RAKOS, M.

Effect of artificial aging on the magnetic nuclear resonance of natural rubber. Coll Cz Chem 28 no.7:1914-1917 Jl '63.

1. Institut fur Physik, Technische Hochschule, Kosice.

RAKOS, M., [illegible]

Magnetic properties of hydrous [illegible] solutions. Coll Cz Chem 30 no.5:1720-1723 My '65.

1. Institut fur experimentale Physik, Safarik-Universitat, Kosice. Submitted July 25, 1964.

RAKOS, M.

Effect of thermal and ultraviolet radiation on the magnetic nuclear resonance of sodium polymethacrylate. Cs cas fys 12 no.3:205-215 '62.

1. Katedra fyziky Vysokej skoly technickej, Kosice.

RAKOS, M.

Evaluation of microphones. p. 177.

STROJNICKY CASOPIS. (Slovenska akademia vied) Bratislava, Czechoslovakia.
Vol. 6, no. 3, 1955.

Monthly List of East European Accessions (EEAI) LC, Vol. 8, No.11,
November 1959.

Uncl.

RAKOS, M.

Simple apparatus for determining paramagnetic resonance. p. 128.

ELEKTROTECHNICKY CASOPIS. Bratislava, Czechoslovakia, Vol. 10, No. 2, 1959.

Monthly list of East European Accessions (EEAI) LC, Vol. 8, No. 10, Oct. 1959
Uncl.

Rakos, M.

Magnetic properties of solid solutions of some ionic compounds. p. 368.

CESKOSLOVENSKY CASOPIS PRO FYSIKU, Czeckoslovakia. Vol. 9, no. 4, 1959.

Monthly List of East European Accessions, (EEAI) LC, Vol. 8, no. 10, 1959 -Oct. Uncl.

PAKOS, M.

Evaluating the results of measurements of the tangent of the loss angle. p. 482

ELEKTROTECHNICKY OBZOR. (Ministerstvo tezkeho strojirenstvi a Ceskoslovenske vedecka technicka spolecnost pro elektrotechniku pri Ceskoslovenske akademii ved) Praha, Czechoslovakia. Vol. 48, no. 9, Sept. 1959.

Monthly list of East European Accessions (EEAI) LC, vol. 9, no. 1, Jan. 1960.

Unel.

KAZDA, P.

An amateur battery charger. p. 514. (TECHNICKA PRACA, Vol. 9, No. 11, Nov 1954, Bratislava, Czechoslovakia)

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

RAKOS, M.; TARABCAKOVA, E.

Effect of ultraviolet rays on paramagnetism of aqueous solutions of iron-chromium compounds. Coll Cz Chem 25 no.9:2265-2273 S '60. (EEAI 10:9)

1. Institut fur Physik, Technische Hochschule, Kosice.

(Ultraviolet rays) (Magnetic properties)
(Iron) (Chromium)

16(1); 18(3), (6);
22(2); 11(2); 14(5) PHASE I BOOK EXPLOITATION CZECH/2579

Sborník vedeckých prac vysokej školy technickej v Košiciach, II, 1957 (Collection of Scientific Works of the Higher Technical School in Košice, II, 1957) Bratislava, SVTL, 1957. 198 p. 1,300 copies printed.

Resp. Ed.: Igor Žáčko; Tech. Ed.: F.R. Blažko; Chief Ed.: Pavol Holéczy, Engineer.

PURPOSE: This collection of articles is intended for scientists and engineers interested in the subjects discussed.

COVERAGE: This collection of 13 articles written by members of the faculty of the Košice Higher Technical School covers a variety of subjects, including mathematics, metallurgy, mining engineering, etc. Each article is accompanied by a resumé in Slovak, Russian, and German. References are listed at the end of each article; the majority of listings are Slovak, German, and Soviet.

Card 1/8

TABLE OF CONTENTS:

AVAILABLE: Library of Congress

IS/mg
12-1-59

VARGA, Z.; RAKOS, M.

Effect of the geometry of the optical system of the Curie-Cheneveau torsion balance on the accuracy of magnetic susceptibility measurement. Sbor VST Kosice 1:61-66 '64.

1. Chair of Physics of the Higher School of Technology, Kosice.
Submitted April 1, 1963.

KAZDA, M.; VARGA, Z.

Magnetic properties of two complex ferric paramagnetics. Chekhosl fiz zhurnal 15 no.4:241-250 '65.

1, Faculty of Natural Sciences of Safarik University, Kosice, Komenskeho park 2. Submitted July 3, 1964.

Z/037/62/000/001/003/007
E197/E535

AUTHORS: Rákoš, M. and Tarabčáková, E.

TITLE: The influence of crystalline and free water on the magnetic susceptibility of slightly magnetic materials

PERIODICAL: Československý časopis pro fiziku, no.1, 1962, 23-34

TEXT: The influence is investigated of the crystallizing and free water on the magnetic susceptibility of paramagnetic and diamagnetic materials which crystallize with a certain number of water molecules. The authors report on measurements of magnetic susceptibility of aqueous solutions of $CoCl_2 \cdot 6H_2O$, $FeSO_4 \cdot 7H_2O$, $CaCl_2 \cdot 6H_2O$ which are represented by a broken line of three sections, an unbroken line and a curve in that order and offers an explanation for the found behaviour. The authors recall that Wiedeman (1868) and Königsberger (1899) observed the discrepancy which exists between the measured magnetic susceptibility of salts in solution and the value calculated from the susceptibility of the crystalline material and survey some of the

Card 1/3

work which was carried out since. Particularly work by G. I. Kruglyakova (Doklady AN SSSR 193, 1958, 443) is considered and extended to a diamagnetic material not so far investigated. The water content was 0 to 100%. Specimens with low water content were obtained both by moistening and drying - identical results being obtained in both cases. The measurements were mostly made with a Curie-Chévenau torsion balance, by a relative method against distilled water, assuming for the latter $-0.72 \cdot 10^{-6}$ CGSM units. In comparison with Kruglyakova's value of $115 \cdot 10^{-6}$ for $CoCl_2$, the authors find $91 \cdot 10^{-6}$ CGSM units; however, in the region of 45% H_2O content, identical values were obtained. The experimental results show that there are three regions of dependence of magnetic susceptibility on water content, namely, a region given by the waterfree and still crystalline material, the region between crystalline material and saturated polution and the region of diluted solution. For paramagnetic materials such a dependence will give either a straight line in any of the regions - the lines being joined at the limit of the

region - or an unbroken line for all concentrations. A curve was determined for the diamagnetic material $CaCl_2$. The Wiedeman formula is applicable to any of the sections. The authors believe that the reason for change in the slope of the line in the three regions is due to a change in the potential energy of the ions in the intercrystalline field, the cause of the curvature in the case of $CaCl_2$ is ascribed to the deformation of the electron shell of the ions in the lattice of the crystal. There are 5 figures.

ASSOCIATION: Katedra fysiky Vysokej školy technickej, Košice
(Department of Physics, Technical University, Košice)

SUBMITTED: May 30, 1961

RAKOS, M.

Nuclear magnetic resonance of some oils. Chekhosl fiz zhurnal 13 no. 6: 441-451 '63.

1. Katedra fyziky, Vysoka skola technicka, Kosice.

RAKOS, M.; TARABCAKOVA, E.

Magnetic investigation of some special cases of photographic processes. Coll Cz Chem 26 no.3:628-636 Mr '61. (EEAI 10:9)

1. Institut fur Physik, Technische Hochschule, Kosice.

(Photography)

RAKOS, M.

"Graphic determination of concentrations and susceptibility of mixtures or solutions of magnetically weak substances"

Pokroky Matematiky, Fysiky a Astronomie. Praha, Czechoslovakia. Vol. 4, no. 1, 1959

Monthly list of East European Accessions (EEAI), LC, Vol. 8, No. 6, Jun 59, Unclas

RAKOS, M.

"Assembly parts for a meter of magnetic susceptibility of low-magnetic materials."

