"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240620008-8

PETRU, E.

✓Excretion of a flavanone by explants of peanuts. E. Petrů and J. Chrastil (Czechoslov. Acad. Sci., Prague). Českoslov. Biol. 4, 162-4(1955).—Excised germinating roots of *Arachis hypogaea*, grown in media contg. mineral salts, sucrose, and vitamins, elaborated and excreted a yellow pigment. On the basis of color reactions and ultraviolet absorption spectra, this pigment is considered to be 3',4'-dihydroxyflavanone and may be identical with the compd. isolated by Lundegårdh, *et al.* (*C.A.* 42, 5957a). Lower temps. (12-16°), presence of malonic acid, NaN_3, and of Ag_2O_3, as well as bacterial or fungal contamination, enhanced production of this pigment. Its function in the oxido-reductive processes in the root is indicated. Cf. *C.A.* 43, 641a, 7491b.

Oldrich Sebek

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PETRU, E. ; RETOVSKY, R. ; PALPVA, A.

"Change of the moneceious property of corn into a purely female character in its ontogeny. p. 393"

P. 393 (Ceshoslovenska, Biologie, Vol. 6, no. 5, Oct., 1957 Praha, Czechoslovakia)

Monthly Index of East European Accessions (EEAI) LC, Vol. 7, No. 7, July 195

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PETR, [illegible].

Chrastil, [illegible]. Exos[illegible] of flavan[illegible] from root explants of [illegible] (Arachis hypogaea L.). p. 1[illegible].

CESKO [illegible], [illegible], [illegible], [illegible], [illegible] 1[illegible].

[illegible]: Monthly Li[illegible] of East European Accessi[illegible], [illegible], [illegible], [illegible], [illegible], [illegible], [illegible], Uncl.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240620008-8

POZDENA, Jiri; SVOBODOVA, Jarmila; PETRU, Eva; LIMBERK, Jaroslav; BLATTNY, Ctibor

Pea mosaic virus in Czechoslovakia. Cesk. biol. 4 no.6:371-383 June 55.

1. Biologicky ustav CSAV, fytopathologie, Praha.
(VIRUSES,
pea mosaic virus)
(PEAS,
pea mosaic virus)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240620008-8

PeTRu, E.

MD

The exosmosis of flavanone from root explantations of Arachis hypogaea. E. Petrů and J. Chrastil (Czech. Acad. Sci., Prague). *Fetia Biol.* 1, 310-12(1955)(in English).—The production and exosmosis of a 3',4'-dihydroxyflavanone pigment from isolated root tips of *A. hypogaea* cultivated *in vitro* are described. An investigation of the influence of temp., compn. of the medium, bacteria, molds, and inhibitors on the intensity of pigment production indicates that flavanone takes part in oxidation-reduction processes in the root, i.e. in aerobic oxidation of glucose via the chromogene system and, therefore, it is conceivable that when aerobic metabolism is slowed down by the action of inhibitors, a raised production of flavanone results.

Joyce E. Lund

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240620008-8

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

The paraffin hydrocarbons in the oil from the buds of birch trees. F. Petrů and J. Hadáček *Collection Czechoslov. Chem. Communications* 7, 90-2(1935). Crystn. of the oil from EtOH and Me_2CO yields $C_{31}H_{64}$, m. 63-4°, n about 1.48-1.50. H. A. Beatty

ASM SLA METALLURGICAL LITERATURE CLASSIFICATION

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240620008-8

C. A.

Dehydration of alcohols with phthalic anhydride F. Petrů. *Chem. Listy* 43, 75-9(1949). —Cf preceding abstr. The app. and conditions used in dehydrating the alcs are fully described. Cetyl alc., menthol, α-terpineol, and MeCH(OH)CH$_2$OH, on dehydration yielded 30%, cetene, 72.7%, 3-p-menthene, terpinolene, and EtCHO, resp. M. Hudlický

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240620008-8

PETRU, F.

5

Oxidation of α-thujene by selenium dioxide. F. Petrů and J. Kavát (*Coll. Trav. chim. Tchécosl.*, 1950, 15, 478—485).—Oxidation of α-thujene with SeO_2 in EtOH results in dehydrogenation and fission of the *cyclo*propane ring with the production of *p*-cymene and 1-formyl-4-*iso*propyl*cyclo*hexa-1 : 3-diene (dihydrocuminaldehyde).

