ZAGORODNEVA, A.G. (Kiyev)

Effect of feeding regimes on the processes of bile formation and secretion. Vrach.delo no.12:122-123 D '62. (MIRA 15:12)

1. Laboratoriya fiziologii pishchevareniya Instituta fiziologii imeni A.A.Bogomol'tsa AN UkrSSR.
(NUTRITION) (BILE)

ZAGORODNEVA, A.G. [Zahorodnieva, A.H.]

Effect of stimulating gastric mechanoreceptors on bile formation during muscular activity of the animal. Fiziol.zhur.Ukr. 6 no.4:526-531 Jl-Ag '60. (MIRA 13:7)

1. Laboratoriya fiziologii pishchevareniya Instituta fiziologii im. A.A. Bogomol'tsa AN USSR, Kiyev.
(STOMACH--INNERVATION) (BILE)

ZAGORODNEVA, A.G. [Zahorodneva, A.H.]

Bile formation and bile secretion processes in various alimentary regimens. Fiziol.zhur.[Ukr.] 9 no.1:118-120 Ja-F '63. (MIRA 18:5)

1. Laboratoriya fiziologii zhivotnykh Instituta fiziologii im. Bogomol'tsa AN UkrSSR, Kiyev.

ZAGORODNEVA, A. G.

Cand Biol Sci - (diss) "Effect of irritation of the gastric mechanoreceptors on the secretory function of the digestive organs during a period of locomotion." Kiev, 1961. 15 pp; (Ministry of Public Health Ukrainian SSR, Kiev Order of Labor Red Banner Medical Inst imeni A. A. Bogomol'ts); 200 copies; price not given; (KL, 6-61 sup, 207)

ZAGORODNEVA, A.G.

Changes in the processes of biligenesis and bile secretion under the influence of various dietary regimens. Vop. pit. 22 no.4:25-30 Jl-Ag '64. (MIRA 17:10)

1. Iz laboratorii fiziologii piishchevareniya (zav. - prof. N.I. Putilin) Instituta fiziologii imeni A.A. Bogomol'tsa AN UkrSSR, Kiyev.

ZAGORODNEVA, Ye. T.

Late results of treating pulmonary tuberculosis with pneumoperitoneum.
Probl. tub. 35 no.6:40-43 '57. (MLRA 12:1)

1. Iz Irkutskoy oblastnoy tuberkuleznoy bol'nitsy (glavnyy vrach Ye.A. Karatayeva, konsul'tant-dots. M.A. Volkova).
(PNEUMOPERITONEUM, ARTIFICIAL, ther. use
tubero., pulm. clin. results (Rus))

ZAGORODNIKOV, A.A. (Leningrad)

Use of radar stations for the study of the atmospheric turbulence.
Meteor. i gidrol. no.10:28-32 O '63. (MIRA 16:11)

ZAGORODNIKOV, A.A.

Some results of radar measurements of turbulence in the free pure atmosphere. Dokl. AN SSSR 156 no.6:1336-1338 Je '64. (MIRA 17:8)

1. Predstavleno akademikom Ye.K. Fedorovym.

Z Gorodnikov, A. YA.

25(2) PHASE I BOOK EXPLOITATION SOV/2043

Moscow. Vyssheye tekhnicheskoye uchilishche imeni N. Ye. Baumana. Kafedra "Metallorezhushchie stanki i avtomaty"

Voprosy avtomatostroyeniya [sbornik] (Problems in the Construction of Automatic Machine Tools [Collection of Articles]) Moscow, Mashgiz, 1959. 213 p. 3,200 copies printed.

Ed.: G.A. Shaumyan, Doctor of Technical Sciences, Professor; Ed. of Publishing House: A.F. Balandin; Tech. Ed.: A.F. Uvarova; Managing Ed. for Literature on Metalworking and Tool Making (Mashgiz): R.D. Beyzel'man, Engineer.

PURPOSE: This collection of articles is intended for engineers and technicians in machine-tool manufacturing.

COVERAGE: This collection of articles deals with theoretical and experimental investigations on the functioning of transmission mechanisms of single-spindle bar-stock automatic machine tools, the kinematic and dynamic design of cam mechanisms, and machining ac-

Card 1/5

curacy of bar-stock automatic machine tools. Investigation of relieving lathes by means of wire resistance gages, and the construction of instruments for determining the rigidity of automatic machine tools are discussed. No personalities are mentioned. References follow several of the articles.

TABLE OF CONTENTS:

at Leningradskiy politekhnicheskiy institut imeni Kalinina (Leningrad Polytechnical Institute imeni Kalinin) and used successfully to determine the rigidity of conventional lathes. A special dynamometer for the same purpose for use on the model 1112 automatic lathe is also discussed. Application of this dynamometer is shown.

AVAILABLE: Library of Congress

GO/bg
9-18-59

S/145/62/000/009/001/005
D262/D308

AUTHOR: Zagorodnikov, A.Ya., Candidate of Technical Sciences, Docent

TITLE: Methods for increasing the economic efficiency of the machining of bodies of revolution

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Mashinostroyeniye, no. 9, 1962, 20-31

TEXT: The author discusses the problem of reducing the working time required for the machining of a component, and presents a new method of multi-tool broaching, the main feature of which is that the tool and the worked component rotate in the same direction. The experiments were conducted on a specially constructed machine (based on the semi-automatic multi-tool lathe design), which also included a special tool block for machining internal surfaces. The optimum cutting conditions, the effect of feed and depth of cutting on loading, suitable material and geometrical parameters for cutting tools, and the best cutting schemes are established in order to obtain

Card 1/2

Methods for increasing ...

the minimum working time per component. Conclusion: The required accuracy of working is obtained and the production costs (excluding material) are halved in comparison with the standard technique. There are 10 figures and 1 table.

ASSOCIATION: MVTU im. N.E. Baumana (MVTU im. N.E. Baumanˇ)

SUBMITTED: July 17, 1962

Card 2/2

ZAGORODNIKOV, A.Ya., kand.tekhn.nauk, dotsent

Ways for increasing economic efficiency of the machining of bodies of revolution. Izv.vys.ucheb.zav.; mashinostr. no.9: 20-31 '62. (MIRA 16:2)

1. Moskovskoye vysshoye tekhnicheskoye uchilishche imeni Baumana.

(Metal cutting)

ZAGORODNIKOV, A. Ya. Cand. Tech. Sci.

Dissertation: "Transmission Mechanisms of Single-Spindle Automatics." Moscow Order of the Labor Red Banner Higher Technical School imeni N. E. Bauman, 16 Jun 47.

SO: Vechernyaya Moskva, Jun, 1947 (Project #17836)

ZAGORODNIKOV, A.Ya., kandidat tekhnicheskikh nauk, dotsent.

Automatization of the production process for bearing rings.
[Trudy] MVTU no.38:74-90 '55. (MLRA 9:6)
(Bearings) (Machinery, Automatic)

L 09256-67 EWP(d)/EWP(v)/EWP(k)/EWP(h)/EWP(l)
ACC NR: AP6029952 (A, N) SOURCE CODE: UR/0413/66/000/015/0129/0130

INVENTORS: Zaporodnikov, A. Ya.; Chernyanskiy, P. M.; Yermakov, Yu. M.; Zamchalov, Yu. F.; Shaumyan, G. A.

ORG: none

TITLE: A method for taking a finish cut in producing bodies of revolution. Class 49, No. 184580 [announced by Moscow Higher Technical School of the Order of Lenin and the Order of the Workers' Red Banner imeni N. E. Bauman (Moskovskoye ordena Lenina i ordena Trudovogo Krasnogo Znameni vyusheye tekhnicheskoye uchilishche)]

SOURCE: Izobret prom obraz tov zn, no. 15, 1966, 129-130

TOPIC TAGS: metalworking, metalworking machine accessory, machine tool, metal cutting machine tool, body of revolution

ABSTRACT: This Author Certificate presents a method for taking a finish cut in producing bodies of revolution being simultaneously turned (see Fig. 1). To increase the efficiency and to improve the quality of surface, the finish cut is taken with a tool bit fed in the radial and the tangential directions in respect to the product. The tool bit is provided with two cutting blades, one of which is held at an angle to the axis of the product and is fed gradually into the contact with the product at the removal zone of the outer layer. The other blade is held parallel to the axis

Card 1/2 UDC: 621.941.1:08

L 09256-67
ACC NR: AP6029952

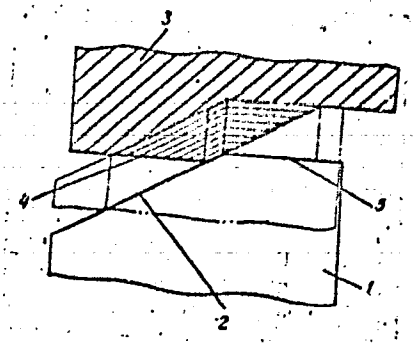

Fig. 1. 1 - tool bit; 2 - first cutting blade; 3 - product; 4 - zone of outer layer removal; 5 - second cutting blade

of the product and is ground to fit that region of the body of revolution which is being cut by this blade. It is this second blade which produces the finish cut on the product. Orig. art. has: 1 figure.

SUB CODE: 13/ SUBM DATE: 17Oct64

ZAGORODNIKOV, B. I.

PA 68T51

USSR/Electricity
Hydroelectric Plants

Apr 1948

"Gor'kiy Hydroelectric Station," B. I. Zagorodnikov, Engr, ½ p

"Gidrotekh Stroi" No 4

This installation is an important one of postwar Five-Year Plan. Located below Shcherbakov Power Station on Volga, it will harness water power for a stretch of 400 km from Shcherbakov to Gorodets. Forming a water reservoir of 179 thousand hectares, it is supplied by 18 km shunt line, equipped with 35 kilovolt transmission lines. No completion date is given.

68T51

PA 63/49T15

ZAGORODNIKOV, B. I.

