln. (NaOH and H<sub>2</sub>SO<sub>4</sub> solns. were used), and the equations used for H<sub>2</sub>O (cf. C.A. 48, 2410a) can be used after modification of  $k$  by the viscosity. G. M. Kosolapoff

MF  
11-5-54

SOV/24 57 3 3287

Translation from: Referativnyy zhurnal Mekhanika, 1957, Nr 3, p 94 USSR

AUTHORS: Ponomarev, V D, N L P

TITLE: The Specific Resistance During Seepage as a Function of the Particle Diameter and Porosity (Zavisimost' udelnogo soprotivleniya pri fil'tratsii ot diametra chastits i poristosti)

PERIODICAL: Izv. AN KazSSR, 1953, Nr 118, pp 3-10

ABSTRACT: The authors investigated the equation for the specific resistance of a fictitious soil (consisting of spherical particles)  $r = k(1 - \epsilon)^2/d^2$  where  $k$  is an experimental coefficient,  $\epsilon$  the porosity of the soil and  $d$  the diameter of the particles. The applicability of this equation to sediments composed of nondetachable particles of arbitrary shape was verified. The experiments were conducted under vacuum on a filter with a diaphragm made of porous glass (the filtering area amounting to 10.7 cm<sup>2</sup>). The values of  $r$  were computed on the basis of the time required for the filtration of a definite volume of liquid through a sediment layer of constant depth under conditions of constant pressure. It was established that the dependence of  $r$  on  $d$  and  $\epsilon$  in the case of quartz and galenite sediments is represented with

Card 1/2

SOV/124-57-3-3287

The Specific Resistance During Seepage as a Function of the Particle (cont.)

sufficient accuracy by the equation given above. It was established that an analogous relationship in the case of alumina and ferric-oxide sediments is expressed by the empirical equation  $r = k'(1 - \epsilon)^{4.5} / d^{1.6} \epsilon^3$ . It is shown that the lower rate of increase of  $r$  observed as the values of  $d$  and  $\epsilon$  of alumina and ferric-oxide sediments are reduced (as compared with the same values for quartz and galenite sediments) is attributable to the greater structural porosity of the former.

V. A. Zhuzhkov

Card 2/2

PONOMAREV, V.D.; NI, L.P.

Effect of viscosity of electrolyte solutions on specific resistance during  
filtration. Izv.AN Kazakh.SSR no.118:11-15 '53. (MLRA 6:10)  
(Filters and filtration) (Electrolytes)

NI, L. P.

PONOMAREV, V.D.; NI, L.P.; LEBEDEV, K.B.; SOLENKO, T.V.

Influence of sulfide ions on the speed of dissociation of aluminate  
solutions. Izv. AN Kazakh. SSR. Ser. gor. dela, met., stroi. i stroimat.  
no. 1: 34-40 '57. (MLRA 10:5)  
(Sulfides) (Aluminates) (Dissociation)

NI, L.P.; PONOMAREV, V.D.

Stability of aluminate solutions in presence of sodium aluminosilicates  
in solid phase. Izv. AN Kazakh. SSR. Ser. gor. dela, met., stroi. i stroimat.  
no. 1:41-47 '57. (MLRA 10:5)

(Sodium aluminosilicate)  
(Aluminates)

PONOMAREV, V.D., NI, L.P.

Efficiency of leaching alumina from bauxites by means of caustic  
sulfide solutions. Izv. AN Kaz.SSR. Ser.net.obog. i osnove. no.1:  
14-21 '57. (MIRA 1:7)

(Leaching)

(Bauxite)



PONOMAREV, V. D.; NI, L.P.

Using the sulfide-caustic method for processing bauxites in the  
production of alumina. Trudy Vost.-Sib. fil. AN SSSR no.13:232-236  
'58. (MIRA 12:12)

1. Institut metallurgii i obogashcheniya AN Kazakhskoy SSR.  
(Alumina) (Bauxite)

NI, L.P.; PONOMAREV, V.D.

Extracting alumina from slag by the alkaline hydrochemical  
method. Izv. AN Kazakh. SSR. Ser. nat. obog. i ogneup. no. 1:  
16-20 '59. (MIRA 13:4)  
(Alumina) (Leaching)

NI, L.P.; ZAKHAROVA, M.V.; PONOMAREV, V.D.