ELEKTROTECHNICKY CASOPIS, Bratislava, Czechoslovakia, Vol. 10, no. 1, 1959

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

Unclassified

CZECHOSLOVAKIA/Magnetism - Experimental Methods of Magnetism

Abs Jour : Ref Zhur - Fizika, No 4, 1959, No 8292

Author : Rakos Matej
Inst : Technical College, Kosice, Czechoslovakia
Title : Electronic Instrument for the Measurement of the Susceptibility of Paramagnetic and Diamagnetic Substances

Orig Pub : Chekhosl. fiz. zh., 1957, 7, No 4, 495-503

Abstract : A detailed description is given of a setup in which the force acting in the field of the electromagnet on the investigated substance is measured by determining the peizoelectric effect of a Rochelle-salt crystal. The potential difference produced on the terminals of the crystal is measured by means of a known method and a vacuum tube voltmeter. The instrument was tested with solutions of iron chloride and in distilled water. The results obtained are compared with the given measurements on tortion balance of the Curie-Chenevau type. A strict proportionality of the effect to the effective force is noted, along with the high sensitivity

Card : 1/2

Makon, F.

A push-pull oscillator for the calibration of recording and playback heads. Praxe. p. 113

(Slaboproudy Obzor. Vol. 18, no. 5, May 1957. Praha, Czechoslovakia)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, no. 10, October 1957, Uncl.

PAKOS, [redacted]

TECHNOLOGY

periodicals: SBORNIK VYSOKOSKOLSKYCH PRACI Vol. 2, 1957

PAKOS, K. Effects of heat on losses in iron, measured by Epstein's apparatus. p. 37

Monthly List of East European Accessions (EEAI) LC Vol. 8, no. 5 May 1959, unclass.

[redacted], M.

"Transformer with automatic tension control." p. 131

TECHNICKA PRACA. (Casopis vedeckych technickych spolocnosti pri Slovenskej akademii vied) Bratislava, Czechoslovakia, Vol. 7, no. 3, 1955.

Monthly List of East European Accessions Index (EEAI) LC. Vol. 8, No. 9, Sept. 1959

Uncl.

RAKOS, M.

Metronyme; p. 510

TECHNICKA PRACA. Czechoslovakia, Vol. 7, No. 11, Nov 1955.

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

ACCESSION NR: AP3003659 Z/0055/63/013/006/0441/0451

AUTHOR: Rakos, M.

TITLE: Nuclear magnetic resonance of some oils

SOURCE: Chekhoslovatskiy fizicheskiy shurnal, v. 13, no. 6, 1963, 441-451

TOPIC TAGS: oil nuclear magnetic resonance, castor oil, bearing oil, paraffin oil, transformer oil, lubricating oil, methyl silicon oil, naphtha oil, immersion oil, polymer oil

ABSTRACT: Some oils were subjected to nuclear magnetic resonance (NMR) in order to obtain information on their structure and to compare their behavior at NMR. Saturation curves were obtained and the longitudinal and transverse relaxation times of the resonance of these oils were investigated. Relations were derived for calculating the number of resonating hydrogen nuclei per unit volume of oil, both by direct study of the signals on a cathode ray oscilloscope and by recording the differential of the absorption curve of NMR. The number

Card 1/2

ACCESSION NR: AP3003659

of hydrogen nuclei per unit volume and mass of the oils was calculated. Equations were derived for the longitudinal relaxation time of glycerine and castor oil. Relations were also found from which qualitative conclusions could be drawn as to the average molecular mass of the oils and the mean distance of the resonating hydrogen nuclei of the different oils. Castor oil, bearing oil 207, paraffin oil, transformer oil B, a lubricating oil of commercial quality, and methyl silicon oil were investigated. Glycerin was used as the normal of the relaxation time and signal intensity. In addition, the intensities of the NMR signals of some naphtha oils, immersion oil, and some polymer oils were measured. Orig. art. has: 3 figures, 1 table, and 26 formulas.

ASSOCIATION: Katedra fyziky, Vysoka skola technicka, Kosice (Department of Physics, College of Technology)

SUBMITTED: 19Jun62 DATE ACQ: 16Jul63 ENCL: 00

SUB CODE: 00 NO REF SOV: 000 OTHER: 013

Card 2/2

COUNTRY : Czechoslovakia
CATEGORY :

ABS. JOUR. : RZKhim., No. 22 1959, No. 79851

AUTHOR : Rakos, M.
INST. : Not given
TITLE : The Investigation of the Accelerated Aging of Mineral Oils by Measuring Their Magnetic Properties

ORIG. PUB. : Chem Listy, 52, No 7, 1229-1234 (1958)

ABSTRACT : The author has investigated the magnetic susceptibility of oils during accelerated aging tests at elevated temperatures and in the presence of Cu and Pb catalysts. In the case of a transformer oil for bearings, it was established that in the course of a 60-hr test at 150° the diamagnetism decreases at first, attains a minimum after some 10 hrs, subsequently passes through a maximum (after approximately 20 hrs), and finally decreases or forms a second maximum (bearing oils).

CARD: 1/3

COUNTRY : Czechoslovakia
CATEGORY : H-[illegible]

ABS. JOUR. : RZhKhim., No. [illegible] 1959 No. 79[illegible]

AUTHOR :
INST. :
TITLE :

ORIG. PUB. :

ABSTRACT : of the [illegible] hydrocarbons. The study of the magnetic susceptibility and of the index of refraction gives a better picture of the course of the aging process than the methods previously used.
O. [illegible]

2/3 245

Distr: 4E3d

Study of the oxidation of mineral oils by magnetic susceptibility. Matej Rákoš (Vysoká škola tech., Košice, Czech.). *Chem. listy* 52, 1229–34(1958).—The change of magnetic susceptibility and n with oxidation time is discussed in connection with the mechanism causing the changes in phys. properties of oils. E. Erdős

RAKOS, M.

Susceptibility measurement of small samples of weak magnetic materials. El tech cas 14 no.7:435-436 '63.

RAKOS, Matej, prof. inz.

"Magnetic gas analyzers" by D.I. Agejkin [Ageykin, D.I.]. Reviewed by Matej Rakos. Stroj cas 15 no.6:575-576 '64.

1. Chair of Physics of the Faculty of Natural Sciences, Safarik University, Kosice.

[illegible], J.

The weight of the phonograph pickup in a substitute electric diagram.

P. 227, (Strojnelektrotechnicky Casopis) Vol. 8, no. 3, 1957, Praha, Czechoslovakia

SO: Monthly Index of East European Accessions (EEAI) Vol. 6, No. 11 November 1957

RAKOS, M.

Electronic apparatus for the measurement of the susceptibility of paramagnetic and diamagnetic materials.

P. 378 (Cexkoslowenska Moroflorgie. Vol. 7, no. 4, 1957 Praha, Czechoslovakia)

Monthly Index of East European accessions (EEAI) LC, Vol. 7, no. 2, February 1958

RAKOS, M.

"Improved measuring accuracy of specific losses within metal sheets."

p. 532 (Elektrotechnicky Obzor) Vol. 46, no. 10, Oct. 1957
Prague, Czechoslovakia

SO: Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 4, April 1958

RAKOS, M.

RAKOS, M. Construction of Kopsel's apparatus of measurement of coercive force in ferromagnetic materials. p. 124

Vol. 8, no. 3, Mar. 1956
TECHNICKA PRACA
TECHNOLOGY
Bratislava, Czechoslovakia

So: East European Accession Vol. 6, no. 2, 1957

24.7900

Z/037/62/000/003/001/007
E202/E492

AUTHOR: Pákoš, M.

TITLE: The influence of thermal and ultraviolet radiations on the nuclear magnetic resonance of sodium polymethacrylate

PERIODICAL: Československý časopis pro fysiku, no.3, 1962, 205-215

TEXT: An installation for oscillographic study and automatic recording of the differential nuclear magnetic resonance absorption curve is described. A rather high curve broadening to 0.085 Oe was attributed to poor field uniformity produced by the magnet of East German origin. However, the apparatus gave adequate resolution for the study of the influence of the thermal and ultraviolet radiations on sodium polymethacrylate containing 40% w/w water. Specimens of the latter were studied prior to, and at various time intervals after exposure to radiation. The intensity of the absorption line immediately and 18 min after thermal irradiation of 3 hours duration was found to 3.33 and 0.82 times respectively of the intensity before irradiation. Within the same 18 min, the line broadened from

Card 1/3

The influence of thermal ...

