MALAKHOVA, N.P.; YAROSH, P.Ya.

Age of rocks of the greenstone stratum of the Polevskoy region in the Central Urals. Dokl. AN SSSR 142 no.3:650-652 Ja '62.
(MIRA 15:1)

1. Gorno-geologicheskiy institut Ural'skogo filiala AN SSSR.
Predstavleno akademikom D.I.Shcherbakovym.
(Polevskoy region--Petrology)

YAROSH, P. Ya.

On the two sericitization stages at the Zyuzel'skiy pyrite deposit. Dokl. AN SSSR 147 no.6:1455-1457 D '62.
(MIRA 16:1)

1. Predstavleno akademikom D. S. Korzhinskim.

(Zyuzel'skiy—Pyrites)
(Zyuzel'skiy—Sericite)

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Metasomatosis and metamorphism of the Zyuzel'koye pyrite ore deposit. Geol. rud. mestorozh. 6 no.4:57-65 Jl-Ag '64. (MIRA 17:10)

1. Institut geologii Ural'skogo filiala AN SSSR, Sverdlovsk.

YAROSH, P. Ya.; KHACHATURYAN, E.A.

Interrelationship of ore and nonmetallic minerals in the Akhtala and Shamlug deposits. Izv. AN Arm.SSR Nauki o zem. 17 no.6:29-36 '64 (MIRA 18:2)

1. Institut geologii Ural'skogo filiala AN SSSR i Institut geologicheskikh nauk AN ArmSSR.

MALAKHOVA, N.P.; YAROSH, P.Ya.

New data on marbled limestones in a pyrite-bearing formation of the Degtyarka deposit in the Central Urals. Dokl. AN SSSR 160 no.3:687-688 Ja '65. (MIRA 18:3)

1. Institut geologii Ural'skogo filiala AN SSSR. Submitted June 1, 1964.

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1. Institut geologii Ural'skogo filiala AN SSSR. Submitted May 22, 1965.

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Growth zones in sphalerite from pyrite deposits in the Urals.
Trudy Inst. geol. UFAN SSSR no.70:149-159 '65. (MIRA 18:12)

YAROSH, S.I. (Kiyev, ul. Geroyev revolyutsii, d. 4a, korpus 11, kom. 47)

New method for facilitating intubation and the exact control of the tube position in the trachea during intratracheal anesthesia. Nov. khir. arkh. no.2:128-129 Mr-Ap '59. (MIRA 12:7)

1. Kafedra akusherstva i ginekologii (zav. - prof. A.Yu. Lur'ye) [deceased] Kiyevskogo meditsinskogo instituta.
(INTRATRACHEAL ANESTHESIA)

BUTENKO, Z.A.; BLEYKHERMAN, N.A.; ZAK, K.P.; SAZHENIN, P.A.; YAROSH, S.I.

Methods for counting eosinophiles directly in the calculating chamber. Vrach.delo no.2:199-201 F '59. (MIRA 12:6)

1. Laboratoriya endokrinnykh funktsiy (rukovoditel' - akad. AN USSR V.P.Komissarenko) Instituta fiziologii AN USSR, kafedra patofiziologii (zav. - prof.O.A.Bogomolets) Kiyevskogo instituta usovershenstvovaniya vrachey, kafedra khirurgii stomatologicheskogo fakul'teta (zav. - zasl.deyatel' nauki, prof.A.K.Gorchakov) i kafedra akusherstva i ginekologii (zav. - prof.A.Yu.Lur'ye [deceased]) Kiyevskogo meditsinskogo instituta.
(EOSINOPHILES)

YAROSH, S.I.

Simple apparatus for recording pulse waves. Vrach.delo no.3:309 Mr '60. (MIRA 13:6)

1. Kafedra akusherstva i ginekologii No.1 (zav. - prof. N.S. Baksheyev) Kiyevskogo meditsinskogo instituta.
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YAROSH, S.I.

Use of potentiated anesthesia in gynecological operations. Akush. i gin. 36 no.4:57-61 Jl-Ag '60. (MIRA 13:12)
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Report submitted for the 3rd World Congress, Intl Federation of Gynoelogy and Obstetrics, At Vienna, Austria, 3-9 Sep 1961

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Influence of the anatomical structure of the neck and maxilla on the technic of direct laryngoscopy. Eksp.khir.i anest. 6 no.3:63-64 '61. (MIRA 14:10)

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YAROSH, S.K.; RODNIKOV, A.V.

Elets bunglers. Sakh.prom. 34 no.10:12-13 O '60. (MIRA 13:10)
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1. Kafedra akusherstva i ginekologii No.1 (zav. - prof. M.S. Baksheyev [Baksheiev, M.S.]) Kiyevskogo meditsinskogo instituta im. akad.Bogomol'tsa (rektor - dotsent V.D.Bratus').
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YAROSH, V.

Hydroelectric power station on the Kura. IUn.tekh. 5 no.10:33-35 O '60. (MIRA 13:12)
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19897 YAROSH, V. i FEDOROV, I.

Ob' - Aral-kaspiy. (K probleme vodnogo soedineniya po proektu P. M. Davydova). Vokrug sveta, 1949, N 6, s. 33-36

ye, Elektrotekhnika. Elektrifikatsiya

So: Letopis Zhurnal Statey - Vol 27 - Moskva, 1949

YAROSH, Viktor.

The future is born today. Tekh.mol.24 no.6:2-6 Je '56. (MLRA 9:9)
(Bratsk Hydroelectric Power Station)

YAROSH, Viktor.

Siberian giant. Tekh.mol.24 no.8:8-11 Ag '56. (MIRA 9:9)
(Yenisey River--Hydroelectric Power Stations)

YAROSH, Viktor, inzhener.

Hydroelectric plant at the Baikal gate. IUn.tekh. no.7:38-42 Je '57. (MLRA 10:7)

(Irkutsk Hydroelectric Power Station)

MALENKOV, G.M.; PERVUKHIN, M.G.; KUCHERENKO, V.A.; ZHIMERIN, D.G.; LOGINOV, F.G.; PAVLENKO, A.S.; YERMAKOV, V.S.; VINTER, A.V.; DMITRIYEV, I.I.; UGORETS, I.I.; BEKHTIN, N.V.; VOZNESENSKIY, A.N.; VASILENKO, P.I.; BOROVOY, A.A.; NOSOV, R.P.; KRISTOV, V.S.; BELYAKOV, A.A.; RUSSO, G.A.; VASIL'YEV, A.F.; REPKIN, V.P.; TERMAN, I.A; ORLOV, G.M.; CHUMACHENKO, N.A.; BESCHINSKIY, A.A.; YAROSH, V.F.

Pavel Pavlovich Laupman; obituary. Gidr. stroi. 26 no.5:62 My '57. (Laupman, Pavel Pavlovich, 1887-1957) (MLRA 10:6)

YAROSH, V., inzh.

End of the Shaman Stone. IUn.tekh. 3 no.12:10-11 D '58.
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(Saratov--Hydroelectric power stations)

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Nurek Hydroelectric Power Plant. IUn.tekh. 5 no.6:33-35 Je '61.
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(MIRA 15:1)
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Yarosh, Ya.

