I 35843-66 EWT(1)/T IJP(c) AT/JAJ
ACC NR: AP6014987 SOURCE CODE: UR/0170/66/010/005/0596/0599

39
B

AUTHOR: Brodyanskiy, V. M.; Kalinin, N. V.

ORG: Moscow Power Institute (Energeticheskiy institut)

TITLE: Exergy of the flow of a substance with a change in the parameters of the surrounding medium

SOURCE: Inzhenerno-fizicheskiy zhurnal, v. 10, no. 5, 1966, 596-599

TOPIC TAGS: fluid dynamics, flow analysis, gas flow

ABSTRACT: From the overall differential equation for the exergy

$$de = di - T_0 ds, \qquad (1)$$

substituting the quantity ds from the equation for an ideal gas, we get

$$de = di - T_0\left(c_p \frac{dT}{T} - R\frac{dp}{p}\right). \qquad (2)$$

Integrating Equation (2) over the interval of the change in state from the state at any point to the parameters of the surrounding medium we write

$$e = c_p(T - T_0) - T_0\left(c_p \ln\frac{T}{T_0} - R\ln\frac{p}{p_0}\right). \qquad (3)$$

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ACC NR: AP6014987 O

Dividing the left and right-hand sides of Equation (3) by the quantity T_0, we get an equation in dimensionless variables

$$e/T_0 = c_p(T/T_0 - 1) - c_p \ln(T/T_0) + R \ln(p/p_0). \quad (4)$$

For convenience in calculation and in construction of a diagram in dimensionless variables, Equation (4) is written in the form

$$\ln \bar{p} = \bar{e} - \frac{c_p}{R}(\bar{T} - 1) + \frac{c_p}{R} \ln \bar{T}, \quad (5)$$

where $\bar{T} = T/T_0$, $\bar{p} = p/p_0$, and $\bar{e} = e/RT_0$ are respectively the dimensionless temperature, pressure, and exergy of the substance. Based on this equation, the article gives a diagram for determination of the values of the exergy for any values of the parameters T_0 and p_0. To determine the necessary corrections at different pressures of the surrounding medium, a secondary diagram is presented by which the value of the correction Δe_p is found by the formula

$$\Delta e_p = RT_0' \ln(p_0'/p_0). \quad (6)$$

Orig. art. has: 7 formulas and 2 figures.

SUB CODE: 20/ SUBM DATE: 22Dec65/ ORIG REF: 007/ OTH REF: 006

Card 2/2

BOYTSOV, Vasiliy Vasil'yevich, prof.; GRIGOR'YEV, Vasiliy Prokhorovich; RAZUMIKHIN, Mikhail Ivanovich; SELEZNEVA, Anna Andreyevna; SHEKUNOV, Yevgraf Porfir'yevich [deceased]; BELYAVSKIY, G.A., inzh., retsenzent; BRODYANSKIY, Yu.M., inzh., red.; SUVOROVA, I.A., izdat.red.; PUKHLIKOVA, N.A., tekhn.red.

[Assembling and mounting work] Sborochnye i montazhnye raboty. Pod obshchei red. V.V.Boitsova. Moskva, Gos.izd-vo obor.promyshl., 1959. 476 p. (MIRA 13:5)
(Airplanes--Design and construction)

L 10726-66 EWT(m)/EWP(j) DS/RM

ACC NR: AP6005090 (A) SOURCE CODE: UR/0251/65/040/003/0607/0612

AUTHOR: Nogaydeli, A. I.; Dzhaparidze, K. G.; Brodzeli, M. I.; Devadze, L. V.; Maysuradze, D. P.; Kertsman, E. L.; Chubabriya, M. Ya.

ORG: none

TITLE: Synthesis and certain photochemical properties of 7-nitro-1', 3', 3'-trime--thyl-spiro-naphthopyran- 2,2'-indoline

SOURCE: AN GruzSSR. Soobshcheniya, v. 40, no. 3, 1965, 607-612

TOPIC TAGS: photoeffect, spiropyran compound, UV irradiation, spectrophotometry, cryogenic effect / 7-nitro-1', 3', 3'-trimethyl-spiro-naphthopyran- 2,2'-indoline

ABSTRACT: On the assumption that the change in color on heating of 1', 2', 3'-trimethyl-indoline-β-naphthopyrilo-spiran, a substance synthesized by Wizinger and Wenning in 1940 (Helv. Chem. Acta, v. 23, 1940, 247) is associated with the splitting of the pyran cycle and hence also with a change in internal configuration and redistribution of bonds in the molecule, and in view of the importance of this problem, the authors synthesized yet another representative of nonsymmetric spiropyrans, namely, 7-nitro-1', 3', 3'-trimethyl-spiro-naphthopyran- 2,2'-indoline (yellowish acicular crystals) through condensation of 8 g of Fisher's base with 8 g of 6-nitro-2-oxy-β-naphthaldehyde (Fig. 1) by heating to 60°C for 1 hr, thus obtaining a thermo-

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ACC NR: AP6005090

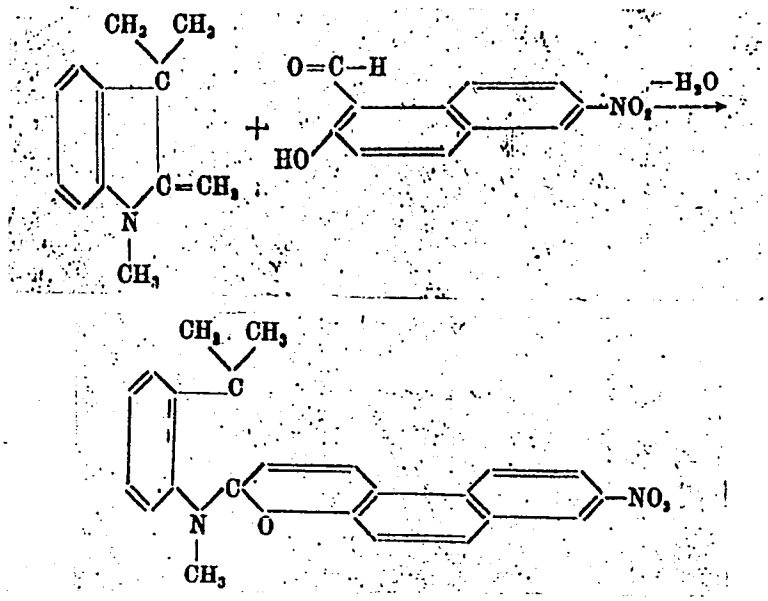

Fig. 1.

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L 18726-66
ACC NR: AP6005090

chromic compound which, in a ligroin solution, is colorless at room temperature but acquires a purple color when heated to 100-150°C. The photochromic properties of this new spironpyran were investigated in a specially designed cryostat (attachment to an SF-10 spectrophotometer). The investigation was performed in liquid (paraffin oil and a mixture of ethanol and methanol in the mutual ratio of 4:1) and solid (polystyrene-ethyl cellulose) solutions. Findings: ultraviolet irradiation at room temperature does not change the color of solution. A reduction in temperature to -10°C in the liquid solution, however, along with a subsequent brief irradiation with λ = 366 mμ causes the solution to acquire a purple color. A peak in the 580 mμ region appears in the absorption spectrum. The process is reversible with time. At still lower temperatures (-90 to -100°C), on the other hand, the process becomes irreversible so long as these temperatures apply. Increasing the temperature instantaneously restores the original pale-yellow color. Orig. art. has: 5 figures, 2 formulas.

