L 23488-65 EWT(m)/EWP(j) Po-4 RM
ACCESSION NR: AP5002191 S/0080/64/037/012/2733/2738

AUTHOR: Vasil'yev, A. A.; Gerasimyuk, T. V.

TITLE: The possibility of obtaining novolac resins from anisol and formaldehyde, and sulfonic acid ionites based thereon

SOURCE: Zhurnal prikladnoy khimii, v. 37, no. 12, 1964, 2733-2738

TOPIC TAGS: novolac resin, anisol formaldehyde novolac, sulfonated ionite, synthesis, sulfonated anisol formaldehyde ionite, ion exchange

ABSTRACT: The conditions for synthesizing anisol-formaldehyde novolacs and for sulfonating these novolacs to prepare ion exchange sorbents were investigated. Condensation of equimolar amounts of anisol and formaldehyde in the presence of 10% H_2SO_4 (on weight of the anisol) at 120° for 2 hours gave a thermoplastic resin which formed linear polycondensates [illegible] $CH_3(OCH_3)\text{-}CH_2]_n\text{-}C_6H_4(OCH_3)_2$. These were sulfonated using a 2:1 [illegible] of H_2SO_4 novolac [illegible] 4 gr[illegible]

Card 1/2

L 23488-65
ACCESSION NR: AP5002191

110C for 1 hour 40 minutes with a 4-fold amount of H_2SO_4, or was (2) heated for 15-20 hours at 145C with a 2-fold amount of H_2SO_4 to give ionites with 2.8 and 3.5 mg equiv/gm exchange capacity, respectively. These ionites have satisfactory mechanical strength, swelling and are more stable to oxidizing agents than the sulfophenolic ionite KU-1. Orig art has 5 tables.

ASSOCIATION: Institut vysokomolekulyarnykh soyedineniy AN SSSR (Institute of High Molecular Compounds AN SSSR)

SUBMITTED: 29Mar63 ENCL: 00 SUB CODE: MT, GC

NR REF SOV: 007 OTHER: 003

Card 2/2

VASIL'YEV, A. A.

"On the surgical treatment of patients with non-specific ulcerative colitis" - p. 71

Voyenno Meditsinskiy Zhurnal, No. 3, 1962

RUBINSHTEYN, Grigoriy Leonidovich, doktor ekon. nauk, prof.;
Prinimali uchastiye: BUKOVETSKIY, A.I., doktor ekon. nauk prof.; VASIL'YEV, A.A., kand. ekon. nauk, dots.; VOLOKITIN, A.S., kand. ekon. nauk, dots.; SARYCHEV, V.G., kand. ekon. nauk, dots.; LUKASHEV, M.Ya., kand. ist. nauk, dots.; LYSENKO, S.P., kand. ekon. nauk, dots.; BAK, I.S., doktor ekon. nauk, prof., retsenzent; GOGOL', B.I., doktor ekon. nauk, prof., retsenzent; ABATUROV, A.I., prof., red.; ROZHANKOVSKAYA, I.I., red.

[Development of domestic trade in the U.S.S.R.] Razvitie vnutrennei torgovli v SSSR. Leningrad, Izd-vo Leningr. univ., 1964. 394 p. (MIRA 18:4)

VASIL'YEV, A.A., inzh.

New machinery for building earthen roadbeds. Avt. dor. 27 no.2: 3-6 F '64. (MIRA 17:3)

VASIL'YEV, A.A.; MATROSOVA, V.S.

Determination of the total exchange capacity of sulfc acid phenol-formaldehyde resins under static conditions. Zhur. prikl. khim. 37 no.11:2493-2499 N '64 (MIRA 18:1)

1. Institut vysokomolekulyarnykh soyedineniy AN SSSR.

VASIL'YEV, A. A. Cand Vet Sci -- (diss) "Therapy of Ducks and Geese ~~for~~ Hymenolepiasis." Mos, 1956. 15 pp 20 cm. (All-Union Order of Lenin Academy of Agr~~icultural~~ Sci~~ences~~ im V. I. Lenin, All-Union ~~IM~~ Inst of Helminthology im Academician K. I. Skryabin), 100 copies (KL, 27-57, 109)

VASIL'YEV, A.A., inzh. (Gur'yev)

Bitumen filler made from bleaching clay wastes. Stroi.pred.neft. prom. 2 no.8:16-18 Ag '57. (MIRA 11:1)
(Clay) (Bitumen) (Fillers (in paper, paint, etc.)

VASIL'YEV, Aleksandr Aleksandrovich; KLIMENKO, K.I., doktor ekonom.nauk, retsenzent; NOVIKOV, M.A., inzh., retsenzent; PETROCHENKO, P.F., kand.ekonom.nauk, red.; SEMENOVA, M.M., red.izd-va; SMIRNOVA, G.V., tekhn.red.; UVAROVA, A.P., tekhn.red.

[Training skilled workers in machinery plants] Podgotovka kvalifitsirovannykh rabochikh na mashinostroitel'nykh predpriiatiiakh. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit. lit-ry, 1959. 175 p. (MIRA 13:2)
(Professional education)

VASIL'YEV, A.A.

Simple design of an electric water level signal in steam boilers. Prom.energ. 15 no.4:33 Ap '60. (MIRA 13:6)
(Liquid level indicators)

KUMANIN, V.; RYVKIN, P.; KHODKEVICH, E.; SOKOLOV, Yu.; KOSTENKO, I.; KUPFER, M.; VASIL'YEV, A.; POSTNIKOV, Yu.; TARAKANOV, A.

More attention to plane modelina as a sport; letter to the editor. (MLRA 7:12)
Kryl.rod. 5 no.12:16 D '54.
(Airplanes--Models)

Vasil'yev, A.

AID P 1270

Subject : USSR/Aeronautics

Card 1/1 Pub. 58 - 14/15

Author : Vasil'yev, A.

Title : Aerodynamics of the wing of a flying model

Periodical : Kryl. rod., 2, 20-22, F 1955

Abstract : The author explains briefly the principles of aerodynamics and their application to flying models. He discusses: 1. the flow over various bodies at small speeds; 2. the increase of aerodynamic qualities of a wing of a model aircraft; 3. the selection of the profile of an airfoil; 4. artificial turbulence of a boundary layer.

Institution : None

Submitted : No date

VASIL'YEV, A.A.

POZHAROV, G.; SHEVCHENKO, V.; VASIL'YEV, A.A., redaktor; ANDRIANOV, B.I., tekhnicheskiy redaktor.

[Parachute jumps from balloons] Pryzhki s parashiutom s aerostata. Moskva, Izd-vo DOSAAF, 1956. 127 p. (MLRA 10:6)
(Parachutes)

MAKAROV, Vyacheslav Nikolayevich; SIMONOV, Vitaliy Yakovlevich; VASIL'YEV, A., redaktor; ANDRIANOV, B., tekhnicheskiy redaktor

[Mechanically powered take-off for gliders] Mekhanizirovannyi vzlet planera. Moskva, Izd-vo DOSAAF, 1956. 140 p. (MLRA 9:9)
(Gliding (Aeronautics))

BLINOV, B., inzhener; VASIL'YEV, A., student, aviamodelist; PESOCHIN, V., student, aviamodelist; BELORUSSOV, L., starosta aerodinamicheskogo kruzhka.

Incomplete book ("Flying glider models." O.Gaevskii. Reviewed by B.Blinov and others. Kryl.rod.7 no.3:23 Mr '56. (MLRA 9:7)

1.Moskovskiy aviatsionnyy institut (for Vasil'yev, Pesochik).
2.Moskovskiy aviatsionnyy tekhnologicheskiy institut (for Belorussov).
(Gliders (Aeronautics)--Models) (Gaevskii, O.)

MAKAROV, Vyacheslav Nikolayevich; VASIL'YEV, A.A., redaktor; TSIGEL'MAN, L.T., tekhnicheskiy redaktor

[Methods of teaching the flying of single-seat gliders] Metodika obucheniia na odnomestnom planere. Moskva, Izd-vo DOSAAF, 1957. 84 p. (MLRA 10:9)
(Gliding and soaring)

SAPOZHNIKOV, Yevgeniy Vasil'yevich; VASIL'YEV, A.A., redaktor; TSIGEL'MAN, L.T., tekhnicheskiy redaktor

[Learn how to fly gliders] Uchis' letat' na planere. Moskva, Izd-vo DOSAAF, 1957. 149 p. (MIRA 10:8)
(Gliding and soaring)

MERKULOV, Igor' Alekseyevich; VASIL'YEV, A.A., red.; ANDRIANOV, B.I., tekhn. red.

[Rocket flights into space] Polet raket v mirovoe prostranstvo. Moskva, Izd-vo DOSAAF, 1958. 88 p. (MIRA 11:10)
(Rockets (Aeronautics)) (Space flight)

ZHARKOVSKIY, Iosif Il'ich; VASIL'YEV, A.A., red.; ANDRIANOV, B.I., tekhn.red.