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1. Ministerstvo zdravookhranenyia Chekhoslovakii, Praga. Adres avtora: Ing. J. Jaros, Praha XII, Tr. W. Piecka 98, Ministerstvo zdravotnictvi.
(NEOPLASMS, statist.
sex factor in mortal. in Czech.)

YAROSH, B.I. [IArosh, B.I.]; YAROSH, Ye.M. [IArosh, IE.M.]

Role of vertical fractures in the formation of oil and gas fields. Pratsi Inst. geol. kor. kop. AN URSR 4:45-54 '61. (MIRA 16:7)

(Stanislav Province—Petroleum geology)
(Stanislav Province—Gas, Natural—Geology)

YAROSH, B.I.; YAROSH, Ye.N.; VITRIK, S.P.; KHRIPTA, I.I.; KOSTYUK, O.I.

Features of the geological structure and oil and gas potential of the Kokhanovka-Svidnitsa oil field. Neftegaz. geol. i geofiz. no.6:3-8 '64. (MIRA 17:8)

1. Institut goryuchikh iskopayemykh AN UkrSSR, Ukrainskiy nauchno-issledovatel'skiy geologorazvedochnyy institut i trest "L'vovnefte-gazrazvedka".

PETROVA, L.A.; YAROSH, Ye.P.; KANTOR, B.B.

Salt separation of the products of the acetonation of sorbose.
Trudy VNIVI 6:41-47 '59. (MIRA 13:7)

1. Sinteticheskaya laboratoriya Vsesoyuznogo nauchno-issledovatel'skogo vitaminnogo instituta i Leningradskiy vitaminnyy zavod No.1.
(SORBOSE)

YAROSH, YE. V.

82147

SOV/81-59-6-20403

Translation from: Referativnyy zhurnal. Khimiya, 1959, Nr 6, p 384-385 (USSR)

5.3831

AUTHORS: Farberov, M.I., Ustavshchikov, B.F., Kut'in, A.M., Vernova, T.P., Yarosh, Ye.V.

TITLE: The Methods of Technical Synthesis and the Application of 2-Methyl-5-Ethylpyridine and 2-Methyl-5-Vinylpyridine

PERIODICAL: Yaroslavsk. prom-st' (Sovnarkhoz Yaroslavsk. ekon. adm. r-na), 1958, Nr 3, pp 15 - 21

ABSTRACT: In the condensation of 1 mole of paraldehyde and 4 moles of 40-60% (better 50%) aqueous solution of NH_3 in the presence of a catalyst (organic or inorganic salt) taken in the quantity of 1-2% based on the weight of the paraldehyde (20-30 min, 260°C, pressure 80-100 atm) 97% pure 2-methyl-5-ethylpyridine (I) is obtained, yield 75-80%, b. p. 175.7°C, $n^{20}D$ 1.4974, d_4^{20} 0.9189; as impurities α - and γ - picoline, higher pyridines and resins are formed. The reaction proceeds in the following order: $4CH_3CHO + NH_3 \rightarrow$ [illegible] $= CHC(C_2H_5) + 4H_2O$. I, diluted by water steam in the molar ratio 1:12-1:20 is dehydrogenated in the presence of industrial dehydrogenation catalysts (K-10 and K-12) consisting of Zn, Cr, Fe and Al oxides activated by K_2O for 2

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The Methods of Technical Synthesis and the Application of 2-Methyl-5-Ethylpyridine and 2-Methyl-5-Vinylpyridine

hours at 575-600°C and a volumetric rate of 500-600 ml per 1 l of catalyst in 1 hour, 97-99% pure 2-methyl-5-vinylpyridine (II) is obtained, yield 20-25% based on I having passed through, or 70-75% based on I decomposed, b. p. 75°C/15 mm, $n^{20}D$ 1.5454, d_4^{20} 0.9577. The content of II in the catalyzate is 23-27%, the yield of the catalyzate 89-91%. Pyridine, picolines, 2,5-dimethyl-, 3-ethyl- and 3-vinylpyridine are formed as impurities. II is very inclined to polymerization. S, $C_6H_2(OH)(NO_2)_3$, α-nitroso- β -naphthol and methol (sulfate salt of methylaminophenol) are used as stabilizers of II. In the process of II separation S is used as stabilizer and methol for storing (in concentrations of up to 0.001 weight %). In the case of oxidizing I by $KMnO_4$ or $Cu(NO_3)_2$, 2,5-pyridine-carboxylic acid (yield 60-70%, m. p. 236°C) is obtained which is converted to nicotinic acid by decarboxylizing with a yield of ~100% (m. p. 163°C). The dimethyl ester of 2,5-pyridine -dicarboxylic acid (m. p. 163°C) after reesterification by ethyleneglycol is condensed in the presence of $ZnCl_2$ into a high-polymeric resin. I with CH_2O forms 5-ethyl-2-vinyl- and 5-ethyl-2-(β-oxyethyl)-pyridine with a high yield. I is easily hydrogenated with a yield of ~100% by Na in butyl alcohol,

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SOV/81-59-6-20403

The Methods of Technical Synthesis and the Application of 2-Methyl-5-Ethylpyridine and 2-Methyl-5-Vinylpyridine

and also catalytically (in the presence of Ni-catalysts) in 2-methyl-5-ethylpiperidine, b. p. 160-161°C, $n^{20}D$ 1.4530, d_4^{20} 0.8339. II is a monomer for the industry of synthetic rubber, it can be used in the production of plastics and synthetic fibers.

Ya. Danyushevskiy

Card 3/3

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001962210004-6"

5(1, 3)

AUTHORS: Farberov, M. I., Ustavshchikov, B. F., Kut'in, A. M., Vernova, T. P., Yarosh, Ye. V.

TITLE: Technical Synthesis of 2-Methyl-5-Ethyl Pyridine and 2-Methyl-5-Vinyl-Pyridine, and Their Fields of Application (Tekhnicheskiye sintezy 2-metil-5-etilpiridina i 2-metil-5-vinilpiridina i oblasti ikh primeneniya)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya tekhnologiya, 1958, Nr 5, pp 92-99 (USSR)

ABSTRACT: The authors took the synthesis of 2-methyl-5-ethyl pyridine (MEP) from acetaldehyde and ammonia with a further dehydrogenation to 2-methyl-5-vinyl pyridine (MVP) as a basis for the working out of technical synthesis of these two substances. The papers recently published in patents (Refs 11-13) tend to show an intense elaboration of these reactions. There are, however, no publications on the first, and especially on the second stage of this process. The authors first clarified the most important rules governing the reaction between acetaldehyde and ammonia for the purpose of an industrial utilization.