SUB CODE: 03, 07, 20/ SUBM DATE: 06Jul65/ ORIG REF: 000/ OTH REF: 007

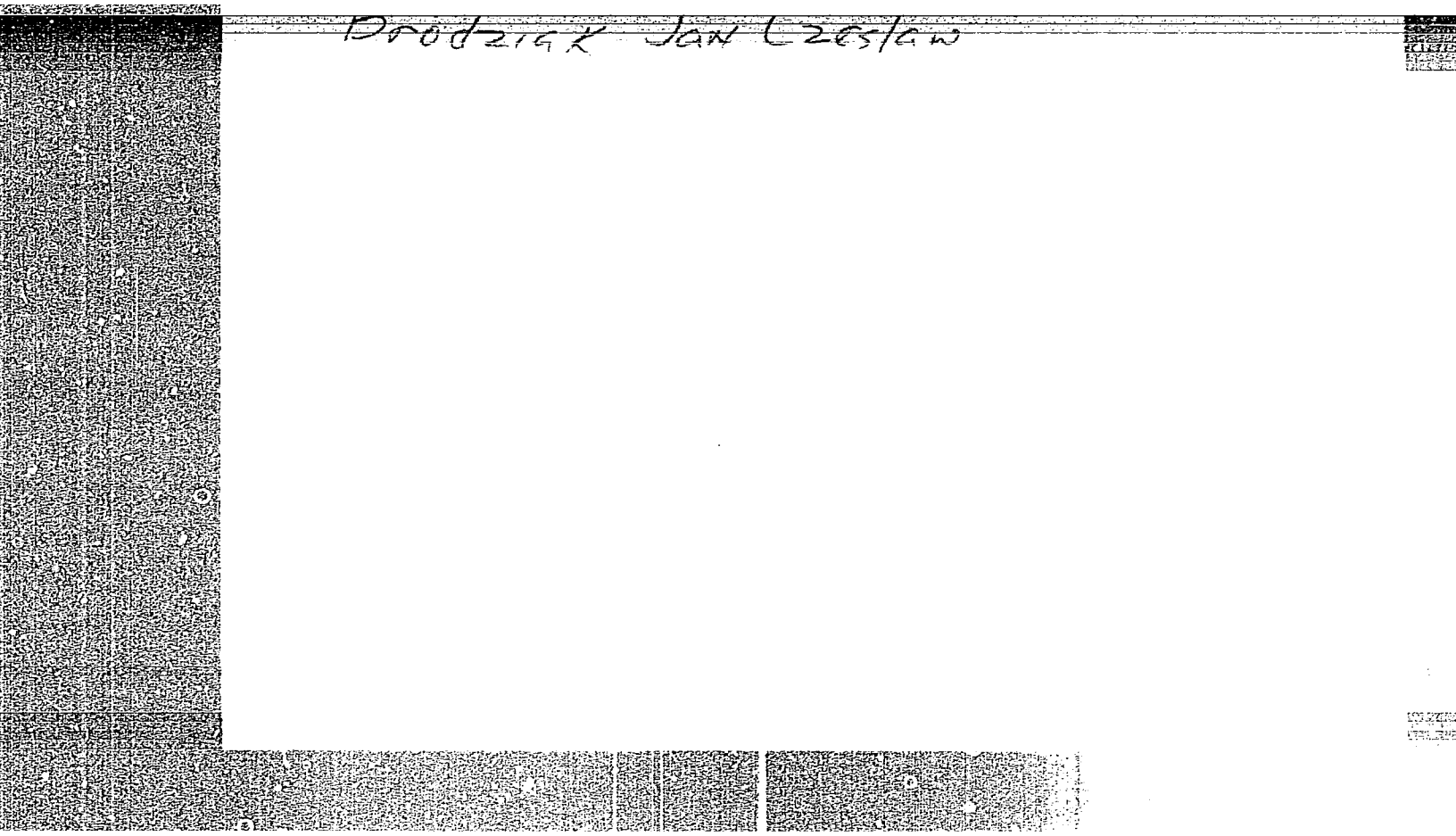
Card 3/3

BRODZIAK, J.

BROWKIN, J.; BRODZIAK, J.

"Electric machines and drives used in the sugar industry." p. 88. (Przeglad Elektrotechniczny, Vol. 30, no. 2, Feb 54, Warszawa)

SO: Monthly List of East Earuopean Accessions, Vol 3 No 6 Library of Congress Jun 54 Uncl



POLAND/Chemical Technology - Chemical Products and Their Application. Control and Measuring Devices. Automatic Regulation. H-3

Abs Jour : Ref Zhur - Khimiya, No 8, 1958, 25439

Author : Brodziak J, Ok.

Inst : Institute of the Fermentation Industry.

Title : Device for Measuring Temperature in Closed Cans and Autoclaves.

Orig Pub : Przem. spozywczy, 1957, 11, No 6, 276.

Abstract : The Institute of Fermentation Industry has developed a measuring unit for determination of the temperature inside of tin cans during their sterilization in an autoclave. Accuracy of determination about 1.5%; temperature about 120°.

Card 1/1

BRODZIAK, [illegible]

Influence of chymotrypsin on adhesion of the fron part of the choroid. Klin. oczna 32 no.3:215-219 '62.

1. Z Kliniki Chorob Oczu AM we Wroclawiu Kierownik: prof. dr med. W. Kapuscinski.
(CHYMOTRYPSIN) (CHOROID) (SCLERA)

DROZDOWSKA, Stanislawa; BRODZIAK, Kazimiera

Methods of treatment and statistical analysis of eye injuries according to data of the Ophthalmological Clinic in Wroclaw (1946-1959). Klin. oczna 33 no.2:215-223 '63.

1. Z Kliniki Chorob Oczu AM we Wroclawiu Kierownik: prof. dr med. W.J. Kapuscinski.
(EYE INJURIES) (STATISTICS)

BRODZIAK, T.

BRODZIAK, T. Graphic method of selecting the wattage of electric bulbs for lighting a room. p. 269.

Vol. 16, No. 11, Nov. 1956.
WIADOMOSCI ELEKTROTECHNICZNE
TECHNOLOGY
Warszawa, Poland

So: East European Accession, Vol. 6, No. 2, Feb. 1957

BRODZIAK, T.

Simplified method of defining voltage drop in electric lines n. n.

p. 198 (Wiadomosci Elektrotechniczne) Vol. 17, no. 8, Aug. 1957, Warszawa, Poland

SC: MONTHLY INDEX OF EAST EUROPEAN ACCESSIONS (EEAI) LC, VOL. 7, NO. 1, JAN. 1958

KAPUSCINSKI, Witold J.; ANDRZEJEWSKI, Feliks; BRODZIAK-KRZESIEKOWA, Kazimiera; oraz wspolpr.: DROZDOWSKA, S.; HANCZYC, P.; HUSZCZA, A.; ILCZYSZYNSKA, H.; CZEREK-JAGUCZANSKA, H.; KRUDYSZ, J.; PACYNSKA, J.; WOZNIAKOWA, I.

Problem of the evolution of some eye diseases in Poland according to material of the Wroclaw clinic. Klin.oczna 31 no.4:411-422 '61.

1. Z Kliniki Ocznej AM we Wroclawiu Kierownik: prof. dr med. W. J. Kapuscinski Z Katedry Maszyn Elektrycznych Politechniki Wroclawskiej Kierownik: prof. dr inz. F. Andrzejewski.

(OPHTHALMOLOGY)

BRODZIAK-KRZESIEKOWA, Kazimiera

An attempt to treat abnormal fixation by means of the R.G.1 color filter. Klin. oczna 35 no.2:289-291 '65.

1. Z Kliniki Okulistycznej Akademii Medycznej we Wroclawiu (Kierownik: prof. dr. med. W.J. Kapuscinski).

ACC NR: AP6026293 (A) SOURCE CODE: PO/0014/66/045/004/0190/0192

AUTHOR: Chromy, L.; Brodziak, R.; Kupiec, Z.