USSR/Electricity Dec 48
Hydroelectric Stations
Electric Power

"Kama Hydroelectric Station," B. I. Zagorodnikov, [illegible], 1 p

"Gidrotekh Strol" No 12

Describes first of three hydroelectric stations planned for the Kama River: upper--Solikamsk, middle--Molotov, and lower--Votkinsk. Construction of the upper station will increase the power production of KAMGES (Kama Hydroelectric Station) by 33%. It will connect with the Ural power network.

63/49T15

USSR/Electricity (Contd) Dec 48

Stations will decrease considerably the volume of earth and concrete work required since the power plant building will be combined with the [illegible] spillway dam. Briefly describes preliminary work to be carried out.

63/49T15

FA 38/49T58

USSR/Engineering Mar 49
Hydroelectric Plants
Construction Industry

"Operations to Complete Volga Installations," B. I. Zagorodnikov, Engr, 1 p

"Gidrotekh Stroi" No 3

Volume of work remaining to be done in "Volgostroy" program: earth excavations 213,000 cu m, quality fills 17,000 cu m, bricklaying 2,500 cu m, metal construction 750 tons, wooden construction 1,400 cu m, masonry work on tanks and roads 60,000 cu m, and housing 6,500 sq m. "Volgostroy" program is under-

38/49T58

USSR/Engineering (Contd) Mar 49

way in three main sectors: Uglichskiy and Shcherbakov hydroelectric stations and Volzhskiy hydro unit.

ZAGORODNIKOV, B. I.

38/49T58

LAZUTKIN, Ye.S.; RUSANOV, Ye.S.; EYDEL'MAN, R.A.; TRUBNIKOV, S.V.; KAPLAN, I.I.; ZAGORODNIKOV, M.I.; GOL'TSOV, A.N.; TATARINOVA, N.I.; SONIN, M.Ya.; SHISHKIN, N.I., doktor geogr.nauk; ANTOSHENKOV, Ye.G.; ZHMYKHOVA, I.I.; KOSYAKOV, P.O.; MATROZOVA, I.I.; ZELENSKIY, G.N.; SEMENKOV, Ya.S.; ZALKIND, A.I., red.; RUSANOV, Ye.S., red.; SHTEYNER, A.V., red.; MIKHAL'CHENKO,N.Z.,red.; GERASIMOVA, Ye.S., tekhn. red.

[Manpower of the U.S.S.R.; problems in distribution and utilization] Trudovye resursy SSSR; problemy raspredeleniia i ispol'zovaniia. Pod red. N.I.Shishkina. Moskva,Izd-vo ekon.lit-ry, 1961. 243 p. (MIRA 14:12)

Moscow. Nauchno-issledovatel'skiy institut.
(Manpower)

CHIZHOV,D.G.; KOGTEV,G.I.; LAVRENENKO,K.D.; SPIRIN, S.A.; NEKRASOV,A.M.; IVANOV, M.I.; UFAYEV,M.Ia.; GRISHIN, I.K.; KOSTIN,M.F.; POPOV,V.A.; ZAGORODNIKOV, P.I.; FEDOTOV, P.N.; KAZ'MIN, A.V.; FOMICHEV, G.I.; YERSHOV,P.I.; MESHCHERYAKOV,V.I.; YEFREMOV,S.G.; LEVIN, I.S.; LETUCHEV,L.I.; KOCHEV, S.V.

Nikolai Alekseevich Andreev. Energetik 4 no.9:40 S '56. (MLRA 9:10)
(Andreev, Nikolai Alekseevich, 1896-1956)

EWT(1)/EWT(m)/ETC/EPF(n)-2/EWG(m)/EWP(t)/EWP(b)/ETC(m) IJP(c)

ACC NR: AP5026103 JD/MW/AT SOURCE CODE: UR/0386/65/002/005/0238/0241

AUTHOR: Zagorodnikov, S. P.; Rudakov, L. I.; Smolkin, G. Ye.; Sholin, G. V.

ORG: none

TITLE: Investigation of the structure of the front of a strong magnetic-sound wave in a rarefied plasma

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 2, no. 5, 1965, 238-241, and insert, side A, between p. 238 and 239

TOPIC TAGS: plasma wave propagation, rarefied plasma, helium plasma, magnetohydrodynamics, sound wave

ABSTRACT: The article is devoted to an experimental investigation of the structure of the front of a strong magnetic-sound wave propagating in a rarefied plasma transverse to a magnetic field. The experiments were carried out under the conditions described in an earlier paper by the authors (ZhETF v. 47, 1717, 1964). The wave was excited by a trapezoidal pulsed magnetic field H, produced on the boundary of a cylindrical plasma column (diameter 6 cm and length 30 cm) in a constant magnetic field H_0. The pulse growth time was [illegible] sec. The plasma density n_0 ahead of the wave front ranged from [illegible] to $\sim 6 \times 10^{13}$ cm^{-3}. The magnetic Mach number μ varied in the range ~1.3--4.2. The following results were obtained. Nonlinear twisting of the wave front in the plasma was observed for all the indicated values of μ. The profile of the magnetic field in the plasma was in good agreement

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with the profile calculated by J. H. Adlam and J. E. Allen (Proc. Phys. Soc. (London) v. 75, 640, 1960) within the accuracy of the cylindrical effect. The width of the transition region coincides, with ~50% accuracy (taking nonstationarity into account), with the width calculated by Adlam and Allen. Oscillograms of the magnetic-probe signals show that the front of the magnetic field, which increases linearly in the plasma boundary, changes inside the plasma into an exponentially growing front with a gradually increasing n_0. The absorption of the wave energy in the front increases with increasing n_0. At the same time, electrons with energy larger than 50 ev appeared behind the wave front. The energy transfer from the wave to the plasma electrons is attributed either to instability or ionization collisions of the electrons on the wave front. Authors are grateful to Ye. K. Zavoyskiy for interest in the work and to A. A. Vedenov and Ye. P. Velikhov for valuable discussions. Orig. art. has: 3 figures and 2 formulas.

SUB CODE: 20/ SUBM DATE: 17Jul65/ ORIG REF: 003/ OTH REF: 007

ZAGORODNIKOV, S.P.; RUDAKOV, L.I.; SMOLKIN, G.Ye.; SHOLIN, G.V.

Study of the front structure of a strong magnetosonic wave in a rarefied plasma. Pis'. v red. Zhur. eksper. i teoret. fiz. 2 no.5:238-241 S '65. (MIRA 18:12)

1. Submitted July 17, 1965.

ACCESSION NR: AP4009105 S/0056/63/045/006/1850/1857

AUTHOR: Zagorodnikov, S. P.; Smolkin, G. Ye.; Sholin, G. V.

TITLE: Spectroscopic investigation of a turbulently heated plasma

SOURCE: Zhurnal eksper. i teoret. fiziki, v. 45, no. 6, 1963, 1850-1857

TOPIC TAGS: plasma heating, plasma turbulence heating, high density plasma, high temperature plasma, plasma spectrum, plasma spectroscopic investigation, wave penetration, electron heating rate, electron temperature, electron temperature distribution, emission line intensity, impurity effect

ABSTRACT: A spectroscopic investigation is reported of turbulence heating of a helium plasma with a relatively high electron density, for the purpose of using turbulence heating to obtain and investigate high-temperature plasmas. An image converter was used to obtain a time-resolved spectrum of the heated plasma, so as to trace the dynamic behavior of the spectral lines in each phase of a single

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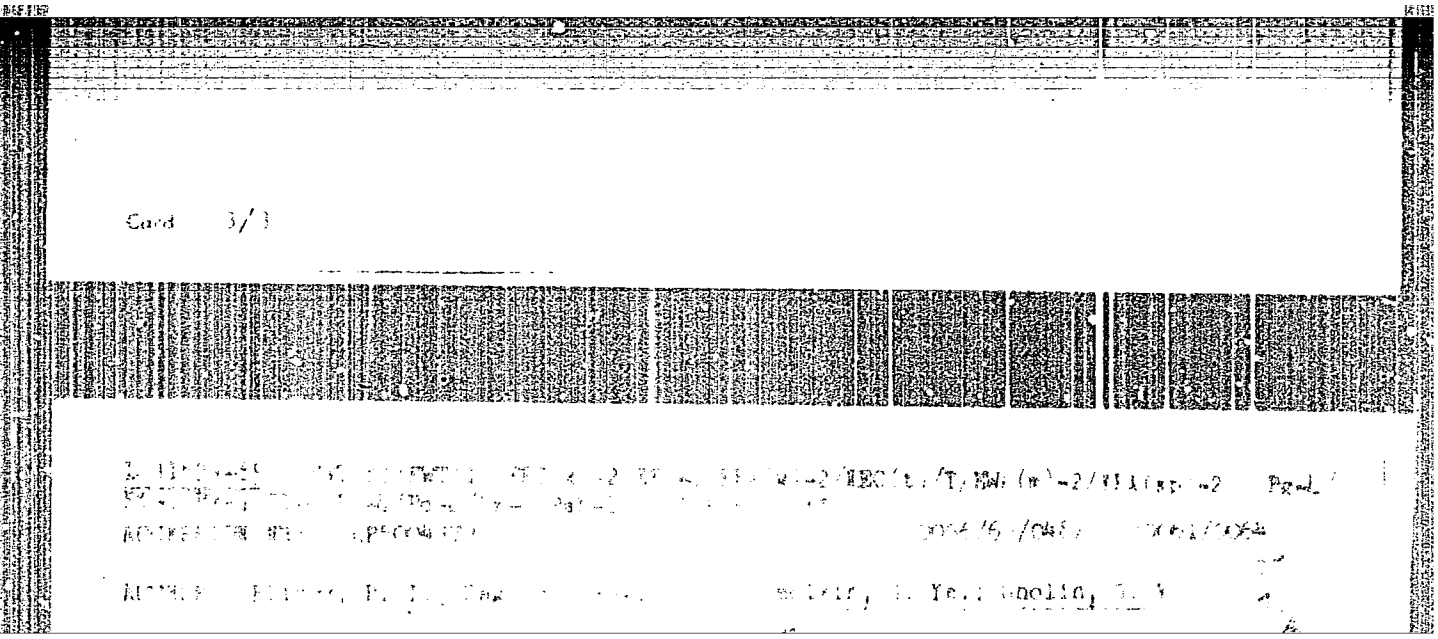
ACCESSION NR: AP4009105

discharge. Tests were made to determine the penetration of the wave into the plasma, the electron heating rate, and the radial distribution of the electron temperature in the discharge tube. All these characteristics were determined from the radial distribution of the emission intensity of the individual spectral lines. An estimated $T_e \approx 100$ eV was obtained for the electron temperature in a plasma of density $n_e = 2 \times 10^{13}$ cm^{-3}. The impurity content, which plays an important role in the heat balance of a plasma with hot electrons, was found not to exceed 1 per cent of the primary component under typical experimental conditions. "In conclusion, we thank Ye. K. Zavoyskiy under whose initiative and constant attention the work was performed. We are also grateful to L. I. Rudakov for continuous interest in the work and useful discussions, M. V. Babykin for help in constructing the experimental apparatus, and P. I. Blinov for help with the microwave measurements." Orig. art. has: 6 figures and 1 formula.