1) S y n t h e s i s o f 2 - m e t h y l - 5 - e t h y l p y r i d i n e. Acetaldehyde is used as paraldehyde. This

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Technical Synthesis of 2-Methyl-5-Ethyl Pyridine and 2-Methyl-5-Vinyl Pyridine, and Their Fields of Application

offers much higher yields. Stoichiometric ratios (1.33 mol paraldehyde per 1 mol ammonia) could, however, not secure a sufficiently high MEP yield. The optimum ratio amounts to at least 4 mol ammonia per 1 mol paraldehyde. The presence of larger quantities of water has a favorable effect. The opinions on the formation mechanism of MEP in literature contradict each other (Ref 14). Up to 30 different salts, among them $ZnCl_2$, $FeCl_2$, $SbCl_3$, $CoCl_2$, $NiCl_2$, CH_3COONa, NH_4Cl, CH_3COONH_4, NH_4F, $NH_4F.HF$, KF, KHF_2 and others served as catalysts. A catalyst was selected which corresponds to the technical process. Its concentration usually amounts to 1-2% of the paraldehyde. The reaction takes also place without catalyst, however, with much smaller yields.

2) Dehydrogenation of 2-methyl-5-ethyl pyridine. Synthesis of 2-methyl-5-vinyl pyridine. The best industrial dehydrogenating catalysts served for dehydrogenation: K-10 and K-12, which consist of zinc oxide, chromium oxides, iron and aluminum oxides, activated with potassium oxide. The partial pressure is

Technical Synthesis of 2-Methyl-5-Ethyl Pyridine and 2-Methyl-5-Vinyl Pyridine, and Their Fields of Application

best decreased by dilution with steam. Figure 2 shows typical dehydrogenation curves of MEP (catalyst K-12 at 575°). Under optimum conditions the MVP yields per passed MEP amounted to 20-25%, and per decomposed MEP to 70-75%. 3) Isolation and stabilization of MVP, i.e. the separation of MEP from MVP is a difficult process as their boiling points are close to each other (176.7 and 187°). Furthermore MVP is easily polymerized. For this reason a high vacuum is required. Sulfur, picric acid, α-nitroso-β-naphthol and sulfurous methyl amino phenol (Figs 3,4) were the best stabilizers of some dozens investigated. 4) Equipment and apparatus for the MVP synthesis. Figure 5 shows a corresponding scheme. 5) The scheme (p 98) shows some more syntheses proceeding from MEP (Refs 15,16). 6) Finally, rubber and latex types on MVP basis are discussed. Some of them show better adhesion to cord from viscose and nylon, high elasticity, frost resistance, and resistance to wear and tear. Some branches of industry announce at present a high demand for those rubber types.

Card 3/4 There are 5 figures and 18 references, 6 of which are Soviet.

SOV/153-58-5-16/25

Technical Synthesis of 2-Methyl-5-Ethyl Pyridine and 2-Methyl-5-Vinyl Pyridine, and Their Fields of Application

ASSOCIATION: Yaroslavskiy tekhnologicheskiy institut i opytnyy zavod Ministerstva khimicheskoy promyshlennosti (Yaroslavl' Technological Institute and Test Plant of the Ministry of Chemical Industry)

SUBMITTED: December 28, 1957

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YARosH, YE. V.

PHASE I BOOK EXPLOITATION SOV/4350

Sovershchaniye po khimii, tekhnologii i primeneniyu proizvodnykh piridina i khinolina. Riga, 1957

Khimiya, tekhnologiya i primeneniye proizvodnykh piridina i khinolina; materialy soveshchaniya (Chemistry, Technology and Utilization of Pyridine and Quinoline Derivatives; Materials of the Conference) Riga, Izd-vo AN Latviyskoy SSR, 1960. 299 p. Errata slip inserted. 1,000 copies printed.

Sponsoring Agencies: Akademiya nauk Latviyskoy SSR. Institut khimii; Vsesoyuznoye khimicheskoye obshchestvo.

Ed.: S. Dashanova; Tech. Ed.: A. Strazdina; Editorial Board: Yu. A. Bankovskiy, Candidate of Chemistry; E. V. Yanga, Candidate of Chemistry (Resp. Ed.); L. P. Zalukayev, Doctor of Chemistry, and M. N. Ekkum.

PURPOSE: This book is intended for organic chemists and chemical engineers.

COVERAGE: The collection contains 33 articles on methods of synthesizing or producing pyridine, quinoline, and their derivatives from natural sources. No personalities are mentioned. Figures, tables, and references accompany the articles.

II. SYNTHETIC MEANS OF PREPARING PYRIDINES AND QUINOLINES

Stazkov, A. S., and O. S. Chepelevskiy. [Sredneaziatskiy gosudarstvennyy universitet imeni V. I. Lenina (Central Asia State University imeni V. I. Lenin)]. Synthetic Studies Card 4/10

Piskarev, V. I., B. P. Ustavshchikov, A. M. Kutepov, P. Yarovoy, and [illegible] [Kemerovskiy tekhnologicheskiy institut (Kemerovo Technological Institute)]. Preparation of 2-Methyl-5-ethylpyridine From Acetaldehyde Ammonia Experimental Plant of the Ministry of the Chemical Industry)] Catalytic Synthesis of 2-Methyl-5-ethylpyridine and 2-Methyl-5-vinylpyridine and Their Fields of Application 97

Yanga, O. Ya. [Institut organicheskogo sinteza Akademii nauk Latviyskoy SSR (Institute for Organic Synthesis of the Academy of Sciences Latviyskaya SSR)]. The Transition From 2,3- Butadione to Pyridine Derivatives 111

Eston, M. Ya. [Institut vysokomolekulyarnykh soyedineniy Akademii nauk SSSR (Institute for High Molecular Compounds of the Academy of Sciences USSR)]. Synthesis and Polymerization of Unsaturated Compounds of the Pyridine and Quinoline Series 119

Arshadskiy, R. I. [Rostovskiy gosudarstvennyy universitet (Rostov State University)]. Industrial Synthesis of Lepidine Bases 127

Kozlov, N. S. [Permskiy sel'skokhozyaystvennyy institut (Perm Agricultural Institute)]. Catalytic Synthesis of Quinoline Bases From Acrolein Anilines and Acetylene 131

Klyuchin, V. I. [Rostov State University]. Preparation of Quinaldine From Sodium Aryl Anilides and Synthesis of N-Arylquinaldine Salts 139

Mikhaylov, G. I. [Vsesoyuznyy nauchno-issledovatel'skiy Institut khimicheskikh reaktivov (All-Union Scientific Research Institute for Chemical Reagents)]. Study of the Hydroxyquinoline Method of Synthesizing Quinolinic Bases 165

Tertov, B. A. [Rostov State University]. Synthesis of 4-Derivatives of Quinoline and Some N-Arylepidine Salts 151

Kozlov, N. S., and O. K. Kostikovich [Permskiy gosudarstvennyy pedagogicheskiy institut (Perm State Pedagogical Institute)]. Catalytic Syntheses of 2-Phenyl- 5,6-b-isoquinoline Derivatives 159

Ardashev, V. I. [Rostov State University]. Catalytic Conversion of Acylated Aryl Amines to Quinolines 171

Zalukayev, L. P. Products of the Condensation of Aniline and Its N-Alkyl Derivatives With Acetaldehyde in a Neutral Medium 178

ROZHANSKIY, Z.Ye., inzh.; SHRAMKO, Yu.S., tekhnik; ZAIKA, N.V., tekhnik; YAROSH, Yu.V., tekhnik; ARONSON, V.R., tekhnik

An impulse signaling device using transistors. Energetik 10 no.12:17-19 D '62. (MIRA 16:1)
(Electric relays) (Electric networks)

MLODOK, B. I.; YAROSH-YAROSHEVSKIY, I. M.