ORG: Institute for Paints and Lacquers, Department of General and Inorganic Chemistry, WSP, Katowice (Instytut Farb i Lakierow i Katedra Chemii Ogolnej i Nieorganicznej)

TITLE: Influence of pH values on inhibition efficiency of substances present in paint coatings against steel corrosion

SOURCE: Przemysl chemiczny, v. 45, no. 4, 1966, 190-192

TOPIC TAGS: corrosion protection, corrosion inhibitor, steel corrosion, pH value

ABSTRACT: The efficiency of inhibition of steel corrosion by diethylphosphoric, di-n-butylphosphoric, di-(2-ethylhexyl)phosphoric, and di-n-dodecylphosphoric acids at various pH values was examined. A steel plate was coated with a resin containing the acids, and immersed in corroding media of 0.2, 5.2, 8.0, and 10.0 pH. It was found that among the substances examined, di-n-dodecylphosphoric

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BRODZICKI, S.

The innervation of the regenerating tail and extremities in tadpoles Xenopus laevis during the first period of regeneration. p. 59.
(FOLIA BIOLOGICA. Vol. 4, no. 1, 1956, Warszawa, Poland)

SO: Monthly List of East European Accessions (EEAL) LC. Vol. 6, no. 12, Dec. 1957. Uncl.

BRODZICKI, Stanislaw

"Estradiol-17β in the eggs of the American lobster Homarus americanus" by R.D.Lisk. Reviewed by Stanislaw Brodzicki. Kosmos biol 12 no.2:182 '63.

BRODZICKI, Stanislaw; JAKUTOWICZ, Konstancja

Review of recent scientific publications. Kosmos biol 13 no.2: 167-169 '64.

BRODZICKI, Stanislaw

Carotenoid pigments of crustaceans. Kosmos biol 11 no.5:521-525 '62.

BRODZICKI, Stanislaw

"A contribution to the biochemical studies on the internal milieu of Carcinus maenas L." by Rene Frentz. Reviewed by Stanislaw Brodzicki. Kosmos biol 11 no.5:548-550 '62.

BRODZICKI, Stanislaw

Occuring of sterols and sterides in Crustacea. Kosmos biol 13 no.1:32-37 '64

"Lipid metabolism in Astacus astacus L." by D.J.Zandee. Reviewed by Stanislaw Brodzicki. Ibid.:81-82

BRODZIKOWSKI, W.

Effect of injuring germinating acorns upon their growth and the quality of seedlings. p. 46

SYLWAN. (Wydzial Nauk Rolniczych i Lesnych Polskiej Akademii Nauk i Polskie Towarzystwo Lesne) Warszawa, Poland (Journal on forestry issued by the Section of Agricultural and Forestry Sciences, Polish Academy of Sciences; and the Polish Society of Forestry; with English and Russian summaries. Includes supplements; Biuletyn Instytutu Badawczego Lesnictwa, bulletin of the Forest Research Institute; Biuletyn Instytutu Technologii Drewna, bulletin of the Institute of Wood Technology; Przeglad Dokumentacyjny Drzewnictwa, documentation of the Institute of Wood Technology; and Prezeglad Dokumentacyjny Lesnictwa, documentation of the Forest Research Institute. Monthly)
Vol. 101, no. 4, Apr. 1957

Monthly List of East European Accessions Index (EEAI), LC, Vol. 8, no. 6, June 1959
Uncl.

BOWBELSKA, Irena; BRODZINSKA, Kazimiera

Auto-agglutination in Raynaud's disease. Polski tygod. lek. 12 no.41: 1561-1564 14 Oct 57.

1. Z I Kliniki Chirurgicznej A. M. w Poznaniu; kierownik prof. dr St. Nowicki. Adres: Poznan, Dluga 1/2.

(RAYNAUD'S DISEASE; blood in, auto-hemagglut. (Pol))
(HEMAGGLUTINATION, in var. dis. auto-hemagglut. in Raynaud's dis. (Pol))

TWARDOSZ, Wladyslaw; BRODZINSKA, Kazimiera

Foot injuries in industrial accidents. Chir. narz. ruchu 24 no.1: 25-30 1959.

1. Z I Kliniki Chirurgicznej A.M. w Poznaniu Kierownik: prof. dr St. Nowicki. Poznan, ul. Dluga 1/2. I. Klinika Chir. A.M.

(ACCIDENTS, INDUSTRIAL,
causing foot inj. (Pol))
(FOOT, wds. & inj.
indust. accid., (Pol))

BRODZINSKA, Kazimiera

Experimental studies on the blood and peripheral circulation in deep hypothermia. Pol. przegl. chir. 36 no.4:453-462 Ap '64.

1. Z I Kliniki Chirurgicznej Akademii Medycznej w Poznaniu Kierownik: prof. dr St. Nowicki.

POLAND

[illegible]-ZACHWIEJA, [illegible], [illegible] and [illegible]; Department of Organic Chemistry (Zaklad Chemii Organicznej), AM /Akademia Medyczna -- Medical School/, Krakow.

"Research [illegible] the Action of Chicory (Cichorium intybus L.)"

Warsaw, Bulletin de l'Academie Polonaise des Sciences, Serie des Sciences Biologiques, Vol [illegible], No [illegible], 19[illegible], pp [illegible].

Abstract: /English article/ Report on an attempt to extract the biologically active substance from the chicory root using various solvents and chromatography. 2 tables, [illegible] diagram, [illegible] illustrations; 10 references, mainly Eastern.

1/1

KOLODZIEJ, Jozef; BRODZINSKA, Kazimiera

Surgical treatment of jaundice and biliary lithiasis. Pol. przegl. chir. 35 no.7/8:849-850 '63.

1. Z I Kliniki Chirurgicznej AM w Poznaniu Kierownik: prof. dr S. Nowicki.

(CHOLELITHIASIS) (SURGERY, OPERATIVE)
(JAUNDICE, OBSTRUCTIVE)

BRODZKI. STANISLAW

Geography & Geology

Pagody, smoki i ludzie; reflektorem po Azji. Ksiazka i Wiedza, 1958. 503 p.
DS Not in DLC

Monthly List of East European Accessions (EEAI) LC, Vol. 8, No. 2, February 1959, Unclass.

BRODZKI, Z.

Ventillation during metal spraying. p.1
(OCHRONA PRACY; BEZPIECZENSTWO I HIGIENA PRACY, Vol. 12, No. 6, June 1957, Warsaw, Poland)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, No. 9, Sept. 1957, Uncl.

BRODZKI, Zdzislaw, mgr inz.

Redevous in the cosmos. Horyz techn 17 no. 9:28-31 S '64.

BRODZKI, Z.

Flight of a cosmic ship in the atmosphere. p. 35.

TECHNIKA LOTNICZA. (Zwiazek Polskich Inzynierow i Techników Lotniczych) Warszawa, Poland. Vol. 14, No. 2, Mar./Apr. 1959.

Monthly List of East European accession (EEAI), LC. Vol. 8, No. 9 September, 1959. Uncl.

P/008/60/000/002/001/003
A107/A126

AUTHOR: Brodzki, Zdzisław, Engineer

TITLE: Propulsion of space ships by ions, plasmas and photons

PERIODICAL: Technika Lotnicza, no. 2, 1960, 34 - 39

TEXT: The article is an abridged review of a paper read on November 23, 1959 on the Scientific Conference of the Katedra Osprzętu Lotniczego Wydzialu Lotniczego Politechniki Warszawkiej (Department of Aircraft Equipment of the Aviation Section of the Polytechnic in Warsaw). The main problem is the flight through the Earth atmosphere and the power resources of rockets. The author reviews known problems of chemical, atomic and solar propulsion systems of space ships, quoting W. E. Maekel [Ref. 8: Propulsion Methods in Astronautics, Pergamon Press 1958] and Enricke [Ref. 7: E. Stuhlinger, Propulsion Systems for Space Ships, Vistas in Aeronautics, p. 191]. He also reviews the ionic propulsion system based on the contact method of Stuhlinger [Ref. 9: Some Problems in Ionic Propulsion Systems, I.R.E. Trans., April 1959] and quotes known propelling systems based on Carnot, Brayton and Rankin cycles. Special attention is paid to a space vehicle of a total weight of 1,500 kg according to Snooper [Ref. 4: Program for Unmanned Reconnaisance M. J.