Alkaline hydrolysis of the acetate obtained from *Oleum sabinae* yields sabinol, b.p. 88·5—89°/10 mm., d_{20}^{20} 0·9495, n_D^{20} 1·4888, $[\alpha]_D$ + 4·62°, identified by $KMnO_4$ oxidation to α-thujadicarboxylic acid, m.p. 142°. Reduction of sabinol by Na in liquid NH_3 (A., 1946, 11, 80) yields α-thujene, b.p. 44—45°/15mm., d_{20}^{20} 0·8334, n_D^{20} 1·4550, $[\alpha]_D$ −27·57°. SeO_2 is added in portions to α-thujene in warm EtOH, the mixture is heated at the b.p. (4 hr.) and, after removal of Se, steam-distillation yields an oil which is partitioned between Et_2O and aq. $NaHSO_3$. The Et_2O extract on distillation gives a mixture, b.p. 55—125°/14 mm. (some decomp.) from which is isolated *p*-cymene, b.p. 62°/14 mm., d_{20}^{20} 0·860, n_D^{20} 1·4888 [identified by oxidation to $p\text{-}C_6H_4(CO_2H)_2$]. Alkaline hydrolysis of the $NaHSO_3$ extract followed by steam distillation yields an oil separated into an aldehyde considered to be 1-formyl-4-*iso*propyl*cyclo*hexa-1 : 3-diene, $C_{10}H_{14}O$ (I), b.p. 115—120°/17 mm., d_{20}^{20} 0·962, n_D^{20} 1·5080, and a higher boiling fraction, d^{20} 0·97, n_D^{20} 1·53, which may contain cuminaldehyde. I forms a *semicarbazone*, $C_{11}H_{17}ON_3$, m.p. 197—199°, and is oxidised in aq. suspension by Ag_2O to an acid, $C_{10}H_{14}O_2$, m.p. 112—113°, which is apparently $p\text{-}C_6H_4Pr^i\text{-}CO_2H$ contaminated with its dihydro-derivative. Oxidation of I with 1% aq. $KMnO_4$ and 2N-NaOH yields cuminic acid, m.p. 115—117°, and treatment of the acid obtained by Ag_2O oxidation with alkaline $KMnO_4$ raises its m.p. from 112—113° to 115—116°. Umbellulone is not detected as a product of SeO_2 oxidation of α-thujene.