[Aviation today and tomorrow; a collection of papers from the magazine "Kryl'ia Rodiny."] Aviatsiia segodnia i zavtra; sbornik materialov zhurnala "Kryl'ia Rodiny." Moskva, Izd-vo DOSAAF, 1958. 141 p. (MIRA 12:1)

(Rockets (Aeronautics)) (Airplanes)

SIMAKOV, Boris Leonidovich, SHVARTSMAN, Yakov Samuilovich, VASIL'YEV, A.A., red.; KARYAKINA, M.S., tekhn.red.

[Soviet fliers in battles for the motherland; a collection of articles from the magazine "Kryl'ya rodiny."] Sovetskie letchiki v boiakh za rodinu; sbornik materialov zhurnala "Kryl'ia rodiny." Moskva, Izd-vo DOSAAF, 1958. 158 p. (MIRA 11:9)
(Russia--Air Force)

VASIL YEV, R.R.

PHASE I BOOK EXPLOITATION 459

Bayev, Lev Konstantinovich

Reaktivnyye samolety (Jet Aircraft) Moscow, Izd-vo DOSAAF, 1958. 223 p. 40,000 copies printed.

Ed.: Vasil'yev, A.A.; Tech. Ed.: Tsigel'man, L T.

PURPOSE: This book presents a discussion of the principles of jet propulsion and is intended for members of DOSAAF (the All-Union Voluntary Society for the Promotion of the Army, Aviation and Navy), particularly young members.

COVERAGE: The book describes the new element added to aviation by jet propulsion, explains the operation of a jet engine and how it achieves formerly unheard-of speeds, analyzes the differences between jet-propelled and piston-driven flight, and discusses the design of modern jet aircraft and related questions. Data from abroad on jet propulsion is also presented. The book closes with a dramatization of a scene aboard a future atomic rocket plane which will fly from Leningrad to Shanghai in 40 minutes. According to the author, the direction of further development must be to diminish the specific gravity of the power plants

Card 1/5

Jet Aircraft

which in the case of gas turbine engines can be accomplished in 5 ways: (1) Increase of the pressure ratio in each compressor stage. This makes it possible to decrease the number of stages of the compressor and cut down its weight. (2) Increase in the temperature of the working cycle of the engine. This requires use of new extra heat-resistant materials, especially for the manufacture of structural members and components which operate in the high-temperature zone. (3) Use of materials with highest possible mechanical properties for manufacture of structural members and components operating under conditions of comparatively low temperatures (for instance, the wheels of the stages of an axial compressor). (4) Improvement of the structural design of the elements of an engine, separately and in combination, such as the blades of the compressor, nozzle assembly and turbine, the rotor shaft, the control system, and so forth. (5) Use of welded structural members in an engine (for instance, steel compressor casings). The author mentions new types of fuel which will allow enormous increase in altitude

Card 2/5

Jet Aircraft

and speeds. A project for a high-altitude supersonic jet bomber, proposed by the well-known Austrian scientist Eugen Saenger, is mentioned, as well as the latter's report on so-called photon rockets at the International Conference on Jet Engines in 1956. The use of atomic energy for jet engines and the development of space ships is predicted. The book contains 85 figures.

TABLE OF CONTENTS:

Card 3/5

Card 4/5

AVAILABLE: Library of Congress

IS/ksv
7-18-58

Card 5/5

SEVERSKIY, Aleksey Ivanovich; PLATONOV, K.K., prof., red.; VASIL'YEV, A.A., red.; BLAZHENKOVA, G.I., tekhn.red.

[Preserving pilot's health] Kak sokhranit' zdorov'e letchika. Pod red. K.K.Platonova. Moskva, Izd-vo DOSAAF, 1959. 118 p. (MIRA 12:9)

(AIR PILOTS--DISEASES AND HYGIENE)

SHEREMETEV, Boris Nikolayevich; FADEYEV, N.N., kand.tekhn.nauk, red.; VASIL'YEV, A.A., red.; KARYAKINA, M.S., tekhn.red.

[Gliders] Planery. Pod red. N.N.Fadeeva. Moskva, Izd-vo DOSAAF, 1959. 217 p. (MIRA 12:10)
(Gliders (Aeronautics))

ZHABROV, Aleksey Aleksandrovich; VASIL'YEV, A.A., red.; FEDOROV, V.I., red.; KARYAKINA, M.S., tekhn.red.

[Theory of the flight and piloting of an airplane] Teoriia poleta i pilotirovaniia samoleta. Moskva, Izd-vo DOSAAF, 1959. 411 p. (MIRA 13:2)

(Airplanes--Piloting)

KONDRAT'YEV, Petr Vladimirovich; VASIL'YEV, A.A., red.; MURYCHEV, A.V., red.; FAYNSHMIDT, F.Ya., tekhn.red.

[Helicopters and their use] Vertolety i ikh primenenie. Moskva, Izd-vo DOSAAF, 1960. 157 p. (MIRA 13:6)
(Helicopters)

IL'CHENKO, Viktor Mikhaylovich, zasluzhennyy master sporta SSSR; VASIL'YEV, A.A., red.; FAYNSHMIDT, F.Ya., tekhn.red.

[Soaring flight] Parlashchii polet. Moskva, Izd-vo DOSAAF, 1960. 96 p. (MIRA 14:2)
(Gliders (Aeronautics))

VASIL'YEV, A., sportsmen 1-go razryada.

Students compete. Kryl.rod. 11 no.4:26-27 Ap '60. (MIRA 13:6)
(Airplanes--Models)

VAILYEV, A.

SOV/40[illegible]

PHASE I BOOK EXPLOITATION

Aviamodelizm; sbornik statey. Posobiye dlya rukovoditeley aviamodel'nykh kruzhkov i uchiteley (Aircraft Modeling; Collection of Articles. Textbook for Instructors of Model Aircraft Clubs and Teachers) Moscow, Uchpedgiz, 1960. 141 p. 12,000 copies printed.

Compilers: E.B. Mikirtumov, Candidate of Technical Sciences, and M.S. Lebedinskiy, Candidate of Technical Sciences; Ed.: A.Ye. Stakhurskiy; Tech. Ed.: V.I. Korneyeva.

PURPOSE: This book is intended for instructors and directors of model airplane clubs sponsored by DOSAAF (All-Union Voluntary Society for Promotion of the Army, Navy, and Air Force).

COVERAGE: The book consists of 47 articles covering various aspects of model aircraft design, construction and operation. The text contains many illustrations and diagrams. No personalities are mentioned. There are 185 references, all Soviet.

TABLE OF CONTENTS:

VASIL'YEV, A., inzh.

Students are building models. Kryl.rod. 13 no.1:24 Ja '62. (MIRA 15:2)
(Airplanes--Models)

VINOGRADOV, Leonid Nikolayevich; RYMANOV, B.A., spets. red.; VASIL'YEV, A.A., red.

[Textbook for training television repairmen] Uchebnoe posobie dlia podgotovki masterov po remontu televizorov. Moskva, Izd-vo DOSAF, 1965. 221 p. (MIRA 18:11)

VASIL'YEV, A.A., inzh.

Organization of the operation of electrical networks. Elek. sta. 36 no.11:75-81 N '65. (MIRA 18:10)

1. Moskovskoye rayonnoye upravleniye energeticheskogo khozyaystva.

BORISENKO, I.G.; VASIL'YEV, A.A., red.; MUKHINA, Ye.S., tekhn. red.

[Use of radio in the training of aviation sportsmen] Ispol'zovanie radio v podgotovke aviatsionnykh sportsmenov. Moskva, Izd-vo DOSAAF, 1961. 85 p. (MIRA 15:4)
(Radio in aeronautics) (Aerial sports)

MAKAROV, V.; SIMONOV, V.; VASIL'YEV, A.A., red.; KOROLEV, A.V., tekhn. red.

[Mechanized take off of gliders] Mekhanizirovannyi vzlet planera. Izd.2., perer. i dop. Moskva, Izd-vo DOSAAF, 1961. 181 p. (MIRA 15:4)

(Gliding and soaring)

KONDRAT'YEV, P.V.; VASIL'YEV, A.A., red.; ISAKSON, A.M., red.;
MUKHINA, Ye.S., tekhn. red.

[Manual for the training of a helicopter pilot; sports flying]
Posobie po podgotovke letchika vertoleta (sportivnoi aviatsii).
Moskva, Izd-vo DOSAAF, 1962. 174 p. (MIRA 15:9)
(Helicopters) (Flight training)

KONDRAT'YEV, P.V.; VASIL'YEV, A.A., red.; IZAKSON, A.M., red.; MUKHINA, Ye.S., tekhn. red.

[Manual for training helicopter pilots; sporting aviation] Posobie po podgotovke letchika vertoleta; sportivnoi aviatsii. Moskva, Izd-vo DOSAAF, 1962. 174 p. (MIRA 15:12)
(Helicopters--Piloting)

KONDRAT'YEV, P.V.; VASIL'YEV, A.A., red.; IZAKSON, A.M., red.;
MUKHINA, Ye.S., tekhn. red.

[Manual for training helicopter pilots (sport aviation)]Posobie po podgotovke letchika vertoleta (sportivnoi aviatsii). Moskva, Izd-vo DOSAAF, 1962. 174 p. (MIRA 16:2)
(Helicopters--Piloting) (Flight training)

FOROSTENKO, Ya., zasl. master sporta; ZHARKOVSKIY,I.; IGNAT'YEV, S.; VASIL'YEV, A.A., red.; SORKIN, M.Z., tekhn. red.