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Propulsion of space ships by ions, plasmas and photons

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A107/A126

Willinsky, Jet Prop. Nov. 1958, 723] and to methods of solar sailing, based on use of reflected solar light for propulsion of space ships according to Sloop and R. L. Garwin [Ref. 5: Solar sailing, Jet Propulsion, no. 3, 1958, 188]. Based on Soviet theoretical investigations a photon rocket was designed, in which by collision of particles and anti-particles photons are formed. Plasma or photon propelling systems can be used only in the outer space because of their enormous power, whereas for launching through the atmosphere chemical propulsion methods are used. There are 9 figures, 1 table and 10 references: 1 Soviet-bloc and 9 non-Soviet-bloc.

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P/008/61/000/001-2/003/006
A107/A126

AUTHOR: Brodzki, Zdzisław, Master of Engineering

TITLE: Flow control in low-speed wind tunnels. Part 1

PERIODICAL: Technika lotnicza, no. 1-2, 1961, 12 - 15

TEXT: The author deals with the difficulties at obtaining precise measurements in a new-type wind tunnel developed at the Instytut Lotnictwa (Aviation Institute). The main difficulties are the flow control and a multipart weight control. Problems in the development of new wind tunnels are the following: danger for the tunnel, ventilator or the related building construction failures, and fluctuations of pressure making the measuring impossible. It was possible to remove all mentioned difficulties in the new type tunnel except the pressure fluctuations which were controlled with some difficulties. New tunnels have to be controlled for equal speed distribution in cross sections and for lack of "pockets" in the tunnel curves. The tests proved that in a 5 m diameter tunnel high fluctuations occurred and it was necessary to determine their nature and cause. Jakobs and Schrenk, dealing with these problems, state that the frequency of the fluctuations is not equal to the frequency of the ventilator. So-called open tun-

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nels do not show fluctuations. Researches performed in the CAGI make it possible to determine this phenomenon. The frequency of fluctuations depends on the size of the tunnel, i.e., they increase in smaller tunnels. In all tunnels of the CAGI the periodic amplitude of fluctuations did not overpass 40% of the dynamic pressure. Investigations of fluctuations showed that they are self-created causing chokes, probably as a consequence of presence of air in the closed part of the tunnel. Based on the quoted phenomena and on the hypothesis of S.P. Strelkov this is confirmed mathematically. Tests in the 5 m diameter tunnel of the Aviation Institute in Poland showed centers of dissolution and an increase of fluctuation amplitudes. The fluctuations can be presented by use of a cylindric tube open on both ends, in which the periodical acoustic jerk of the air frequency (ω) and the time of the impulse conveyance (τ) to the other end of the tube is determined. The periodical fluctuations disappearing in the tunnel are sinusoidal. If y is the replacement of particles in the initial stage of the tube section then

$$\frac{\partial^2 y}{\partial t^2} = a \frac{\partial^2 y}{\partial x^2} - \mu\delta \frac{\partial y}{\partial t} \qquad (1)$$

where t = time; a = velocity of the sound; and $\mu\delta\frac{\partial y}{\partial t}$ - expression depending on the friction and adhesion. Limit conditions $\frac{\partial y}{\partial x(o,t)} = 0$ are expressed by

Flow control in low-speed wind tunnels. Part I

$$\frac{\partial y}{\partial x(l,t)} = - \mu B \, ie^{i\omega (t-\tau)}. \qquad (2)$$

If $\mu = 0$ harmonic particles can be found by $y_o = D \cdot \cos \frac{\pi n}{l} x \cos (\frac{\pi na}{l} \cdot t + \psi)$, (3), where n = free chosen value and ψ = constant. This equation shows a wave with "n" knots. The approximate periodical solution of Equation (1) can be expressed by:

$$y_o = \frac{1}{2} D \left[\cos \omega (t - \frac{x}{a}) \, e^{\frac{-\mu\delta}{2\alpha} x} + \cos \omega (t + \frac{x}{a}) \, e^{\frac{+\mu\delta}{2\alpha} x} \right], \qquad (4)$$

where $\omega = \frac{\pi \cdot na}{l} + \mu\alpha + \ldots$. + expression on higher series. The dependency on the speed of the main flow is introduced by the time of the phase transfer and expressed by: $\tau = \frac{\lambda}{0.6v} + \beta T$, (5) where $\beta \leqslant 1$ = constant value and T = time of the initial fluctuation. The delay and frequency is expressed by $\tau - \frac{2\pi\beta}{\omega} \approx \frac{4\pi}{\omega}$ (6). Using only particular sounds, τ is consequently a function of the flow speed, expressed by $\tau \sim \frac{4l}{n \cdot a}$, whereas the frequencies are: $\frac{a}{2l}$, $\frac{3a}{2l}$, $\frac{5a}{2l}$. If, according to the basic equation, $\mu = kv^2$, the dependency of the fluctuation amplitude on the frequency and the flow speed is: amplitude $D = \frac{k}{\mu} v^2 \frac{2a}{\pi\delta n} \cos \cdot \frac{\pi \, na \, \lambda}{0.6 \cdot l \cdot v}$; frequency $\omega = \frac{\pi \, na}{l} - \frac{\mu\delta}{2} \operatorname{tg} \frac{\pi \, na \, \gamma}{0.6l \cdot v}$; where D - amplitude; n-

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P/008/61/000/001-2/003/006
A107/A126

Flow control in low-speed wind tunnels. Part I

subsequent value; l - length of the tunnel; $v = \frac{a \cdot \lambda}{2A \cdot l}$ - unit speed; a - speed of sound; l - length of free flow; ω - flow speed; and ω - frequency. The following characteristics of the amplitude, conveyance and the fluctuation frequency in relation to the speed can be determined: 1) jumping relationship of initial fluctuations; 2) nonproportionality to the speed; 3) broadening of areas by higher flow speed; 4) nonfluid increase of the fluctuation amplitude by speed and presence of resonance zeniths in the middle sector, and 5) initiating of periodical fluctuations by equal speed in two similar tunnels. There are 5 figures.

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P/008/61/000/003-4/001/002
A058/A126

AUTHOR: Brodzki, Zdzisław, Master of Engineering

TITLE: Air-flow control for low-speed range in wind tunnels, Part II

PERIODICAL: Technika Lotnicza, no. 3-4, 1961, 44-47

TEXT: In the first part of this article published in issue no. 1, 1961, of this periodical, reasons for application of control were discussed to attain a proper air flow in wind tunnels. Special attention was paid to the influence of pulsation. In this part the distribution of static tension and velocity will be discussed and devices to dampen the pulsation in wind tunnels. The author refers to some English works published by F. B. Bradfield (Ref. 2: F. B. Bradfield; G. F. Midwood - Effect of Static Pressure along the Axis of an Open Jet Tunnel of a) Nozzle Flare and b) a Ring in the Collector. R. M. no. 1695) and Falkner (Ref. 3: V. M. Falkner, A. M. I. Mech; H. L. Nixon - Experiments on Air Flow in the 7-Foot Open-Jet no. 1 Wind Tunnel and Application to Wind-Tunnel Design) dealing with the distribution of static tension along the axis of the measuring range and the problem of irregular work of the wind tunnels. Research conducted by the Italian Politechnic in Turin recommends the application of a

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ring annex in connection with a slot. CAGI, however, use a longitudinal, divided ring. The author gives a description of the Italian findings. There are 10 figures and 4 references: 1 Soviet-bloc and 3 non-Soviet-bloc.