"Leningrad", a new type of continuous gas water heater of great calorific power. Gaz.prom. 5 no.11:17-21 N '60. (MIRA 13:11)
(Gas appliances) (Water heaters)

KOSHNITSKIY, I.N., dotsent; KRICHKOVSKIY, G.F.; VERBITSKAYA, L.P., dotsent; LYSENKO, N.I.; BIRBRAYER, M.L.; ALEIGOZ, N.G.; LOKHMATOV, D.P.; YAROSHCHUK, A.A.

State of health of workers in the graphite industry. Vrach. delo no.8:134 Ag'63. (MIRA 16:9)

1. Odesskiy meditsinskiy institut.
(NO SUBJECT HEADINGS)

YAROSHCHUK, A.A.

Duration of treatment of patients with pulmonary tuberculosis by an artificial pneumothorax in combination with antibacterial therapy. Probl. tuberk. 41 no.2:18-22 '63 (MIRA 17:2)

1. Iz kafedry tuberkuleza (zav. - dotsent M.I.Taranenko) Odesskogo meditsinskogo instituta imeni N.I.Pirogova.

MEL'NIK, Yu.P.; YAROSHCHUK, M.A.

Find of scheelite in metasomatites of the Krivoy Rog region.
Zap.Vses.min.ob-va 92 no.2:246-250 '62. (MIRA 15:6)

1. Institut geologicheskikh nauk AN USSR, Kiyev.
(Krivoy Rog Basin--Scheelite)
(Krivoy Rog Basin--Metasomatite)

STRYCIN, A.I. [Strykin, O.I.]; YAROSHCHUK, M.A. [Yaroshchuk, M.O.]

Petrography and the genesis of the rocks of the Volodarsk group of magnetic anomalies. Geol. zhur. 24 no.4:36-49 '64. (MIRA 18:2)

1. Institut geologicheskikh nauk AN UkrSSR.

STRYGIN, A.I. [Stryhin, O.I.]; YAROSHCHUK, M.A. [IAroshchuk, M.O.]

Granitization of skarns (Ukrainian Shield). Geol. zhur. 25 no.3:79-86 '65. (MIRA 18:11)

1. Institut geologicheskikh nauk AN UkrSSR.

LOGINOV, A., kand.pedagog.nauk; KOVACH, S.K. (g.Satanov, Khmel'nitskoy obl.); BAYEV, S.Ya., uchitel'; POPOVA, A.N., uchitel'nitsa; ZAMULIN, G.T.; YEMEL'YANOVA, T.I.; PYATNITSKIY, M.P.; YAROSHCHUK, N.A., uchitel'; CHISTYAKOV, V.M., uchitel'; LENSHIN, A.S. (g. Novosibirsk); NOSKOV, V.I., (g.Feodosiya); RUD', K.A., uchitel'nitsa; VASIK, G.Ye., uchitel'; GAPONENKO, I.M.

Editor's mail. Khim. v shkole 15 no.3:73-78 My-Je '60. (MIRA 14:7)

1. Pedinstitut, g. Ulan-Bator (for Loginov). 2. Ordzhonikidzevskaya srednyaya shkola No.5, Stavropol'skiy kray (for Bayev). 3. Nikiforovskaya shkola sel'skoy molodezhi, Tambovskoy oblasti (for Popova). 4. Pedagogicheskiy institut g. Krasnodara (for Zamulin, Yemel'yanova, Pyatnitskiy). 5. Srednyaya shkola No.8, g. Vinnitsy (for Yaroshchuk). 6. Srednyaya shkola sovkhoza "Spartak" Saratovskoy obl. (for Chistyakov). 7. Srednyaya shkola No.14 g. Stalina (for Rud'). 8. Shkola No.569 g. Moskvy (for Vasik). 9. Pedagogicheskiy institut, g. Novozybkov (for Gaponenko).

(Chemistry—Study and teaching)

YAROSHCHUK, N.A., uchitel'

Apparatus for obtaining white phosphorus. Khim. v shkole 17 no.2: 62-63 Mr-Ap '62. (MIRA 15:3)

1. Srednyaya shkola No.8, g. Vinnitsa.
(Chemical laboratories—Aparatus and supplies)(Phosphorus)

YAROSHCHUK, N. A., uchitel'

Preparation of magnesium silicide and silicohydride. Khim. v shkole 17 no.6:68 N-D '62. (MIRA 16:1)

1. Srednyaya shkola No. 8, Vinnitsa UkrSSR.

(Silicon hydrides) (Magnesium silicides)

YAROSHCHUK, V.L.

The role of the recognition of type signs in the solution of arithmetical problems of a definite type [with summary in English]. Vop.psikhol. 5 no.1:103-113 Ja-F '59. (MIRA 12:4)

1. Pedagogicheskiy institut inostrannykh yazykov, Odessa.
(Arithmetic--Study and teaching)

YAROSHCHUK, V.L.

Peculiarities in the formation of arithmetical concepts in pupils when work is organized around the standard features of a problem. Nauk. zap. Nauk.-dosl. inst. psykhol. 11:134-139 '59. (MIRA 13:11)

1. Pedagogicheskiy institut inostrannykh yazykov, Odessa.
(Number concept)

YAROSHCHUK YE.

7786. YAROSHCHUK YE.---V Pomoshch' Sadovodu. Kursh, KN. IZD., 1954. 196 s. ill. zo sm. 8.000 EKZ. zr. 65 K. (55--4286) P 634. 1/7 (47.39&47.395.1)

SO: Knizhnaya Letopis', Vol. 7, 1955

YAROSHCHUK, Ye.A.

Broad horizons. Zhil.-kom. khoz. 11 no.12:3 D '61. (MIRA 15:11)

1. Predsedatel' ispolnitel'nogo komiteta Volynskogo oblastnogo Soveta deputatov trudyashchikhsya.

~ 1.8000
10.8100

29188
S/021/60/000/010/010/016
D251/D303

AUTHOR: Yaroshek, A.D.

TITLE: Method and apparatus for the testing outer layers of machine elements without destruction

PERIODICAL: Akademiya nauk Ukrayins'koyi RSR. Dopovidi, no. 10, 1960, 1369 - 1371

TEXT: The author proposes a method for testing the outer layers of machine elements to a depth of 0.2 - 0.3 mm. The test is carried out in a weak electromagnetic field (1 - 2e) which makes it possible to eliminate the influence of the field strength on the magnetic permeability and the heating of the element. A sensor of the laid-on coil or communicating coil type is used. Fig. 1 gives the circuit diagram. L is the sensor, C a condensor, E the generator and R_{add} an additional resistance. The inductance of L and the condensor C in parallel with it produce a wave-contour which gives the feed from E to R_{add}. During the experiment two quantities vary

Card 1/3

Method and apparatus for ...

simultaneously - the stress on the contour with resonance and the capacity. The variation of these quantities, when the sensor is moved from a place where there is a defect to a place where there is not, is unknown, but may be compensated for in a sensor of high sensitivity. Figures show the sensitive elements of sensors of the communicating coil and laid-on coil types respectively. By using specially designed sensors, elements of intricate shape may be tested. The author claims that this method overcomes several defects of the method of F. Förster (Ref. 1: Zeitschrift für Metallkunde, 5, 163, 1952; 8, 346, 1953; 4, 166, 1954). There are 4 figures and 1 non-Soviet-bloc reference.