Behavior of alumina in potassium nitrate solutions at 100°C.  
Trudy Inst. met. i obog. Ali Karaka. 1964:96-d. 164.  
(1964:96)

NI, L.I.: FERRICUM, ...

Effect of potassium cyanide on the ...  
formed during ... removal from aluminate solutions ...  
Thur. prikl. khim. 30 n. 191904-1908 3 1961.

NI, L.P.

Hydrochemical alkali method of preparing alumina from high silica  
bauxites. Trudy Inst. met. i obogashch. AN Kazakh. SSR 3:148-153  
'60. (MIRA:4:6)

(Aluminum--Metallurgy)

69829

S/136/60/000/05/009/025  
E071/E235

18.3100

AUTHORS: Ponomarev, V. D., Ni, L. P., and Sazhin, V. S

TITLE: A Combined Method for the Complete Processing of High Silica and High Iron Bauxites Containing Titanium

PERIODICAL: Tsvetnyye metally, 1960, Nr 5, pp 44-48 (USSR)

ABSTRACT: A technological scheme for processing bauxites including a branch for processing red mud with a complete utilisation of its components is proposed. In this scheme the extraction of iron from the red mud is done by reducing smelting in an electric furnace and the extraction of alumina and alkali from slags by hydrochemical leaching. The remaining residues enriched in titanium dioxide can be further utilised for the production of titanium. The scheme is shown in the figure. The main operations of the proposed scheme were verified on a laboratory scale, using hydroargillitic bauxites of the following composition, %:  $\text{SiO}_2$  - 10.65,  $\text{Al}_2\text{O}_3$  - 43.0,  $\text{Fe}_2\text{O}_3$  - 17.35,  $\text{TiO}_2$  - 2.45,  $\text{CaO}$  - 1.34, S - 0.4. The following main results were obtained. Optimum leaching conditions of bauxites: sodium oxide concentration in the return

Card 1/3 aluminate solution 200 to 240 g/litre; duration of

69829

S/136/60/000/05/009/025  
EO71/E235

A Combined Method for the Complete Processing of High Silica and High Iron Bauxites Containing Titanium

leaching 2 hours at 105°C. A stable extraction of alumina equal to 76.5% (97% of the theoretically possible) is obtained. Despite a low ratio of liquid to solid (3:1 initially and 6:1 after leaching) the pulp possessed a good fluidity and did not present any difficulty. The settling of red mud was done with the addition of 0.2% starch. The necessary settling area of the diluted pulp 2.42 m<sup>2</sup>/t day, for various washing stages 5.0 to 6.5 m<sup>2</sup>/t/day. This indicated that the treatment of bauxite with high modulus return solutions does not present any difficulties during leaching, settling and washing of red mud. Smelting of the red mud (16.7% SiO<sub>2</sub>, 34.8% Fe<sub>2</sub>O<sub>3</sub>, 19.15% Al<sub>2</sub>O<sub>3</sub>, 6.35% TiO<sub>2</sub>, 9.1% Na<sub>2</sub>O) was done on a 1000 g sample with 30 g of charcoal at 1550°C with a retention time of 20 minutes. The extraction of iron into pig iron - 96.8%, silicon in pig 0.05 to 0.15%, the pig was alloyed with vanadium, chromium and gallium. The composition of slag: 30.25% SiO<sub>2</sub>, 38.4% Al<sub>2</sub>O<sub>3</sub>, 12.48% TiO<sub>2</sub>, 1.5% Fe and 15% Na<sub>2</sub>O (equivalent to a transfer from the red mud of all the alumina, 99.2% of titanium dioxide and 83.1 of alkali).