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25130
P/008/61/000/007/001/003
D235/D303

26.1110

AUTHOR: Brodzki, Zdzisław, Master of Engineering

TITLE: Ducted propeller as a means of obtaining greater lift

PERIODICAL: Technika lotnicza, no. 7, 1961, 130-136

TEXT: The author gives in the article a brief review of the theory and experimental results of ducted fans and propellers. After a short discussion and classification of propellers and fans, regarding their functions, media in which they perform, their pressure and thrust, the author derives expressions for the thrust of a propeller encased in a segment of a cylinder, as a product of the pressure rise across the propeller and the cross sectional area of the cylinder, and of an unducted fan, as a change of momentum of the air flow through affected areas in front and behind the propeller. Using Bernoulli's law, he derives expressions for the thrust coefficients for an unducted and then a ducted propeller, introducing into the expression of the latter a coefficient of the increase of velocity of air caused by the presence of the duct.

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25130
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Ducted propeller...

From energy considerations, he obtains the efficiency of the propeller and shows on a graph the dependence of the propeller efficiency on the increase of speed coefficient due to the duct. Another graph shows the influence of the duct drag coefficient on the total propeller efficiency. Referring to D. Kukhemann and Y. Veber (Ref. 1: Aerodinamika aviatsionnykh dvigateley) he points out that the development of ducted propellers should follow along two lines: 1) For slow speeds - ducts giving increase in speed coefficient, hence increase in thrust; 2) Ducts giving a decrease in speed coefficient, thus reducing the Mach. No. for large speeds. Considering the pitch of the propeller, he points out the possibility of making a constant pitch ducted propeller by choice of a suitable duct. Then the author discusses and illustrates on graphs: The dependence of air speed on the blades on the relative position of the propeller in the duct, influence of the duct on power and thrust, in comparison with an unducted propeller, and the case of an oblique air flow on both ducted and unducted propellers and how the flow and thrust distribution on the blades vary. Referring to investigations made in the university of Wichita (USA) he comes to the following conclusions: For large thrusts,

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Ducted propeller...

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P/008/61/000/007/001/003
D235/D303

at low air speeds, the duct should be such, as to produce a contraction of the flow behind the blades, the thrust could be increased by increasing local air speed and, preventing separation at the inlet of the duct, and from graphs of blade incidence - thrust and blade incidence power coefficient for unducted and ducted propellers at low air speeds, it is possible to obtain almost double the thrust by introducing a duct at the expense of a small power input. Then, he discusses briefly, practical applications of ducted propellers for S.T.O.L., V.T.O.L. and towing airplanes by increasing safety of the propeller by coupling it to a turbo jet engine, thus improving thrust at starting conditions and for air cushion vehicles. For the latter he discusses ground effect and illustrates it on graphs: 1) Input power ratio (near ground/infinity) - h/d, for the same thrust (where h - distance from ground to propeller disc, d = diameter of propeller disc); 2) Ratio of thrusts (near ground/∞) - h/d; 3) Velocity field of the flow at different positions near the ground; 4) (NASA-graph) streamlines and velocities near the ground and away from it, for cylindrical and annular outlets and 5) (NASA-graph) thrust coefficient - h/d for cylindrical, annular and annular-broken outlets. The theoretical investigations

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Ducted propeller...

for the thrust ratio (ground/∞), according to the author, may be done following Betz's simplifications by considering a thin annulus of the flow between the propeller and the ground. Using this, he obtains thrust ratio for a straight outlet and one inclined inwards. The latter deduces the optimum angle as a function of h/d (does not hold very near the ground) and then quotes similar formula which also include the thickness parameter of the duct. There are 18 figures and 5 references: 3 Soviet-bloc and 2 non-Soviet-bloc. The references to English-language publications read as follows: Wattson R.K., Hoene V.D. - Ducted fans. Aero/Space. no. 6, 1959; Quinn N. - Ducted fans for Vtol and Stol Aircraft, aeroplane 12, 2, 1960, p. 194.

Card 4/4

BRODZKI, Zdzislaw, mgr inz.

Guiding and steering of space veh cles. Techn lotn 19 no.4: 99-106 Ap '65.

ACC NR: AP6030292 SOURCE CODE: PO/0102/66/000/007/0001/0007

AUTHOR: Brodzki, Zdzislaw (Master engineer)

ORG: none

TITLE: Some problems of spacecraft aerodynamics

SOURCE: Technika lotnicza i astronautyczna, no. 7, 1966, 1-7

TOPIC TAGS: reentry aerodynamics, spacecraft entry, magnetogasdynamics

ABSTRACT: The paper discusses the most essential laws and phenomena governing the aerothermochemistry, magnetogasdynamics and aerodynamics of rarefied gases and permitting the elucidation of problems involved in the limitation of the flight of a spacecraft through the atmosphere and in the protection of its surface against heat. In the discussion of aerothermochemistry, the phenomena occurring in the vicinity of the ship are analyzed by considering the chemical reactions which take place and the temperature distribution behind a strong shock wave and on the surface of an Apollo capsule during reentry. The "fireball" phenomenon behind the spacecraft is also considered. The discussion of magnetogasdynamics includes the propagation of magnetogasdynamic interference waves. Orig. art. has: 18 figures.

SUB CODE: 20,22/ SUBM DATE: none/ ORIG REF: 002/ OTH REF: 005

Card 1/1 UDC: 533.665:629.19

BROEN, Andrzej, mgr inz.; GEBICKI, Zbigniew, mgr inz.

The universal sprag as a new element of small mechanization.
Wiadom gorn 14 no.5:143-145 My '63.

BROER, B.A.

Micromethod for the determination of Lupus erythematosus cells. Zdrav. Kazakh. 23 no. 4:77-78 '63. (MIRA 17:5)

1. Iz Kazakhskogo nauchno-issledovatel'skogo kozhno-venerologicheskogo instituta (direktor - kand. med. nauk M.O. Omarov).

BROER, B.A.

Determination of the antitoxic function of the liver using calculation charts. Zdrav. Kazakh. 22 no.8:51-55 '62
(MIRA 17:4)

1. Iz Kazakhskogo kozhno-venerologicheskogo instituta (dir. - kand. med. nauk M.O.Omarov).

BROER, B.A.

Some hematologic indices in lupus erythematosus. Vest. derm. i ven. no.3:35-37 '65. (MIRA 18:11)

1. Kazakhskiy nauchno-issledovatel'skiy kozhno-venerologicheskiy institut (direktor - kand. med. nauk M.O. Omarov) Alma-Ata. Rukovoditeli raboty - dotsent Ye.M. Rakhmalevich i kand. med. nauk Z.P. P'yankova; konsul'tant - chlen-korrespondent AMN SSSR prof. P.V. Kozhevnikov.

BROFCSIK, E.

Ceramic condensers. p. 459.
Vol 7, no. 12, Dec. 1955. EPITOANYAG. Budapest, Hungary.

So: Eastern European Accession. Vol 5, no. 4, April 1956

BROFMAN, A. V.

42693. BROFMAN, A. V. Inorodnoye Telo Bronkha. Zdravookhraneniye Razakhstana, 1948, No 7, s. 42-44

SO: Letopis' Zhurnal'nykh Statey, Vol. 7, 1949

BROFMAN, A.V.

Pathohistological modifications of the tonsils in brucellosis. Izv. AN Kazakh. SSR Ser.kraev.pat. no.7:43-50 '51 (MLRA 9:8)
(BRUCELLOSIS) (TONSILS--DISEASES)

ELANTSEV, B. V., BROFMAN, A. V.

Mucous Membrane

Histopathology of the mucous membrane of the upper respiratory tract in experimental brucellosis. Vest. oto-rin., 14, No. 2, 1952;

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

BROFMAN, A.V.

Nose bleeding in brucellosis. Izv. AN Kazakh. SSR. Ser. kraev. pat. no.5:82-87 '51. (MLRA 10:2)

(BRUCELLOSIS) (HEMORRHAGE)

BROFMAN, A.V.