0.556 to 0.750 Oe, while the temperature dropped from 90 to 22°C. These and similar phenomena were explained by the gel character of sodium polymethacrylate. It was contended that when the specimen is dehydrated it loses all its elasticity and also the magnetic resonance which is attributed to the hydrogen nuclei of the water retained by sodium polymethacrylate. The author infers that the sample has a colloidal structure. This comprises the long chained molecules of sodium polymethacrylate proper surrounded by a layer of highly oriented dipoles of water molecules which adhere tightly to the surface of each polymer molecule. Further outward, there is another less oriented and less tightly adhering second layer of water molecules and, finally, a free and completely diffused suspending medium of water solvent. In this way the decrease of absorption line width due to irradiation is explained by the increased molecular motion in the solvent throughout all its layers. Whereas from theoretical considerations the width intensity of the absorption line should be a constant, in this case its value varied, viz it was 1.85 immediately after the thermal

Card 2/3

irradiation and 0.613 18 minutes later. Hence the increased intensity cannot be accounted for entirely by the decrease in the width. The discrepancy is thought to be due to the increased vibration of the oriented dipoles in the first layer of water, which increases the number of resonating hydrogen nuclei. The final decrease in the intensity of the absorption line to a level below the irradiated value is probably due to an overall increase in the number of dipoles over their original number. It is concluded that the effects of the ultraviolet irradiation are similar to that of the thermal irradiation, although the temperature during irradiation did not change. There are 6 figures.

ASSOCIATION: Katedra fyziky Vysokej školy technickej, Košice
(Department of Physics, Technical College, Košice)

SUBMITTED: May 30, 1961

CZECHOSLOVAKIA/Magnetism - Experimental Methods of Magnetism F

Abs Jour : Ref Zhur Fizika, N 3, 1959, 17995

Author : Rakos, Matej
Inst : -
Title : Electronic Instrument for the Measurement of Susceptibility of Paramagnetic and Diamagnetic Materials.

Orig Pub : Desposl. casop. fys., 1957, 7, No 4, 378-384

Abstract : See Referat Zhur Fizika, 1959, No 4, 8292.

Card 1/1

RAKOS, Rezso, dr.; GERGELY, Mihaly, dr.

Successful surgical therapy of a case of partial gastric and total pyloric obstruction caused by sodium hydrate. Orv. hetil. 102 no.38: 1804-1805 17 S '61.

1. Satoraljaujhelyi Varosi Tanacs Korhaza, Sebeszet.

(STOMACH dis) (PYLORIC STENOSIS etiol)

RÁKOS, Rezso, Dr.; TAJBER, Tamas, Dr.

New data on the etiology of embryopathies; successful surgery of a case of congenital atresia of the small intestine. Orv. hetil. 99 no.31: 1076-1077 3 Aug 58.

1. A Satoraljaujhelyi Varosi Tanacs Korhaza (igazgato: Kerdy Kalman dr.) Sebeszeti Osztalyanak (foorvos: Rakos Rezso dr.) es Gyermekosztalyanak (foorvos: Bodo F. Pal dr.) kozlemenye.

(INTESTINE, SMALL, abnorm.
atresia, etiol. & surg. (Hun))

RAKOSHITS, G. S.

Using the method of ~~rotary~~ extrusion in thinning cylindrical shell walls. Avt. prom. 29 no.5:44 My '63. (MIRA 16:4)

1. Moskovskiy avtomobil'nyy zavod imeni Likhacheva.

(Extrusion(Metals))

GOLOVNEVA, Mariya Alekseyevna; ATROSHENKO, Aleksey Petrovich; KORNEYEV, D.M., kand. tekhn.nauk, retsenzent; RAKOSHITS, G.S., inzh., retsenzent; GOLOVNEV, I.F., kand. tekhn.nauk, red.; DENINA, I.A., red.izd-va; SHCHETININA, L.V., tekhn. red.

[Equipment and technology of drop forging]Oborudovanie i tekhnologiia goriachei shtampovki. Moskva, Mashgiz, 1962. 368 p. (MIRA 16:3)

(Forging)

BAKOS, Elemer, szakiskasi szaverto

Regulation of loading duty. Kozleked kozl 20 no.40:810-811 6 D '64.

1. Ministry of Light Industry, Budapest.

RAKOSI, Elemer

On the packaging of merchandises. Kozleked kozl 18 no.2:19-20 Ja '62.

RAKOSI, Gyorgy

Large-scale forage cake pressing machine. Mezogazd techn 1 no.3:15 '61.

RAKOSI, Gyorgy

Machine repair and maintenance. Mezogazd techn 1 no.4:18 '61.

RAKOSI, GY.

RAKOSI, GY. Let us use machines better. p. 6

Vol. 8, no. 4, A pr. 1956
ALLA MI GAZDASAG
AGRICULTURE
Budapest, Hungary

So: East European Accession, Vol. 6, No. 3, March 1957

R[illegible]I, I.

Ten years of people's democracy. p. 2.
(MAGYAR ELET. No. 7, Apr. 1955. Budapest.)

SO: Monthly List of East European Accession. (EAL). LC. Vol [illegible] Nov. 11 [illegible] Uncl.

G

HUNGARY/Organic Chemistry. Synthetic Organic Chemistry.

Abs Jour: Ref Zhur-Khim., No 2, 1959, 4696.

Author : Bognar, R. and Rakosi, M.
Inst : Hungarian Academy of Sciences.
Title : Flavenoids. III. One of the Basic 'Leucoanthocyanides'. Preparation and Structure of One of the Racemates of 3,4-flavondiol.

Orig Pub: Magyar Kem Folyoirat, 64, No 3, 106-110 (1958) (in Hungarian with a German summary); Acta Chim Acad Sci Hung, 14, No 3-4, 369-379 (1958) (in German with summaries in English and Russian).

Abstract: The reduction of 3-flavonol (I) gives one of the four possible racimates of flavon-3,4-diol (II) which is not identical with that prepared previously (A. H. Mozingo, J Amer Chem Soc, 60, 669 (1938)). From the synthesis procedure and from the

Card : 1/3

Abs Jour: Ref Zhur-Khim., No 2, 1959, 4696.

under reduced pressure, giving II, yield 78%. In a third procedure 1 gm I is reduced with 0.2 gm $LiAlH_4$ in 100 ml ether for 2 hrs, the solution is hydrolyzed with 10 ml 12.5% HCl, and extracted with ether; II.H_2O is obtained, yield 75.6%. The UV spectra of I, II, and of 3-flavonol are given.
L. Vinograd.

Rákos, M.

621.317.43

1392. CALORIMETRIC DIFFERENTIAL METHOD OF MEASURING IRON LOSSES. M.Rákoš. Elektrotech. Obzor, Vol. 44, No. 10, 341-4 (1955). In Slovak.

It is shown that the differential method eliminates the errors of the subtraction of the copper losses. The method is specially valuable in cases where the direct measurement of the power input and the separation of the iron and copper losses are difficult. The method is suitable also for measuring the losses at various frequencies and degrees of saturation.

Electrical Research Association

RAKOSI, Laszlo, dr.

Carbonized autochton tree trunk in the Dorog lignite basin. Foldt kozl 90 no.4:459-461 O-D '60. (EEAI 10:5)
(Hungary--Trees)

SOMORJAI, Endre; SZALAY, Sandor, dr. prof.; RAKOSI, Miklosne, dr., tudomanyos munkatars

Determining the thickness of carbon films on the basis of measuring optical density. ATOMKI kozl 5 no.2: 103-106 '63

1. Magyar Tudomanyos Akademia Atommag Kutato Intezete igazgatoja, Debrecen; Magyar Tudomanyos Akademia levelezo tagja; "ATOMKI Kozlemenyek" felelos szerkesztoje es felelos kiadoja (for Szalay). 2. Kossuth Lajos Tudomanyegyetem Szerves Kemiai Tanszek, Debrecen (for Rakosi).

BOGNAR, Rezso; RAKOSI, Miklos; LITKEI, Gyorgy

Flavonoids.VII.Synthesis of isomer 3-bromium-flavanones and 3-bromium-flavone. Magy kem folyoir 68 no.7:305-310 Jl '62.

1. Kossuth Lajos Tudomanyegyetem Szerves-Kemiai Tanszeke, Debrecen. 2. "Magyar Kemiai Folyoi" szerkeszto bizottsagi tagja. (for Bognar).