Card 2/4



Card 3/3

ZAGORODNIKOV, S.P.; RUDAKOV, L.I.; SMOLKIN, G.Ye.; SHOLIN, G.V.

Observation of shock waves in a collision-free plasma. Zhur. eksp. i teor. fiz. 47 no.5:1717-1720 N '64.

(MIRA 18:2)

L 25676-66 EWT(1)/EIC(f)/EPF(n)-2/EWG(m)/EIC(m)-6 IJP(c) WW/AT

ACC NR: AT6001559 SOURCE CODE: UR/3136/65/000/909/0001/0008

AUTHOR: Zakurdnikov, S. P.; Rudakov, L. I.; Smolkin, G. Ya.; Sholin, G. V. 35 70 B+1

ORG: none

TITLE: Investigation of the structure of a strong magnetosound wave front in rarefied plasma 2/ 2./

SOURCE: Moscow. Institut atomnoy energii. Doklady, IAE-909, 1965. Issledovaniye struktury fronta sil'noy magnitno-zvukovoy volny v razrezhennoy plazme, 1-8

TOPIC TAGS: plasma magnetic field, sound wave, magnetic field, rarefied plasma, constant magnetic field, plasma wave

ABSTRACT: This is a continuation of previous experiments reported by the authors in ref. 4 (ZhETF, 47, 1717, 1964). The experiments were inspired by the work of J. H. Adlam and J. E. Allen (Proc. Phys. Soc. London, 75, 640, 1960), where a numerical solution was found for the problem of the unsteady motion of a magnetic piston along rarefied plasma, based on two concrete formulas on the change of the magnetic field in time at the boundary of plasma:

$$H_n(t_n) = 1 + \alpha t_n \qquad (1)$$

and

$$H_n(t_n) = 1 + \beta\left[1 - \exp(-\alpha t_n)\right] \qquad (2)$$

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L 25676-66

ACC NR: AT6001559

3

The profile of the magnetic field of plasma was found for certain values of t_{n}, when $\alpha = 1$ and $\beta = 1$. The experiments were conducted under conditions similar to those reported by the authors in ref. [illegible]. The wave was excited by a trap[illegible]dal impulse of [illegible] cylindrical [illegible] a diameter [illegible] cm and length [illegible] cm, within the constant magnet[illegible] field [illegible]. The [illegible] was [illegible] sec. The plasma density [illegible] preceding the wave front varied between [illegible] and [illegible] cm^{-3}. The magnetic Mach number [illegible] there was [illegible] [illegible] the front given [illegible] [illegible] the front was observed in [illegible] region. [illegible] apparently related to the [illegible] character of the wave front [illegible] experiments. All other results coincide with the findings of Adlam and Allen. In conclusion, the authors note that they have observed during their experiments an absorption of wave energy at the front. which grew with the increase of n_0. In the plasma behind the wave front, electrons with an energy of 50 ev appeared. The authors thank E. K. Zavoyskiy for his interest in the experiments and A. A. Vedenov and E. P. Velikhov for their valuable discussions. Orig. art. has: 2 formulas and 3 figures.

SUB CODE: 20 / SUBM DATE: 00/ ORIG REF: 002/ OTH REF: 008

Card 2/2 ddc

ZAGORODNIKOV, P.I.

CHIZHOV, D.G.; KOGTEV, G.I.; LAVRENENKO, K.D.; SPIRIN, S.A.; NEKRASOV, A.M.; IVANOV, M.I.; UFAYEV, M.Ya.; GRISHIN, I.K.; KOSTIN, M.P.; POPOV, V.A.; ZAGORODNIKOV, P.I.; FEDOTOV, P.N.; KAZ'MIN, A.V.; FOMICHEV, G.I.; YERSHOV, P.I.; MESHCHERYAKOV, V.I.; YEFREMOV, S.G.; LEVIN, I.S.; LETUCHEV, L.I.; BELKIN, M.N.; OBOLONKOV, M.I.; BATENIN, B.A.; BUR'YANOV, B.P.; KAMATOV, P.I.; KOKOREV, S.V.

Nikolai Alekseevich Andreev. Elek. sta. 27 no.10:62 O '56.
(Andreev, Nikolai Alekseevich, 1897-1956) (MLRA 9:12)

ZAGORODNIKOV, V., insh.; SOSOMKIN, B., insh.

White Russian innovators and efficiency promoters introduce automatic processes. Mekh.stroi. 17 no.8:22-24 Ag '60. (MIRA 13:8)
(White Russia—Construction industry)
(Automation)

ZAGORODNIKOV, V.

Feed attachment for a flashlamp. Sov. foto 18 no.9:45 S '58.
(Photography, Flashlight) (MIRA 11:10)

ZAGORODNIY, A. G.

Single-revolution multicolor method of reproducing graphic geological materials. Razved. i okh. nedr 28 no.5:50-53 My '62. (MIRA 15:10)

1. Geologorazvedochnyy trest No.1.

(Geology—Maps) (Color printing)

ZAGORODNIY, S. V.

USSR/Chemistry - Petroleum Jul/Aug 52

"Contemporary Trends in the Field of Application of Boron Fluorides for the Catalytic Conversion of Hydrocarbons," A. V. Topchiyev, Ya. M. Paushkin, Moscow, S. V. Zagorodniy, Voronezh

"Uspekh Khim" Vol XXI, No 4, pp 422-451

Discusses physicochem properties of BF_3, methods of prepg BF_3, chem properties of BF_3, alkylation of hydrocarbons, disproportionation and isomerization of hydrocarbons, cracking in the presence of BF_3, polymerization catalyzed by BF_3 sepn and purification of hydrocarbons with the aid of BF_3 compds, alkylation of phenols with olefins, alkylation of carboxylic acids with olefins. The discussion is based on 40 Russian references (among which publications by the authors of this review predominate) and 132 foreign references.

PA216T23

ZAGORODNIY, Vasiliy Ivanovich [Zahorodniy, V.I.], kand.ekonom.nauk; ROMANOV, O.T., otv.red.; SKRIPNIK, V.T. [Skrypnyk, V.T.], red.

[Improvement of the welfare of the Soviet people] Zrostannia dobrobutu radians'koho narodu. Kyiv, 1961. 46 p. (Tovarystvo dlia poshyrennia politychnykh i naukovykh znan' Ukrains'koi RSR. Ser.3, no.2) (MIRA 14:7)
(Labor and laboring classes)

ZAGORODNIY, Vladimir Anisimovich [Zahorodniy, Volodymyr]; SVARNIK, I., red.; BURKATOVSKAYA, TS. [Burkatova'ka, TS.], tekhred.

[The Lenin Collective Farm] Imeni Lenina. L'viv, Knyzhkovo-zhurnal'ne vyd-vo, 1960. 25 p. (MIRA 14:1)
(Ternopol Province--Collective farms)

ZAGORODNOV, A.M.; SMIRNOV, N.M.

Tectonic pattern of the Tom'-Yaya interfluve based on the results of aeromagnetic survey. Trudy ZNIIGGiMS no.17:85-92 '61. (MIRA 15:9)
(Tomsk Province--Geology, Structural)

ZAGORODNOV, A.M.; ZALIPUKHIN, M.I.

Tectonic pattern of the Pur-Taz-Yenisey interfluve. Trudy SNIIGGIMS no.10:23-40 '60. (MIRA 15:12)
(West Siberian Plain--Geology, Structural)

L 40175-66 EWT(1)/T JK

ACC NR: AP6029379 (A,N) SOURCE CODE: UR/0346/66/000/006/0018/0019

AUTHOR: Zagorodnov, M. V.; Mustafayev, G. A.; Shapkin, V. A.; Yelagina, Ye. B.

ORG: [Zagorodnov; Mustafayev] State Scientific Control Institute of Veterinary Preparations (Gosudarstvennyy nauchno-kontrol'nyy institut veterinarnykh preparatov); [Shapkin] Main Administration, Biological Industry, MSKh SSSR (Glavnoye upravleniye biologicheskoy promyshlennosti MSKh SSSR); [Yelagina] Kursk Biological Plant (Kurskaya biofabrika)

TITLE: Effect of prolongators on the activity of hyperimmune foot-and-mouth disease serum

SOURCE: Veterinariya, no. 6, 1966, 18-19

TOPIC TAGS: hoof and mouth disease, serum, experiment animal, virus, immunization, diagnostic drug

ABSTRACT: Hyperimmunization of guinea pigs with a suspension of foot-and-mouth disease virus containing aluminum hydroxide (AH) and a saponin greatly increases the activity of diagnostic serum, regardless of the virus type. In the authors' experiments, the optimum dose of AH was 1%, that of the saponin 0.5%. Hyperimmunization of guinea pigs with a virus suspension containing 1% AH yielded type O serum with a titer of 1:60; types A and C, 1:80. Hyperimmunization of the animals with 0.5% saponin yielded type O serum with a titer of 1:110 to 1:150; type A, 1:140 to 1:170; type C, 1:170. A pronounced inflammatory reaction was noted at

UDC: 619.616.988.43-077.34

Card 1/2

L 40175-66
ACC NR: AP6029379

the injection site following injection of virus with 1% AH or 0.5% sponin. With increase in AH or saponin content, necrosis developed in the inflammatory focus and some of the guinea pigs died. Orig. art. has: 2 tables. [JPRS: 36,932]

SUB CODE: 06 / SUBM DATE: none

L 4242-66 EWT(1)/EWT(m)/ETC/EPF(n)-2/EWG(m)/EPA(w)-2/EWA(m)-2 IJP(c)
ACCESSION NR: AT5007973 06/AT/JXT S/0000/64/000/000/1023/1029

AUTHOR: Berezin, A. K.; Berezina, G. P.; Bolotin, L. I.; Gorbatenko, M. F.; Yegorov, A. M.; Zagorodnov, O. G.; Kornilov, B. A.; Kurilko, V. I.; Lutsenko, Ye. I.; Laypkalo, Yu. M.; Pedenko, N. S.; Kharchenko, I. F.; Shapiro, V. D.; Shevchenko, V. I.; Faynberg, Ya. B.