ASSOCIATION: Instytut budivel'noyi mekhaniky AN URSR (Institute of Construction Mechanics AS UkrSSR)

PRESENTED: by F.P. Byelyankin, Academician AS UkrSSR

SUBMITTED: November 19, 1959

Card 2/2

28695
S/021/60/000/012/003/006
D251/D302

18000 2607

AUTHORS: Hrozin, B.D. (Corresponding Member AS UkrSSR); Semyroh-Orlyk, V.M.; and Yaroshek, A.D.

TITLE: Investigating the quality of the outer layers of roller ball-bearing races without destruction

PERIODICAL: Akademiya nauk Ukrayins'kyoi RSR. Dopovidi, no. 12, 1960, 1598-1602

TEXT: The authors state that the possibility of controlling the outer layers of machine elements without destruction is of great significance in determining their reliability and working life. The authors investigated this possibility by means of eddy currents. The method used was that described by A.D. Yaroshek (Ref. 1: DAN URSR, 1369, (1960)) using a sensor of the plated-coil type, with a sensitive element, consisting of am iron-clad carbonyl coating of type СБ-1 (SB-1), and a coil of 30 turns of ПЕЛ (PEL) 0.1 wire. Part of the coating of the sensor which touches the element is ground to the form of the upper track,

Card 1/2

Investigating the quality ...

and during the investigation, the sensor moves along this track. The magnitude of the resonance stress U and the resonance capacity C for various frequencies ($2 \cdot 10^6$, 10^6, $0.5 \cdot 10^6$ and $0.2 \cdot 10^6$) which correspond to different depths δ of the penetration of the eddy current into the steel (20, 40, 60 and 100 mk) were measured. The obtained results are represented in graphical form. By means of this method various kinds of defects such as sections of different structure, fissures, the presence of non-metallic foreign bodies, etc., may be detected in the outer layers of the element. There are 4 figures and 1 Soviet-bloc reference.

ASSOCIATION: Instytut mekhaniky AN URSR (Institute of Mechanics AS UkrSSR)

SUBMITTED: July 30, 1960

Card 2/2

85529

S/032/60/026/011/018/035
B004/B067

19600

AUTHOR: Yaroshek, A. D.

TITLE: Study of the External Layers of Machine Parts by Means of Eddy Currents

PERIODICAL: Zavodskaya laboratoriya, 1960, Vol. 26, No. 11, pp. 1256 - 1262

TEXT: The present paper is based on the papers by F. Förster (Refs. 1,2) on the steel control by means of eddy currents. The author developed this method for the flaw detection on thin surface layers of paramagnetic machine parts. A core of a shell transformer is used which is directly applied to the metal to be tested. The frequency is varied between $4 \cdot 10^6$ - $10 \cdot 10^3$ cps thus allowing layers between 15 and 300μ to be controlled. The resonance voltage U and the resonance capacity C were measured. The duration of measurement was 10 - 15 sec. The practical experiments were made with rings of ball bearing of ШХ 15 (ShKh15) steel under the assistance of B. D. Grozin, V. N. Semirog-Orlik, and S.B.Nizhnik.

Card 1/2

85529

Study of the External Layers of Machine Parts by Means of Eddy Currents

S/032/60/026/011/018/035
B004/B067

Results: Cracks, nonmetallic inclusions, and carbide deposits can be distinctly observed. The instrument indications could be confirmed by metallographic examination. Furthermore, the different types of steel can be distinguished with the aid of this method, i.e., by comparing the measurement values of U and C with those of the standards provided sample and standard had been subject to the same preliminary thermal treatment. There are 5 figures, 1 table, and 3 references: 1 Soviet and 2 German.

ASSOCIATION: Institut mekhaniki Akademii nauk USSR (Institute of Mechanics of the Academy of Sciences of UkrSSR)

Card 2/2

28703

S/021/61/000/003/008/013
D274/D301

11710

AUTHORS: Grozin, B.D., Corresponding Member AS UkrSSR, and Yaroshek, A.D.

TITLE: Method of non-destructive control of heat treatment of outer layers of machine parts

PERIODICAL: Akademiya nauk UkrSSR. Dopovidi, no. 3, 1961, 321-323

TEXT: The heat treatment is controlled by eddy currents and an inductance-type transducer, by the method of A.D. Yaroshek (Ref. 1: Zav. lab., 11, 1256 (1960)). The measured parameters of the transducer are the resonance voltage U and the resonance capacitance C. For the investigation, specimens of steel ШХ 15 (ShKh 15), У8А (U8A) and steel 45, were prepared. The specimens were heat treated and then cooled in air. The investigations were conducted at the frequencies $2 \cdot 10^6$, $500 \cdot 10^3$, $200 \cdot 10^3$ and $40 \cdot 10^3$ cycles which penetrate the steel to a depth of 20, 60, 100 and 200 μ, respectively. Fig-

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Method of non-destructive control...

ures show the obtained curves $U = f(t^o)$, $C = \varphi(t^o)$ and $H_w = \psi(t^o)$, (t^o denoting annealing temperature, and H - hardness). From the figures it is evident that the C-curve has a minimum at 300°C, and a maximum at 500-600°C. As the change in C is mainly related to changes in permeability, the form of the C-curve can be explained as follows: At temperatures up to 300°C, simultaneous decomposition of residual austenite, of martensite and of troostite take place. These processes lead to an increase in permeability and to a decrease in C. Temperatures up to 500-600°C lead to a certain decrease in permeability. The form of the U-curves depends on the relationship between energy losses by eddy currents and by magnetic hysteresis. From the graphs it follows that up to 300°C, control of heat treatment can be effected by the values of U or C, whereas between 0-700°C, control can be effected by the value of U, (C cannot be used over this range). Joint inspection of C and U are used for control over the entire frequency range. The measurement error of U and C does not exceed 0.2-0.3%. The advantages of the above control method are: Non-destructive control, possibility of control-

Card 2/3

28703

Method of non-destructive control... S/021/61/000/003/008/013
D274/D301

ling various sections of parts, of controlling fairly complex parts, of automation, high speed of measurement (10-15 sec), etc. There are 3 figures and 3 Soviet-bloc references.

ASSOCIATION: Instytut mekhaniky AN USSR (Institute of Mechanics AS UkrSSR)

SUBMITTED: October 26, 1960

Card 3/3

S/021/61/000/006/006/009
D247/D301

1.8000

AUTHOR: Yaroshek, A.D.