Condition of the upper respiratory tract, the ear, and the vestibular apparatus in brucellosis. Trudy Inst.kraev.pat. AN Kazakh.SSR 6:70-86 '58. (MIRA 12:6)
(RESPIRATORY ORGANS) (BRUCELLOSIS) (VESTIBULAR APPARATUS)

BROFMAN, A.V., kand. med. nauk.

Case of foreign bodies of the paranasal sinuses. Vest. otorin. 21 no.2: 94-95 Mr-Ap '59. (MIRA 12:4)

1. Iz kafedry bolezney ukha, gorla i nosa (zav. - prof. O.M. Mukoseyeva) Karagandinskogo meditsinskogo instituta.
(PARANASAL SINUSES, for. bodies, case report (Rus))

BROFMAN, A. V., dotsent

Case of angiosarcoma of the trachea. Vest. otorin. no.5:85-86 '61. (MIRA 14:12)

1. Iz kafedry bolezney ukha, gorla i nosa (zav. - prof. O. M. Mukoseyeva) Karagandinskogo meditsinskogo instituta.

(TRACHEA—CANCER)

BROFMAN, A.V., dotsent; MAMETOV, N.D.

Hemorrhage from the aorta following poisoning with caustic soda. Zhur. ush., nos. i gorl. bol. 21 no.5:79-81 S-O '61. (MIRA 15:1)

1. Iz kliniki bolezney ukha, gorla i nosa (zav. - prof. O.M.Mukoseyeva) Karagandinskogo meditsinskogo instituta.
(HEMORRHAGE) (SODIUM HYDROXIDE--TOXICOLOGY)

BROFMAN, A.V., dotsent

Case history of osteomas of the mastoid process. Zhur.ush., nos.i gorl.bol. 22 no.2:72-73 Mr-Ap '62. (MIRA 15:11)

1. Iz kliniki bolezney ukha, gorla i nosa Karagandinskogo instituta.

(MASTOID PROCESS--TUMORS)

BROFMaN, A.V.

Some problems of otogenic intracranial complications. Zdrav. Kazakh. 23 no.4:23-24 '63. (MIRA 17:5)

1. Iz kafedry bolezney ukha, gorla i nosa Karagandinskogo meditsinskogo instituta.

BROKHAM, A.V., dotsent; NUGMANOVA, Kh.S., dotsent

Pathomorphology of the mucous membrane of the upper respiratory tracts in miners. Bor'ba s sil. 6:215-224 '64 (MIRA 18:2)

1. Karagandinskiy meditsinskiy institut.

BROFMAN, G.

Organizing the repair of marine refrigerating equipment.
Mor. flot 25 no.8:31 Ag '65. (MIRA 18:8:)

1. Starshiy inzh. Chernomorniiproyekta.

MEDVEDEV, M.Ye.; BROFMAN, M.V.

Use of hot compressed air in the Kiruna Mine. Izv. AN Kazakh. SSR. Ser. gor. dela no.1:109-110 '58. (MIRA 16:5)

(Kiruna Region, Sweden—Boring—Cold weather operations)

BROGA, L.; DANILYAVICHYUS, E.[Danilevicius, E.]; GLIBAUSKAYTE, M., [Glibauskaite, M.], red.; MEDONIS, A., red.; CHECHITE, V. [Cecite, V.], tekhn. red.

[Tourist map of the Lithuanian S.S.R.] Turistskaia karta Litovskoi SSR. Vil'nos, Gos.izd-vo polit. i nauchn. lit-ry Litovskoi SSR, 1963. 72 p. (MIRA 17:4)

MUSEROVICH, A.; BROGOVSKI, S.; SKORUPSKA, T.

Study of organic matter in bound Podzolic sandy soils.
Pochvovedenie no.2:89 F '60. (MIRA 15:7)
(Humus) (Podzol)

MUSIEROWICZ, A.; OLSZEWSKI, Z.; BROGOWSKI, Z.; KEPKA, M.

The black earths of the Blonie, Sochaczew and Lowica regions. Rocz nauk roln rosl 82 no.3:503-562 '61.

1. Zaklady Gleboznawstwa Szkoly Glownej Gospodarstwa Wiejskiego w Warszawie i Politechniki Warszawskiej.

BRohich, B.

YUGOSLAVIA/Chemical Technology. Chemical Products and Their Applica-H-12
tion. Electrochemical Industries. Electroplating Galvanic Cells

Abs Jour : Ref Zhur - Khimiya, 1958, No 22, 74616

Author : Brohich B., Meyech B., Trpevska B.
Inst : Not Given
Title : Anodic Oxidation of Ferrochrome

Orig Pub : Glasnic Khem. drushtva, 1957, 22, No 4, 233-243

Abstract : Anodic oxidation of ferrochrome was investigated employing solutions of NaCl, Na_2CrO_4, and H_2CrO_4 of varying concentrations. An increase in BT_c was observed when concentration of the electrolyte (NaCl) and D_a were reduced. The optimum conditions of oxidation ($BT_a \sim 73\%$) were as follows: NaCl concentration of 0.05n, $D_a = 0.5$ a/ m^2, mixing with air. At these conditions the Cr^{3+} content was reduced to 8%. The Fe:Cr ratio in the electrolyte differs from that on the anode. With the decreased concentration of the electrilyte, the Fe concentration in the solution decreases also. At D_a 1a/ m^2 and while mixing with air the Fe:Cr ratio in the

Card : 1/3

YUGOSLAVIA/Chemical Technology. Chemical Products and Their Appli- H-12
cation. Electrochemical Industries. Electroplating Galvanic Cells

Abs Jour : Ref Zhur - Khimiya, 1958, No 22, 74616

0.05 n NaCl solution and on the anode are equal. At lower values of D_c (0.5 a/dm^2) the electrolyte contains less Fe. At the other D_a values and at the same NaCl concentration; as well as at all the values of D_a and in the 2.7 n NaCl solution, the electrolyte contains more Fe than it is present on the anode. Similar behavior was observed with the 0.025 n H_2CrO_4 solutions in which the Cr^{3+} content was equal to 16.4%. pH of the electrilytes falls rapidly during the first 10-15 amp. hrs. from 7 to 1.5-2.0. In experimenting with the 0.1 n H_2CrO_4 solution it was observed that under certain conditions, value of the electrolyte pH increases and at a pH of approx. 2.0, Fe $(OH)_3$ precipitates. In the presence of $Cr_2O_7^{2-}$ ions electrical charge of the above precipitate changes and Fe is deposited on the anode. Thickness of the formed layer depends on the dispersion of Fe $(OH)_3$ and determines the degree of resistance thus produced. Such a

Card : 2/3

Abs Jour : Ref Zhur - Khimiya, 1958 , No 22, 74616

phenomenon may be avoided by increasing concentration of H_2CrO_4 up to 1 n. Under these conditions pH of the solution remains below 2 for a prolonged time. The described phenomenon was not observed in neutral solutions. In the latter case $Fe(OH)_3$ was found to have high dispersivity and the Cr^{3+} content in such solutions was approx. 15%. At elevated temperatures resistance of the electrilytes decreases, which is particularly advantageous in the initial stages of the process. Consumption of the electric energy in all the cases was found almost identical and comprised 4.7 KW Hrs for 1 kg CrO_3 or 2.4 KW Hrs for 1 kg K_2CrO_4.

BROHL, Wlodzimierz; CZECH, Wlodizimierz; LUSTIG, Stefania

Effect of lard and olive oil load on serum lipids. Polski tygod. lek. 14 no.45:1977-1978 9 Nov 59.

1. (Z Oddzialu Chorob Wewnetrznych Instytutu Gruzlicy i I. Zakladu Chorob Wewnetrznych Studium Doskonalenia Lekarzy; kierownik: prof. dr med. Walenty Hartwig).
(LIPIDS, blood) (FATS)

BROHM, Frant., MUDr

Stuttering and Pavlovian reflexology. Cas.lek.cesk. 91 no.7:202-206 15 Feb 52.