TITLE: Acceleration of charged particles with the aid of longitudinal waves in plasma and plasma waveguides

SOURCE: International Conference on High Energy Accelerators. Dubna, 1963. Trudy. Moscow, Atomizdat, 1964, 1023-1029

TOPIC TAGS: high energy accelerator, electron beam, plasma accelerator, plasma waveguide

ABSTRACT: Plasma waveguides and noncompensated electron and ion beams can be utilized as accelerating systems in linear accelerators (Faynberg, Ya. B., Symposium CERN 1, 84 1956); *Atomnaya energiya* 6, 431 (1959)). In such systems, slow electromagnetic waves $v_\phi \leq c$ are propatated, which are necessary for particle acceleration. The waveguide properties of restrained plasma and noncompensated beams are displayed in the case of waves in the meter and centimeter range even for com-

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ACCESSION NR: AT5007973

paratively small plasma densities around 10^9 to 10^{13} cm^{-3}). Under these conditions the high-frequency energy losses during wave propagation, which are due to the collisions of plasma particles, are small. The density of electrons in metals (about 10^{23}) is many orders greater than is necessary for ensuring waveguide properties in the microwave range. This leads to great losses of high-frequency power during wave propagation in metallic conductors. For plasma densities around 10^9 to 10^{13} cm^{-3}, the energy losses during particle transist through the plasma, which are proportional to plasma density, are insignificant, from 10^{-5} to 10^{-6} ev/cm. This means that plasma waveguides are "transparent" for accelerated particles. According to the conditions of acceleration the particles are divided into individual bunches. Thus the loss of particles moving in the plasma can increase greatly because of the occurrence of coherent deceleration representing the inverse of the effect of coherent acceleration, which was established by V. I. Vekaler (Symposium CERN 1, 80 (1956)). However, even for accelerated particle fluxes of the order of tens of amperes, these losses are all insignificant. Because waveguide properties are determined by the plasma, the metal surfaces can be remote from regions with large field strengths or eliminated altogether, which permits a significant increase in the permissible voltages of the accelerating fields and a substantial de-

L 4242-66
ACCESSION NR: AT5007973

crease in the high-frequency energy losses. It is also important to concentrate the electromagnetic energy in the radial direction only in the regions where the accelerated particles are moving. Thus for a given field strength the electromagnetic energy flux decreases markedly. If the fluxes of accelerated particles are large, the waveguide properties necessary for acceleration can be ensured by the particles of the beam which are not entrapped in the acceleration process, through which particles the entrapped particles move. The beam itself which is injected into the accelerator operates under these conditions of an accelerating system. To clarify the possibilities of particle acceleration by means of electromagnetic waves excited by charged particle beams, and also to investigate the influence of beam instabilities upon the acceleration process, the Physicotechnical Institute, Academy of Sciences Ukrainian SSR conducted theoretical and experimental investigations on the interaction of charged particle beams with a plasma. These investigations were intended to lead to, not the design and construction of a definite accelerator model, but the physical processes occurring during the interaction under consideration, and in this way to a determination of the possibilities of plasma methods of acceleration which are being developed at this institute. The theory developed up to the present time of the interaction between beams and plasma has been essentially a linear theory. As a result of the work of V. D. Shapiro and V.

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ACCESSION NR: AT5007973

I. Shevchenko at this institute for the case of beams of not very large density, a nonlinear theory has been created which permits one to trace the process of interaction of an initially nonmodulated beam and mono-energetic beam with a plasma from the initial stage to saturation. As is shown, a large part of the beam's energy of ordered motion (75% of its initial energy) is lost by the beam as a result of collective interactions with the plasma. Thus the energy expended upon excitation of oscillations amounts to 30%; upon increasing the thermal energy of the plasma, to 30%; and upon increasing the thermal energy of beam, to 15%. The experimental investigations of this interaction were carried out by I. F. Kharchenko and A. K. Berezin and their respective co-workers. Their results are in agreement with the theory of M. F. Gorbatenko. The mentioned institute has also carried out further theoretical and experimental investigations on the problems of electromagnetic wave propagation in plasma waveguides excited by high-frequency wall sources. The experimental studies, by O. G. Zagorodnov, et al., showed that the results agree well with theory under conditions of insignificant nonlinear effects. Current experiments are concerned with highly-ionized plasmas with density 10^{11} to 10^{12}. Orig. art. has: 4 figures, 1 table.

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L 4242-66

ACCESSION NR: AT5007978

ASSOCIATION: Fiziko-tekhnicheskiy institut AN UkrSSR (Physicotechnical Institute, AN UkrSSR)

SUBMITTED: 26May64 ENCL: 00 SUB CODE: EP

NO REF SOV: 005 OTHER: 001

Card 1/5

34437
S/185/61/006/006/016/030
D299/D304

24,2120 (1049,1163,1538)

AUTHORS: Lifshyts', Ye.V., Yehorov, A.M., and Zahorodnov, O.H.

TITLE: Measuring high-frequency field strength in a plasma by means of the Stark effect

PERIODICAL: Ukrayins'kyy fizychnyy zhurnal, v. 6, no. 6, 1961, 793 - 796

TEXT: A method is proposed for measuring parameters of plasma waveguides which has the advantage (over existing methods) of introducing only very small perturbations. The Stark effect is used for determining the mean field strength in plasma waveguides in a magnetic field. First, the radial distribution of the electric-field components in the waveguide are determined, and then the phase velocity of the wave and the field strength at the waveguide axis. The field -strength measurements were based on the Epstein-Schwartzschild formula:

$$\Delta\nu = \frac{3hE}{8\pi^2\mu Ze}\left\{n_2(n_\eta - n_\xi)_2 - n_1(n_\eta - n_\xi)_1\right\} \qquad (1)$$

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Measuring high-frequency field ...

for the static Stark effect. It was found that the magnitude of the Stark line broadening was considerably greater in the experiments conducted, than line broadening due to other factors which could therefore be neglected. The diameter of the plasma waveguide was 20 mm, the plasma density varied between 10^{10} - 10^{11}. The field strength was measured by the broadening of the H_γ - line. This line was selected because it was more suitable for the operating conditions of the spectrograph used in the experiment. The discharge spectrum was recorded on photographic plates of type "Pankhrom"; the exposure varied between 30 minutes to 2 hours. A figure shows a typical line shape. The line broadening, due to the experimental apparatus, was taken into account be means of a calibration device, incorporating a thyratron. From formula (1) follows that the field strength $E = 2.31 \cdot 10^3 \Delta\lambda$, where $\Delta\lambda$ is expressed in Å, and E - in kw/cm. The obtained values of E are listed in a table, together with the values of $\Delta\lambda$. The described method is effective; its effectiveness increases with higher field strength. The use of photoelectric recording ensures much greater speed of measurement. There

Card 2/3

Measuring high-frequency field ... S/185/61/006/006/016/030
D299/D304

are 2 figures, 1 table and 6 references: 5 Soviet-bloc and 1 non-Soviet-bloc (in translation).

ASSOCIATION: Fizyko-tekhnichnyy instytut AS UkrRSR (Physico-Technical Institute of the AS UkrSSR), Kharkiv

X

Card 3/3 .

ZAGORODNIY, A.D.; DYADECHKIN, N.I.

Method of breaking hard ore in northern Krivoy Rog Basin mines.
Met. i gornorud. prom. no.4:80-82 Jl-Ag '64.
(MIRA 18:7)

BAGRATSKIY, O. G.

ZAGORODNOV, O.G.; FAYNBERG, Ya.B.; YEGOROV, A.M.

Reflection of electromagnetic waves from a plasma moving in slow-wave guides. Zhur. eksp. i teor. fiz. 38 no.1:7-9 Jan '60.
(MIRA 14:9)

(Electromagnetic waves) (Plasma (Ionized gases)) (Wave guides)

S/057/61/031/003/005/019
B125/B202

9.2585

AUTHORS: Zagorodnov, O. G., Gaynberg, Ya. B., Yegorov, A. M., and Bolotin, L. I.