TITLE: Separating the types of defects on checking the quality of the outer layers of machine parts by the method of eddy currents

PERIODICAL: Akademiya nauk Ukrayins'koyi RSR, Dopovidi, no. 6, 1961, 731 - 735

TEXT: It is often necessary to know the type of surface defect before the usefulness of the component can be assessed. The author describes the method, whereby simultaneous measurements of values U and C (e.m.f. and capacity) at different frequencies are made as the pick-up shown in Fig. 1 is moved on the inspected surface. Peaks or gradual changes of tension U are observed as the pick-up encounters sharp local changes (cracks) or a non-uniform structure. The pick-up of superimposed coil (Fig. 1) excites a ring of current of outer an inner diameters B and D, respectively. Moving the

Card 1/4

S/021/61/000/006/006/009
D247/D301

Separating the types of ...

pick-up in the direction of arrow M, one peak of value U occurs when a defect enters zone A and two peaks when it enters zone D. Movement in the direction of arrow K gives other coordinates of the defects. Structural changes are determined similarly. The method also gives a non-destructive means of checking heat treatment of steels Y8A (U8A), ШХ15 (ShKh15) and 45 in a wide range of tempers. B.D. Hrozin and the author designed a directional pick-up of superimposed coil type for locating surface stresses from matching surface deformations. The coil in this pick-up is wound on a rectangular instead of circular core. As the angle of this pick-up is varied the output will show extreme values for direction parallel and perpendicular to the flow of deformation. To differentiate between residual stresses and other defects both types of pick-up should be used in succession. To test stress sensitivity, the directional pick-up was applied to a specimen in torsion. It was found that the pick-up becomes very sensitive only when the elastic limit of the material is exceeded. The direction of plastic deformation can be determined by noting that U is much smaller along

Card 2/4

Separating the types of ...

the flow of deformation than across it. There are 4 figures and 5 Soviet-bloc references.

ASSOCIATION: Instytut mekhaniky AN URSR (Institute of Mechanics AS UkrSSR)

SUBMITTED: January 12, 1961

IX

NAZARENKO, G.T. [Nazarenko, H.T.]; YAROSHEK, A.D.

Studying the fatigue process in rolling friction by the method of eddy currents. Dop. AN URSR no.3:370-374 '62. (MIRA 15:5)

1. Institut mekhaniki AN USSR. Predstavleno akademikom AN USSR F.P.Belyankinym [Bieliankin, F.P.].
(Metals--Fatigue) (Friction)

1,800

4487
S/198/62/008/005/006/009
D234/D308

AUTHOR: Yaroshek, A. D.

TITLE: Method and apparatus for testing the quality of external active layers of machine components without destroying them

PERIODICAL: Akademiya nauk Ukrayins'koyi RSR. Instytut mekhaniky. Prykladna mekhanika, v. 8, no. 5, 1962, 552-555

TEXT: The above method and apparatus have been developed at the Institute of Mechanics, AS UkrSSR. Tests are carried out in weak electromagnetic fields, first to a depth of 15 microns, increasing gradually to 300 microns. The range of frequencies used is 30.10^3 to 4.10^6 c/s. A pick-up moves along the surface of the component and induces eddy currents in the external layer, causing variations in the parameters of the pickup coil. From these variations the presence of inhomogeneities in the layer can be determined. The measuring circuit is described. The measured quantities are the resonance voltage U and the resonance capacity C. The pickup can be

Card 1/2

Method and apparatus ...

raised above the surface up to 20 microns at high frequencies and up to 150 microns at low frequencies without affecting the measurement. The error does not exceed 0.5% in many cases and the duration of measurement is 10-15 sec. The whole apparatus consists of a stabilizer, current generator, measuring device for U and capacitor box. It is assembled as an instrument 'Defectoscope Д-3 (D-3)'; dimensions are 450 x 290 x 260 mm and weight approximately 15 kg. In addition, four types of pickups have been developed: 1) one having a special core made of carbonyl iron, inside which is placed the inductance coil, this type being used for testing cylindrical components; 2) a similar type used for testing components of complex shape; 3) a small-size pickup whose sensing element consists of a core of nickel-zinc ferrite ϕ-600 (F-600) of a special shape, and a coil; this type is used for testing very small areas; 4) a pickup with directed sensitivity characteristic, producing eddy currents flowing along a rectangle. There are 3 figures.

ASSOCIATION: Instytut mekhaniky AN USSR (Institute of Mechanics, AS UkrSSR)

SUBMITTED: May 16, 1962

Card 2/2

L 39930-65 EWT(d)/EWT(m)/EWP(c)/EWA(d)/EWP(v)/T/EWP(t)/EWP(k)/EWP(z)/EWP(b)/EWP(l) Pf-4 HJW/JD

ACCESSION NR: AP4042821 S/0021/64/000/007/0899/0901

22
21
B

AUTHOR: Yaroshek, A. D.

TITLE: Determining the full depth of penetration of eddy currents into steel during the nondestructive quality control of the active outer layers of machine parts

SOURCE: AN UkrRSR. Dopovidi, no. 7, 1964, 899-901

TOPIC TAGS: quality control, eddy current, eddy current penetration, steel surface layer, nondestructive control/steel ShKh15

ABSTRACT: The full penetration depth (δ_π) of eddy currents was determined within ± 10% on ShKh15 steel at a frequency range of $30 \times 10^3 - 4 \times 10^6$ cps according to a previously developed method. Comparing the data obtained with those from the literature, the author concludes that the two are in agreement. This precise determination of δ_π is sufficient for the control of the outer layers of machine parts. For steels that differ only slightly in their magnetic and electrical characteristics from ShKh15, δ_π can be determined by the chart obtained for ShKh15 steel. The penetration depth for materials with magnetic and electrical characteristics differing significantly from those of ShKh15 can be obtained experimentally according to methods proposed in earlier papers. Orig.

Card 1/2

L 39930-65
ACCESSION NR: AP4042821

art. has: 3 figures and 3 formulas.

ASSOCIATION: Instytut mekhaniky AN URSR (Mechanics Institute, AN UkrSSR)

SUBMITTED: 08Jul63 ENCL: 00 SUB CODE: MM, EM

NO REF SOV: 005 OTHER: 000

2/2
Card

YAROSHEK, A.D.

Apparatus for controlling the small sections of external layers of ferromagnetic parts. Zav. lab. 30 no.11:1403-1404 '64 (MIRA 18:1)

1. Institut mekhaniki AN UkrSSR.

YAROSHEK, L.I.; SAMOYLOVA, A.E.

Detection of streptococcal antigens in the urine of patients with rheumatic fever and rheumatoid arthritis. Vop. revm. 3 no.3:45-48 Jl-S'63 (MIRA 17:3)

1. Iz revmatologicheskoy kliniki (zav. M.S. Belen'skiy) Ukainskogo nauchno-issledovatel'skogo instituta kurortologii i fizioterapii (direktor-dotsent F.Ye. Kurkudym) i kafedry mikrobiologii (zav. - prof. S.M. Minervin) Odesskogo meditsinskogo instituta.

DENISOV, Ivan Pavlovich; YAROSHEN', I.F., kand. tekhn. nauk, retsenzent; RYABININ, V.Ye., kand. tekhn. nauk, retsenzent; MITROFANOVA, N.P., kand. tekhn. nauk, retsenzent; MOLCHANOVSKIY, A.S., red.; FRIDKIN, L.M., tekhn. red.