[In a sport airplane]Na sprotivnom samolete. Moskva, Izd-vo DOSAAF, 1962. 238 p. (MIRA 16:1)
(Aerial sports)

PONOMAREV, A., general-polkovnik inzhenerno-tekhnicheskoy sluzhby; POKROVSKIY, G., prof., doktor tekhnicheskoy sluzhby; KUVAL'DIN, A., dots., kand. tekhnicheskikh nauk inzhener-polkovnik; MOSTOVENKO, V., dots., kand. tekhnicheskikh nauk inzhener-polkovnik; GONCHAROV, M., polkovnik; TARANTSOV, A., polkovnik; VASIL'YEV, N., polkovnik; GORDEYEV, N., kapitan 1 ranga; KOZIN, K., kapitan 1 ranga; ARKHIPOV, M., dots., kand. tekhn. nauk inzhener-podpolkovnik; SEDOV, A., dots., kand. tekhn. nauk, inzhener-podpolkovnik; MELIK-PASHAYEV, N., dots., kand. tekhn.nauk, inzhener-podpolkovnik; TIKHOMIROV, Yu., dots., kand. tekhn. nauk, inzhener-podpolkovnik; PARFENOV, V., kand. tekhn. nauk, inzhener-podpolkovnik; GEORGIYEV, A., inzh.-podpolkovnik; KRUCHININ, V., inzh.-podpolkovnik; MEKONOSHIN, N., inzh.-podpolkovnik; RYKOV, S., inzh.-podpolkovnik; SURIKOV, B., inzh.-podpolkovnik; ZHUKOV, V., inzh.-mayor; NOVIKOV, M., inzh.-mayor; SUSHKOV, Yu., inzh.-kapitan; ASTASHENKOV, P.T., inzh.-podpolkovnik; VASIL'YEV, A.A., red.; KARYAKINA, M.S., tekhn. red.

[New advances in military technology for youthful readers]Molodezhi o novom v voennoi tekhnike. Moskva, Izd-vo DOSAAF, 1961. 342 p. (MIRA 15:2)
(Rockets (Ordnance)) (Atomic weapons)
(Electronics in military engineering)

VINOKUROV, Aleksandr Dmitriyevich; ZEL'VENSKIY, Yuliy Davydovich; VASIL'YEV, A.A., red.; KOROLEV, A.V., tekhn.red.

[The first astronaut is an alumnus of an aeroclub] Pervyi kosmonavt - vospitannik aerokluba. Moskva, Izd-vo DOSAAF, 1962. 94 p. (MIRA 15:5)
(Gagarin, IUrii Alekseevich, 1934-)

VEL'GUS, S.[Velgus, S.], planerist; MAKULYA, E.[Makula, E.], planerist; SKSHIDLEVSKIY, S.[Skrzydlewski, S.], planerist; SNESHKO, Yu.[translator]; VASIL'YEV, A.A., red.; DVOYENOSOV, D.V., red.; ZAMYATIN, V.M., red.; SOROKIN, M.Z., tekhn. red.

[Flights in a glider] Perelety na planere. Moskva, DOSAAR, 1963. 145 p. Translated from the Polish. (MIRA 16:10)
(Gliding and soaring)

VASIL'YEV, A., sportsmen 1-go razryada, kand.tekhn.nauk

Most favorable trajectories for gaining in altitude. Kryl.rod. 14 no.3:42-43 S '63. (MIRA 16:9)
(Airplanes—Models)

TUR'YAN, V.A.; VASIL'YEV, A.A., red.; SHELEST, I.I., red.

[In the world of flying vehicles] V mire letatel'nykh apparatov. Moskva, Izd-vo "DOSAAF," 1964. 68 p.
(MIRA 17:4)

IL'CHENKO, Viktor Mikhaylovich, zasl. master sporta, obshchestvennyy trener; VASIL'YEV, A.A., red.

[Soaring flight] Pariashchii polet. 2-3 perer. i dop. izd. Moskva, Izd-vo DOSAAF, 1964. 135 p. (MIRA 17:5)

1. Vsesoyuznyy planernyy komitet Federatsii aviatsionnogo sporta SSSR (for Il'chenko).

VASIL'YEV, A., kand. tekhn. nauk, sportsmen 1-go razryada

New trends in the construction of airplane models. Kryl. rod. 15 no.6:23 Je'64. (MIRA 17:6)

1. Chlen Moskovskogo aviamodel'nogo kluba.

VASIL'YEV, A.A.; GERASIMIYUK, T.V.

Possibility of producing novolak resins from anisole and formaldehyde and sulfonated ion exchangers based on them. Zhur. prikl. khim. 37 no.12:2733-2738 D '64. (MIRA 18:3)

1. Institut vysokomolekulyarnykh soyedineniy AN SSSR.

VASIL'YEV, A.A.

Bumpiness of helicopters on the Black Sea coast of the Caucasus in bora-type winds. Trudy TSIP no.146:11-20 '65. (MIRA 18:9)

Vasil'[illegible]

[illegible]haracteristics of the operation of crane runways and the prolongation of their service life. Prom. stroi. 42 no.7:33-36 '65.
(MIRA 18:8)

1. Moskovskiy ordena Trudovogo Krasnogo Znameni inzhenerno-stroitel'nyy institut im. V.V.Kuybysheva.

SHABANOV, A.N., prof.; VASIL'YEV, A.A.

Treatment of mastitis. Sov. med. 21 no.7:49-56 Jl '57. (MIRA 12:3)

1. Iz khirurgicheskoy kliniki Moskovskoy ordena Lenina gorodskoy klinicheskoy bol'nitsy imeni S.P. Botkina.
(MASTITIS, ther.
puerperal (Rus))
(PUERPERIUM, compl.
mastitis, ther. (Rus))

VASIL'YEV, A. A., Cand Med Sci -- (diss) "Lesions of the ovary and their role in the clinical aspect of emergency surgery. (Relation to inflammatory processes in appendix vermiformis)." Moscow, 1959. 16 pp; (Ministry of Public Health USSR, Central Inst for Advanced Training of Physicians); 200 copies; price not given; (KL, 17-60, 168)

VASIL'YEV, A.A., kand.med.nauk

Etiology of apoplexy of the ovary. Akush.i gin. no.6:57-61 '60.
(MIRA 14:1)

1. Iz khirurgicheskoy kliniki (zav. - prof. B.S. Romanov) i ginekologicheskoy kliniki (zav. - prof. F.A. Syrovatko) Bol'nitsy imeni S.P. Botkina (glavnyy vrach - prof. A.N. Shabanov).

(OVARIES--DISEASES)

VASIL'YEV, A.A., kand.med.nauk

Association of ovarian apoplexy with appendicitis. Sov. med. 25 no.3:35-41 Mr '61. (MIRA 14:3)

1. Iz 3-y kafedry khirurgii (zav. - zasluzhennyy deyatel' nauki prof. B.S.Rozanov), kafedry ginekologii TSentral'nogo instituta usovershenstvovaniya vrachey (zav. - prof. F.A.Syrovatko) i Moskovskoy gorodskoy klinicheskoy ordena Lenina bol'nitsy imeni S.P.Botkina (glavnyy vrach - prof. A.N.Shabanov).
(OVARIES—DISEASES) (APPENDICITIS)

VASIL'YEV, A.A.

Bilateral apolplexy of the ovaries. Kaz.med.zhur. no.3:61-63 My-Je '62. (MIRA 15:9)

1. 3-ya kafedra khirurgii (zav. - prof. B.S.Rozanov), kafedra ginekologii (zav. - prof. F.A.Syrovatko) TSentral'nogo instituta usovershenstvovaniya vrachey i klinicheskaya Moskovskaya bol'nitsa imeni S.P.Botkina (glavnyy vrach - prof. A.N.Shabanov).
(OVARIES--DISEASES) (HEMORRHAGE)

VASIL'YEV, A.A., kand. med. nauk

Technique of ileorectal anastomosis following total colectomy; experimental research. Khirurgiia 39 no.6:102-106 Je '63. (MIRA 17:5)

1. Iz 1-y kafedry khirurgii (zav. - zasluzhennyy deyatel' nauki prof. B.S. Rozanov) TSentral'nogo instituta usovershenstvovaniya vrachey, Bol'nitsy imeni S.P. Botkina (glavnyy vrach - dotsent Yu.G. Antonov) i Instituta normal'noy i patologicheskoy fiziologii (dir. - deystvitel'nyy chlen AMN SSSR prof. V.V. Parin) AMN SSSR.

VASIL'YEV, A.A., kand.med.nauk

Clinical aspects and treatment of nonspecific ulcerative colitis. Sov. Med. 27 no.7:41-45 Jl'63. (MIRA 16:9)

1. Iz 1-oy kafedry khirurgii (zav. - zasluzhennyy deyatel' nauki prof. B.S.Rozanov), kafedry infektsionnykh bolezney (zav. - deystvitel'nyy chlen AMN SSSR prof. G.P.Rudnev) TSentral'nogo instituta usovershenstvovaniya vrachey i bol'nitsy imeni S.P.Botkina (glavnyy vrach - dotsent Yu.G. Antonov).