Card 2/3

69829

S/136/60/000/05/009/025  
E071/E235

A Combined Method for the Complete Processing of High Silica and High Iron Bauxites Containing Titanium

Optimum conditions of preferential leaching of alumina from slag: in autoclave (reaction 1): concentration of sodium oxide in the initial solution 350 to 500 g/litres, the initial caustic modulus of the pulp 13 to 14; addition of calcium oxide as calculated from the molar ratio of  $\text{CaO}:\text{SiO}_2 = 1:1$ , pressure - 50 atm, duration of leaching 15 minutes. Under these conditions, the extraction of alumina from slag amounts to 90%. The chemical composition of the autoclave mud after autoclaving: 27.1%  $\text{SiO}_2$ , 3.14%  $\text{Al}_2\text{O}_3$ , 1.9% Fe, 12.5%  $\text{TiO}_2$ , 29.36% CaO, 13.7%  $\text{Na}_2\text{O}$ . The extraction of sodium oxide (reaction 2) is done with an alkali solution containing 60 g/litres of  $\text{Na}_2\text{O}$ , during 12 hours at a ratio of liquid to solid of 6:1 and temperature 95 to 100°C. About 90 to 95% of  $\text{Na}_2\text{O}$  can be removed from the mud. The residue containing 14% of titanium dioxide can be used for its recovery. There are 1 figure and 7 references, 6 of which are Soviet and 1 English.

Card 3/3



GOL'DMAN, M.M.; MEDVEDKOV, B.Ye.; NI, L.P.; PONOMAREV, V.D.

Regeneration of sodium oxide from sodium calcium hydrosilicates.  
Izv.AN Kazakh.SSR.Ser.met., obog.i ogneup. no.2:53-63 '61.

(MIRA 14:8)

(Sodium calcium silicate—Analysis)

NI, L.P.; PEREKHREST, G.L.; PONOMAREV, V.D.

Solubility of sodium aluminosilicate in high modulus aluminate  
solutions at 70, 90, 110, and 130°C. Trudy Inst. met. 1  
obogashch. AN Kazakh. SSR 4:34-37 '62. (MIRA 15:8)  
(Sodium aluminosilicate) (Solubility)

И. В. П. ПЕРЕКРЕСТ, Г. П. ПОНОМАРЕВ, В. Д.

interaction of silicon with high-modulus aluminate solutions  
at 90°. Zhurnal Khim. 35 no. 6:944-952 Ny 1960. MIRA 1964

1. Institut metallurgii i obogashcheniya A.M. Dezhnev  
(Silicon) (Aluminates)

NE, S.I., PEREZHURENT, G.E.; PONOMAREV, V.I.

Composition of solid phases precipitating in the process of  
desilification of high-modulus aluminate solutions. Zhur.  
prikladn. khim. 35 no 5:952-962 My 62. (U.S.S.R.)

I. Institut metallurgii obogasheniya Al' tsent.  
(Aluminosilicates)

NI, L.P.; MEDVEDKOV, B.Ye.; PONOMAREV, V.D.

Phase equilibria in the system  $\text{Na}_2\text{O} - \text{CaO} - \text{SiO}_2 - \text{H}_2\text{O}$  at 220°C

Izv.AN Kazakh SSR. Ser.tekh.i khim.nauk no.1:36-43 '63.

(MIRA 1963)

RAKINOV, A.S.; POCHINOV, V.D.: 1, 0.1.

Behavior of the basic components of blast furnace slags during their hydrochemical processing. Izv. vys. ucheb. zav.; tsvet. ser. 6 no.3:1 1-125 '63. (USSR:9)

1. Kazakhskiy politekhnicheskii institut, kafedra metalurгии i legkikh i rezhikh metallov. (Lening)

SULEYMENOV, E.N.; GOL'DMAN, M.M.; SHUSTER, R.L.; MACHKASOV, Ye.I.; NI, L.  
P.; PONOMAREV, V.D.

Studying the formation of fibers in mineral wool with the method  
of high-speed cinematography. Izv. AN Kazakh. SSR. Ser. tekhn. i  
khim.nauk no.3:28-33 '64. (MIRA 17:2)

NI, L.P.; PEREKHREST, G.L.; SOLENKO, T.V.

Solubility of sodium aluminosilicate in aluminate solutions. Zhur.prikl.  
khim. 37 no.1:22-29 Ja '64. (MIRA 17:2)

1. Institut metallurgii i obogashcheniya AN KazSSR.



GOL'DMAN, M.M.; SHUSTER, R.L.; MACHKASOV,, Ye.I.; SAZHIN, Yu .G.;  
SULEYMENOV, E.N.; SPIVAK, Yu.M.; NI, L.P.; PONOMAREV. V.D.