HUNGARY/Organic Chemistry. Synthetic Organic Chemistry. G

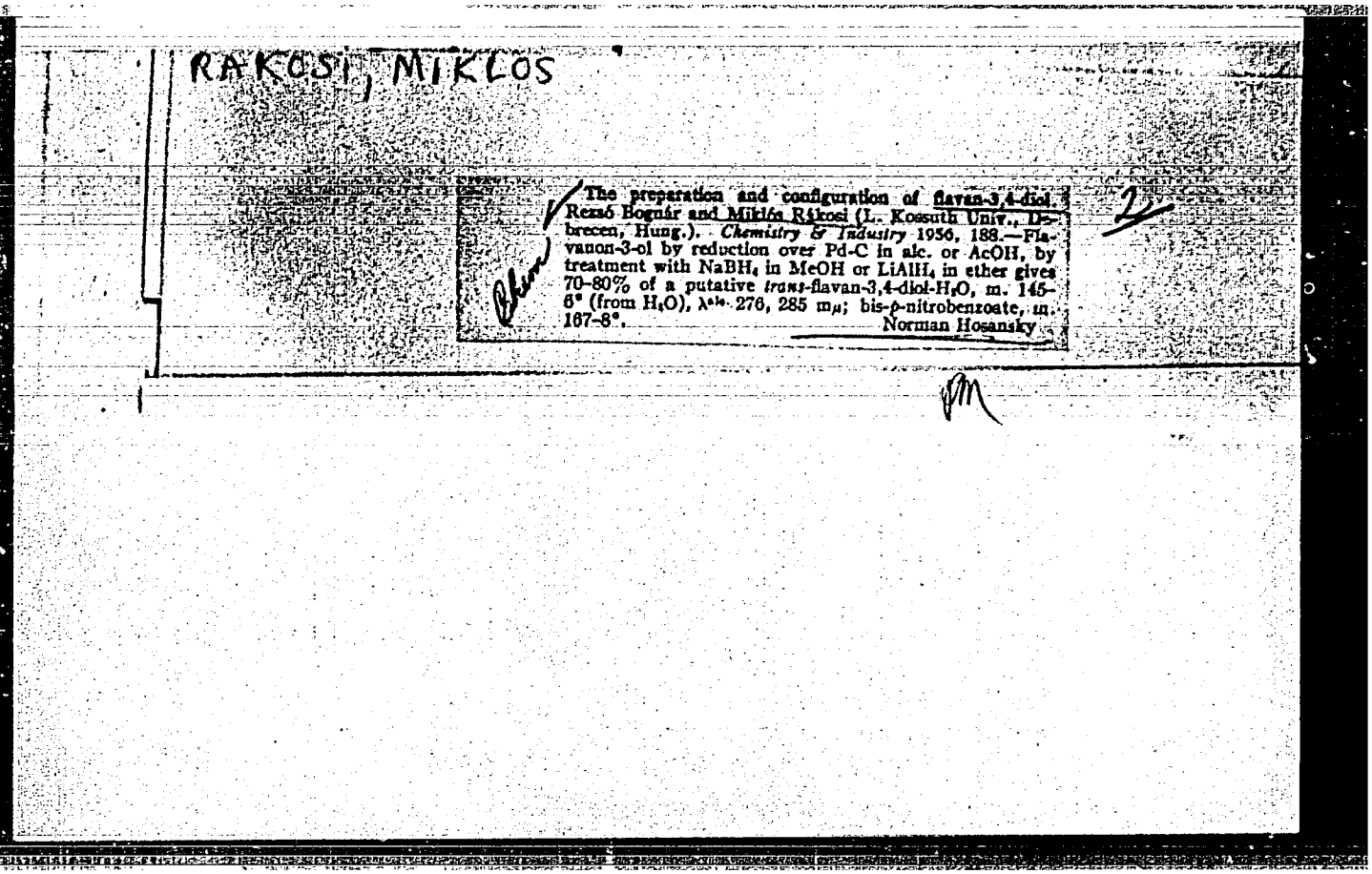
Abs Jour: Ref Zhur-Khim., No 2, 1959, 4697.

Author : Bognar, R. and Rakosi, M.
Inst :
Title : Flavonoids. IV. The Reduction of Flavon and of 2'-hydroxychalcone.

Orig Pub: Magyar Ken Folyoirat, 64, No 3, 11-117 (1958) (in Hungarian with a German summary)

Abstract: See RZhKhim, 1958, 53877.

Card : 1/1



RAKOSI, MIKLOS

The preparation and configuration of flavan-3,4-diol. Rezsö Bognár and Miklós Rákosi (L. Kossuth Univ., Debrecen, Hung.). *Chemistry & Industry* 1956, 188.—Flavanon-3-ol by reduction over Pd-C in alc. or AcOH, by treatment with $NaBH_4$ in MeOH or $LiAlH_4$ in ether gives 70–80% of a putative *trans*-flavan-3,4-diol-H_2O, m. 145–6° (from H_2O), $\lambda^{alc.}$ 276, 285 mμ; bis-*p*-nitrobenzoate, m. 167–8°.
Norman Hosansky

BOGNAR, Rezso; FARKAS, Istvan; RAKOSI, Miklos

Flavonoids, V. Conversions of glycosyl chalcone and glycosyl flavanone. Magy kem folyoir 67 no.6:253-257 Je '61.

1. Kossuth Lajos Tudomanyegyetem Szerves-Kemiai Tanszeke, Debrecen 2. "Magyar Kemiai Folyoirat" szerkeszto bizottsagi tagja (for Bognar).

RAKOS, Rezso, dr.,; ABOSSY, Istvan, dr.

Giant cyst of the thorax. Orv. hetil. 96 no.14:387-388 3 Apr 55.

1. A Satoraljaujhelyi Jarasi Korhaz (igazgato: Valenta Andras dr.) Sebeszeti Osztalanak (foorvos: Rakos Rezso dr.) es a Jarasi Tbc. Gondozo Intezet (vezeto-foorvos: Abossy Istvan dr.) kozlemenye.

(THORAX, cysts, giant, surg.)
(CYSTS, thorax, giant, surg.)

RAKOSI, M.

30. Bromination of flavanone and of flavanone-3-ol. (In German) R. Bognár, M. Rákosi. *Acta Chimica Academiae Scientiarum Hungaricae*. Vol. 8, 1955, No. 1—3, pp. 309—318, 3 figs.

Reacting unsubstituted flavanone with N-bromo-succinimide, flavone and 3-bromo-flavanone were obtained. The flavone and succinimide also separated directly from the carbon tetrachloride solution whereas the 3-bromo-flavanone may be crystallized from the reaction mixture. The bromo-derivative was converted at room temperature in an alcoholic solution by the action of dilute aqueous alkaline solutions into flavone. 2-hydroxy-dibenzoyl-methane was produced when the bromo compound was treated with a more concentrated alkaline solution at higher temperatures. Flavone and flavone-3-ol being primary products of the reaction as well as the formation at a relatively low energy level of the pyrane ring system, capable of mesomerization, represent a stabilization process. This reaction probably proceeds through an intermediate brominated product, formed in the first stage, which then undergoes dehydrobromination in the next step.

KHKOSI-M.

45. **Flavonoids. The reduction of flavanone and 2'-hydroxy-chalcone.** (In German) R. Bognár, M. Rákosi. *Acta Chimica Academiae Scientiarum Hungaricae.* Vol. 13, 1957, No. 1—2, pp. 217—229, 3 figs.

3 2-May

The catalytic hydrogenation of 2'-hydroxy-chalcone can be carried out in two steps. In the first step the double bond is saturated with hydrogen and a compound of the phlorizin type is formed. In the second step the carbonyl group is also reduced by the active palladium-carbon catalyst and 1-(*o*-hydroxyphenyl)-3-phenyl-propanol-1 is formed as the final product. The catalytic hydrogenation of flavanone similarly takes place in two steps. First the carbonyl group is reduced to give β-4-hydroxyflavane; when acted upon by palladium-carbon of increased activity the hydrogenolysis of the pyran ring also proceeds in addition to the reduction of the C=O group, and after taking up 2 moles of hydrogen 1-(*o*-oxyphenyl)-3-phenyl-propanol-1 is obtained. The reduction of flavanone by lithium aluminium hydride or sodium borohydride gives excellent yields of β-4-hydroxyflavane. The ultraviolet absorption curves of the products are presented and the problem of the steric structure of β-4-hydroxyflavane is discussed.