TITLE: Multiplication of the frequency by means of plasma "slamming"

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 31, no. 3, 1961, 297-300

TEXT: The present paper deals with the experimental study of the problem of frequency multiplication by slamming. As is known, a Doppler effect occurs when electromagnetic waves are reflected from a moved surface. In this case frequency and amplitude of the incident wave are changed. The effect concerned can be considerably increased in the case of multiple reflection. This is attained, e.g., by concentrating the electromagnetic energy in a volume completely or partially filled with the plasma. This volume is then rapidly reduced by slamming the plasma. In this case not only density but also the total electromagnetic energy are increased. In the case concerned the energy of the photons that are multiply reflected from the plasma is increased. This effects the reversal of the Fermi

S/057/61/031/003/005/019
B125/B202

Multiplication of the frequency...

acceleration effect. In the case of multiple reflection frequency and amplitude strongly increase even in the case $V_\phi \gtrsim C (V \ll C)$. This effect was experimentally checked for an H_{011} wave in the 10-cm region. The electromagnetic field was compressed in a resonator having the shape of a metallic rectangular resonator. The plasma piston entered the resonator by a grating consisting of three metal bands. The second front face of this waveguide gradually passed into a waveguide with the critical wavelength $\lambda_{cr} = 4.6$ cm. This waveguide serves as filter for the harmonic frequencies. The plasma piston was produced by a two-electrode discharge with special ignitor and with additional electrodynamic acceleration. Fig. 1 shows the general block diagram of the experimental arrangement. The beginning of discharge can be regulated such that the plasma compression occurs two to three microseconds after the beginning of the high-frequency pulse in the waveguide. On slamming also the frequency of the electromagnetic field increases as a result of multiple reflection from the moved plasma until the frequency of the field exceeds the critical frequency of the waveguide filter. Fig. 3 illustrates the oscillograms of the high-frequency signals with the "multiplied" frequency at different instants of time of the

plasma slamming. In this case the maximum pulse height of the high-frequency signal with the multiplied frequency corresponds to the shortest duration of slamming. These outputs are separated from the high-frequency pulse which is interrupted by the moving piston by the time interval τ. This time interval corresponds to the "slamming time", i.e., the time required for the multiplication of the frequency of the initial value (in this case 2840 megacycles) to a value slightly exceeding the critical frequency of the waveguide (6530 megacycles). Thus, the frequency was increased by little more than 2.3 times. The spectrum of the oscillations produced by the magnetron contained harmonic oscillations of small amplitudes which penetrate into the waveguide. Their amplitudes reproduce the form of the magnetron pulse. During slamming dissipation of the field energy caused by losses in the cavity and in the plasma compression occurs besides the frequency multiplication and the intensification of the field amplitude. To obtain a sufficiently large amplitude of the signal at the output the "slamming time" must be of the same order of magnitude as the attenuation time $\tau_0 = Q/\omega$. In the experiments described slamming takes ~0.4 microseconds, which corresponds to a

Multiplication of the frequency...

S/057/61/031/003/005/019
B125/B202

velocity of motion of $2 \cdot 10^7$ cm/sec of the plasma compression. Thus, it was shown that by slamming a sufficiently strong frequency multiplication can be attained. There are 3 figures and 8 references: 6 Soviet-bloc and 2 non-Soviet-bloc. The 2 references to English language publications read as follows: E. L. Ginston, Science, 127, 3303, 1858; A. C. Kolb, Phys. Rev., 107, 345, 1957.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN USSR Khar'kov (Institute of Physics and Engineering of the AS UkrSSR Khar'kov)

SUBMITTED: May 20, 1960

Card 4/4

S/781/62/000/000/003/036

AUTHOR: Zagorodnov, O. G., Faynberg, Ya. B., Yegorov, A. M., Kivshik, A. F.

TITLE: Reflection of electromagnetic waves from a moving plasma. Investigation of waveguide properties of a plasma

PERIODICAL: Fizika plazmy i problemy upravlyayemogo termoyadernogo sinteza; doklady I konferentsii po fizike plazmy i probleme upravlyayemykh termoyadernykh reaktsiy. [illegible] Kiev, Izd-vo AN Ukr. SSR, 1962, [illegible]

TEXT: The first part of the article describes experiments on the reflection of slow electromagnetic waves from a moving plasma, aimed at ascertaining whether the frequency multiplication and increase in the reflected [illegible] ... [illegible] ... Since the Doppler shift in the frequency and the change in the amplitude of an electromagnetic wave reflected from a moving mirror can be made appreciable only by increasing greatly the velocity of the reflecting surface or

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APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963410020-5"

Reflection of electromagnetic waves from . . .

by changing the phase velocity of the wave in the space where the interaction takes place, and since it is not practical to obtain high physical mirror velocities (even when an electron beam or a plasma is used as a reflecting surface), the experiment was carried out with an electromagnetic wave of a phase velocity slowed down to that of the reflecting plasma. The slow-wave structure consisted of a helical waveguide comprising a porcelain tube 30 mm in diameter, with a helix made of copper wire 0.4 mm in diameter wound at a pitch of 0.8 mm. The experimentally measured phase velocity in the helix was $v_{ph}/c = 1/200$. A plasma piston was produced by discharging a 750 microfarad capacitor bank charged to 4.5 kV. At 24.75 Mcs, the frequency of the reflected wave was found to be increased by 11 per cent relative to the incident wave, and when the phase velocity was decreased to 1/375 of the velocity of light, the frequency increased by 20 per cent. The velocity of the plasma piston was calculated to be $v = 6.45 \times 10^7$ cm/sec. This effect can be used for amplification and generation of microwaves, acceleration of particles, and various measurements in plasma and also to increase the stability of a plasma.

The second part of the investigation was devoted to waveguide properties of plasma. A plasma waveguide was produced by a high frequency discharge in a quartz tube 1500 mm long.

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In which a vacuum of 7×10^{-3} mm Hg was maintained. The plasma density in the waveguide
could be varied up to 10^{11} cm^{-3}. A slow electromagnetic wave of low power (on the order of
1 watt) at frequencies from 150 to 2000 Mcs was excited in the plasma waveguide, and the re-
sultant phase velocity of the standing wave was [illegible] as a function of the frequency for
different plasma densities and for several values of longitudinal magnetic field. A study of
the dependence of the waveguide field intensity on the high-frequency power applied to the
plasma (in the range from 100 to 1.5 kw) [illegible] this dependence to be non-monotonic,
probably owing to resonance in the plasma column. Other quantities measured were the
radial dependence of the longitudinal [illegible]
passing through the plasma waveguide [illegible] distortion of [illegible] signals
[illegible] wave losses in the plasma waveguide.
The acceleration in the plasma was investigated by means of a small model of a helical-
plasma accelerator. An analysis of the energy spectrum of the beam, made by electrostatic
deflection, shows that the spectrum is quite broad and that a considerable fraction of the
electrons had the expected energy near 5.5 keV. This shows that the field is capable of pene-
trating and reaching the axis of the plasma and that the electrons become accelerated.
K. D. Sinel'nikov is credited [illegible] reason for signal [illegible]

[illegible]

Reflection of electromagnetic waves from S/781/62/000/000/[illegible]/036

plasma waveguide. There are nine figures and sixteen references, including articles by S. S. Buchsbaum and S. C. Brown, Phys. Rev. 106, 196 (1957), V. Josephson, J. Appl. Phys. 29, 30 (1958); Ginzton, Science, 127, 3308 (1958), and M. Lampert, Phys. Rev. 102, 289 (1956).

Card 4/4

S/057/61/031/005/009/020
B104/B205

24.2120 (1049, 1163, 1532)

AUTHORS: Zagorodnov, O. G., Faynberg, Ya. B., Ivanov, B. I., Us, V. S., and Bolotin, L. I.

TITLE: Non-linear effects in the propagation of electromagnetic waves in a plasma waveguide

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 31, no. 5, 1961, 574-576

TEXT: An experimental study has been made of non-linear distortions of sinusoidal electromagnetic waves in a plasma. Non-linearities of this kind occur when the velocity of the plasma electrons interacting with the wave becomes comparable to the phase velocity of the waves. The experiments were conducted with a cylindrical plasma column of 1 cm diameter and 160 cm length, produced by a d-c discharge in mercury vapor within a longitudinal magnetic field. The signals at the input and the output of the discharge tube were conveyed to a double-beam oscilloscope. The dependence of the ratio a_n/a_1 (a_i - amplitude of the i-th harmonic) on the spacing of the two spirals exciting and receiving the electromagnetic

Card 1/2

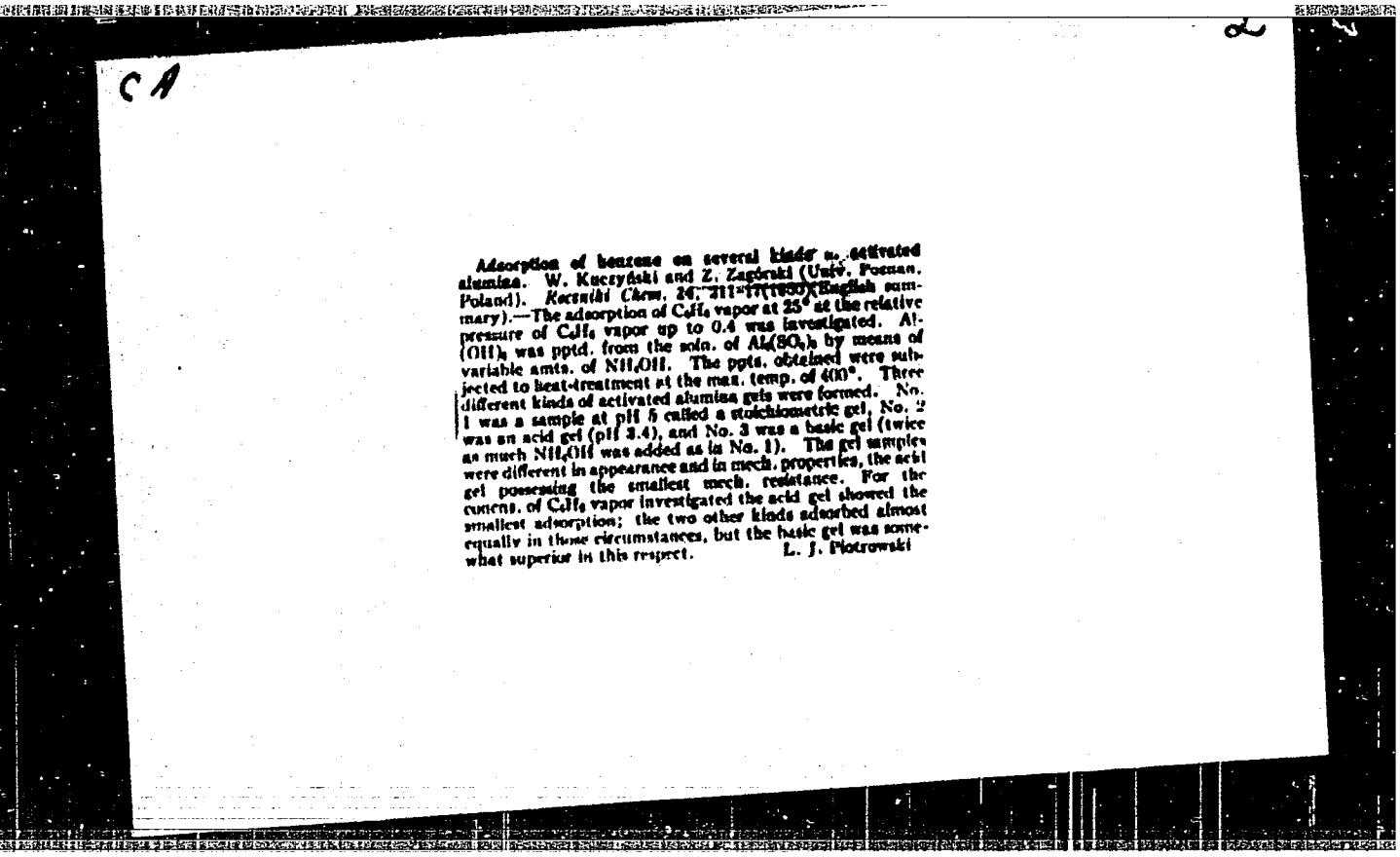
Non-linear effects...