(COLON (ANATOMY)--ULCERS)

L 60207-65 EWT(m)/EPF(c)/T/EWP(j) Pc-4/Pr-4 GS/JAJ/RM
ACCESSION NR: AT5019611 UR/0000/64/000/000/0139/0150

AUTHOR: Korotkov, A. A.; Vasil'yev, A. A.; Prokof'yev, V. D.; Timofeyeva, N. P.

TITLE: Polymerization of isoprene with complex catalysts in various solvents

SOURCE: Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskogo kauchuka. Polimerizatsiya izoprena kompleksnymi katalizatorami [Polymerization of isoprene by complex catalysts]. Moscow, [illegible], 1964, 139-150

TOPIC TAGS: isoprene polymerization, solvent, complex catalyst

ABSTRACT: Polymerization of isoprene was studied at 20°C in the following solvents: butane, pentane, hexane, heptane, octane, isopentane, isooctane, and cyclohexane. A complex of general formula $AlR_3 \cdot TiCl_4$ was used as catalyst. The degree of conversion and the polymer molecular weight were monitored as a function of time during 2 hour polymerization experiments [illegible]. The degree of isoprene conversion and the average molecular weight of polymer is determined by the solubility and the rate of [illegible] of the polymer in the respective solvents. In all solvents the rate of isoprene polymerization increases with temperature. At given conditions (constant temperature of polymerization), the degree

Card 1/2

L 60207-65
ACCESSION NR: AT5019611

of conversion of isoprene in various solvents decreased in the following sequence: pentane, hexane, heptane, [illegible] up to a certain conversion level the average molecular weight of polymer remains [illegible] higher conversion levels [illegible] The highest [illegible] next was hexane [illegible] weight among all solvents used [illegible] were best solvents from the point of view of conversion to polymer as well as polymer molecular weight. Orig. art. has [illegible] figures and 1 table.

ASSOCIATION: none

SUBMITTED: 240ct64 ENCL: 00 SUB CODE: MT, GC

NO REF SOV: 000 TYPE: [illegible]

Card 2/2

ACCESSION NR: AT3017736

AUTHORS: Vasil'yev, A. A.; Daychik, M. L.; Prigorovskiy, N. I.

TITLE: Strain gages for operation in temperature and radiation fields

SOURCE: AN SSSR. Institut mashinovedeniya. Metody issledovaniya napryazheniy;

TOPIC TAGS: strain gage, strain

found that the temperature [illegible] nonlinearly and noticeably temperature [illegible]

Card 1/2

L 63861-65

ACCESSION NR: AT5017736

apparent strains were obtained for unmounted and welded (to a test bar) strain gages. It was also found that increased curvature of the mounting surface increased the temperature effect. Twenty-four hour radiation tests showed that the strain gage characteristics were unchanged for neutron radiation levels of up to $2 \cdot 10^{19} n/cm^2$ (integral intensity) (N. N. Aristarkhov et al. Tenzodatchiki dlya raboty v usloviyakh neytronnogo oblucheniya. - Sb. "Metody i pribory tenzometrii," vyp. 1. GOSINTI, 1964). Calibration of gages prior to use permits matching of gage properties for temperature compensation. Orig. art. has: 7 figures and 5 tables.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: IE, TD

NO REF SOV: 005 OTHER: 001

Card 2/2

TUNIK, A.V.; VASIL'YEVA, V.A.; VASIL'YEV, A.A.; GERSHMAN, M.B.

Use of polyvinyl alcohol for the preparation of membranes. Zhur. prikl. khim. 38 no.7:1636-1638 Jl '65. (MIRA 18:7)

S/109/61/006/005/012/027
D201/D303

9.2574

AUTHORS: Mikaelyan, A.L., and Vasil'yev, A.A.

TITLE: Interaction of magnetostatic oscillations in a ferrite sample during regeneration. Part II: Conditions of excitation of oscillations in a general case

PERIODICAL: Radiotekhnika i elektronika, v. 6, no. 5, 1961, 789 - 795

TEXT: In the first part of their work (Ref. 1: Vzaimodeystiviye magnitostaticheskikh kolebaniy v ferritovom obraztse pri regeneratsii, Ch. I. Vzaimodeystviye Prosteyshikh tipov kolebaniy, Radiotekhnika i elektronika, 1961, 6, 4, 623) the authors showed that HF magnetic fields acting on a ferrite, the frequencies of which are related by

$$\omega_1 + \omega_2 = \omega_p \qquad (1)$$

[Abstractor's note: Symbols used not explained, but are presumably

Card 1/12

Interaction of magnetostatic ...

those used in the first part of this work[7] result in the interaction of natural "magnetostatic" oscillations in the sample. This assumption has been illustrated by the analysis of interaction between the simple magnetostatic oscillations 2.0.1 - 2.$\bar{1}$.0. In the present article the interaction of higher index potentials, namely of the pair 3.0.1 - 3.$\bar{1}$.0 is investigated. The excitation of the above pair leads to the following spectrum of potentials at frequencies ω_1 and ω_2

$$\omega_1 : 3.0.1;\ 1.0.0; \qquad (2)$$

$$\omega_2 : 3.\bar{1}.0;\ 1.\bar{1}.0.$$

Assuming potentials to have the structure as given by P.S. Fletcher and R.O. Bell (Ref. 2: Ferrimagnetic resonance modes in spheres, J. Appl. Phys. 1959, 30, 5, 687)

Card 2/12

Interaction of magnetostatic ...

$$\psi_1 = A_1 \cdot 30\, z\left[-\frac{x^2+y^2}{2} + \frac{1}{3}\mu_1 z^2 + \frac{a^2(1-\mu_1)}{5}\right],$$
$$\psi_2 = A_2 \cdot 20\,(x-jy)\left[-\frac{x^2+y^2}{4} + \mu_2 z^2 + \frac{a^2(1-\mu_1)}{5}\right], \qquad (3)$$

φ_1 and φ_2 are given by

$$\varphi_1 = \frac{40}{3}(\tau_1 + \tau_2^*)\mu_2^* z^3 A_2^*, \quad \varphi_2 = -15\,(\tau_2 + \tau_1^*)(x - jy)z^2 A_1^* \qquad (4)$$

so that the full potentials are determined by

$$\Psi_1' = E_1 z + 30 z A_1\left[-\frac{x^2+y^2}{2} + \frac{1}{3}\mu_1 z^2 + \frac{a^2(1-\mu_1)}{5}\right] + \frac{40}{3}(\tau_1 + \tau^*)\mu_2^* A_2^* z^3,$$
$$\Psi_1'' = D_1 \frac{1}{r^4} P_3^0(\cos\theta) + F_1 \frac{1}{r^2} P_1^0(\cos\theta),$$
$$\Psi_2' = E_2 (x - jy) + 20\,(x - jy) A_2\left[-\frac{x^2+y^2}{4} + \mu_2 z^2 + \frac{a^2(1-\mu_2)}{5}\right] - \qquad (5)$$
$$- 15\,(\tau_1^* + \tau_2) A_1^* (x - jy) z^2,$$
$$\Psi_2'' = D_2 \frac{1}{r^4} P_3'(\cos\theta)\, e^{-j\varphi} + F_2 \frac{1}{r^2} P_1'(\cos\theta)\, e^{-j\varphi}.$$

Card 3/12

Interaction of magnetostatic ...

From the condition of continuity of potentials and of normal components of induction at ω_1 and ω_2 the system of equations given in (6) follows:

$$1)\ \left[\mu_1 + \frac{3}{4} + 0{,}3\,(\tau_2^{*2} - \tau_1^{*2})\right] A_1 = \left[0{,}2\tau_2^* - 0{,}8\tau_1\mu_2^* + \frac{4}{15}\,(\tau_1 + \tau_2^*)\,\mu_2^*\right] A_2^*,$$

$$2)\ [4\mu_2^* k_2^* - 4\mu_2^{*2} + k_2^* - 27\mu_2^* - 4 + 8\tau_2^*\mu_2^*(\tau_1 + \tau_2^*)]\, A_2^* =$$
$$= -[21\tau_2^* + 12\tau_1 + 6\tau_2^*\mu_1^* + 3\,(\mu_2^* - k_2^*)\,(\tau_1 + \tau_2^*)]\, A_1,$$

$$3)\ \frac{1}{a^2}\,[(\mu_2^* - k_2^* + 2)\,E_2^* - \tau_2^* E_1] + [16 + 104\,\mu_2^* + 16\,\mu_2^*\,(\mu_2^* - k_2^*) +$$
$$+ 8\,(\mu_2^* - k_2^*) - 40\,\mu_2^*\tau_2^*\,(\tau_1 + \tau_2^*)]\, A_2^* - [90\tau_2^* - 54\tau_1 +$$
$$+ 24\,\mu_1\tau_2^* - 15\,(\mu_2^* - k_2^*)\,(\tau_1 + \tau_2^*)]\, A_1 = 0,$$

$$4)\ \frac{1}{a^2}\,[3E_1 - 2\tau_2^* E_2^*] + [30\,\tau_1\,(\tau_1 + \tau_2^*) - 60\,\mu_1 - 45]\, A_1 +$$
$$+ [12 - 8\,\mu_2^*\tau_2^* - 36\,\mu_2^*\tau_1]\, A_2^* = 0.$$

(6)

Card 4/12

Interaction of magnetostatic ...