Utilizing nepheline pulp, lean in calcium oxide for needs of  
the construction industry. Trudy Inst. met. i oboz. AN Kazakh.  
SSR 8:122-125 '63 ; (MIRA 17:8)

NI, L.P.; BUNCHUK, L.V.

Interaction in the system  $\text{Na}_2\text{O} - \text{Al}_2\text{O}_3 - \text{SiO}_2 - \text{CaO} - \text{H}_2\text{O}$  in conditions of the hydrochemical method with various molecular relations of  $\text{CaO} : \text{SiO}_2$ . Trudy Inst. met. i obog. AN Kazakh. SSR 9:56-62 '64. (MIRA 17:9)

NI, L.P.; MEDVEDKOV, B.Ye.; PONOMAREV, V.D.

Interaction in the system  $\text{Na}_2\text{O} - \text{CaO} - \text{SiO}_2 - \text{H}_2\text{O}$  at  $280^\circ \text{C}$ .  
Trudy Inst. met. i obog. AN Kazakh. SSR 9:69-76 (1979).  
(L.M.G. 1719)

NI, L.P.; ROMANOV, L.G.; OSIPOVA, Ye.F.; PONOMAREV, V.D.

Interaction of sodium hydroalumosilicates with azeal solutions.  
Trudy Inst. met. i obog. AN Kazakh. SSR 9:90-96 '61.  
1961, 10:3.

GOLDMAN, M.M.; SHUSTROV, A.L.; MACHKASOV, Ye.I.; NI, L.F.; PONOMAREV, V.D.

Obtaining mineral wool from slimes of nephelyte rock processing.  
Trudy Inst. met. i obog. AN Kazakh. SSR 9:112-115 '62.  
(MIRA 17:9)

NI, I.I.; ... ..

Alkaline ... ..  
solutions. ... ..

NI, L.P.; ROMANOV, I.G.; KHALYAPINA, O.B.; PONOMAREV, A.D.

Investigating high temperature sodium aluminosilicate hydrates.  
Trudy Inst.met.i obog. AN Kazakh.SSR 11:15-21 '62.

(MIRA 18:1)

NI, L.P.; ZAKHAROVA, M.V.; PONOMAREV, V.D.

Investigating potassium aluminosilicates formed in the system  
 $K_2O - Al_2O_3 - SiO_2 - H_2O$  at  $90^\circ C$ . Trudy Inst. met. i bog.  
AN Kazakh.SSR 11:38-43 '64. (MIRA 18:4)



SOLENKO, T.V.; NI. L.P.

Interaction of iron hydroxide with high-ratio aluminate solutions  
in presence of calcium oxide at 90°C. Trudy Inst. net. i obog.  
AN Kazakh. SSR 12:3-8 '65. (MIRA 18:10)

NI, I.P., KUMAR, S., ...; ...; ...

kinetics of the interaction of the unstable form of sodium  
silicofluoride hydrate with alkali and aluminate solutions.  
Izv. vys. ucheb. zav.; tsvet. met. 8 no. 3:52-57, 1965.

(MIRA 1965)

1. Institut metallurgii i obycheniya Al kazanskoy SSSR.  
nenkementovaya kafedra legkikh i srednikh metallov kazanskogo  
politehnicheskogo instituta.

NI, L.P.; COLEMAN, M.M.; BOWEN, I.V.; KUMARAKAYA, A.P.; SYLVE, N.H.;  
BONOMAREN, V.S.

Behavior of iron by) oxide in an a kail medium during autolysis  
treatment. Trudy Inst. nat. i obsh. AN Kazakh. SSR 12:9-15 '65.  
(MIRA 18:10)

PEREKHREST, G.L.; KHALYAPINA, O.B.; AKHMETOV, S.F.; NI, L.P.; PONOMAREV, V.D.