J. G. M. CAMPBELL.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240620008-8

C. A

10

The dehydration of alcohols with phthalic anhydride. I. Hans Waldmann and František Petrů (Tech. Hochschule, Prague, Czech.). *Chem. Ber.* **83**, 287-91(1950). The dehydration of alcs. with o-$C_6H_4(CO)_2O$ (I) is catalytically accelerated by the addn. of a small amt. of $PhSO_3H$ (II). Refluxing 50 g. cyclohexanol 6 hrs. with 100 g. I gives 79% cyclohexene (III), b_{760} 82.4°, with 74 g. I and 2.5 g. II 0.5 hr. 98%; III is formed. Cyclopentanol (21.3 g.), 37 g. I, and 0.5 g. II 2 hrs. give 79% cyclopentene, b_{760} 44.6°. Drop-wise addn. of an acyclic alc. to boiling I in such a way that the reaction products distill off gives olefins which are passed through Br in CCl_4 or $CHCl_3$ to form the corresponding di-Br compds. In this way, 30 g. PrOH, 100 g. I, and 3 g. II in 1.5 hrs. give 80%, $MeCHBrCH_2Br$, b_{760} 140°. Without II or with II alone no dehydration is observed. $MeEtCHOH$ (20 g.), 60 g. I, and 2 g. II 3 hrs. give 46.7 g. $(CHBrMe)_2$ (IV), b_{760} 150.7°, d_4^{20} 1.792, corresponding to 79.5%. $(CHMe)_2$, without II only 2.9%. $(CHMe)_2$ is formed. Me_2CHCH_2OH (36.7 g.), 100 g. I, and 3 g. II 4 hrs. give 9 g. Me_2CBrCH_2Br (V), b_{760} 148.50°, d_4^{20} 1.7595, and 27 g. IV, b. 155-6°, d_4^{20} 1.793. The ratio of IV to V varies with the temp. If the reaction mixt. is heated very gently, only $Me_2C:CH_2$ (VI) is formed. VI and HBr give Me_2CBr, b. 72.3°. Me_2COH (37 g.) and 100 g. I 110 min. at a gentle boil give 69 g. V, b_{760} 149°, d_4^{20} 1.7598, and 12 g. $MeCBr(CH_2Br)_2$, b_{760} 102.5°, d_4^{20} 2.1856. AmOH (27.2 g.) with 63 g. I 2.5 hrs. is not dehydrated; addn. of 2 g. II gives 73% $PrCH:CH_2$ and $PrCHBrCH_2Br$, b_{760} 179.80°. $Me_2CHCH_2CH_2OH$ (43.8 g.), 100 g. I, and 3 g. II 3 hrs. give 33.5 g. crude amylene (chiefly $Me_2CHCH:CH_2$), b_{760} 34.6°, which, hydrated according to Wischnedgradsky [*Ann.* **190**, 332 (1878)], gives $Me_2CHCH(OH)Me$, b_{760} 101.2°, 2-anthraquinonecarboxylate, m. 98.0°. $Me_2CCH(OH)Me$ (100 g.) and 200 g. I 10 hrs. give 50 g. hexene mixt. (VII), with addn. of 5 g. II and 8 hrs. is obtained 85 g. VII consisting of $Me_2CCH:CH_2$, b_{760} 40.2°, n_D^{20} 1.3761, d_4^{20} 0.6513; $Me_2C:CMe_2$, b_{760} 71.3°, di-Br compd., m. 170°; and $Me_2CHCMe:CH_2$, b_{760} 55.7°, n_D^{20} 1.3901, d_4^{20} 0.6815, in a ratio of 1.9:8. $C_6H_{11}OH$ and $C_6H_{11}CH(OH)Me$ (50 g.), 100 g. I, and 3 g. II 2 hrs. give 12% octene mixt. (VIII), b_{760} 122.4°, without II only 2%. VIII, b_{760} 124.5°, d_4^{20} 0.7214, is obtained. $(CH_2OH)_2$ (60 g.) and 200 g. I 4 hrs. give 9% AcH; 3 hrs. with 2 g. II gives 21% AcH and 39% dioxane. In the same way, 22 g. $MeCH(OH)CH_2OH$ gives 5 g. EtCHO, 3 g. $CH_2:CHCH_2OH$ and 3 g. dimethyldioxane. $MeCH(OH)CH_2CH_2OH$ (45 g.) and 200 g. I 6 hrs. give 12 cc. $CH_2:CHCH_2CH_2OH$, b_{760} 110.5-12°, d_4^{20} 0.8427, n_D^{20} 1.422, and 26% butadiene (IX). Di-Br compd. (X), m. 117-18°. In the presence of II, 47.9%, IX is formed. $[MeCH(OH)]_2$ (45 g.) and 200 g. I 3 hrs. give 31 g. crude butanone (XI), chiefly MeEtCO, b. 77.80°, 2,4-dinitrophenylhydrazone, m. 116-17°. IX, 1.5 g. X, with addn. of II, 33 g. XI and 0.8 g. X are obtained in 55 min. $(Me_2C(OH)]_2$ (118 g.) and 400 g. I 2 hrs. give 68%, Me_2CCOMe (XII), b. 103.4° and 5.7 g. $(Me_2C:CrI_2)_2$ (XIII), b_{760} 68.9° (maleic anhydride adduct, m. 77.9°). In the presence of II, 35%, XII and 15.3 g. XIII are formed. Dehydration of 50 g. glycerol with 100 g. I and 3 g. II gives 13.5 g. $CH_2:CHCHO$.

I. J. Brams

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240620008-8

PETRU, F.

"Introduction to the chemistry of inorganic cycles" by Ionel Haiduc. Reviewed by F. Petru. Chem listy 57 no. 5: 540-541 My '63.

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Petru, J.