As shown in Ref. 2 (Op.cit.) if $m_0 = 0$, the system of Eqs. (6) resolves into 3 independent equations which characterize the resonant oscillations in the ferrite

$$\begin{aligned} &1)\ \mu_1 = -\frac{3}{4}, \\ &2)\ k_2^{\cdot 2} - 27\mu_2^{\cdot 2} - 4\mu_2^{\cdot} + 4\mu_2^{\cdot} k_2^{\cdot} - 4 = 0, \\ &3)\ \mu_2^{\cdot} - k_2^{\cdot} + 2 = 0. \end{aligned} \tag{7}$$

and eliminating amplitudes A_1 and A_2 from 7-1 and 7-2,

$$\begin{aligned} &\left[\mu_1 + \frac{1}{4} + 0{,}3(\tau_2^{\cdot 2} - \tau_1^{\cdot 2})\right]\left[4\mu_2^{\cdot} k_2^{\cdot} - 4\mu_2^{\cdot 2} + k_2^{\cdot} - 27\mu_2^{\cdot} - 4 + \right. \\ &\left. + 8\tau_2^{\cdot}\mu_2^{\cdot}(\tau_1 + \tau_2^{\cdot})\right] = \left[0{,}8\tau_1\mu_2^{\cdot} - 0{,}2\tau_2^{\cdot} + \frac{4}{15}\mu_2^{\cdot}(\tau_1 + \tau_2^{\cdot})\right][21\tau_2^{\cdot} + \\ &+ 12\tau_1 + 6\tau_2^{\cdot}\mu_1^{\cdot} + 3(\mu_2^{\cdot} - k_2^{\cdot})(\tau_1 + \tau_2^{\cdot})]. \end{aligned} \tag{8}$$

is obtained. The critical value of the modulation depth in ferrite, corresponding to the full compensation of losses can be derived

Card 5/12

Interaction of magnetostatic ...

from Eq. (8) as

$$m_0 = \frac{2\sqrt{\mu_1''\left[\mu_2''+0.1(\mu_2''-k_2'')(4\mu_2+1)^2\right]}}{2\mu_2(\mu_1-k_1-1)+(0.8\mu_2-0.3)(\mu_2-k_2-1)} \qquad (9)$$

Graphs are given of working frequencies, pumping frequencies and of the external threshold pumping field as functions of the external magnetic field. The same graphs for small values of the magnetic field are also shown. The threshold value of the field of resonant pumping is given as

$$h_p^e \simeq 5\frac{\sqrt{\Delta H_1 \Delta H_2}}{4\pi M}\Delta H_p. \qquad (10)$$

The dependence of the threshold value of the external pumping field and working frequencies for modes 3.0.1 - 3.1.1 are given in Fig. 3. The determination of threshold values of the external pumping field

Card 6/12

Interaction of magnetostatic ...

is carried out by the authors using the perturbation method.

Fig. 3.

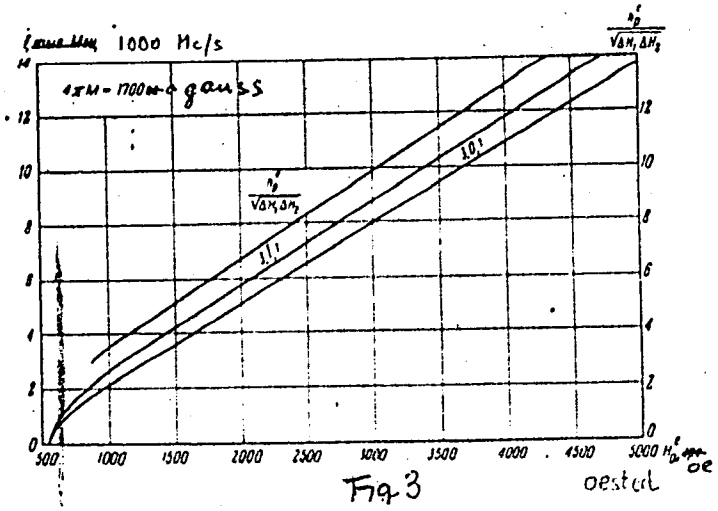


Fig 3

oestad

Card 7/12

Interaction of magnetostatic ...

From Maxwell's equations

$$\frac{\Delta\omega_1}{\omega_1} = -2\pi \frac{\int (\vec{M}_1 \vec{H}_1^{0*} - \vec{M}_1^{0*} \vec{H}_1)\, dv}{\int_{V_0} \vec{H}_1 \vec{H}_1^{0*}\, dv + 4\pi \int_{V_1} \vec{M}_1^{0*} \vec{H}_1\, dv}, \qquad (11)$$

is obtained, where $\vec{M}_1^0$, $\vec{H}_1^0$ is the initial magnetizing force and the field respectively, $\vec{M}_1$, $\vec{H}_1$, the magnetizing force and the field induced by losses and pumping, V_1 and V_0 - the volume of the ferrite and total volume respectively; then

$$\Delta\omega_1 = \dot{\omega}_1 - \omega_1 = \omega_1' - \omega_1 + j\omega_1'' \qquad (12)$$

is true, where ω_1 - initial frequency, ω_2 - the complex induced frequency. Assuming that $\left(\operatorname{Im}\frac{\Delta\omega_1}{\omega_1} = 0\right)$ and eliminating the amplitudes

Card 8/12

$$m_0 \geqslant \frac{2\sqrt{(\mu_1^* I_1 - k_1^* N_1)(\mu_2^* I_2 - k_2^* N_2)}}{|(\mu_1 - k_1 - 1) Z_1 + (\mu_2 - k_2 - 1) Z_2|}, \qquad (13)$$

is obtained in which I, N, Z are the following integrals

$$I_1 = \int_{V_1} \left(\frac{\partial \psi_1}{\partial x} \frac{\partial \psi_1^*}{\partial x} + \frac{\partial \psi_1}{\partial y} \frac{\partial \psi_1^*}{\partial y} \right) dv,$$

$$N_1 = \left| \int_{V_1} \left(\frac{\partial \psi_1}{\partial x} \frac{\partial \psi_1^*}{\partial y} - \frac{\partial \psi_1}{\partial y} \frac{\partial \psi_1^*}{\partial x} \right) dv \right|, \qquad (14)$$

$$Z_1 = \int_{V_1} \frac{\partial \psi_2^*}{\partial z} \left(\frac{\partial \psi_1^*}{\partial x} - j \frac{\partial \psi_1^*}{\partial y} \right) dv.$$

In expression (14) I and N, represent orthogonal magnetic potentials and the integral Z, characterizes the relationship between the oscillation modes in the ferrite. For the pair 3.2.0 - 3.1.0 the

Card 9/12

threshold is given in the form of

$$m_0 \geqslant \frac{2\sqrt{[2\mu_1'' + 0{,}2(\mu_1'' - k_1'')(4\mu_1 + 1)^2](\mu_2'' - k_2'')}}{k_1 - 15\mu_1 + 1}. \qquad (19)$$

the graph of which is also given in the article. The following conclusions are made by the authors: 1) The interaction of magnetostatic oscillations resulting from regeneration is possible only for oscillations with a definite structure of the field; 2) With the influence of the pump field at the higher types of resonance with frequencies ω_1 and ω_2, the whole spectrum of simpler modes arises, the indices of which are determined by formulae (17) and (15) of Ref. 1 (Op.cit.); 3) The threshold value of the external pump field which corresponds to the regenerative mode in the range 5,000 - 8,000 Mc/s has the value of a few oersted and increases with the increase in oscillation frequency. Last, the work of H. Suhl (Ref. 3: Theory of the ferromagnetic microwave amplifier, J. Appl. Phys. 1957, 28, 11, 1225) and of Ya. A. Monosov (Ref. 4: K. Teorii neli-

Card 10/12

Interaction of magnetostatic ...

neynykh yavleniy v ferritakh na SVCh, Ch. I-II, Radiotekhnika i elektronika 1960, 5, 1, 2, 59, 278) is discussed. The formula of Suhl for the threshold value of m_0 is similar to the Eq. (13) of the present article. The integral of the type Z as given in Eq.(39) of Ref. 4 (Op.cit.) is correct. The approximations, however, in induction resulted in lower values of m_0, e.g. for the system 2.0.1 - - 2.1.0. the value of m_0 in Ref. 4 (Op.cit.) has been reduced by a factor $\sqrt{(\omega_0^2 + \omega_1^2)}/\omega_0\omega_1$, where ω_1 - oscillating frequency of 2.0.1. which means a twofold reduction at f_1 = 5,000 Mc/s (4πM = 1700 gauss). The basic error in Ref. 5 [Abstractor's note: Ref. 5 is not given], states, the author is due to the assumption that the interaction between modes, one of which has index m, differing from n by more than 2 (e.g. 3.0 and 3.1, 4.0 and 4.1 etc.) is not possible. In this work there is another error, namely in Eq. (10) which leads to a lower threshold value and also the solution of the particular problem is not quite correct, because it fails in the case

Card 11/12

of a degenerate regime. The authors express their thanks to V.V. D'yachenko, a student at MFTI for his help in deriving several formulae and numerical evaluations. There are 4 graphs and 4 references: 2 Soviet-bloc and 2 non-Soviet-bloc. The references to the English-language publications read as follows: P.S. Fletcher, R.O. Bell, Ferri-magnetic resonance models in spheres, J. Appl. Phys. 1959, 30, 5, 687; H. Suhl, Theory of the ferromagnetic micro-wave amplifier, J. Appl. Phys. 1957, 28, 11, 1225.