Solid-phase transitions taking place over a period of time  
in the system  $K_2O - Na_2O - Al_2O_3 - SiO_2 - H_2O$  at  $90^\circ C$ . Izv. AN  
Kazakh.SSR.Ser.khim.nauk 15 no.3:55-61 J1-Ag '65.  
(MIRA 18:11)

1. Submitted January 23, 1965.

PONOMAREV, V.D.; GOL'DMAN, M.M.; NI, I.I.; KURTOV, P.I.; LONNEN, S.M.

Complex processing of the nephelites of Kazakhstan. *Int. J. Geophys. Geophys. Chem.*  
Kazakh.SSR 21 no.2:3-6 P '65.

NI, P.F.; SOKOL'SKIY, D.V.

Rhenium as a promoter of the catalyst nickel on silica gel in the  
hydrogenation of unsaturated compounds in the liquid phase. Izv.  
AN Kazakh. SSR. Ser.khim. no.1:46-54 '58. (MIRA 12:2)  
(Catalysts, Nickel) (Rhenium) (Hydrogenation)

NI, Pavel Spiridonovich; MIROSHNICHENKO, V.D., red.izd-va; MINSEER,  
L.I., tekhn.red.

[Dependence of costs for the upkeep of drifts on the rate of  
advance in longwalls] Zavisimost' rasKhodov na podderzhanie  
shtrekov ot skorosti podvigania lavy. Moskva, Gos.nauchno-  
tekhn.izd-vo lit-ry po gornomu delu, 1960. 22 p.

(MIRA 14:3)

(Coal mines and mining--Costs)

NI, P.S.; GRIN'KOV, N.P.; ARYSTANOV, I.D.

Technical and economic comparison of variants of panel develop-  
ment. Nauch. trudy KNIIM no.14:24-38 '64.

Improving the panel system of developing seams in conditions of  
Karaganda Basin mines. Ibid.:62-78  
(MIFA 18:4)



11609  
S/044/63/000/001/014/053  
A060/A000

AUTHOR: Ni, V. Kh.

TITLE: Investigation of the solutions for systems of differential equations

PERIODICAL: Referativnyy zhurnal, Matematika, no. 1, 1963, 45, abstract 1B199  
(Tr. Mekhan.-matem. fak. Kazakhsk. un-t, 1960, v. 1, no. 2, 146 - 157)

TEXT: 1. With the aid of known estimates from below and from above for the characteristic numbers of the system

$$\frac{dx}{dt} = P(t)x$$

by the quantities

$$a = - \overline{\lim}_{t \rightarrow \infty} \frac{1}{t} \int_{t_0}^t \beta(\tau) d\tau, \quad b = - \overline{\lim}_{t \rightarrow \infty} \frac{1}{t} \int_{t_0}^t \alpha(\tau) d\tau, \quad (1)$$

Card 1/2

S/044/63/000/00./014/053  
A060/A000

Investigation of the solutions for...

where  $\alpha(t)$  and  $\beta(t)$  are, respectively, the smallest and the greatest roots of the equation  $\det(P + P^* - 2\lambda) = 0$ , and by citing Persidskiy's theorem (Izv. fiz.-matem. ob-va pri Kazansk. un-te, 1938, v. XI, ser. 3) it is demonstrated that, when  $\beta(t) \leq -a < 0$ , the homogeneous solution of the system

$$\frac{dx}{dt} = P(t)x + f(t,x), \quad (f(t,x) \leq B|x|^\beta, \beta > 1)$$

is asymptotically stable. 2. Estimates are given for the characteristic numbers of the system

$$\frac{dx_s}{dt} = \sum_{k=1}^n x_k f_{sk}(t, x_1, \dots, x_n) \quad (s = 1, \dots, n, |f_{sk}| \leq \text{const}),$$

obtained analogously to (1). 3. The problem is solved as to the existence of an almost-periodic solution of the system

$$\frac{dx}{dt} = P(t)x + \alpha f(t, x)$$

(where  $\alpha$  is a parameter,  $P(t)$  and  $f(t, x)$  are periodic in  $t$ ).  
[Abstracter's note: Complete translation] B. F. Bylov  
Card 2/2

NI, V.Kh.