[Principles of the use of water power] Osnovy ispol'zovaniia vodnoi energii. Moskva, Izd-vo "Energiia," 1964. 363 p. (MIRA 17:4)

1. Vsesoyuznyy zaochnyy energeticheskiy institut (for Yaroshen', Ryabinin, Mitrofanova).

SOV/20-120-4-27/67

AUTHORS: Kuskov, V. K., Bebikh, G. F., Yaroshenko, A. D.

TITLE: A New Method of Production of Oxyalkylphosphinic Acids (Novyy sposob polucheniya oksialkilfosfinovykh kislot)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol. 120, Nr 4, pp. 786-788 (USSR)

ABSTRACT: The esters of boric acid react with phosphorus trichloride not even in case of boiling. On the other hand it easily decomposes phosphorusoxychloride when heated in a water bath; at 0°, however, the reaction proceeds very slowly. In this paper the authors found that boric esters can be easily phosphorylated according to Soborovskiy-Zinov'yev-Englin's reaction (Ref 2) when the reactants are sufficiently cooled. Without cooling phosphorous trichloride is oxydized to oxychloride. At first the mentioned reaction was investigated with tributylborate and triisobutyl borate taken as examples. The ratios of mixture of the reactants and the process of reaction are described. By phosphorylation of trimethyl borate and tribenzyl borate α-oxyphosphinic acids were

Card 1/3

A New Method of Production of Oxyalkylphosphinic Acids

obtained (formerly also from corresponding aldehydes, Refs 4, 5). From butyl borate crystal-like oxybutylphosphinic acid was obtained. From triethyl borate oxyethylphosphinic acid was successfully produced as a not pure lead salt. It is apparently a salt of the unstable β-oxyethylphosphinic acid. The remaining phosphinic acids were produced as lead salts which cannot be crystallized in free state. They possibly form mixtures of polymers. In connection with the treatment of isobutyl borate it was attempted to change the obtained chloranhydrides into ethyl ethers. This was carried out by treatment with ethanol in the presence of pyridine (as in Ref 7). The ether mixture obtained could not be distilled. The attempt of distilling triethyl phosphate in a vacuum resulted in a polymerization. One pyrophosphate could, however, be produced (according to Ref 8). Those compounds had a molecular weight of 1300-1400 instead of the computed 963 and they were apparently polyphosphates. The ethers produced are not very efficient as insecticides against calandra granaria. There are 1 table and 9 references, 3 of which are Soviet.

Card 2/3

SOV/2o-12o-4-27/67

A New Method of Production of Oxyalkylphosphinic Acids

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov)

PRESENTED: November 5, 1957, by S. I. Vol'fkovich, Member, Academy of Sciences, USSR

SUBMITTED: October, 16, 1957

1. Phosphinic acids---Production 2. Boric acid esters---Chemical analysis 3. Phosphinic acid esters---Properties 4. Lead salts ---Properties

Card 3/3

YAROSHENKO, A.D., kand.istor.nauk

Life full of struggle. Nauka i zhyttia 11 no.8:51 Ag '61.
(MIRA 14:12)
(Liebknecht, Karl, 1871-1919)

YAROSHENKO, A. F.

36793. GUSEVA, A YA. Khorosho podgotovit' zimovku kolkhoznogo skota. Sots. sel. khoz-vo Uzbekistana, 1949, No. 4., c. 65 - 69

SO: Letopis Zhurnal'nlk Statey, Vol. 50, Moskva, 1949

1. YAROSHENKO, A. F.

2. USSR (600)

4. Soviet Central Asia - Sheep Shearing

7. Shearing sheep by electricity on collective farms of Central Asia. Sots. zhiv. 15, No. 4, 1953.

9. Monthly List of Russian Accessions, Library of Congress, April 1953. Unclassified.

AKOPYAN, A.A., kand.tekhn.nauk; PANOV, A.V., kand.tekhn.nauk; SHMATOVICH, V.V., kand.tekhn.nauk; YAROSHENKO, A.I., inzh.

Overvoltage levels and insulation requirements in 700 kv. a.c. power transmission lines. Vest.elektroprom. 33 no.2:4-11 F '62. (MIRA 15:2)

(Electric power distribution—Alternating current)

AKOPYAN, A.A., kand.tekhn.nauk; FETIN, V.P., kand.tekhn.nauk; YAROSHENKO, A.I., inzh.

Combination dischargers for 500 kv. networks and their test results. Elek.sta. 33 no.2:54-59 F '62. (MIRA 15:3)
(Electric power distribution)(Electric protection)

YAROSHENKO, A.I., inzh.

Determination of the frequency of free oscillation in electric power transmission networks. Elek. sta. 35 no.12:39-43 D '64. (MIRA 18:2)

L 10022-67 EWT(1)

ACC NR: AP6023609 SOURCE CODE: UR/0105/66/000/007/0012/0017

AUTHOR: Yaroshenko, A. I. (Engineer) 25

ORG: All-Union Electrotechnical Institute (Vsesoyuznyy elektrotekhnicheskiy institut)

TITLE: Operation of valve-type lightning arresters on 750-kv transmission lines 15

SOURCE: Elektrichestvo, no. 7, 1966, 12-17

TOPIC TAGS: transmission line, lightning ~~arrester~~ equipment, electric power transmission

ABSTRACT: General conditions re operation of lightning arresters in 750-kv systems are set forth. A brief review of Soviet publications on the subject reveals this rule: a valve-type magnetic lightning arrester will reliably interrupt its current if the recovery voltage does not exceed 1.6 phase voltage. Both typical 750-kv power transmission systems recommended by the Energoset'proyekt

Card 1/2 UDC: 621.316.933

L 10022-67

ACC NR: AP6023609 O

Institute do not satisfy the above condition. The recovery voltages can be reduced by increasing the capacity of compensating reactors; this can be accomplished by shunting a part of the reactor winding with a sparkgap, by providing reactors with additional delta-connected windings, or by some other means. The recovery-voltage / reactor-capacity relations were explored on a transmission-system simulator (curves shown). The effects of automatic excitation regulator and transformer saturation on the recovery voltage proved (in the simulator study) to be insignificant. Orig. art. has: 6 figures, 1 formula, and 2 tables.

SUB CODE: 09 / SUBM DATE: 18May65 / ORIG REF: 004

Card 2/2 egk

YAROSHENKO, A.N.

Content of vitamins B_6 and B_{12} in the blood serum in alveolar pyorrhea before and after treatment. Stomatologiia 41 no.5: 9-11 S-O '62. (MIRA 16:4)

1. Iz kafedry terapevticheskoy stomatologii (zav. - prof. Ye.Ye.Platonov) i kafedry propedevtiki vnutrennikh bolezney (zav. - prof. N.A.Al'bov [deceased]) Moskovskogo meditsinskogo stomatologicheskogo instituta.
(GUMS--DISEASES) (PYRIDOXINE) (CYANOCOBALAMINE)

VIL'DT, M.O., assistant; YAROSHENKO, A.N., aspirant

Changes in the capillary permeability in patients with paradentosis treated with vitamin B_6. Teor. i prak.stom. no.6:109-114 '63. (MIRA 18:3)

1. Iz kafedry propedevtiki vnutrennikh bolezney (zav. - prof. N.A. Al'bov [deceased]) i kafedry terapevticheskoy stomatologii (zav. - prof. Ye.Ye.Platonov) Moskovskogo meditsinskogo stomatologicheskogo instituta.