SUBMITTED: April 21, 1960

Card 12/12

S/109/60/005/012/028/035
E192/E582

9.4300 (1137, 1155, 1147)

AUTHORS: Mikaelyan, A.L., Vasil'yev, A.A. and Turkov, Yu.G.

TITLE: Influence of Dielectric Characteristics and Size of Ferrites on the Width of the Resonance Curve

PERIODICAL: Radiotekhnika i elektronika, 1960, Vol.5, No.12, pp. 2055-2056

TEXT: It is known that the half-width ΔH (or $\Delta \omega$) of the resonance curve is a very important parameter in ferrites. The quantity ΔH is principally determined by the magnetic losses in ferrites. However, it is interesting to investigate how ΔH depends on their dielectric parameters. . . . In order to investigate this effect the system shown in the figure is considered. This consists of a cylindrical resonator operating in the $E_{n\,10}$-mode and a coaxial longitudinally magnetized ferrite rod. The characteristic equation for this system is in the form (Ref.1)

$$ak_{\perp}\frac{\mu_0}{\mu_{\perp}}\frac{J_1'(ak_{\perp})}{J_1(ak_{\perp})}+\frac{k}{\mu}\frac{\mu_0}{\mu_{\perp}}=ak_0\frac{C_1'(ak_0)}{C_1(ak_0)}, \qquad (1)$$

Card 1/4

S/109/60/005/012/028/035
E192/E582

Influence of Dielectric Characteristics and Size of Ferrites on the Width of the Resonance Curve

where

$$C_1(ak_o) = J_1(ak_o) - \frac{J_1(bk_o)}{N_1(bk_o)} N_1(ak_o)$$

where a and b are radii of the ferrite rod and the resonator, respectively; μ and k are the components of the tensor of the ferrite permittivity, $\mu_\perp = (\mu^2 - k^2)/\mu$; $k_\perp = \omega\sqrt{\varepsilon\mu_\perp}$; $k_o = \omega\sqrt{\varepsilon_o\mu_o}$.

For the case of thin ferrite rods Eq.(1) can be simplified and the following expression is obtained

$$\omega_M + (2 + \beta)(\omega_o - \omega) = 0 \qquad (3)$$

where $\omega_M = 4\pi\gamma M$, $\omega_o = \gamma H_o$. By separating the real and imaginary parts of Eq.(3) an expression for ω'', which represents the attenuation coefficient of the natural oscillations in ferrite, is obtained. Consequently, the width of the resonance curve is

S/109/60/005/012/028/035
E192/E582

Influence of Dielectric Characteristics and Size of Ferrites on the Width of the Resonance Curve

expressed by

$$\Delta H = \frac{\Delta\omega}{\gamma} = -\frac{\omega''}{\gamma} = \frac{\Delta H_o + (ak'_o)^2 \frac{\varepsilon''}{\varepsilon_o} \frac{4\pi M}{16}}{1 + \alpha \frac{\omega_M}{4\omega'} (ak'_o)^2} \qquad (7)$$

where γ is the Euler constant. A numerical example is considered and it is shown on the basis of Eq.(7) that the width of the resonance curve due to the dielectric losses is about 0.165 Oe, which is quite a significant fraction for the ferrites with a narrow resonance curve. There are 1 figure and 2 references: 1 Soviet and 1 non-Soviet.

SUBMITTED: April 21, 1960

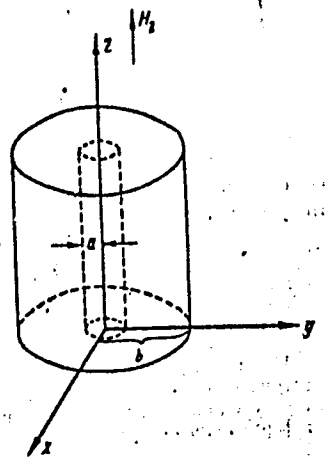
Card 3/4

20430

S/109/60/005/012/028/035
E192/E582

Influence of Dielectric Characteristics and Size of Ferrites on the Width of the Resonance Curve

Fig.



Card 4/4

9,2571

S/109/61/006/005/026/027
D201/D303

AUTHORS: Mikaelyan, A.L., Vasil'yev, A.A., and D'yachenko, V.V.

TITLE: Regeneration in ferrite at SHF under the influence of longitudinal pumping

PERIODICAL: Radiotekhnika i elektronika, v. 6, no. 5, 1961, 846 - 849

TEXT: In their previous work (Ref. 1: Vzaimodeystviye magnitostaticheskikh kolebaniy v ferritovom obraztse pri regeneratsii, Ch. I - II, Radiotekhnika i elektronika, 1961, 6, 4, 5, 639, 789) the authors analyzed the phenomena occurring in a magnetized ferrite under the influence of a circulary polarized varying magnetic field having a large amplitude (i.e. the pumping field). The essence of the above phenomena was first determined by H. Suhl (Ref. 2: Theory of ferromagnetic microwave amplifier, J. Appl. Phys., 1957, 28, 11, 1225) and their mechanism reduces to the following: if one excites in the ferrite "magnetostatic" oscillations

Card 1/8 6

at frequencies ω_1 and ω_2 related to each other by

$$\omega_1 + \omega_2 = \omega_p, \qquad (1)$$

where ω_p - the pumping field frequency, then losses due to self-oscillations at frequencies ω_1 and ω_2 can be compensated for from the energy of the pumping field and, therefore, the pumping field has the role of a source which produces periodical changes in the properties of ferrite. At certain "threshold" magnitudes of the pumping field, at which the losses are compensated for, there begins the generation of oscillations at frequencies ω_1 and ω_2. In Ref. 1 (op.cit.) and Ref. 2 (op.cit.) the only case investigated was when the pumping field was homogeneous and was circulary polarized in the plane perpendicular to the magnetizing axis (type 1, $\bar{1}$, 0). In the present article the authors analyze similar effects in a ferrite sphere under the influence of a pumping field h_p ori-

S/109/61/006/005/026/027
D201/D303

ented along the magnetizing field H_o^e (along the z axis). As in Ref. 1(Op.cit.) a small ferrite sphere is considered, to which the approximations of magnetostatics can be applied. Using the notations of Ref. 1(Op.cit.) and determining the intensity of magnetization from the system of

$$\frac{d\vec{M}}{dt} = -\gamma[\vec{M}\vec{H}], \quad \mathrm{rot}\,\vec{H} = 0, \quad \vec{H} = \mathrm{grad}\,\Psi \tag{2}$$

$$4\pi M_{x_1} = \chi_1 \frac{\partial \Psi_1}{\partial x} - jk_1 \frac{\partial \Psi_1}{\partial y} - \alpha h_p \frac{\partial \Psi_2^*}{\partial x} + j\beta h_p \frac{\partial \Psi_2^*}{\partial y}, \quad 4\pi M_{y_1} = \chi_1 \frac{\partial \Psi_1}{\partial y} + \tag{3}$$

$$+ jk_1 \frac{\partial \Psi_1}{\partial x} - \alpha h_p \frac{\partial \Psi_2^*}{\partial y} - j\beta h_p \frac{\partial \Psi_2^*}{\partial x}$$

are found, where

$$1 = \frac{\omega_o \omega_M}{\omega_o^2 - \omega_1^2}; \tag{4}$$

Card 3/8

6

Regeneration in ferrite ...

$$k_1 = -\frac{\omega_1\omega_M}{\omega_o^2 - \omega_1^2};\quad \alpha = \frac{\gamma\omega_M(\omega_o^2 - \omega_1\omega_2)}{2(\omega_o^2 - \omega_1^2)(\omega_o^2 - \omega_2^2)};\quad \beta = \frac{\gamma\omega_M\omega_o(\omega_2 - \omega_1)}{2(\omega_o^2 - \omega_1^2)(\omega_2^2 - \omega_2^2)}. \tag{4}$$

From the relationship div $\overline{B} = 0$ and Eqs. (3) the expressions for the potentials of magnetostatic oscillations at frequencies ω_1 and ω_2 are found to be

$$\mu_1\left(\frac{\partial^2}{\partial x^2} + \frac{\partial^2}{\partial y^2}\right)\psi_1 + \frac{\partial^2\psi_1}{\partial z^2} = \alpha h_p\left(\frac{\partial^2}{\partial x^2} + \frac{\partial^2}{\partial y^2}\right)\psi_2^*,\quad \mu_2\left(\frac{\partial^2}{\partial x^2} + \frac{\partial^2}{\partial y^2}\right)\psi_2 + \tag{5}$$

$$+ \frac{\partial^2\psi_2}{\partial z^2} = \alpha h_p\left(\frac{\partial^2}{\partial x^2} + \frac{\partial^2}{\partial y^2}\right)\psi_1^*.$$