Two-dimensional problem of heat and mass transfer. Inzh.-fiz.  
zhur. no.12:56-65 D '63. (MIRA 17:2)

1. Kazakhskiy gosudarstvennyy universitet imeni S.M. Kirova,  
Alma-Ata.

L 50338-65 ENT(d) Pg-4 IJF(c)

UR/0361/65/000/001/0119/0029

ACCESSION NR: AF5013261

14  
B

AUTHORS: Iim. Ye. L.; Ni. V. Kh.

TITLE: Solution of a system of parabolic differential equations when the characteristic equation has multiple roots

SOURCE: AN KazSSR, Izvestiya. Seriya fiziko-matematicheskikh nauk, no. 1, 1965, 19-29

TOPIC TAGS: differential equation

ABSTRACT: The author treats three problems when the characteristic equation

$$|A - \lambda E| = 0, A = \|a_{ij}\| (i, j = 1, 2, \dots, n) \quad (1)$$

has multiple roots  $\lambda_1, \dots, \lambda_l$  with multiplicities  $r_1, \dots, r_l$ ;  $\sum_{i=1}^l r_i = n$ . A typical case is: Find a bounded solution of

$$\frac{\partial U_i}{\partial t} = \sum_{j=1}^n a_{ij} \left( \frac{\partial^2 U_j}{\partial x^2} + \frac{\partial U_j}{\partial x} \right), (i=1, 2, \dots, n), \quad (2)$$

in the region R satisfying the initial condition

$$U_i(x, y, 0) = f_i(x, y) (i=1, 2, \dots, n) \quad (3)$$

Card 1/3

L 59338-65  
 ACCESSION No: AF5013261

0

and the boundary condition

$$\frac{\partial u_l(x, y, 0)}{\partial x} \Big|_{x=0} = 0 \quad (l = 1, 2, \dots, n), \quad (1)$$

where  $f_l(x, y)$  are bounded, continuous functions on the region  $D$  ( $x \geq 0, -\infty < y < \infty$ ).  
 The solution is sought in the form

$$W_l^{(0)}(x, y, t) = \sum_{m=1}^{\infty} \sum_{n=1}^{\infty} \sum_{l=1}^n (-1)^{m+n} C_{nm}^{(l)} \int_{-\infty}^{+\infty} d\xi \int_{-\infty}^{\infty} \frac{f_l(\xi, \eta) [(x-\xi)^2 + (y-\eta)^2]^{m-1} e^{-\lambda t}}{(2\pi)^{m-1}} \frac{(x-\xi)^2 + (y-\eta)^2}{4\lambda^{m-1}} d\eta \quad (5)$$

where  $C_{nm}^{(l)} = \sum_{k=1}^n \lambda_k^{m-1} r_{nk}^{(l)}$ ,  $r_{nk}^{(l)} = 0, \quad l = 1, 2, \dots, n$

$$f_l(x, y) = \begin{cases} f_l(x, y), & x > 0 \\ f_l(-x, y), & x < 0 \end{cases} \quad (l = 1, 2, \dots, n). \quad (6)$$

Card 2/3

L 50338-65

ACCESSION NR: AP5013211

Orig. art. has: 12 Kowalski.

ASSOCIATION: none

SUBMITTED: OO

ENCH: OO

SUB CODE: NA

ED REF SOV: OO

OTHER: OO

ML  
Card 3/3

L 52731-65 INT(1)/EPF(c)/EPF(n)-2/ENG(m)/EPB  
ACCESSION NOS: AF501391B

Pr-l/Ps-l/Pu-l  
01/0170/65, 010/005/66h/0652

AUTHOR: M. V. Kh.

TITLE: A two-dimensional mixed boundary problem of heat and mass transfer when the roots of the characteristic equation are multiples

SOURCE: Inzhinerno-fizicheskij zhurnal, no. 5, 1965, 614-652

TOPIC TAGS: integral equation, Volterra equation, heat transfer, parabolic equation, Fourier transform, Laplace transform

ABSTRACT: The condition of solvability of a set of two differential equations of the parabolic type was studied analytically. The equations are given by

$$\frac{\partial U_i}{\partial t} = \sum_{k=1}^2 a_{ik} \left( \frac{\partial U_k}{\partial x^2} - \frac{\partial U_k}{\partial t} \right) \quad (i=1,2).$$

with coefficients subject to the condition

$$(a_{11} + a_{21})^2 - 4(a_{11}a_{22} - a_{12}a_{21}) = 0, \quad a_{11} + a_{21} > 0.$$

which generates multiple roots of the type  $\lambda_1 = \lambda_2 = \lambda > 0$ . The problem is