CH Vesely, V., and Petru, J.: Uvod do organické chemie. T. I. 200 pp. Kčs. 80. T. II. 304 pp. Kčs. 92. Prague: Vydavatelstvo. 1952. Reviewed in Chem. Listy 48, 1713 (1954).

Chem

Vesely, V., and Petru, J.: Introduction to Organic Chemistry. T.I. 200pp. Kcs. 80. T.II. 304pp. Kcs. 92. Prague: Vydavatelstvo. 1952. Reviewed in Chem. Listy 48, 1713(1954).

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PETRU, F.

ZECH

Wichterle, O., and Petru, F.: Anorganická chemie. Prague: Nakl. ČSAV. 1953. 822 pp. 42 Kčs. Reviewed in *Chem. Listy* 48, 1089(1954).

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PETRU, F.; GALIK, V.

Structure of sandaracopimaric acid [in German with summary in Russian]. Sbor.Chekh.khim.rab. 18 no.5:717-723 O '53. (MLRA 7:6)

1. Institut obshchey organicheskoy khimii Prazhskogo Politekhnicheskogo instituta, Praga. (Sandaracopimaric acid)

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~~FRANTISEK~~, PETRU, Frantisek

Constitution of sandaracopimaric acid. Frantisek Petrů and Vlastimil Galik (Vysoká škola chem., [illegible] Chem. Listy 47, 613-17(1953).—Sandarac (60 g.) was extd. with Et_2O, the ether ext. (contg. 18.8 g. extd. material) treated with dry NH_3, the NH_4 salts of the acids (17.2 g.) filtered off, the filtrate extd. with 1% NaOH, washed with H_2O, the alk. ext. acidified with dil. AcOH (1:3), the ppt. filtered, washed with H_2O, extd. with 80% EtOH, the filtered ext. adjusted to pH 9 with NaOH in EtOH, and the EtOH distd. off *in vacuo*; the aq. residue deposited after several hrs. the Na salt of *sandaracopimaric acid* (I), which, recrystd. from H_2O decompd. with CO_2, gave, after repeated crystn. from EtOH, 0.35 g. (0.7%) I, m. 173° $[\alpha]^{20}_{D}$ −19.69°. Transformation of I to its Na salt and crystn. of the regenerated I gave a product, m. 170°, $[\alpha]^{20}_{D}$ −28.42°. *Me ester* of I (with CH_2N_2) m. 69° (from MeOH); mixed m.p. with Me dextropimarate, 44-5°; with Me isodextropimarate, 42-3°. Hydrogenation of I over PtO_2 in EtOH or AcOH yielded a dihydro deriv., m. 179-80° (from EtOH), giving pos. test with $C(NO_2)_4$. I (0.8) and 0.6 g. Se, heated in a sealed tube 20 hrs. at 330-60°, gave, after chromatography, 1,7-dimethylphenanthrene (pimanthrene), m. 88-4° (from EtOH) [$C_6H_3(NO_2)_3$ *compd.*, m. 159-60° (from EtOH) *picrate*, m. 132° (from EtOH)], and oil ($C_{20}H_{30}$), $b_{0.7}$ 146° (bath temp.), n^{20}_{D} 1.5793. Also in *Collection Czechoslov. Chem. Communs.* 18, 717-22(1953) (in German).

M. Hudlický

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240620008-8

PETRU, F.

"Chemistry" by Michell J. Sienko, Robert A. Plane. Reviewed by F. Petru. Chem listy 57 no.11:1194-1195 N '63.

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Petru, F.

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Petru, F., and Hajek, B.: O vývoji české chemie. Prague: Orbis. 1954. 152 pp. Kčs. 15. Reviewed in Chem. Listy 49, 1417(1955).

Chem

Petru, F., and Hajek, B.: About the Development of Czech Chemistry. Orbis. 1954. 152pp. Kcs. 15. Reviewed in Chem. Listy 49, 1417(1955).

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240620008-8

CZECHOSLOVAKIA/Chemical Technology. Chemical Products and Their Application. Elements. Oxides. Mineral Acids. Bases. Salts.

Abs Jour: Ref Zhur-Khim., No 3, 1959, 28042.

Author : Petru, F., Hajek, B., and Prochazka, V.
Inst :
Title : Industrial Scale Production of Scandium and Scandium Compounds.