All the intermediate steps are neglected and only the final results

Card 4/8

Regeneration in ferrite ...

are given which determine the type of interacting oscillations and the amplitude at the pumping field corresponding to the threshold of generation: 1) Oscillations with zero second index, i.e.

$$2,0,1;\ 3,0,1;\ 4,0,1 \qquad (6)$$

interact between themselves which is the so-called "degenerate" case. The formula determining the generation threshold of oscillations 2,0,1 is given in

$$\frac{h_p}{\Delta H} \geqslant 2\,\frac{\omega_o^2 + \omega^2}{\left|\omega_o^2 - \omega^2\right|} = \frac{5}{2}\,\frac{H_o^e - \frac{4}{3}\pi M}{4\pi M}\left(1 + \frac{\omega^2}{\omega_o^2}\right). \qquad (7)$$

Its graph is given in Fig. 1 for different values of the external magnetizing fields. 2) The second group of interacting oscillations consists of pairs of

$$3,\bar{1},0\text{-}3,1,1 \quad 4,\bar{1},0\text{-}4,1,1 \quad 4,\bar{2},0\text{-}4,2,1, \qquad (8)$$

Card 5/8

Regeneration in ferrite ...

the formula determining the generation threshold of a lower pair of oscillations 3,$\bar{1}$,1-3,1,1 has the form of

$$h_p^2 \geq \frac{(8\mu_1\mu_1''-4\mu_1k_1''-4k_1\mu_1''+27\mu_1''-k_1'')\,(8\mu_2\mu_2''+4\mu_2k_2''+4\mu_2''k_2+27\mu_2''+k_2'')}{[\alpha(4\mu_1+k_1-4\mu_2+27)-\beta(4\mu_2+1)]\,[\alpha(4\mu_2+4k_2+4\mu_1+27)-\beta(4\mu_1+1)]} \qquad (9)$$

The evaluation was made for the condition of every oscillation being at resonance, determined from the relationship

$$k_1-27\mu_1-4\mu_1^2+4\mu_1k_1-4=0,\ k_2+27\mu_2+4\mu_2^2+4\mu_2k_2+4=0. \qquad (10)$$

These results for the pair 3,$\bar{1}$,0 - 3,1,1 are given as graphs in Fig. 2. There are 2 figures and 3 references: 1 Soviet-bloc and 2 non-Soviet-bloc. The references to the English-language publications read as follows: H. Suhl, Theory of ferromagnetic microwaves amplifier, J. Appl. Phys., 1957, 28, 11, 1225; R.T. Denton, A ferromagnetic amplifier using longitudinal pumping, Proc. I.R.E. 1960, 5, 937.

SUBMITTED: June 24, 1960

Card 6/8

S/109/62/007/003/027/029
D234/D302

9.2571

AUTHORS: Mikaelyan, A.L., Vasil'yev, A.A., and Smorodinov, V.S.

TITLE: Calculating generation thresholds in ferrites with longitudiani pumping

PERIODICAL: Radiotekhnika i elektronika, v. 7, no. 3, 1962, 568 - 569

TEXT: The authors consider phenomena analogous to regeneration in ferrites, with the aid of the disturbance method. It is supposed that the initial system is a ferrite sample having no losses, with frequencies ω_1 and ω_2. The disturbances are assumed to consist of losses of oscillations of the frequencies ω_1 and ω_2 and the field of pumping, i.e. the frequencies ω_1 and ω_2 are then complex. A formula is obtained which allows determination of the generation threshold; for the simplest case it is found to coincide with the result of a previous paper by the authors. Quasi-static approximation is used in the deduction. A short mention of experiments carried

Card 1/2

Calculating generation thresholds ... S/109/62/007/003/027/029
D234/D302

out by the authors for this type of oscillations is given. There are 6 references: 3 Soviet-bloc and 3 non-Soviet-bloc. The references to the English-language publications read as follows: R. Denton, Proc. IRE, 1960, 48, 5, 937; L. Walker, Phys. Rev., 1957, 105, 2, 390; R. Denton, J. Appl. Phys. 1961, Suppl., 32, 3, 300.

SUBMITTED: October 14, 1961

Card 2/2

L 17809-65 EWT(1)/EWA(h) Pm-4/Peb ESD(dp)
ACCESSION NR: AP4045501 S/0109/64/009/009/1717/1719

AUTHOR: Vasil'yev, A. A.; Smorodinov, V. S.

TITLE: Parametric generation in ferrites with longitudinal pumping

SOURCE: Radiotekhnika i elektronika, v. 9, no. 9, 1964, 1717-1719

TOPIC TAGS: parametric generation, ferrite parametric generation, ferrite amplifier, ferrite

ABSTRACT: The authors have experimentally investigated parametric generation in small ferrite spheres under pulsed pumping conditions. The applied pulses had a duration of approx. 1μ sec with oscillations being monitored on a heterodyne receiver. It was found that under pulse conditions the threshold power required for oscillation was considerably greater than in the case of continuous pumping, and that the amplitude of the generated oscillation fell off sharply below some critical pump-pulse duration. The threshold-pulse duration could not be accurately determined, due to the insensitivity of the receiver at these increasingly lower amplitudes. The investigation shows that ferrite amplifiers can operate as parametric systems under

Card 1/2

L 17809-65
ACCESSION NR: AP4045501

either pulsed or steady-state pumping conditions. The authors also propose a simplified method for calculating the amplitude of parametric oscillations. Orig. art. has: 3 figures and 3 formulas.

ASSOCIATION: none

SUBMITTED: 18Jul63 ENCL: 00 SUB CODE: EC

NO REF SOV: 005 OTHER: 002

Card 2/2

L 13367-66 FBD/EWT(l)/EWT(m)/EEC(k)-2/EWA(d)/EWP(v)/T/EWP(t)/EWA(b)-2/EWP(k)/EWP(b)/
ACC NR: AP6001806 SOURCE CODE: UR/0107/65/000/012/0003/0005
EWA(h) IJP(c) WG/JD/HM

AUTHOR: Vasil'yev, A.; Ryasik, V.

ORG: none

TITLE: Working profession of lasers 35,41

SOURCE: Radio, no. 12, 1965, 3-5

TOPIC TAGS: medical laser, welding equipment/Razdan ruby laser, laser, ruby laser, SU-1 ruby laser, GOR 100 laser, Luch 3 solid state laser, solid state laser, laser application, semiconductor laser

ABSTRACT: Several types of lasers are produced in quantity in the Soviet Union. Some of their salient features are reviewed in this article. The lot-produced Razdan ruby laser (Fig. 1) is a portable unit. It uses a ruby crystal 80 mm long and 6.5 mm in diameter as the active element and the 500-J IFP-800 xenon lamp for pumping. Its resonator consists of two parallel mirrors, one of which has a reflection coefficient of 50%. The Razdan, with its own closed-loop cooling system, has the following characteristics: pulse repetition rate, 2 cps; pulse duration, 400 mu-sec; output energy, 2 j; emission wavelength, 6943 Å; power supply, 220 v, a-c, 50 cps; power consumption, 3 kw. The unit weighs 32 kg and measures 350 x 290 x 450 mm. It can be used for laboratory research and in industry for spot welding and punching of small holes. For purely research purposes, such as studies into the interaction of high-intensity emissions with various materials, a laser with a controlled Q (Fig. 2) has been developed. It produces 30-mm pulses with a duration of 40-50

Card 1/4

3

nanosec. The SU-1 (Fig. 3) is a ruby laser unit designed exclusively for welding refractory metals such as titanium and steel and gold and silicon. It generates light pulses with a duration of 5 msec and an energy of 1 j. These powerful pulses also make it possible to weld metals with greatly differing melting temperatures, such as aluminum with nickel. Ruby lasers have also been developed for medical applications. An ophthalmo-coagulator (Fig. 4), which employs a laser, is designed for bonding exfoliated eye retinas. The laser emits pulses with energies of up to 0.5 j. The system is optically controlled, and the light beam can be focused on any point of the eye. The field of application of neodymium-doped glass lasers is also growing. These lasers emit at a wavelength of 1.06 mu. The GOR-100 system (Fig. 5) belongs to this group. The energy of pulsed emission for the GOR-100 reaches 100 j. The divergence of the light beam takes several minutes, and as a result a high energy density can be obtained on the irradiated surface. The GOR-100 uses a neodymium-doped glass element 240 mm long and 16 mm in diameter. A modification of the GOR-100 laser is the GSI-1 system, which has similar parameters but whose active element is in the form of a rectangular plate. This arrangement produces an output beam with a rectangular cross section. Such lasers are used for welding, cutting, and drilling of metals. Another group of lasers uses semiconductors as active elements, such as gallium arsenide. Fig. 6 illustrates the Luch-3 laser system with a gallium arsenide diode 0.4 x 0.4 x 0.1 mm as the active element. It weighs 1.5 kg and measures 90 x 155 x 180 mm. The cooling system is in the form of a Dewar vessel filled with liquid nitrogen, assuring a one-hour continuous operation. It has the following basic characteristics: emission wavelength, 8430 Å; pulse duration, 2 mu-sec; pulse repetition rate, 70-200 cps; power supply, 27 v, d-c.