Card 1/3

52731-65

ACCESSION NR: AP5013918

stated as follows: Find a solution for the above equation in the region  $P(t > 0, 0 \leq x \leq l, -\infty < y < +\infty)$  satisfying the initial condition  $U_i(x, y, 0) = 0$  ( $i=1,2$ ) and the boundary conditions

$$(a^{(1)}U_x + a^{(2)}U_y) \Big|_{x=0} = \varphi_1(y, \eta), \quad \left( \frac{\partial U_1}{\partial x} + h_1 U_1 \right) \Big|_{x=l} = \varphi_2(y, \eta),$$

$$(a^{(1)}U_x + a^{(2)}U_y) \Big|_{x=l} = \varphi_3(y, \eta), \quad \left( \frac{\partial U_2}{\partial x} + h_2 U_2 \right) \Big|_{x=0} = \varphi_4(y, \eta),$$

The solution is given in the form:

$$U_i(x, y, \eta) = \sum_{n=1}^{\infty} B_n^{(i)} g^{(i)}(x, y, \eta) + \sum_{n=1}^{\infty} B_n^{(i)} g^{(i)}(x, y, \eta) + \sum_{n=1}^{\infty} B_n^{(i)} g^{(i)}(x, y, \eta) + \sum_{n=1}^{\infty} B_n^{(i)} g^{(i)}(x, y, \eta)$$

$$g^{(1)}(x, y, \eta) = \frac{1}{2i\sqrt{\lambda t}} \exp \left[ -\frac{x^2 + y^2}{4\lambda t} \right], \quad g_x^{(1)} = \frac{\partial}{\partial x} g^{(1)}, \quad g_{xx}^{(1)} = \frac{\partial^2}{\partial x^2} g^{(1)},$$

Card 2/3



L 52731-65

REGISTRATION No. 195013918

$$g^{(n)}(x, y, z) = \frac{\partial^n}{\partial x^n} \exp\left[-\frac{x^2 + y^2}{4\lambda t}\right] \cdot g^{(n)} = \frac{\partial^n}{\partial x^n} g^{(n)} \quad g^{(0)} = \frac{\partial^0}{\partial x^0} g^{(0)}$$

$$g(x, y, z) = \int_0^x \int_0^y \int_0^z g(\eta, \xi, \zeta) d\eta d\xi d\zeta$$

The properties of the unknown functions  $g_{ij}(x, y, z)$  are studied in detail by means of two lemmas where it is shown that, in order to determine these functions, a set of four integro-differential equations must be solved. By using Fourier-Laplace transforms and proving the existence of the solution under the condition  $T_1/(T_1 + T_2) > 0$ , these integro-differential equations are reduced to a system of ordinary Volterra type integral equations. A successive approximation scheme is proposed for the solution of the Volterra equations. Orig. art. lang: 32 equations

ASSOCIATION: Kazakhskiy Gosudarstvennyy universita im. S. M. Kirova, Alma-Ata

(Kazakh State University)

SUBMITTED: 23 June 1954

ENCL: 00

SUB CODE: ME, TD

NO REF SOVI: 006

DESB: 010

Card 3/3 1/2

NI, V. N.

Dissertation: "Technical and Economic Analysis of Earth Excavation with Heavy-Duty Scrapers and the Field of Their Application." Eng. Tech. Sci., Moscow Engineering Technic Inst. (Inst. Serge Gruzdevskiy, Moscow, U.S.S.R. (Vseroyuzyt. Inst. Tekhn., Moscow, 7 Apr. 54))

SO: SUP 243, 19 Oct 1954

ROGOVSKIY, L.V.; NI, V.N.; KRIVONOSOV, V.A.; LESNCHILOVSKIY, V.F.; KLIMOVA,  
G.D., red. izd-va; RYAZANOV, P.Ye., tekhn. red.