Rákosi, M.

7

Bromination of flavanone and flavanon-3-ol. Preparing flavon-3-ol. R. Bognár and M. Rákosi (L. Kossuth Univ., Debrecen, Hung.). *Acta Chim. Acad. Sci. Hung.* 8, 309–18(1955)(in German)(English summary).—Bromination of flavanon-3-ol with *N*-bromosuccinimide gives 3-bromoflavanone which readily loses HBr to give flavon-3-ol. Similar brominations of flavanones are reported. Flavanone (I) (2.24 g.), 1.78 g. *N*-bromosuccinimide, and 0.02 g. Bz_2O_2 in 30 ml. CCl_4 was refluxed 20 min., cooled, and the crystals filtered off and washed to give 2.25 g. colorless crystals (II). The CCl_4 filtrate was washed successively with H_2O, solns. of KI, $Na_2S_2O_3$, and then H_2O, dried over $MgSO_4$, evapd. to dryness, the residue extd. with abs. alc., and the alc. removed to leave 1.63 g. viscous yellow oil (III). II (2 g.) dissolved in 25 ml. EtOH, the soln. clarified with C, 40 ml. H_2O added to the warm soln. which cooled gave 0.55 g. flavon; (IV), m. 97–9°. Extn. of 2 g. II with petr. ether also gave 0.65 g. IV. II (4.43 g.) powdered, extd. with 150 ml. H_2O, and the residue recrystd. from petr. ether also gave 1.19 g. IV, m. 96–7°. III (2.5 g.) was dissolved in 10 ml. EtOH and H_2O added slowly to give an oil which was recrystd. from aq. alc. and then alc. to give 0.2 g. 3-bromoflavanone (V), m. 126–6.5°. IV (0.23 g.) was recovered from the crystn. liquors. IV was also obtained from III as follows: 1.82 g. III was dissolved in 17.2 ml. EtOH, shaken 10 min. with 10.3 ml. 10% KOH, and gradually a total of 250 ml. H_2O added to give an oil which crystd. slowly, the crystals filtered off, washed with H_2O, dried, and recrystd. from petr. ether giving 0.46 g. IV, m. 97–8.5°. I (2.24 g.) in 20 ml. $CHCl_3$ treated at 0° with 1.6 g. Br in

4

1/2

Bognar, R.; Rakosi, M.

30 ml. $CHCl_3$, irradiated with a quartz lamp up to 25° during 20 min., the soln. washed with H_2O, dried over $MgSO_4$, and evapd. *in vacuo* gave 2.94 g. viscous oil (VI), contg. Br, which was dissolved in 12.5 ml. EtOH, treated 10 min. with 10% KOH, and H_2O added to give 0.40 g. IV, m. 96.5–7.5° (petr. ether). III (3.5 g.) in 62 ml. EtOH and 18.3 ml. 15% aq. NaOH refluxed 5 min., cooled, treated with 75 ml. H_2O then 10% HCl to pH 5 to give a yellow ppt. which was filtered off, dried, and recrystd. twice from alc. to give 2-hydroxydibenzoylmethane (VII), yellow crystals, m. 117–18°. VI (1.5 g.) similarly treated also gave 0.47 g. VII. Likewise, 0.66 g. IV treated with NaOH in EtOH gave 0.2 g. VII, m. 119–20°. Flavanon-3-ol (0.6 g.), 0.52 g. *N*-bromosuccinimide, 0.05 g. Bz_2O_2, and 100 ml. CCl_4 was refluxed at least an hr., cooled to 0°, the ppt. of succinamide filtered off, the filtrate washed free of acid, dried over $MgSO_4$, evapd. to dryness *in vacuo*, dissolved in 25 ml. MeOH and 5 ml. H_2O, clarified with C, and cooled to give 0.30 g. flavon-3-ol (VIII), light yellow needles, m. 169.5–70.5° (MeOH). VIII (0.1 g.) in 0.4 ml. pyridine was heated on the H_2O bath one hr. with 0.5 ml. Ac_2O, poured into H_2O, and the ppt. recrystd. from aq. EtOH to give 0.08 g. 3-acetoxyflavone, m. 109–11°. Ultraviolet spectra are reported for all these compds. to establish their identity.

Enno Wolthuis

4

2/2

Reaction of flavanone and of flavanon-3-ol with *N*-bromosuccinimide: a new method for the preparation of flavanon-3-ol. Rezso Bognár and Miklós Rákosi (Kossuth Univ., Debrecen, Hung.). *Chemistry & Industry* 1955, 773.— Treatment of flavanone with *N*-bromosuccinimide (I) gave a mixt. of flavone (II) and 3-bromoflavanone (III). II sepd. directly from the CCl_4 soln. together with succinimide and with the evolution of HBr; III was isolated from the soln., m. 126–0.5°. III was converted to II by treatment with 10% aq. alkali at room temp. in 10 min.; hydrolysis with warm 15% alkali gave 2-hydroxydibenzoylmethane. Flavanon-3-ol gave flavon-3-ol when treated with I in warm CCl_4.

Donald Hamm

(1)

RAKOSI, T.

1

CSSR

RAKOSI, T.

Dental clinic (zubna klinika) Kosice, director: docent Dr A. Ruzicka

Prague, Ceskoslovenska Stomatologie, No 2, 1963, pp 127-134

"Use of Screening Rehabilitation ins Mixed Dentition"

RAKCSI, Tibor (Sopron); KOVACS, Laszlo (Budapest); [illegible], Gabor (Budapest); SZULLO, Antal (Gyor)

Letters to the editor. Radiotechnika 14 no. 5:175 My '64.

RAKOSI, T.

Examination of teeth defects in children in the nurseries at Kosice.
Bratisl. lek. listy 34 no.12:1397-1400 Dec 54.

1. Z c zubnej klin. PLPKU v Kosiciach. predn. doc. MUDr. A.Ruzicka
(TEETH, diseases
in inf. & child., prev. exam. in nurseries in Czech.)
(PUBLIC HEALTH
in Czech., teeth exam. in nurseries)

RAKOSI, T.

Dental survey in nurseries and considerations on origin and causes of malocclusion. Bratisl. lek. listy 34 no.5:511-517 May 54.

1. Zo Stomatologickej kliniky LFSU v Kosiciach, prednosta dr. A.Ruzicka.
(MALOCCLUSION, etiology and pathogenesis,)

RANCSI, Tomas

SURNAME, Given Names

(2)

Country: Czechoslovakia

Academic Degrees: MD

Affiliation: Clinic of Dentistry FN /not identified/ (Zubna klinika FN), Kosice; Director: Docent Arnost RUZICKA, MD.

Source: Prague, Prakticke Zubni Lekarstvi, Vol IX, No 6, July 1961, pp 175-179.

Data: "Philosophical Problems in Othodontic Treatment."

55

[illegible], [illegible]

Plan for th[illegible] electr[illegible]ation o[illegible] capitalist[illegible] [illegible] Po[illegible]. Pr[illegible]. [illegible]. [illegible]. V[illegible].
Moskva, Gos. e[illegible] izd-[illegible], 19[illegible]. [illegible] p.

1. Electric pow[illegible]r distribution. 2. Electri[illegible] pow[illegible]r plants - Europe. I. [illegible], [illegible]
Isakovi[illegible], 190[illegible]- [illegible]ed.

Rakosnik, J.

Moving a warehouse in France. p. 287. INZENYRSKE STAVBY. (Ministerstvo stavebnictvi) Praha. Vol. 4, no. 6, June 1956.

Source: EEAL LC Vol. 5, No. 10 Oct. 1956

Rakosnik, J.

Titanium production in Czechoslovakia. p. 24. NOVA TECHNIKA. (Rada vedeckych technickych spolecnosti pri Ceskoslovenske akademii ved) Praha. Vol. 4, no. 1, Jan. 1954.

Source: EEAL LC Vol. 5, No. 10 Oct. 1956

RAKOSNIK, J.