1. Z kliniky pro choroby usni, nosi a krcni lek. fak. M.U. v Brne. Prednosta: Prof. MUDr Frantisek Ninger.
(SPEECH DISORDERS,
stuttering, Pavlovian reflexology in etiol.)

BROHM, Frantisek, MUDr

Speech perception by differentiated sounds. Cas.lek.cesk. 91 no.30: 884-888 25 July 52.

1. Z otolaryngologicke kliniky k lekarske fakulty Masarykovy university v Brne; prednosta: prof. MUDr Frant. Minger. O K sedesatinam prof. Dr. Wiskovskeho.

(HEARING DISORDERS,
perception of speech by differentiated sounds in limited deafness)
(SPEECH,
perception by differentiated sounds in limited deafness)
(PERCEPTION,
of speech by differentiated sounds in limited deafness)

EROHM, Frantisek, Doc. Dr.

Prevention of functional speech disorders. Cesk. otolar. 3 no.3: 137-143 Aug 54.

1. Z Kliniky pro nemoce usni, nosni a kroni lek. fak. MU v Brne. Prednosta prof. Dr. Frantisek Ninger.
(SPEECH DISORDERS
funct., etiol. & prev.)

BROHM, Frantisek, Doc., MUDr.

Hearing tests with the aid of an acoustic sound. Cesk. otolar. 5 no.4:203-207 Aug 56.

1. Z ORL kliniky lekarske fakulty MU v Brne, predn. prof. MUDr. Frant. Ninger.
(HEARING TESTS,
acoustic sound technic (Cz))

BROHM, Franciszek

Clinical and experimental cochlear function tests. Otolar.polska 14 no.2:187-199 '60.

1. Z Kliniki Otolaryngologicznej Wydzialu Lekarskiego w Brnie, Kierownik: prof.dr R.Hladky.
(COCHLEA physiol)

BROHM, F., prof. MUDr.; SEDLACEK, K., prof. MUDr.; SUPACEK, I., MUDr.

Dispensary services for children with hearing disorders. Zdrav. aktuality no.147:135-147 '61.

(HOSPITAL OUTPATIENT SERVICES) (DEAFNESS in inf & child)
(PEDIATRICS hosp & clin)

BROHM, F.

Suggestion for the organization of care for the hard-of-hearing. Cesk. pediat. 16 no.6:546-550 Je '61.

1. Foniatricke oddeleni usni kliniky lekarske fakulty v Brne, prednosta prof. dr. R. Hladky.

(DEAFNESS in infancy & childhood)

BROHM, Frantisek; JELINEK, Josef

Method of measurement of cochlear potential. Cesk. otolaryng. 11 no.3: 179-184 '62.

1. Otolaryngologicka klinika lekarske fakulty University J. E. Purkyne v Brne, prednosta prof. dr. R. Hladky.

(COCHLEA physiol)
(OTORHINOLARYNGOLOGY equip & supplies)

BROHM, Frantisek; ZLAMAL, Jiri

Noise in motor transport. Cas. Lek. Cesk. 101 no.10:300-307 9 Mr '62.

1. Klinika pro nemoci usni, nosni a krcni UJEvP v Brne, prednosta prof. MUDr. Robert Hladky.

(NOISE) (AUTOMOBILES)

BROHM, F.; SUPACEK, I.; TICHA, H.

Investigation of hearing in infants and small children in case finding for hearing defects. Cesk. pediat. 16 no.6:551-556 Je '61.

1. Foniatricke oddeleni usni kliniky lekarske fakulty v Brne, prednosta prof. dr. R. Hladky Foniatricka laborator fakulty vseob. lekarstvi KU v Praze, reditel prof. dr. M. Seeman OUNZ Liberec detsky usek, vedouci prim. dr. R. Gostof.

(DEAFNESS in infancy & childhood)

BROHM, F.; JELINEK, J.

Method of measuring cochlear potentials. II. Actual measurement and registration. Cesk. otolaryng. 12 no.2:65-71 Mr '63.

1. Otolaryngologicka klinika lekarske fakulty UJEvP v Brne, prednosta prof. dr. R. Hladky.
(COCHLEA)

BROJ, K.

"Pulse amplifiers with transformer couplings." P. 457.

SLABOPROUDY OBZOR. (Ministerstvo presneho strojirenstvi, Ministerstvo spoju a Vedecka technicka spolecnost pro elektrotechniku pri CSAV). Praha, Czechoslovakia, Vol. 16, No. 9, Sept. 1956.

Monthly list of East European Accessions (EEAI), LC, Vol. 8, No. 8, August 1959.
Uncla.

Z/039/62/023/002/006/007
D286/D305

AUTHOR: Broj, Karel, Engineer

TITLE: Magnetostrictive delay line for storage systems

PERIODICAL: Slaboproudý obzor, v. 23, no. 2, 1962, 91 - 96

TEXT: The article, based entirely on Western sources, describes the properties and function of a magnetostrictive line suitable for use as storage element. After a general description of the principles of a delay system and the properties of acoustic delay lines, the author gives a detailed analysis of a magnetostrictive wire type acoustic delay line, lists the conditions to be fulfilled in the design of such a line and derives optimum pulse shapes for proper line function. There are 20 figures, 2 tables, and 7 non-Soviet-bloc references. The references to the 4 most recent English-language publications read as follows: M.D. Fugan: Bibliography on Ultrasonic Delay Lines. Trans. IRE PGUE - 2 (1954), no. 11, p 46; E.M. Bradburd: Magnetostrictive Delay Line. Electrical Communication 1951, no. 5, p 46; G. Scarrot and coll.: Wire Type Acoustic Dely Lines for Digital Stor-

Card 1/2

Magnetostrictive delay ... Z/039/62/023/002/006/007
D286/D305

age. Proc. Instr. Elect. Engrs. 103 B (1956), p 497; C.I. Cohn and coll.: Magnetostrictive Delay Line for Video Signals. IRE Transactions on Component Parts 1958, no. 3, p 53

ASSOCIATION: TESLA Pardubice, n.p., výzkumný závod Přemyšlení (TESLA Pardubice, National Enterprise, Research Plant Přemyšlení)

SUBMITTED: July 24, 1961

Card 2/2

ALBERT, Z.; BROJAKOWSKA, M.

Induction of neoplasms in mice by injection of human tissue extracts. Pat. polska 3 no. 3:207-216 July-Sept 1952. (CIML 23:5)

1. Of the Institute of Pathological Anatomy (Head--Prof. Z. Albert, M. D.) of Wroclaw Medical Academy. 2. Part of the technical work done by the Acting Assistant Head--Bogdan Gago. 3. Report given before the Second Congress of Anatomo-Pathologists in Krakow on 28 Sept, 1951. 4. Work subsidized by a special grant of the Ministry of Health.

ALBERT, Z.; BROJAKOWSKA, M.

Effect of prolonged administration of nitrogranulogen on spontaneous appearance of neoplasms in mice. Pat. polska 3 no.4:309-316 Oct-Dec 1952. (CLML 24:2)

1. Of the Institute of Pathological Anatomy (Head--Prof. Z. Albert, M.D.) of Wroclaw Medical Academy.

ALBERT, Z.;BROJAKOWSKA, M.

Effect of prolonged diet with red protosil on changes in the internal organs with special reference to kidneys. Pat. polska 4 no.1:35-49 Jan-Mar 1953. (CIML 24:5)

1. Of the Institute of Pathological Anatomy (Head--Prof. Z. Albert, M. D.) of Wroclaw Medical Academy.

BROJAN, J.

Training in the field of problems connected with high-power circuit breakers. p. 343. (PRZEGLAD ELEKTROTECHNICZNY, Vol. 30, No. 8, Aug. 1954, Warszawa, Poland)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 3, No. 12, Dec. 1954, Uncl.