Orig Pub: Chem Prumysl, 7, No 5, 230-232 (1957) (in Czech with English and Russian summaries)

Abstract: Live steam is passed into a mixture of 850 kg of the residue remaining after the processing of Zinwald tungstenate and 1700 liters conc HCl until the volume of the mixture reaches 2500 liters. To each 1000 liters of the solution thus obtained 120 liters

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PETRU, F.; HEHOR, J.

SCIENCE

Periodical CHEMICKE LISTY. Vol. 52, no. 2, Feb. 1958.

PETRU, F.; HEHOR, J. Chloromethylation of 1,2-digydronaphthalene. p. 353.

Monthly List of East European Accessions (EEAI) LC, Vol. 8, no. 3, March, 1959. Uncl.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240620008-8

CZECHOSLOVAKIA/Chemical Technology. Chemical Products and Their Application. Elements. Oxides. Mineral Acids. Bases. Salts. H

Abs Jour: Ref Zhur-Khim., No 8, 1959, 28042.

Author : Petru, F., Hajek, B., and Prochazka, V.
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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240620008-8

COUNTRY

CATEGORY : Inorganic Chemistry. Complex Compounds.

ABS. JOUR. : RZKhim., No. 16 1959, No. 56625

AUTHOR : Petru, F. and Jost, F.

INST. : Not given

TITLE : On the Chemistry of the Rare Elements. VII. Addition Products Formed by Anhydrous Scandium Trichloride and Scandium Tribromide with Pyridine *

ORIG. PUB. : Chem Listy, 52, No 8, 1645-1646 (1958)

ABSTRACT : The authors have investigated the course of the reaction of anhydrous $ScCl_3$ and $ScBr_3$ with piperidine and with pyridine. In the experiments the vapor of the corresponding organic base was contacted with the anhydrous halide at 24° and 150 mm Hg. The formation of the following addition products has been established: $ScCl_3 \cdot 2C_5H_5N$ (mp 235-236°), $ScCl_3 \cdot 4C_5H_5N$ (245-248°); $ScBr_3 \cdot 3C_5H_5N$ (203-204°), and $ScBr_3 \cdot 4C_5H_5N$ (245-250°). The products obtained are white crystals, partially

*and with Piperidine.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240620008-8

PETRU, F.

"Introduction to the practice of inorganic chemistry" by H. Holzapfel, [illegible] Fischer. Reviewed by [illegible] Petru. Chem listy 58 no. [illegible]:43 '64.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240620008-8

[illegible], [illegible]; [illegible], [illegible]; [illegible], [illegible].

"Chemistry of rare elements." [illegible] properties [illegible]. In [illegible]. p. 139[illegible].

COLLECTION OF [illegible] CHEMICAL COMMUNICATIONS, Prague, [illegible]. Vol. [illegible], No. 5, May 1[illegible]

Monthly List of East European Accessions ([illegible], LC, Vol. [illegible], No. [illegible], [illegible].
Unclassified

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240620008-8

PETRU F

CZECHOSLOVAKIA

PETRU, F.; ALTER, F.; SATAVA, J.

Institute of Inorganic Chemistry, College of Chemical Engineering (Institut für anorganische Chemie, Technische Hochschule für Chemie), Prague (for all)

Prague, Collection of Czechoslovak Chemical Communications, No 11, November 1966, pp 4453-[illegible]

"On the chemistry of rare elements. Part [illegible]: Basic lanthanum carbonate."

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240620008-8

PETRU, F., inz. CSc.; POPELA, B., inz.; KRSEK, J., inz.; RUBES, M.; VESELA, Z., inz.

Gaseous molecular light generator for visible and infrared regions. Jemna mech opt 9 no. 9:269-275,282 S '64.

1. Institute of Instrument Technology, Brno.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240620008-8

[illegible]ETRU, F., [illegible] B., [illegible]z.