Preparation of titanium tetrachloride and its reduction to metallic titanium. J. Rakosnik (*Hutnické Listy*, 1954, 9, 268—272).—Prep. of crude $TiCl_4$ from a mixture of TiO and TiC by chlorination at 600° is described. Purification of crude $TiCl_4$ is performed by reducing some of the impurities with H_2S or Cu filings with subsequent fractional distillation. Reduction of $TiCl_4$ with Mg in A atm. at 650—950° gives better yields than reduction in vac. After separation of Mg and $MgCl_2$ a Ti sponge is obtained which still contains 0·1% Cl.

S. K. Lachowicz.

RALGNIK, J. I.

Preparation of titanium tetrachloride and its reduction to titanium metal. Jiří Rakovník (Výzkumný ústav kovů, Panenské Břežany, Czech.). *Hutnické Listy* 9, 208-72 (1954)(English summary).—TiO_2 was mixed with charcoal in the ratio 3:1 and 16% H_2O was added, and the mixt. was briqueted, dried, and heated for 1 hr. to 800° under a layer of charcoal. The briquets were thus converted to a mixt. of TiO and TiC. Each briquet, weighing 3.5 kg., was placed in a vertical graphite elec. furnace and heated while dried Cl was blown through from the bottom. Up to 400°, the gases issuing from the top of the furnace were released to the atm. The temp. was then increased to 600° and the vapors of $TiCl_4$ condensed. The crude $TiCl_4$ was boiled for 20-30 min. under a reflux condenser with 2% Cu powder, until $FeCl_3$ and $VOCl_3$ were reduced. $TiCl_4$ was then distd., and the colorless fraction boiling above 136° was collected. Air in the distn. receiver was dried with $CaCl_2$ prior to distn. $TiCl_4$ was reduced with Mg in a stainless-steel reactor, in which the temp. was not allowed to exceed 950° in order to prevent the formation of Ti-Fe alloy. Pure Ti sponge was obtained when the reduction was carried out in an argon atm.; in a vacuum the temp. could not be controlled and exceeded 950°. $MgCl_2$ was removed from the Ti sponge either by leaching with dil. HCl or by vacuum distn. at 900°. Argon contg. up to 0.3% N was purified by Ca vapors, obtained from 2 Ca electrodes, or by waste Ti powder.

Frank J. Hendel

RAK [illegible], J.

"Preparation of titanium tetrachloride and its reduction to metallic titanium." Hutnicke Listy, Brno, Vol 9, No 5, May 1954, p. 268

SO: Eastern European Accessions List, Vol 3, No 10, Oct 1954, Lib. of Congress

KAKOSY, Bela, okleveles gepeszmernok

Pulp pumps in the service of mining. Bany lap 94 no.2:107-111 F '61.

RAKOSY, Bela, okleveles gepeszmernok

An up-to-date pump. Bany lap 96 no.12:915-916 D'63.

RAKOUSKI, V.Ye.; POZNYAK, V.S.; RATNER, A.G.; CHAYKOVA, V.D.

Constituent components of peat in the White Russian S.S.R. Vestsi AN BSSR. Ser. fiz.-tekh. nav. no. 1:97-108 '56. (MLRA 10:1)
(White Russia--Peat)

RAKOUSKI,V.Ye.

Biochemical and geochemical principles of the formation of fuel deposits. Vestsi AN BSSR no.6 35-51 N-D '54. (MLRA 8:9)

1. Chlen-korespondent Akademii nauk BSSR
(Mineralogical chemistry) (Fuel)

RAKOV, A., inzh.

Colored silicalcite. Biul.tekh.inform. 5 no.1:30 Ja '59.
(MIRA 12:4)
(Silicates)

25(7) SOV/117-59-3-21/37

AUTHORS: Ustinov, V.N., Kuz'min, A.Ya., and Rakov, A.A., Engineers

TITLE: Cooled Polishing Wheels (Poliroval'nyye krugi s okhlazhdeniyem)

PERIODICAL: Mashinostroitel', 1959, Nr 3, p 32 (USSR)

ABSTRACT: Fabric polishing wheels are extensively used for polishing electro-plated automobile parts at the Gor'kiy Automobile Plant. The wheels rapidly wear down from 400 - 450 mm to 250 mm and become inefficient and unsafe because of overheating. The article describes a new hub for the polishing wheels introduced at the plant, consisting of two discs connected with a center bush and provided with 6 ventilation holes, 6 vanes for driving the sucked-in air to the wheel periphery, and 19 studs for attaching the fabric. The design permits re-use of the fabric discs from worn wheels, by folding them into right-angle sectors and attaching on studs. This, and the air cooling, make

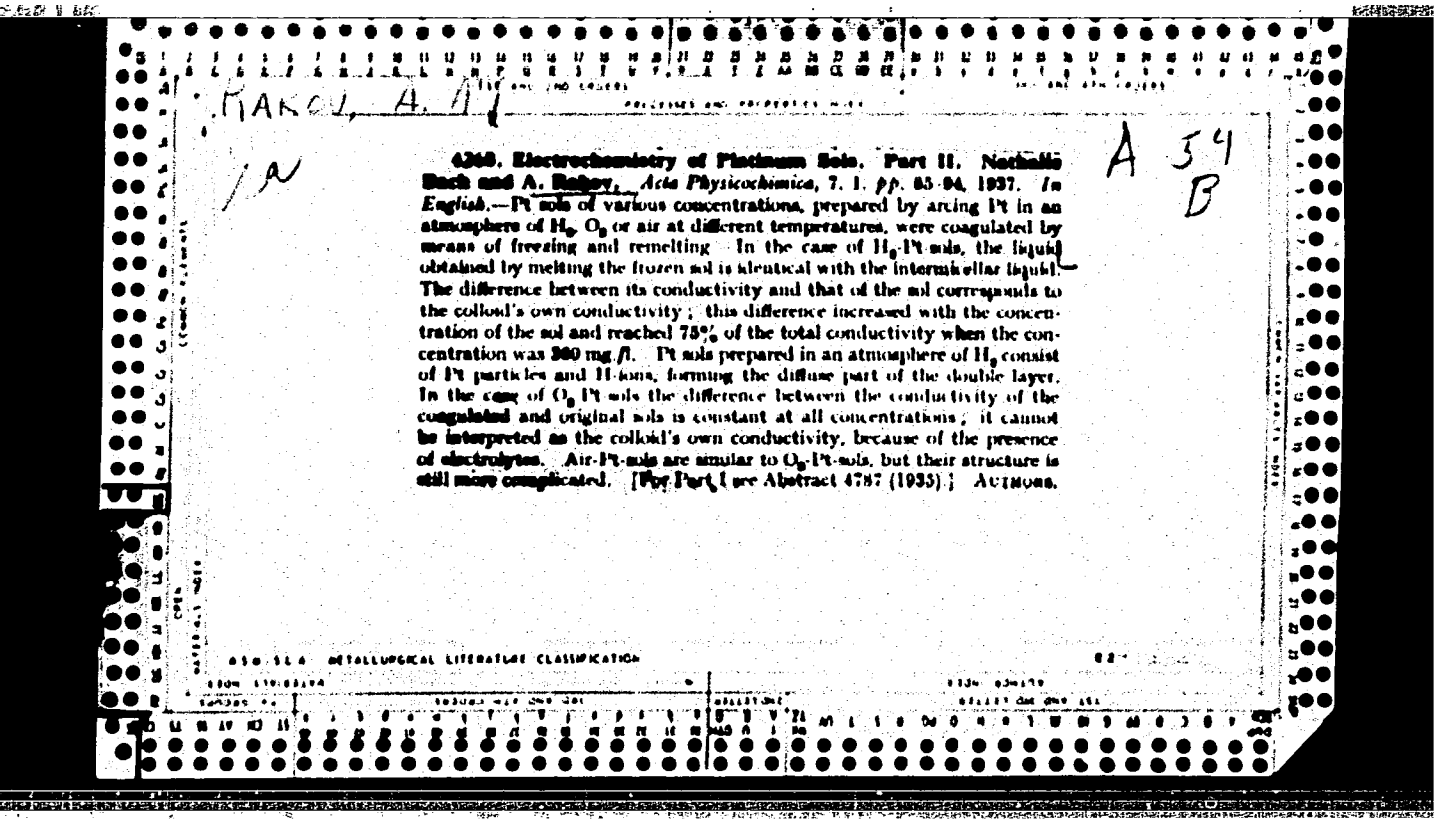
Card 1/2

Cooled Polishing Wheels

the hub highly commercial. The estimated annual economy entailed in the plant's car body plating shop alone amounts to 300,000 rubles. There is 1 photo.