waves (see Fig. 1) shows that a sinusoidal signal undergoes distortion at a distance of 10 cm and acquires a sawtooth shape. Fig. 2 shows a_2/a_1 as a function of a_1 for different amplitudes of the input signal and different densities of the plasma. It was found further that non-linearities are also produced by a decrease in plasma density, due to the decreasing phase velocity of the waves and the growing amplitude of the signal in the plasma. It is concluded that a sinusoidal signal is distorted by a non-linear plasma. The sawtooth signal observed at the output undergoes further distortion with increasing non-linearity. There are 4 figures and 4 references: 2 Soviet-bloc and 2 non-Soviet-bloc.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN USSR Khar'kov (Institute of Physics and Technology, AS UkrSSR, Khar'kov)

SUBMITTED: July 30, 1960

Card 2/4 2



CA

Adsorption of benzene on several kinds of activated alumina. W. Kuczyński and Z. Zagórski (Univ. Poznan, Poland). *Roczniki Chem.* 26: 211–17 (1952) (English summary).—The adsorption of C_6H_6 vapor at 25° at the relative pressure of C_6H_6 vapor up to 0.4 was investigated. $Al(OH)_3$ was pptd. from the soln. of $Al_2(SO_4)_3$ by means of variable amts. of NH_4OH. The ppts. obtained were subjected to heat-treatment at the max. temp. of 400°. Three different kinds of activated alumina gels were formed. No. 1 was a sample at pH 5 called a stoichiometric gel, No. 2 was an acid gel (pH 3.4), and No. 3 was a basic gel (twice as much NH_4OH was added as in No. 1). The gel samples were different in appearance and in mech. properties, the acid gel possessing the smallest mech. resistance. For the concns. of C_6H_6 vapor investigated the acid gel showed the smallest adsorption; the two other kinds adsorbed almost equally in these circumstances, but the basic gel was somewhat superior in this respect. L. J. Piotrowski

COUNTRY	:	Poland	E-2
CATEGORY	:		
ABS. JOUR.	:	RZKhim., No. 5 1960, No.	17533
AUTHOR	:	Zagorski, Z.	
INST.	:	Not given	
TITLE	:	The Determination of Oxygen in Gas Mixtures	
ORIG. PUB.	:	Chem Analit (Poland), 4, No 1-2, 361-364 (1959)	

ABSTRACT : A semicontinuous method for the polarographic determination of O_2 in gas mixtures is described, using a dropping mercury electrode as the cathode and an inner mercury electrode as the anode. The mixture to be analyzed is sucked through the polarographic cell. A 5% H_2SO_4 solution serves as the background. The instrument is calibrated with air.

V. Mirkin

CARD: 1/1

ZAGORSKI, Z.

(3)

Chemical Abstracts
May 25, 1954
Miscellaneous
Industrial Products

Alginates from Baltic seaweeds. W. Kuczyński and Z. Zagórski (Univ. Poznań, Poland). *Roczniki Chem.* 26, 690–1(1952).—Several samples of alginates have been extd. in 12% yield from air-dried *Fucus vesiculosus* collected on the Baltic shore. The use of Na alginate in stabilization of course suspensions was investigated. Janina R. Spec

ZMORSKI, Z.

"Recent Soviet achievements in the field of instrumental chemical analysis." p. 193. (Wiadomosci Chemiczne. Vol. 7, no. 5, May 1953. Wroclaw.)

SO: Monthly List of East European Accessions, Vol. 3, No. 2, Library of Congress, February 1954, Uncl.

Increase of accuracy in polarographic determination of trace substituents. Zbigniew Zagorski (Central Bur. Cable Construction, Poznan, Poland). Roczniki Chem. 29, 912-15(1955)(English summary).—A simple method of measurement of small waves on a polarogram was developed [illegible] was [illegible] times enlarged [illegible] graph paper with scale. With the help of a transparent pattern the lines of equal [illegible]

P. Ingalus

ZAGURSKY

POLAND/Analytical Chemistry - Analysis of Inorganic Substances E-2

Abs Jour : Ref Zhur - Khimiya, No 3, 1958, No 7595

Author : Zaguraky
Inst : Not Given
Title : The Polarographic Determination of Lead Oxides in Lead Metal

Orig Pub : Chem. Anal., 1956, 1, No 2-3, 188-198

Abstract : The lead being analyzed is dissolved in mercury, the lead oxides floating on the surface of the amalgam (A) are dissolved in 0.5 N HCC and the zesulting solution is estimated polarographically at known time intervals (t). Because of the slow transition of Pb from A into solution the polarographic results are extrapolated graphically to t→0, whereby the correction is introduced for the decreasing volume of the solution above A (as the result of the sampling). The results of the analyses are good when ≥ 10g of the Pb oxides are determined per 1 g of the Pb metal.

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ZAGORSKI ZBIGNIEW

POLAND/Analytical Chemistry - Analysis of Inorganic Substances. E-2

Abs Jour : Ref Zhur - Khimiya, No 8, 1958, 24765

Author : Zagorski Zbigniew, Kempinski Olgierd
Inst :
Title : Polarographic Determination of Traces of Thallium in Metallic Cadmium and Lead and Also in Iron-Cadmium Bodies.

Orig Pub : Chem. analit., 1956, 1, No 4, 273-284

Abstract : Description of a method of determining Tl in "cadmium sponge" (Cd, Fe and their oxides) (CS) of alkaline storage batteries, and also in metallic Cd and Pb. Concentration of Tl by precipitation of the thio-urea-perchlorate complex of Tl (RZhKhim, 1953, 9121; 1955, 40326) does not yield satisfactory results since Cd is almost completely precipitated together with the Tl. Good results were obtained on using the extraction method. 3 g CS are dissolved in 30 ml 7 N HNO_3, the insoluble residue filtered off, the filtrate is evaporated to 10 ml, transferred to the

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POLAND/Analytical Chemistry - Analysis of Inorganic Substances. E-2

Abs Jour : Ref Zhur - Khimiya, No 8, 1958, 24765

extraction apparatus, 5 ml of bromine water are added and extraction with ether is conducted for 5 hours. The extract is evaporated, 2 ml of HNO_3 and H_2SO_4 are added, and the mixture is evaporated to dryness. The residue is dissolved in 5 ml of the background solution (300 ml 25% NH_4OH + 214 g NH_4Cl + 300 ml warer saturated with SO_2 + 2.2 liters of water) and subjected to polarography. Under the described conditions of extraction Tl is separated from Fe, Cd, Cu and Pb. Analogously Tl is determined in metallic Pb and Cd. Relative error of determination of Tl in CS (10-3% Tl) is ± 8%, while in metallic Pb and Cd containing 10^{-2}% Tl, it is of 10^{-2}% [?] ± 3%.

Card 2/2

22

Application - Medicinals, Vitamins, Antibiotics.

Abs Jour : Ref Zhur - Khimiya, No 3, 1958, 8994

Author : Kwaśniewski Wacław, Łagowski Zbigniew

Inst : University of Poznan

Title : Stabilizing Properties of Alginates Derived from Baltic Seaweeds. I. Chemistry and Uses of Alginic Acid.

Orig Pub : Zesz. nauk. Univ. Poznaniu, 1957, No 6, 53-54

Abstract : A procedure has been developed for producing alginic acid (I) from Fucus vesiculosus (yield 80%). An investigation has been made of the stabilizing action of the Na-salt of I (II) on model-study suspensions. Stabilizing action of II is observed at a concentration as low as 0.001%.

Card 1/1

ZAGORSKI, Zbigniew, dr.

Industrial application of the radiation chemistry. Przegl techn no.36:3,5 7 S '60.

ZAGORSKI, Zbigniew Pawel

The determination of the G-value of gamma-radiation-induced reactions by polarographic electrolysis at constant potential. Nukleonika 5 no.5:253-260 '60.

1. Institute of Nuclear Research, Warszawa, Department of Radiation Chemistry

ZAGORSKI, Zbigniew Pawel

γ - radiation induced chain reaction of oxygen reduction in the aqueous system O_2 - Na_2SO_3 - NaOH. Nukleonika 6 no.9:587-599 '61.

1. Polish Academy of Sciences, Institute of Nuclear Research, Warsaw, Department of Radiation Chemistry.

MINC, S.; ZAGORSKI, Z.P.; BROSZKIEWICZ, R.

Continuous methods of tracing chemical changes in fluids under gamma irradiation. Nukleonika 9 no.7/8:611-623 '64

1. Institute of Nuclear Research, Warszawa-Swierk.

ZAGORSKI, Zbigniew Pawel, doc. dr

Role of radiation chemistry in studies on absolute rate constants. Wiad chem 18 no. 7:391-412 Jl '64.