Des[illegible] [illegible] generator of He-Ne light. [illegible]

1. [illegible] skoslov[illegible] akademie ved. [illegible]

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L 10600-65 EWG(j)/EWA(k)/FBD/EWT(1)/EEC(k)-2/EEC(t)/T/EEC(b)-2/EWP(k)/EWA(h)/EWA(m)-2 Pn-4/Po-4/Pf-4/Peb/Pi-4/Pl-4 IJP(c)/APWL/RSD(t) WG

ACCESSION NR: AP4046499 Z/0030/64/000/009/0269/0275

AUTHOR: Petrů, F. (Engineer, Candidate of sciences); Popela, B. (Engineer); Krsek, J. (Engineer); Vesela, Z. (Engineer); Rubas, M.

TITLE: Gas laser for visible and infrared regions

SOURCE: Jemna mechanika a optika, no. 9, 1964, 269-275, 282

TOPIC TAGS: helium neon, silicon tube, discharge tube, CW gas laser

ABSTRACT: The article describes the design, characteristics and application of two CW He-Ne gas lasers emitting at wavelength of 1.1522, 3.3, and ~.6328 μ, built in Czechoslovakia. The authors claim their superior performance in comparison with other laboratory use. The article also includes a review of gas lasers. The gas discharging tubes and the Brewster's windows in these lasers are made of silicon of high optical purity. The technological processes of their construction, including material used, are also given in detail. This work was performed at UPT with the cooperation of R. Chudoba, J. Fajt, J. Jirusek, O. Moundry, A. Stejskal, V. Prajzner, Z. Barak, and other coworkers at the Institute whom we thank. The Electric Heating Appliance Factory in Prague,

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the Research Institute for Development of High-Frequency Generators for Charging Electronic Tubes, "Meopta" Plant for Production of Special Optical Parts, and UVOJM in Prerov (Manufacturing Dielectric Films on Mirrors) also participated in this work. Orig. art. has: 19 figures.

ASSOCIATION: Ustav pristrojove techniky, CSAV, Brno (Institute for Instrument Design, CSAV)

SUBMITTED: 00 ENCL: 00 SUB CODE: EC, OP

NO REF SOV: 002 OTHER: 028

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240620008-8

ACCESSION NR: AP4016947 Z/0030/64/000/002/0038/0042

AUTHOR: Petru, F. (Engineer); Bocek, V. (Engineer); Krsek, J. (Engineer); Popela, B. (Engineer)

TITLE: Construction and technology of helium-neon laser

SOURCE: Jemna mechanika a optika, no. 2, 1964, 38-42

TOPIC TAGS: laser, resonator, helium emission, neon emission, helium spectrogram, neon spectrogram, stimulated emission, high frequency generator

ABSTRACT: The authors describe the construction and technology of a continuously emitting He-Ne (1) laser. A resonator was used consisting of two concave mirrors 50mm in diameter (radius of curvature - 800 mm) with 13 dielectric interference layers for a maximum reflective capacity at a wavelength of 1.1523 μm. The setup for measuring the emission spectra is described. Three different shapes of tube were tested, differing in length, diameter, gas pressure, and the angle of closure. The first sign of stimulated emission was achieved with spherical mirrors at a distance of 800 mm; it appeared as a new emission line at a wavelength of 1.15μm. Various frequency patterns were observed, and the most typical ones were photographed; some of these photographs are reproduced in the paper. "In conclusion, the authors thank M. Rubes, K. Stefka

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ACCESSION NR: AP4016947

and M. Horky for developing the technology of tube manufacture, Z. Vesela for work on the high frequency generator, R. Chudoba for work on the optical bench and O. Moudry for the spectral measurements." Orig. art. has: 13 figures and 1 table.

ASSOCIATION: Ustav pristrojove techniky CSAV, Brno (Institute for Equipment Design, Czechoslovak Academy of Sciences)

SUBMITTED: 06Dec63 DATE ACQ: 18Mar64 ENCL: 00

SUB CODE: SD, PH NO REF SOV: 000 OTHER: 012

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240620008-8

ACCESSION NR: AP4029389 Z/0039/64/025/004/0181/0185

AUTHOR: Petru, Frantisek (Engineer); Bocek, Vlastislav (Bochek, V.) (Engineer); Popela, Bohumir (Engineer); Krsek, Jiri (Krshek, Y.) (Engineer)