ASSOCIATION: Gor'kovskiy avtomobil'nyy zavod (Gor'kiy Automobile Plant)

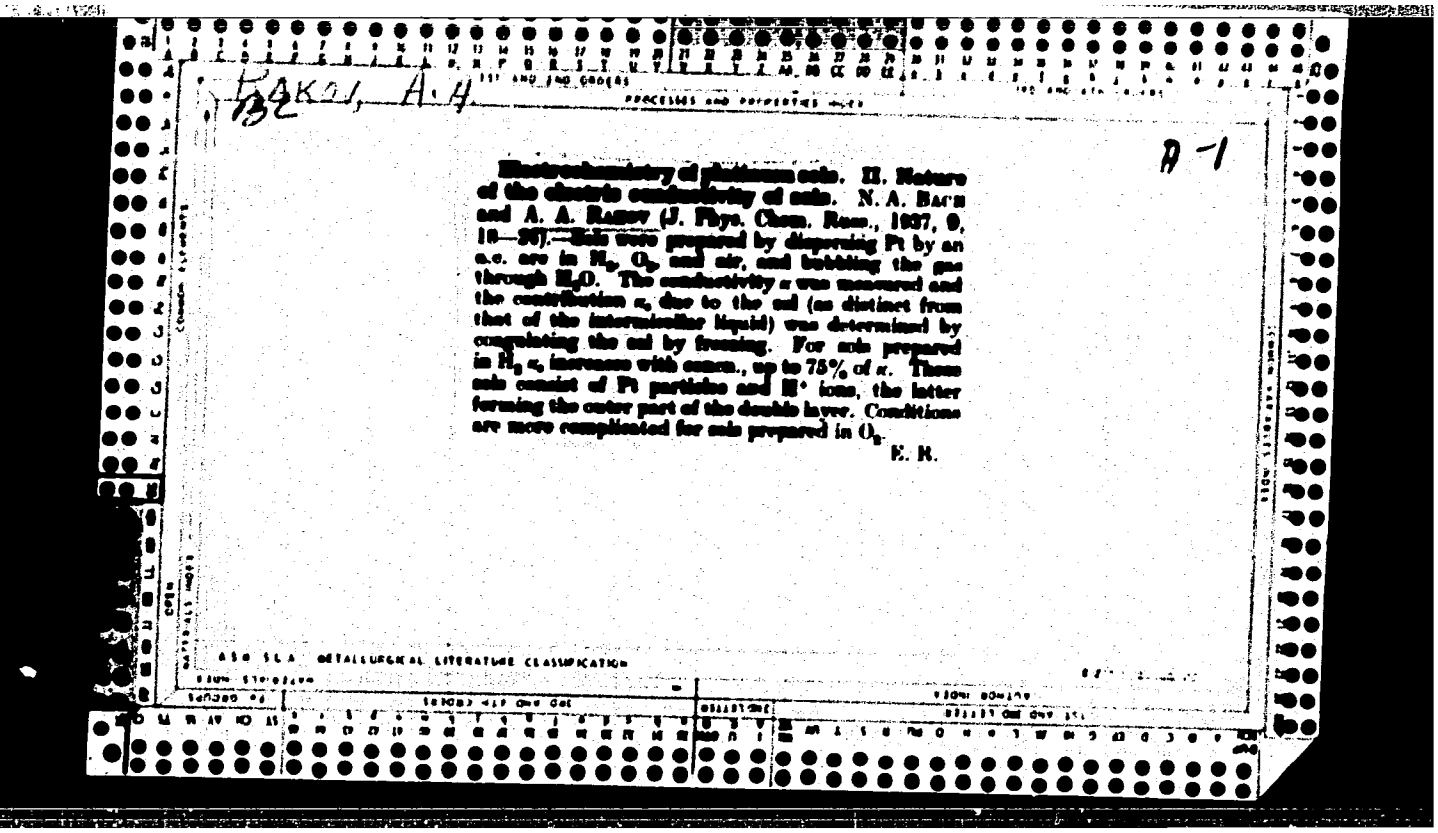
Card 2/2



MARC, A. A.

A 54
B

4368. **Electrochemistry of Platinum Sols. Part II. Nathalie Buch and A. Rabcy.** *Acta Physicochimica*, 7. 1. *pp.* 85-94, 1937. *In English.*—Pt sols of various concentrations, prepared by arcing Pt in an atmosphere of H_2, O_2 or air at different temperatures, were coagulated by means of freezing and remelting. In the case of H_2-Pt-sols, the liquid obtained by melting the frozen sol is identical with the intermicellar liquid. The difference between its conductivity and that of the sol corresponds to the colloid's own conductivity; this difference increased with the concentration of the sol and reached 75% of the total conductivity when the concentration was 300 mg./l. Pt sols prepared in an atmosphere of H_2 consist of Pt particles and H-ions, forming the diffuse part of the double layer. In the case of O_2 Pt-sols the difference between the conductivity of the coagulated and original sols is constant at all concentrations; it cannot be interpreted as the colloid's own conductivity, because of the presence of electrolytes. Air-Pt-sols are similar to O_2-Pt-sols, but their structure is still more complicated. [For Part I see Abstract 4787 (1935).] AUTHORS.



BAKU, A. A.

A-1

Electrochemistry of platinum sols. II. Nature of the electric conductivity of sols. N. A. Bach and A. A. Ramov (J. Phys. Chem. Russ., 1937, 9, 18—30).—Sols were prepared by dispersing Pt by an a.c. arc in H_2, O_2, and air, and bubbling the gas through H_2O. The conductivity κ was measured and the contribution κ_s due to the sol (as distinct from that of the intermicellar liquid) was determined by coagulating the sol by freezing. For sols prepared in H_2 κ_s increases with concn., up to 75% of κ. These sols consist of Pt particles and H^+ ions, the latter forming the outer part of the double layer. Conditions are more complicated for sols prepared in O_2.

E. R.

ASD SLA METALLURGICAL LITERATURE CLASSIFICATION

BAKOV, A.A.

A. A. Bakov, T. I. Borisova, and B. V. Ershler, The double ion layer in an oxidized metal. Pp. 1299-6.

The capacity of the double layer has been measured on a polished and etched nickel electrode in relation to the potential and the amount of adsorbed oxygen. The capacity of the double layer changes little at an anode oxidation of the electrode near the reversible hydrogen potential.

The Karpov Physical Chemical Inst.
Moscow
February 26, 1948

SO: Journal of Physical Chemistry (USSR) 22, No. 11, 1948

Rakov A.A

7

Electrochemical study of the properties of the surface oxygen compounds on silver. I. N. Pyshnova, A. A. Rakov, and S. Ya. Pshenitzkii (O. Yu. Kurnar Mines Chem. Inst., Moscow). *Zhur. Fiz. Khim.* 30, 1134-7 (1956).—The formation of Ag_2O on the surface of a Ag catalyst during catalytic oxidation processes or by exposing the Ag surface to pure O was studied by the electrochem. method. This oxide can be reduced electrochemically at a potential of 1.1–1.2 v. The formation of the oxide does not depend on the initial state of the Ag and after reduction of the oxide the resulting Ag surface is always heterogeneous. When heated in a N atm. the oxide dissoc. and it can be reduced by H or other reducing agents. It is thermally more stable than oxides formed by electrochem. oxidation processes. The formation of oxides by treating a Ag surface with O at 250° leads to the passivation of the catalyst.

J. Roytar Leach

5(4)
AUTHORS: Rakov, A. A., Veselovskiy, V.I., Nosova, V.I., SOV/76-32-12-8/32
Kasatkin, E. V., Borisova, T. I.