1. Head, Laboratory of the Department of Radiation Chemistry, Institute of Nuclear Research, Warsaw.

ACC NR: AP6036781 SOURCE CODE: PO/0046/66/011/009/0681/0683

AUTHOR: Zagorski, Z. P.; Panta, P. P.

ORG: [Zagorski] Department of Radiation Chemistry, Institute of Nuclear Research, Warsaw; [Panta] Department of Reactor Exploitation, Institute of Nuclear Research, Swierk

TITLE: Electrochemical cell with direct conversion of ionizing radiation into electrical energy

SOURCE: Nukleonika, v. 11, no. 9, 1966, 681-683

TOPIC TAGS: electrochemistry, electrolysis, radioactive source, cobalt, radioisotope, irradiation effect

ABSTRACT: Experiments in the use of gamma rays from a radioisotope source for the production of an electric current are briefly described. An electrochemical cell consisting of two kinds of aluminum foil electrodes placed in a semiliquid solution of ammonium glycol and ethylene glycol developed an increasing potential difference when subjected to gamma irradiation from a Co^{60} source. This difference was of opposite direction to that measured in the case of the spontaneous building up of voltage. In the case of very high external resistance, the potential difference increases regularly before gradually leveling. If the

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ACC NR: AP6036781

external resistance is low, the irradiation causes a current flow which is proportional to the dose rate of the incident radiation. The authors see an analogy between their device and a fuel cell. They also think that electrolysis in a radiation field is similar to photoresistivity, where the amount of external electric energy is modulated by the incident light. Further experiments are planned with a view to applying the phenomenon to the sterilization of bone tissue. Orig. art. has: 2 figures.

SOV REF: 001/

SUB CODE: 07,20/ SUBM DATE: 14Mar66/ OTH REF: 001/ ATD PRESS: 5107

Card 2/2

ZAGORSKI, Zbigniew Pawel

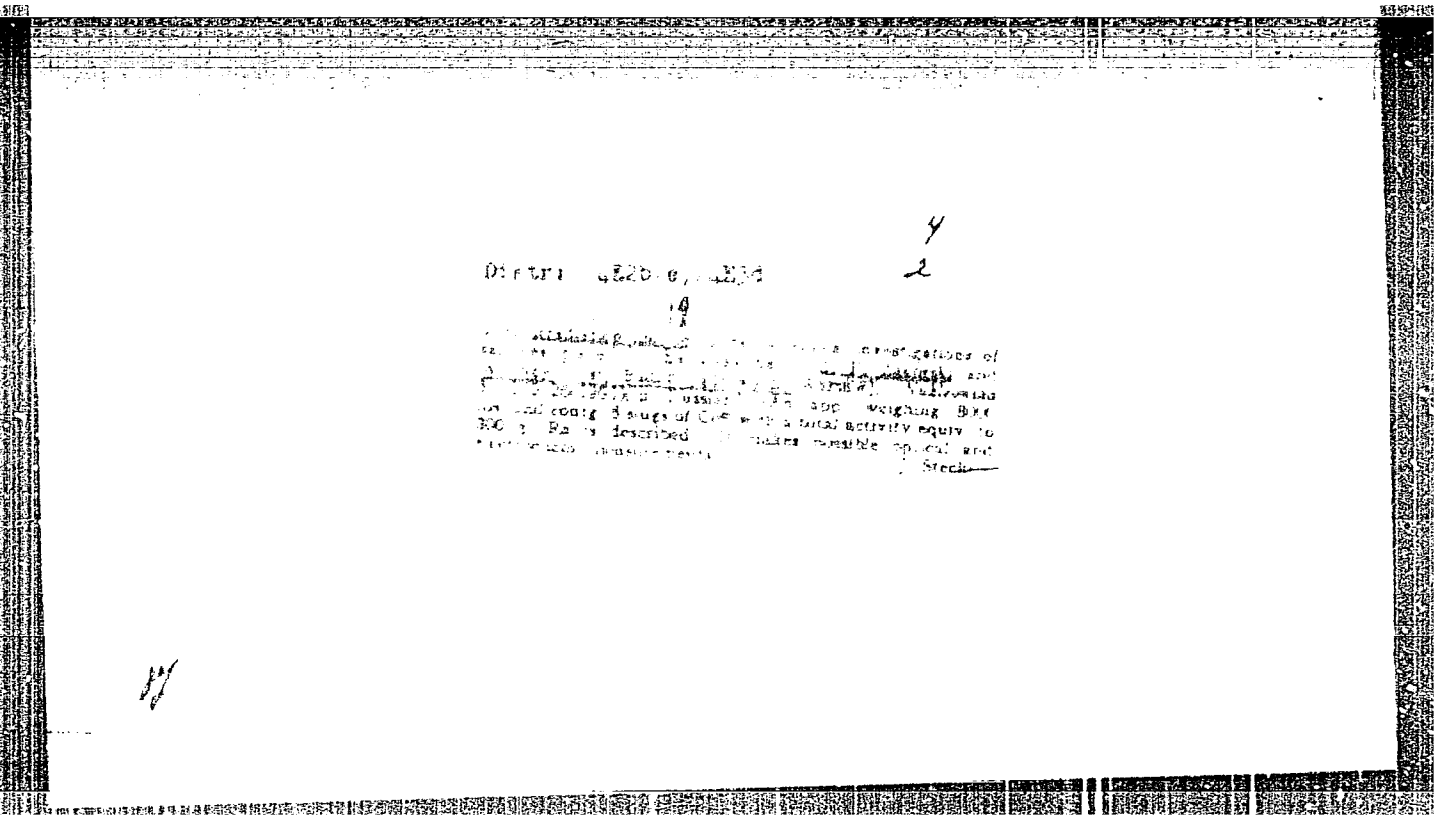
Gamma-radiation induced chain reaction of oxygen reduction in the aqueous system C_2-Na_2SO_3-NaOH. Nukleonika 6 no.9:587-599 '61.

1. Polish Academy of Sciences, Institute of Nuclear Research, Warszawa, Department of Radiation Chemistry.

ZAGORSKI, Zbigniew Pawel

Gamma radiation induced chain reaction of oxygen reduction in the aqueous system $C - Na_2SO_3 - NaCH$. Nukleonika 6 no. 9:587-599 '61.

1. Polish Academy of Sciences, Institute of Nuclear Research, Warszawa, Department of Radiation Chemistry.



ZAGORSKI, Z.P.

The G-value of γ-ray-induced reactions, as determined by polarography at a constant potential. Z. P. Zagórski. (Inst. Radiat. Chem., Warsaw). Nukleonika 5, 255-9 (1960) (in English). Several examples are given, proving the applicability of const.-potential polarography in a case of linear dependence of diffusion current on concn. The amt. of energy was detd. by a Fricke dosimeter. Two successive reactions, as well as induction periods or post-[illegible] effects, could be discerned, and nonlinear de-

K[illegible], [illegible]; [illegible], [illegible]

On the fluorescence light emitted by aqueous solutions in a gamma radiation field. Acta physica Pol 26 no.3/4:433-442 [illegible] '64.

1. Department of Radiation Chemistry, of the Institute of Nuclear Research of the Polish Academy of Sciences, Warsaw.

85443

P/046/60/005/004/003/007
A222/A026

26.2246

AUTHORS: Zagórski, Zbigniev Paweł; Ney, Włodzimierz

TITLE: Installation for Direct Physico-Chemical Observation of Systems in a Gamma Irradiation Field

PERIODICAL: Nukleonika, 1960, Vol. 5, No. 4, pp. 219 - 226

TEXT: In the Russian-language article an installation for Cobalt 60 irradiation is described, which makes possible physical and physico-chemical research during gamma irradiation. Reference is made to a paper by Z.P. Zagórski, "Postępy Techniki Jądrowej" (Progress in Nuclear Engineering), now being printed, for the description of other irradiation devices. The concept of a Cobalt 60 irradiation device for absorption measurement of different light waves during irradiation was brought up by Professor Stefan Minc. To that end, a simple device was built, which consisted of a vacuum or selenium photocell illuminated by a small light bulb. The dose rate was about 20 r/sec. Subjected to test were two types of photocells most frequently used in photo absorption meters: a "Pressler 90-350 PALA OXV" vacuum photocell and a gold-plated selenium photocell made by the

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British company EEL and used in Hilger photo absorption meters. The current measured for the vacuum photocell was 3.2×10^{-8} A in darkness, 9.92×10^{-7} A with the bulb on, 4.5×10^{-8} A during gamma irradiation in darkness, 10.8×10^{-7} A during gamma irradiation and with the bulb on, and 9.95×10^{-7} A under latter conditions though after a dose of 5×10^{6} r. The respective current values measured for the selenium photocell were $\leq 10^{-8}$ A, 6.2×10^{-7} A, 3×10^{-8} A, 6.7×10^{-7} A and 4.65×10^{-7} A. The results showed that standard photocells may be used in gamma irradiation fields under proper precautions. Apart from a decrease in sensitivity after extended irradiation, another serious deficiency is the glass opacity in photocell and container. In the irradiation device designed, mobile gamma irradiation sources were provided, because the system required a fixed optical system for reasons of mechanical sensitivity. The device consists of body, irradiation system, working chamber, removable cap and optical system (Fig. 1). The body consists of a flask-shaped jacket with a smaller concentrical dead-end cylinder inside, both made of steel. The space between jacket and cylinder, latter also referred to as socket, is filled with lead which constitutes

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a biological radiation shield. Optical and manipulation channels are attached horizontally to the socket. The body weighs 4 tons. The vertical top ends of six acid-resistant steel tubes are welded to the bottom of the dead-end cylinder. The other ends of the bent tubes horizontally protrude from the external body jacket. Each of the tubes receives a Cobalt 60 charge at the end of a flexible shaft. By means of the flexible shaft, each of the Cobalt charges may be either pushed through the tube into the dead-end cylinder, or pulled back and withdrawn into the tube. The wall of the dead-end cylinder has a slot with a variable aperture, which permits controllable passage of radiation to a photocell. The dead-end cylinder, which then receives the test container, is topped by a heavy lead-shielded cap balanced by counterweights. The six Cobalt 60 charges have a total of 300 gram - equivalents in radiation intensity. Design and technical projecting of the device were worked out by W. Ney, W. Olszewski, A. Stanek and Z.P. Zagórski, all of the Institute of Nuclear Research. There are 2 figures

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and 1 table.