[Instructions I O2-60 for carrying out and inspecting earthwork  
operations done with scrapers] Instruksia po proizvodstvu i priemke  
zemlianykh rabot, vypolniaemykh skreperami I O2-60. Moskva, Gos.  
izd-vo lit-ry po stroit., arkhitekt. i stroit. materialam, 1960. 51 p.  
(MIRA 14:9)

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut organizatsii,  
mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stvu.  
(Earthwork) (Scrapers)

NI, V N

ROGOVSKIY, L.V., inzh.; MIRONOV, N.K., inzh.; VESTERSKIY, N.M.,  
inzh.; NI, V.N., kand.tekhn.nauk; VLASOV, P.Ye., red.isd-vs;  
YUDINA, L.A., red.isd-vs; MELNIKH, L.Ya., tekhn.red.;  
OSINKO, L.M., tekhn.red.

[Handbook on building; earthwork] Spravochnik po obshche-  
stroitel'nym rabotam; zemlianye raboty. Moskva, Gos.izd-vo  
lit-ry po stroit., arkhit. i stroit.materialam, 1960. 405 p.  
(MIRA 14:2)

(Earthwork)

BUDANOV, G.V., inzh., red.; GUSEV, V.I., inzh., red.; NI, V.N.,  
inzh., red.; MALYAKOVSKIY, V.T., inzh., red.; GRIGOROV,  
I.I., inzh., red.; PEREVEZENTSEV, N.T., inzh., red.  
TURIANSKIY, M.A., spets. red.

[Construction specifications and regulations] Stroitel'-  
nye normy i pravila. Moskva, Stroizdat. Pt.4. Vol.2.  
No.1. Ch.10. 1965. 95 p. (MIRA 18:7)

1. Russia (1923- U.S.S.R.) Gosudarstvennyy komitet po  
delam stroitel'stva. 2. Gosstroy SSSR (for Budanov,  
Gusev, Malyakovskiy). 3. Nauchno-issledovatel'skiy insti-  
tut ekonomiki stroitel'stva Gosstroya SSSR (for Ni,  
Perevezentsev, Grigorov).

CABANU, I.; NIAC, G.; ONICIU, L.

Determination of the spectrum of absorption in ultraviolet of  
the complex  $FeS_2O_3$ . Studia Univ B-B S. Chem 7 no.1:27-34 '62.

NIAC, Gavril

Participation at the Meeting of the International Committee  
of Thermodynamic and Electrochemical Kinetics in Moscow.  
Studia Univ B-B S.Chem 9 no. 1:121-123 '64.

NIAC, G.; GUNESCH, H.; WEISS, Gh.; LITERAT, L.

Contributions to the practical application of the kinetic  
method for determining desorption isotherms. Rev chimie Min  
petr 15 no. 4:198-203 Ap '64.



NIAGN, V.; DUVAM, S.; RUGENDOR, Ye.

Treatment of tumors of the bladder with radioactive cobalt.  
Urologia 26 no.1:52-56 '61. (MIRA 14:3)  
(COBALT--ISOTOPES) (BLADDER--TUMORS)

NIAGOLOV, Iv., purv.; IORDANOV, E.M.

Morbidity, mortality and disability in hypertension in 1958,  
1959, and 1960 in our country. Suvr. med. 13 no.7:8-15 '62.

(HYPERTENSION)

NIAGOLOVA, Maria, u-ka (Kotel)

An excursion to the Zoological Department of the Museum of Natural Sciences at Kotel. Biol i khim 4 no.3:47-48 '62.

NIAGH, D.V.

ANTIKINA, M. Kh., KOTLYAROVSKIY, D. M., KORNILOV, A. A., KURBANLINA, M. S.,  
MAKHONAVIDSE S. M., POSEVITSKIY, A. N., ~~REZNIK, L. M.~~, ~~STEFANOV, N. I.~~  
BOZANOVA, A. M., BEZAKOV, V. A., OZBEN, R. G., ~~TRIFIMOV, G. G.~~,  
CHEREMISIN, L. B.

"Decay Properties of  $K^0$ -Mesons"

Report presented at the Intl. Conference on High Energy Physics, Geneva,  
4-11 July 1962

Joint Inst. for Nuclear Research  
Lab. of High Energies, Dubna, 1962