BROJAN, J.

Conference on switchgear at the Polish Academy of Sciences; a report from its work, February 25-27, 1954, in Warsaw. p. 345. (PRZEGLAD ELEKTROTECHNICZNY, Vol. 30, No. 8, Aug. 1954, Warszawa, Poland)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 3, No. 12, Dec. 1954, Uncl.

P/021/61/000/001/001/002
A107/A126

AUTHOR: Brojan, J., Master of Engineering

TITLE: Present state and prospects of production of low-voltage equipment in Poland

PERIODICAL: Przegląd Elektrotechniczny, no. 1, 1961, 5 - 7

TEXT: The author lists the following Polish plants in operation: A-1. Zakłady Wytwórcze Aparatów Wysokiego Napięcia im. J. Dimitrova, (High-Voltage Equipment Plant), Warsaw, ul. Gocławska 12, producing 220 kv switches; A-2. Zakłady Wytwórcze Aparatury Elekr. "Elester" (Electrical Equipment Plant), Łódź, ul. Przędzalniana 71, producing oil switches, etc.; A-3. Zakłady Wytwórcze Przyrządów Pomiarowych im. J. Krasickiego (Measuring Instruments Plant), Warsaw-Włochy, ul. Dzierżyńskiego 10, producing various measuring devices; A-6. Zakłady Wytwórcze Aparatury Precyzyjnej (Precision Instruments Plant), Świdnica, ul. Łukasińskiego 26/28, producing computers and measuring instruments; A-7. Pomorskie Zakłady Wytwórcze Aparatury Niskiego Napięcia (Low-Voltage Equipment Plant), Toruń, ul. 22 Lipca 13/23, producing mine equipment; A-8. Śląskie Zakłady Wytwórcze Aparatury Elek-

Card 1/3

trycznej (Silesian Electrical Equipment Plant), Bielsko-Biala, ul. Partizantów 61, producing various switches; A-10. Zaklady Wytwórcze Aparatury Rozdzielczej "Zwar" (Distributor Equipment Plant), Warsaw-Międzylesie, ul. Żaganska 1, producing switches and distributors; A-11. Zaklady Wytwórcze Aparatury Elektrycznej "Woltan" (Electrical Equipment Plant), Łudź, ul. Gdańska 138, producing electromotors for locomotives and vessels, transformers, etc; A-13. Łódzkie Zaklady Wytworcze Łaczników Elektricznich "Elan" (Lodź Switch Plant), Lodź, ul. Praska 15/17, producing heavy-duty switches, low-size contactors, etc.; A-17. Zaklady Wytwórcze Przekaźników "Refa" (Transmitter Equipment Plant), Świebodzice, ul. Strzegomska 23, producing transmitters, railroad heaters, etc.; A-18. Dolnośląskie Wytwórcze Aparatury Precyzyjnej (Lower Silesian Precision Equipment Plant), Ząbkowice Śląskie, ul. Waryńskiego 3, producing switches up to 40 amp, microcontactors, etc.; A-21. Lubuskie Zaklady Aparatów Elektrycznych "Lumel" (Lubuski Electrical Equipment Plant), Zielona Góra, ul. Sulechowska 1, producing measuring devices and equipment; A-31. Warsawska Wytwórnia Wyrubów Elektrotechnycznych (Warsaw Electrical Equipment Plant), Warsaw, ul. Srebrna 9, producing transformers, transductors, voltage regulators, etc.; and A-32. Łódzkie Zaklady Wytwórcze Urządzeń

Present state and prospects of production of... P/021/61/000/001/001/002
A107/A126

Elektrotechnycznych (Lodz' Electrical Equipment Plant), Lodz', ul. Nowotki 73, producing electromagnetic boards, switches, etc. The electrotechnical industry in Poland will be further developed and, according to the Second Five Year Plan, the production, in which at present 16,000 workers are employed, will be doubled.

Card 3/3

BROJER, Z.

Synthesis of nitrile rubber. p. 344. (PRZEMYSL CHEMICZNY, Vol. 10, No. 7, July 1954, Warszawa, Poland)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 3, No. 12, Dec. 1954, Uncl.

P/014/62/041/008/002/003
D204/D307

AUTHORS: Brojer, Zbigniew, Penczek, Stanisław

TITLE: Epoxy resins derived from unsaturated compounds - synthesis and properties, Part I.

PERIODICAL: Przemysł chemiczny, v. 41, no. 8, 1962, 437 - 440

TEXT: The aim of this paper is to review the present day trends and developments, (based largely on Western works), regarding the epoxydation of unsaturated compounds with a view to producing epoxy resins. Direct catalytic oxidation and cooxidation methods are mentioned and the oxidation of olefins with peracetic acid is treated in some detail. The synthesis and properties of the resin Epoxide 201, produced by the Union Carbide Chemical Co., and of similar materials developed by the same Company are described and compared, particular attention being paid to the methods of hardening and the characteristics of hardened resins. The data are presented in tabular form. It is believed that resins of this type will find wide application as lacquers, especially in the form of epoxy esters.

Card 1/2

Epoxy resins derived from ... P/014/62/041/008/002/003
D204/D307

There are 8 tables and 21 references: 4 Soviet-bloc and 17 non-Soviet-bloc.

ASSOCIATION: Instytut tworzyw sztucznych (Institute of Synthetic Materials)

Card 2/2

SKORA, Stanislaw; BROJER, Zbigniew; LENDZION, Andrzej

Application of cool hardened epoxy compositions for metal gluing.
Polimery tworz wielk 7 no.9:328-330 S '62.

1. Instytut Tworzyw Sztucznych, Warszawa.

BROJER, Zbigniew; PENCZEK, Piotr; PENCZEK, Stanislaw

Epoxy resins from nonsaturated compounds; synthesis and properties. Pt. 2. Przem chem 41 no.12:684-687 D '62.

1. Instytut Tworzyw Sztucznych, Warszawa.

S/081/63/000/003/033/036
B144/B186

AUTHORS: Brojer, Zbigniew, Łazowski, Zbigniew, Penczek, Pietr

TITLE: Method of obtaining thermoreactive compounds from epoxy and novolak resins

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 3, 1963, 616, abstract 3T225 (Polish patent 45738, March 20, 1962)

TEXT: A method is patented for obtaining thermoreactive epoxy-novolak compounds (I) from epoxy resins (II) and from phenol formaldehyde novolak resins (III). The molecule of II contains > 1 epoxy group and has an epoxy number $\geq$ 0.1 g-equiv per 100 g resin. The molecule of III contains >2 phenol groups. Amines with the structure $C_6H_5N(R)(R')$ were used as catalysts, where R and R' are the same or different alkyl radicals. Per 100 parts by weight II, 30 - 300 parts by weight III are used. The catalyst quantity is 0.01 - 5 parts by weight per 100 parts by weight of a mixture of II and III. The optimum curing temperature is 150 - 200°C. When I are obtained, no water separates. I has a low shrinkage, good electric properties and can be kept at ~20°C for some months without

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deterioration of the properties. It is used for producing articles of laminated plastics (based on mineral or organic fiber filler), plastics (with mineral or organic fillers), glues (in the form of solutions), as well as molded articles. The articles have a high thermal stability and good physical and mechanical properties. The cost of I is relatively low. Example: - I for molding is obtained from (in parts by weight): II (low-molecular with epoxy equivalent ~0.5 g-equiv per 100 g resin) 100, III 100, dimethyl aniline 0.2. Dimethyl aniline is added to III and heated under stirring to 140°C. II is heated seaparately to 140°C. The two resins are mixed and the air is removed in vacuo. I is obtained, from which articles are molded. [Abstracter's note: Complete translation.]

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Studies on hardening epoxy resins with the DMP-10 hardener. Polimery tworz wielk 9 no.12:520-525 D '64.

1. Institute of Plastics, Warsaw. Submitted February 1, 1964.