L 15670-66 EWT(m)/T

ACC NR: AP6000202 SOURCE CODE: UR/0056/65/049/005/1463/1469

AUTHORS: Karpenko, D. Ya.; Yaroshenko, A. P.

ORG: Dnepropetrovsk State University (Dnepropetrovskiy gosudarstvennyy universitet)

TITLE: Vector meson in a Coulomb field

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 49, no. 5, 1965, 1463-1469

TOPIC TAGS: vector meson, boson, matrix function, quantum mechanics, spinor, Coulomb field, integral equation

ABSTRACT: The authors show that Kepler problem for a boson can be solved in simpler fashion in the Kemmer representation, using for this purpose the theory developed for projection operators by A. A. Borgardt (Algebraicheskiye metody v teorii chastits tselogo spina [Algebraic Methods in the Theory of Particles with Integer Spins], Dnepropetrovsk, 1964). In particular, the motion of bosons of spins 0 and 1 in a Coulomb field is treated on the basis of a 16-row Kemmer representation. The properties of the spin-angle functions involved in the calculations are described and the integrals of motion which completely classify the states are deter-

Card 1/2

L 15670-66

ACC NR: AP6000202

mined. The radial and angular parts of the initial equation can be separated by employing the integrals of motion and a set of projection operators. The method is compared with that used for a spinor particle. Authors are grateful to A. A. Borgardt for discussions of the results of the paper and for valuable remarks. Orig. art. has: 41 formulas.

SUB CODE: 20,12/ SUBM DATE: 24Feb65/ ORIG REF: 003/ OTH REF: 004

Card 2/2

ROSSIKHIN, V.V.; YAROSHENKO, A.P.

Energy levels, magnetic and quadrupole moments of slightly deformed nuclei. Trudy DKHTI no.16:75-83 '63. (MIRA 17:2)

SEMENOV, L.N.; YAROSHENKO, A.P.

Simplified design of an apparatus for corrosion testing by the alternating immersion of samples coated with paint materials. Lakokras.mat.i ikh prim. no.1:73-74 '62. (MIRA 15:4)
(Materials--Corrosion) (Protective coatings)

KARPENKO, D.Ye.; YAROSHENKO, A.P.

Vector mesons in a Coulomb field. Zhur eksp. i teor.fiz. 49 no.5:1463-1469 N '65. (MIRA 19:1)

1. Dnepropetrovskiy gosudarstvennyy universitet.

YAROSHENKO, A.R. (Khar'kov)

Stressed state of a toroidal shell with an elliptic cross section. Prikl. mekh. 1 no.3:41-52 '65. (MIRA 18:7)

1. Laboratoriya gidravlicheskikh mashin AN UkrSSR.

L 24-65 EWA(d)/EWA(m)/EWA(1)/EWP(v)/EWR/EWT(k)/EWA(h) Pf-4/Pg-4
ACCESSION NR: AP5011588 UR/0198/65/001/003/0041/0052

AUTHOR: Yaroshenko, A. R. (Khar'kov)

TITLE: Stressed state of a toroidal shell with an elliptical cross section

SOURCE: Prikladnaya mekhanika, v. 1, no. 3, 1965, 41-52

TOPIC TAGS: stress analysis, stress distribution, elliptical shell structure, complex variable, ordinary differential equation

ABSTRACT: The stress distribution was studied analytically in a toroidal shell with an elliptic cross section as shown in Fig. 1 on the Enclosure. To obtain the resolvents of the problem, the following type of equation is considered

$$-ic\frac{1}{R_1R_2\sin\theta}\frac{d}{d\theta}\left[\frac{R_2^2\sin\theta}{R_1}\frac{d\tilde{T}}{d\theta}\right]+\tilde{T}=T_1^*+T_2^*,$$

where $c=\frac{\delta}{\sqrt{12(1-\mu^2)}}$.

$\tilde{T}$- is the complex resolvent function, and δ is the shell thickness. Expressions for the radii of curvature are obtained from Fig. 1, simplified to the two special cases of $\varphi=\frac{\pi}{2}$, 0. The resulting equations are reduced to the general form

$$\varepsilon\frac{d}{dx}\left[\rho(x)\frac{dY}{dx}\right]+[q(x)+\varepsilon r(x)]Y=f(x)$$

The homogeneous part of this differential equation is given in terms of Airy functions. Four types of tubular equalizer are considered as particular examples of the problem (see Fig. 2 on the Enclosure). For each case simplified expressions are obtained for the stresses $\sigma_1(M_1)_{max}$ and $\sigma_2(T_2)_{max}$. These are expressed in the form

$$\frac{\sigma_1(M_1)}{\sigma(Q_0)_{max}}=\frac{4{,}527\kappa}{(a_0\lambda)^{\frac{1}{7}}}\left[1-a_0\left(1-\varepsilon^2\right)^{\frac{1}{7}}\right] \quad \text{and} \quad \frac{\sigma_2(T_2)}{\sigma(Q_2)_{max}}=\frac{\lambda^{\frac{5}{7}}}{a_0^{\frac{1}{7}}}\left[1-a_0\left(1-\varepsilon^2\right)^{\frac{1}{7}}\right]\cdot 0{,}939.$$

Finally, a corresponding expression is derived for the axial displacement of the

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and the results are shown graphically. From these curves it is concluded that the most advantageous design is type IV with an almost constant Δ_z as a function of b/a. Orig. art. has: 32 equations and 5 figures.

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ENCLOSURE: 01

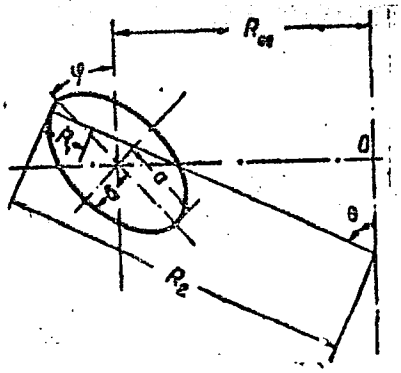

Fig. 1.

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ENCLOSURE: 02

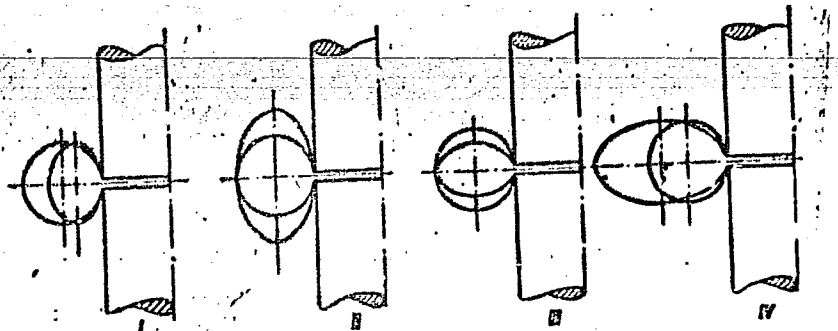

Fig. 2.

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