ASSOCIATION: Institute of Nuclear Research, PAN, Warsaw, Laboratory of Radiation Chemistry

SUBMITTED: February 24, 1960

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AUTHOR: Zagórski, Zbigniew Paweł 19

TITLE: Determination of the G-Value of γ-Radiation-Induced Reactions by Polarographic Electrolysis at Constant Potential

PERIODICAL: Nukleonika, 1960, Vol. 5, No 5, pp 253 - 260

TEXT: The author presents experimental details and an equation for polarographic determination of the G-value which establishes the yield of reactions in radiation chemistry. He shows that tracing the reaction by polarographic means during irradiation provides information, which is hard to obtain by other means. The G-value specifying the number of changed molecules (either formed or destroyed) per 100 eV of absorbed energy is helpful in the investigation of reaction mechanisms and in technological work on the application of radiation-induced reactions in industry. The author indicates that pertinent publications (Ref. 1, 2, 3 and 4) do not contain reports of polarography having been used in heavy gamma radiation or as a means of calculating G-values from data obtained during irradiation. In the series of experiments presented, a Gammacell 220 source (Atomic Energy of Canada Ltd.) was used, with an activity of about 6,000

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Curies of Cobalt 60, average rate of dose 120 r/sec, as well as a test compartment of 3 liters in volume and a comparatively uniform field intensity ($\pm$20% tolerance between strongest and weakest sections). Figure 1 shows the irradiation chamber where the small polarographic thermostat vessel with ground glass fittings was placed. Currents were measured and recorded by means of the electronic polarograph Radiometer PO4 with a self-balancing bridge and a recording paper of 250 mm effective width. The records (Fig. 2) concern cases of oxygen consumption occuring as a result of various radiation-induced reactions. The reactions were selected as to illustrate various measurable rates. The amount of energy absorbed in a particular vessel is determined by chemical reference dosimetry in a separate test without a polarograph. In the investigation presented, the Fricke dosimeter was used (0.001 M $FeSO_4$, 0.8 NH_2SO_4, saturated with air); the increase in absorption due to Fe^{3+} formation in a specified period of time was measured by means of a Unicam SP 500 spectrophotometer at 302 mμ. The G-value was deduced from the linear dependence of the diffusion current on concentration as well as from the linear dependence of concentration change

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in the standard reference dosimeter on the dose within the investigated range of irradiation time and dose rate:

$$G_x = \frac{i_\Delta c_x G_{Dos} d_{Dos}}{i\Delta_{Dos} t d_x}$$

where the symbols specify

i - current intensity at the initial (final) concentration of the reacting substance c_x

i_Δ - change in current intensity in the selected time and concentration range

c_x - initial (final) concentration of the reacting substance

G_{Dos} - G-value of the gauge dosimeter used

G_x - G-value of the reaction investigated

Δ_{Dos} - change in concentration of the gauge dosimeter constituent, to which the G-value refers, in a given unit of time

t - time during which the change i_Δ takes place

d_{Dos} - density of the standard dosimeter liquid

d_x - density of the liquid investigated

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The equation is valid for cases both of consumption and formation of a product. In case of consumption the symbols i and c_x specify initial values (G_{-x} is derived), and in case of formation i and $^{x}c_x$ are final products (G_x is the result). Polarographic determination of fundamental data for calculation of the G-value along with tracing of the reaction during irradiation has proved useful and helped in solving some problems of the reaction mechanism. Further papers on the problems of polarography in radiation and on reactions of O_2 in the radiation field will be published later. The author acknowledges the cooperation of Professor S. Minc, Mr. R. Broszkiewicz and Miss T. Bryl. There are 2 Figures and 6 references: 1 Soviet, 2 Polish and 3 American.

ASSOCIATION: Institute of Nuclear Research, Warsaw (Department of Radiation Chemistry)

SUBMITTED: February 24, 1960

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ZAGORSKI, Z.

The possibility of radiation nitration of aromatic hydrocarbons. J. R. Broszkiewicz, S. Minc, and Z. Zagorski (Inst. Badań Jądrowych, Warsaw). *Polish Acad. Sci. Inst. Nuclear Research, Repr.* No. 123/ChR. 1 p.(1959)(In English).—A soln. prepd. from C_6H_6 0.170, $Ca(NO_3)_2 \cdot 4H_2O$ 11.8, and H_2O 80 g., was exposed to γ-radiation (6600 c. from Co) for 16 hrs. at atm. pressure. Polarographic examn. of the irradiated soln. revealed $PhNO_2$, picric acid, and some unidentified compds. Mononitrophenols were not detected. The reaction mechanisms proposed involve 2 steps: $NO_3^- + H = NO_3^- + OH$, and $NO_3^- + OH = NO_3 + OH^-$, followed by: $C_6H_6 + NO_3 = C_6H_5NO_3$ or $NO_3 + OH = NO_3^+ + OH^-$ and $C_6H_6 + NO_2^+ = C_6H_5NO_3 + H^+$.

A. Szafranski

ZAGORSKI, Z.

Automation in analytical chemistry. p. 313.

CHEMIA ANALITYCZNA. (Komisja Analityczna Polaskiej Akademii Nauk i Naczelan Organizacja Techniczna) Warszawa, Poland, Vol. 3, no. 3/4 1958

Monthly List of East European Accessions (EEAI) LC, Vol. 8, no. 7, July 1959
Uncl.

E-2

COUNTRY : Poland
CATEGORY :

ABS. JOUR. : RZKhim., No. 1959, No. 86231

AUTHOR : Zagorski, Z.; Cyrankowska, M.
INST. :
TITLE : New Applications of Extraction-Polarographic Method. I. Determination of Copper and Lead in Iron-Cadmium Paste
ORIG. PUB. : Chem. analit., 1958, 3, No 3-4, 495-500

ABSTRACT : On determination of traces of Pb and Cu in Fe-Cd paste used in the manufacture of alkaline storage batteries, the sample (5 g) is dissolved in 30-40 ml HNO_3 (1:1), resultant solution (together with small amount of precipitate) is diluted with water to 50 ml and thoroughly stirred. If content of Pb and Cu in the paste is at least of 0.005%, 5 ml of the settled solution are placed in a separatory funnel into which are added 10 ml ammonium citrate solution (50 g citric acid dissolved in 50 ml water and 50 ml 25% NH_4OH), 10 ml concentrated NH_4OH and 5 ml 0.2% solution of Na-diethyldithiocarbamate (I). If content of Pb and Cu is less than 0.005%, 20 ml of the solution

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E-2

COUNTRY : Poland
CATEGORY :
APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963410020-5"
ABS. JOUR. : RZKhim., No. 1959, No. 86231

AUTHOR :
INST. :
TITLE :

ORIG. PUB. :

ABSTRACT : are taken and there are added to it a 4-fold amount, respectively, of each of the above-stated reagents. Then, extraction is carried out with CCl_4 (by increments of 20 ml), adding each time 5 ml of 0.2% solution of I. The extracts are combined and are shaken with 30 ml 10% solution of ammonium citrate (to remove the partially extracted Fe^{2+}). After separation of the aqueous layer the extract is shaken with 30 ml HNO_3 (1:1) (to remove Pb and Cu) and the aqueous layer is separated. This extraction of the organic phase with a solution of HNO_3 is repeated 2 more times. The acid extracts so obtained are combined and evaporated to dryness on a water bath, and dissolved in 10 ml of a solution 2 N in CH_3COOH and 2 N in CH_3COONH_4; N_2 is passed in and polarography is carried out.

CARD: 2/2

A. Nemodruk.

ZAGORSKI, Z.; KRAWCYZK, W.

Some methods of determining perchlorates in macro and micro quantities.
p. 505.

CHEMIA ANALITYCZNA. (Komisja Analitczna Polskiej Akademii Nauk i Naczelna Organizacja Techniczna) Warszawa, Poland, Vol. 3, no. 3/4 1958

Monthly List of East European Accessions (EEAI) LC, Vol. 8, no. 7, July 1959

Uncl.

COUNTRY : Poland E-2
CATEGORY :

ABS. JOUR. : RZKhim., No. 1959, No. 86206

AUTHOR : Zagorski, Z.; Krawczyk, W.
INST. :
TITLE : Methods of Determining Macro- and Micro-Amounts of Perchlorate.

ORIG. PUB. : Chem. analit., 1958, 3, No 3-4, 505-513

ABSTRACT : Improved method of determining micro-amounts of ClO_4^- (about 0.001%) in storage battery electrolytes, based on their reduction to Cl^- with $Ti_2(SO_4)_3$ and Zn-metal in H_2SO_4-medium, and subsequent turbidimetry of Cl^- in the form of AgCl (RZhKhim, 1955, No 1, 648). For determination of macro-amounts of ClO_4^- (about 1%) a method is proposed which is based on reduction of ClO_4^- with $Ti_2(SO_4)_3$ and Zn-metal, by heating under reflux on boiling water bath, and subsequent polarography of Cl^- formed. Completeness of the reduction of ClO_4^- depends on concentration of H_2SO_4 in solution and on duration of heating: 40% concentration of H_2SO_4 is optimal, heating for 1 hour is sufficient for a

CARD: 1/2

ZAGORSKI, Z.

Determination of oxygen in a gas mixtures.
p. 361.

CHEMIA ANALITYCZNA. (Komisja Analitycana Polskie Akademii Nauk i Naczelna Organizacja Techniczna) Warszawa. Poland. Vol. 4, No. 1/2, 1959.

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