L 13367-66
ACC NR: AP6001806

2

This laser is primarily designed for laboratory purposes. Orig. art. has: 6 figures.
[ATD PRESS: 4165-F]

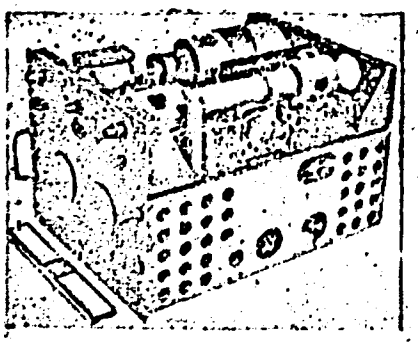


Fig. 1. Razdan ruby laser

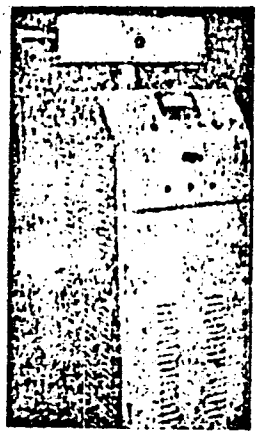


Fig. 2. Ruby laser with controlled Q

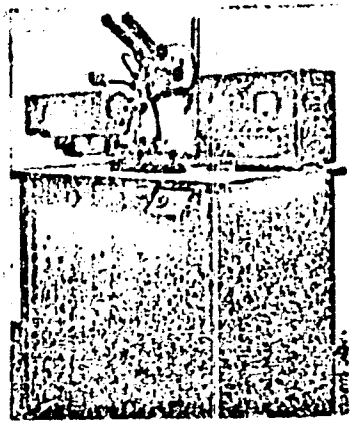


Fig. 3. SU-1 laser welding unit

14

Card 3/4

L 13367-66
ACC NR: AP6001806

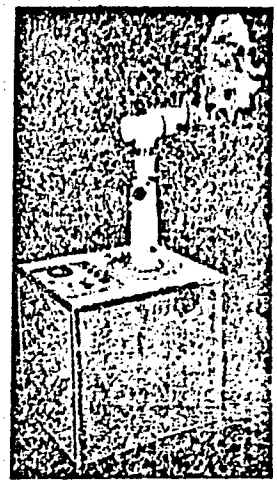


Fig. 4. Laser ophthalmo-coagulator

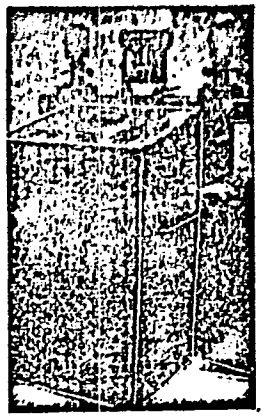


Fig. 5. GOR-100 neodymium-doped glass laser

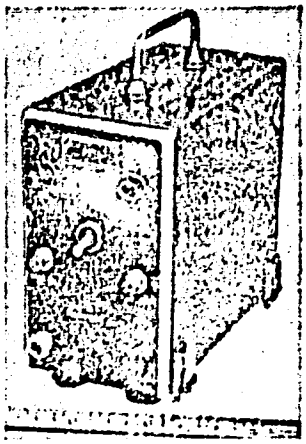


Fig. 6. Luch-3 gallium arsenide solid-state laser

SUB CODE: 20, 13, 06 / SUBM DATE: none

Card 4/4 Joining of dissimular metals

ACC NR: AP7002308 SOURCE CODE: UR/0143/66/000/006/0128/0128

AUTHOR: Borchaninov, G. S.; Sokolov, N. I.; Vasil'yev, A. A.; Tarasov, V. I.; Grudinskiy, P. G.; Ul'yanov, S. A.; Kuvshinskiy, N. N.; Fedoseyev, A. M.

ORG: none

TITLE: L. N. Baptidanov (Deceased)

SOURCE: IVUZ. Energetika, no. 6, 1966, 128

TOPIC TAGS: electric engineering personnel, academic personnel

ABSTRACT: L. N. Baptidanov died January 13, 1966. His working life was primarily dedicated to training of electrical engineering specialists. Soon after graduating from the Electrical Industrial Faculty of the Moscow Institute of the National Economy, Baptidanov began teaching at the Moscow Power Technical School. In 1934, Baptidanov began teaching at the All Union Correspondence Industrial Institute, then in 1946 he shifted to the All Union Industrial Academy of Machine Building, where he worked in the chair of electrical power stations. He was responsible for the creation of a model electrical station in the electrical stations chair of the Moscow Power Institute. Baptidanov was also very active as an author, writing such works as "Industrial Enterprise Substations", "Electrical Equipment of Electrical Stations and Substations", etc. From 1943 to 1946, Baptidanov worked as the Scientific editor for Electrical engineering at the State Power Literature Publishing House. [JPRS: 37,564]

SUB CODE: 09 / SUBM DATE: none

Card 1/1

MUKHANOV, K.K., kand. tekhn. nauk; VASIL'YEV, A.A., inzh.; SOKOLOV, B.B., inzh.; SYCHEV, V.I., inzh.

Effectiveness of using aluminum alloys in constructing walls and roofs of industrial buildings. Prom. stroi. 37 no.7:37-40 Jl '59. (MIRA 12:10)

(Aluminum alloys) (Metallurgical plants)

L 15719-65 EWT(m)/EWP(w)/EWA(d)/EWP(t)/EWP(b) AFFTC/ASD-3/ESD-3/IJP(c)/SSD/AFWL/ASD(m)-3 JD/JG

ACCESSION NR: AR4045882 S/0137/64/000/007/I035/I035

SOURCE: Ref. zh. Metallurgiya, Abs. 7I222

AUTHOR: Vasil'yev, A. A.; Gruzin, P. L.

TITLE: Temperature dependence of the internal friction of chromium

CITED SOURCE: Sb. Relaksats. yavleniya v met. i splavakh. M., Metallurgizdat, 1963

TOPIC TAGS: temperature dependence, internal friction, domain structure, ferromagnetism, chromium

TRANSLATION: An investigation was made of the change in internal friction of electrolytic chromium (99.9%) in the interval from -196 to +200°C. Measurements were made on samples with a diameter of 7 mm and a length of 70 mm, using the flexural vibration resonance method. On the curve for the temperature dependence of the resonance frequency there are two minimums: a minimum at 300°K connected with the transition of Cr from the antiferromagnetic to the paramagnetic state. A peak on the curve for the change in the antiferromagnetic antiphase

Card 1/2

L 15719-65
ACCESSION NR: AR4045882

domain structure of Cr is also connected with this transition. At 70°C, internal friction does not depend on the amplitude of the vibrations in the given stress interval, while at the same time at 0° and at -196° an amplitude dependence of internal friction is observed even in cases of small stresses. The increase in the value of internal friction in the antiferromagnetic state is connected with the increased losses due to rotation of the magnetic moments of the domain. The existence of an amplitude dependence of internal friction shows the preservation of domain structure [illegible] curves for the internal friction of samples anvilled to 60%, in the 125-175°K region, have a broad triple peak and a small peak at 185°K. Annealing at 600° reduces internal friction to the initial level and strongly reduces the height of the peaks.

SUB CODE: MM, AS ENCL: 00

Card 2/2

L 10380-65 EWT(m)/EWP(w)/EWA(d)/EWP(t)/EWP(b) SSD/AFWL/ASD(m)-3 JD
ACCESSION NR: AR4046550 S/0058/64/000/008/E086/E086

SOURCE: Ref. zh. Fizika, Abs. 8E566

AUTHORS: Zharov, Yu. D.; Trokin, Yu. A.; Vasil'yev, A. A.; Gruzin, P. L.; Polikarpov, Yu. A.

TITLE: Determination of the internal friction and of the modulus of elasticity of metals at low amplitudes

CITED SOURCE: Sb. Relaksats. yavleniya v. met. i splavakh. M., Metallurgizdat, 1963, 221-225

TOPIC TAGS: internal friction, modulus of elasticity, flexural strength, flexural oscillations

TRANSLATION: An installation is described for the study of the internal friction and for the measurement of the modulus of elasticity, using high-frequency flexural vibrations of the specimen. The in-

Card 1/2

L 10830-65
ACCESSION NR: AR4046550 0

stallation makes it possible to carry out measurements in the temperature interval from -196 to +200C and at frequencies of several kcs, and at oscillation amplitudes corresponding to a relative deformation $\sim 10^{-8}$--10^{-5}.

SUB CODE: MM ENCL: 00

Card 2/2

ACCESSION NR: AR4046551

SOURCE: Ref. zh. Fizika, Abs. 8E669

AUTHORS: Vasil'yev, A. A.; Gruzin, P. L.

TITLE: Temperature dependence of the internal friction of chromium

CITED SOURCE: Sb. Relaksats. yavleniya v met. i splavakh. M., Metallurgizdat, 1963, 247-249

TOPIC TAGS: chromium, internal friction, temperature dependence, flexural oscillations, ferromagnetic transition, antiferromagnetic, domain structure

TRANSLATION: The method of flexural oscillations is used to investigate the change in the internal friction (IF) of electrolytic Cr in the interval from -195 to +200C. On the curve showing the variation of the resonant frequency there are two minima: a minimum at

Card 1/2