TITLE: The Mechanism of the Joint Electrochemical Formation of Ozone, Persulfuric Acid and Oxygen on the Platinum Electrode (O mekhanizme sovmestnogo elektrokhimicheskogo obrazovaniya ozona, nadsernoy kisloty i kisloroda na platinovom elektrode)

PERIODICAL: Zhurnal fizicheskoy khimii, 1958, Vol 32, Nr 12, pp 2702 - 2710 (USSR)

ABSTRACT: The electrolysis is carried out in 10n sulfuric acid with a cylindrical platinum electrode refrigerated by methyl alcohol. Analyses of H_2O_2, H_2SO_5, $H_2S_2O_8$ and ozone and measurements of the general acid concentration were carried out in brief intervals. Two stages were observed (at -50°C and 0,5 A/cm^2). In the first stage oxygen was formed at a potential of 1,0 to 1,8 V, while in the second stage the potential rose to 3,0 V resulting in a high persulfuric acid yield and a low ozone yield. The transition took place within 1 to 2 minutes. By means of a rapidly revolving platinum electrode in the

Card 1/2

The Mechanism of the Joint Electrochemical Formation of 307/76-32-12-8/32
Ozone, Persulfuric Acid and Oxygen on the Platinum Electrode

Dewar flask which was filled with a freezing mixture of carbon-dioxide snow and methyl-alcohol, polarization curves were plotted at various temperatures in 10n sulfuric acid. Also in this case the jump in potential was noted, the curves differing according to whether they were plotted beginning at a low amperage and ending at a high one, or vice-versa. All showed a hysteresis loop. At a temperature of -70°C a third stage occurred in which ozone is produced abundantly at a potential of 5.5 to 7.0 V. These jumps in potential and the chemical reactions due to them are explained by the changing surface finish of the electrode and the influence of intermediate platinum compounds. There are 8 figures and 19 references, 7 of which are Soviet.

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova Moskva
(Physico-Chemical Institute imeni L. Ya. Karpov, Moscow)

SUBMITTED: July 10, 1957
Card 2/2

RAKOV, A. A.

5(4) PHASE I BOOK EXPLOITATION SOV/2216

Soveshchaniye po elektrokhimii. 4th, Moscow, 1956.

Trudy...; [sbornik] (Transactions of the Fourth Conference on Electrochemistry; Collection of Articles) Moscow, Izd-vo AN SSSR, 1959. 868 p. Errata slip inserted. 2,500 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Otdeleniye khimicheskikh nauk.

Editorial Board: A.N. Frumkin (Resp. Ed.) Academician. O.A. Yesin, Professor; S.I. Zhdanov (Resp. Secretary), B.N. Kabanov, Professor, S.I. Zhdanov (Resp. Secretary); B.N. Kabanov, Professor; Ya. M. Kolotyrkin, Doctor of Chemical Sciences; V.V. Losev, P.D. Lukovtsev, Professor; Z.A. Solov'yeva; V.V. Stender, Professor; and G.M. Florianovich; Ed. of Publishing House: N.G. Yegorov; Tech. Ed.: T.A. Prusakova.

PURPOSE: This book is intended for chemical and electrical engineers, physicists, metallurgists and researchers interested in various aspects of electrochemistry.

COVERAGE: The book contains 127 of the 138 reports presented at
the Fourth Conference on Electrochemistry sponsored by the Depart-
ment of Chemical Sciences and the Institute of Physical Chemistry,
Academy of Sciences, USSR. The collection pertains to different
branches of electrochemical kinetics, double layer theories and
galvanic processes in metal electrodepositon and industrial elect-
rolysis. Abridged discussions are given at the end of each divi-
sion. The majority of reports not included here have been
published in periodical literature. No personalities are mentioned.
References are given at the end of most of the articles.

Ksenzhek, O.S., and V.V. Stender (Dnepropetrovsk Institute of Chemical Technology imeni F.E. Dzerzhinskiy). Polarization of Graphite Electrodes During the Anodic Separation of Chlorine 823

Buyanova, N. Ye., and G.A. Tsyganov (Institute of Chemistry, Academy of Sciences, UzSSR). Hydrogen Overvoltage at Electrodes with Homogeneous Surface 827

Rakov, A.A., K. I. Kosova, and E.V. Kasatkin (Physicochemical Institute imeni L. Ya. Karpov). Mechanism of the Simultaneous Electrochemical Formation of Persulfuric Acid, Ozone and Oxygen at a Platinum Anode in Sulfuric Acid Solutions 834

Volkov, G.I., Z. L. Klitsa, Ye. K. Susorova and N. V. Cheremisina. Influence of Surface-Active Substances on the Rate of Decomposition of Sodium Amalgams 841

Il'in, G. G., and V.I. Skripchenko (Novocherkassk Polytechnic

Card 33/ 34

Transactions of the Fourth Conference (Cont.) SOV/2216

Institute imeni S. Ordzhonikidze). Influence of the Nature of an Electrolytic Cation on the Anode Process During the Electrolysis of Alkaline and Alkaline-Earth-Metal Chloride Solutions 845

Voronin, N.N. (Deceased), B. G. Prikhodchenko, A.A. Yedigaryan, O. V. Izbesova, I. G. Pavlenko, Ye. Kh. Ignatenko, and S.V. Tkachuk (Kiyev Polytechnic Institute). Electrolytic Reduction of Oxygen at Porous Cathodes 849

Discussion [N. A. Fedotov, R.I. Kaganovich, Ye. M. Kuchinskiy, G.N. Kokhanov, and contributing authors] 852

AVAILABLE: Library of Congress

TM/ec
9-30-59

Card 34/34

5(4) SOV/76-33-2-18/45

AUTHORS: Nosova, K. I., Rakov, A. A., Yeselevskiy, V. I.

TITLE: A Study of the Electrochemical Behavior of Ozone on the Platinum Electrode by the Method of Cathodic Polarography (Izucheniye elektrokhimicheskogo povedeniya ozona na platinovom elektrode metodom katodnoy polyarografii)

PERIODICAL: Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 2, pp 349 - 356 (USSR)

ABSTRACT: Experimental material concerning the cathodic reduction of ozone on the rotating platinum electrode in sulfuric acid solutions at 25, 0, -30, -50 and -70°C was the basis for thorough investigations on the mechanism of the electrode reaction in the region of high anode potentials (analogous to the experiments in reference 3). The apparatus used was previously described (Ref 4). The rate of rotation of the platinum electrode was about 3000 rpm in all experiments. The stationary potential was determined as a function of the temperature at constant ozone concentration in 10 n H_2SO_4 (Table 1) and as a function of the ozone concentration at 25°C (Table 2). The polarogram curves (Fig 1) which were obtained

Card 1/3

in 10 n H_2SO_4 saturated with 2% ozone and at 25°C indicate a value of $\varphi_{1/2}$= 1.30 volt for the ozone reduction, while the reverse curve shows a half-wave of $\varphi_{1/2}$=1.55 volt for the ozone reduction. The size of the limiting current is directly proportional to the ozone concentration in the solution, so that the method of cathode polarography with the rotating Pt electrode can be used for a quantitative determination of ozone in solutions and in the gaseous phase. At lower temperatures (-30 and -70°) two polarogram waves appear for the ozone reduction (Figs 3,4), which is explained in terms of a two-stage reduction reaction ($O_3+e^- \longrightarrow O_3^-$; $O_3^- + H^+ \longrightarrow O_2 + OH$). It is assumed, on the basis of the formation of surface oxygen compounds on platinum, that the following reaction mechanism takes place:

$PtO+2\ OH \longrightarrow PtO[O]_{ads}+H_2O$; $PtO[O]_{ads}+2H^++2\ e^- \longrightarrow PtO+H_2O$.

A Study of the Electrochemical Behavior of Ozone on the Platinum Electrode by the Method of Cathodic Polarography SOV/76-33-2-18/45

There are 4 figures, 6 tables, and 7 references, 5 of which are Soviet.

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova Moskva (Physical-Chemical Institute imeni L. Ya. Karpov, Moscow)

SUBMITTED: July 19, 1957

Card 3/3

RAKOV, A.A.; VESELOVSKIY, V.I. (Moscow)

Electrochemical reduction of ozone on various metals. Zhur.fiz.-khim. 35 no.10:2297-2305 O '61. (MIRA 14:11)

1. Fiziko-khimicheskiy institut imeni L.Ya.Karpova.
(Ozone) (Reduction, Electrolytic)