TITLE: Gas laser with a mixture of helium and neon

SOURCE: Slaboproudy obzor, v. [illegible], [illegible] 4, 1964, 181-185

TOPIC TAGS: laser, stimulated [illegible], emission spectrum, emission line, emission intensity, helium emission [illegible] emission

ABSTRACT: A He-Ne ([illegible]) laser [illegible] continuous radiation at a wavelength of 1.1523 μm was used for measurements of [illegible] emissions and emission spectra. The emitted radiation was measured by a [illegible] photoelectric cell and a monochromator made from an optical goniometer. Results are given of measurements with three silica tubes of various lengths and diameters and closed by plates installed at various Brewster angles. The best results with stimulated emission (~ 5 mW) were obtained with a tube in which the silica plates were fastened with glue rather than being soldered on. These tubes are free of deformation and tension. The relationship between input and the ratio P/P max is shown on a graph for one type of tube. The reliability at maximum output was found to be good, and the stability of the emission during several hours of operation

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240620008-8

ACCESSION NR: AP4029389

was ± 3%/hr. Orig. art. has: 9 figures and 1 table.

ASSOCIATION: Ustav pristrojove techniky CSAV, Brno (Institute for Equipment Design, Czechoslovak Academy of Sciences)

SUBMITTED: 10Dec63 DATE ACQ: 01May64 ENCL: 00

SUB CODE: SO, PH NO REF SOV: 003 OTHER: 011

Card 2/2

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240620008-8

Z/508/60/000/000/003/018
E073/E335

AUTHORS: Bárta, Čestmír, Petrů, František and Hájek, Bohumil

TITLE: Synthesis of scandium-oxide single crystals

SOURCE: III. Konference o monokrystalech. Prague, Výzkumný ústav pro minerály, 1960. 17 - 19

TEXT: The authors succeeded in synthesizing scandium oxide by a hitherto unpublished method from spectroscopically pure Sc_2O_3 of an open structure. The synthesis was carried out on the Verneuil principle of crystallizing from the melt with equipment used for the commercial manufacture of corundum single crystals. To produce single crystals a reducing (hydrogen) atmosphere was needed. The linear rate of growth is of the order of 8 mm/h. The melting point is estimated at 2300 °C. The largest single crystal produced so far is 45 mm long and 4 mm wide. The product obtained was clear and dense, of 3.91 g/cm^3 density and with a hardness of 6.5 according to Mohs scale, refractive index 1.91. X-ray and γ-ray radiation produce a sufficiently strong luminescence which still persists at a temperature of about 100 °C; the emitted light is white with a pinkish hue. Further work is being continued.

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Z/508/60/000/000/003/018
E073/E335

Synthesis of ....

ASSOCIATIONS: Výzkumný ústav pro minerály v Turnove (Minerals Research Institute, Turnov)

Katedra anorganické chemie na Vysoké škole chemickotechnologické, Praha (Chair of Inorganic Chemistry of the University for Chemical Technology, Prague)

Card 2/2

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240620008-8

PETRU, Frantisek, doc.; JOST, Frantisek

Contribution to the chemistry of rare elements; part 9 : Use of scandium oxide and scandium salts for crystallizing some dicarboxylic acids. Sbor chem tech no.3, part 1:9-13 '59.

1. Katedra anorganicke chemie, Vysoka skola chemicko-technologicka, Praha.

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240620008-8"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240620008-8

PETRU, Frantisek; POPELA, Bohumir; KULHANEK, Jan; CUCHY, Zdenek; BOBEK, Milan; VITAK, Frantisek

Small infrared spectrophotometer. Chem listy 57 no.9:964-972 S '63.

1. Ustav pristrojove techniky, Ceskoslovenska akademie ved, Brno a Vyzkumny ustav monokrystalu, Turnov.

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240620008-8"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240620008-8

PETRU, F.

"Inorganic chemistry, a guide to advanced study" by R.B. Heslop, P.L. Robinson. Reviewed by F. Petru.
Chem listy 58 no.8:991-992 Ag '64.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240620008-8

PETRU, Frantisek (Brno)

Gas lasers. Pokroky mat fyz astr 10 no.1:51-62 '65.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240620008-8

S/081/62/000/004/013/087
B149/B101

AUTHORS: Landa, Stanislav, Petru, František, Vít, Yaroslav, Procházka, Vladimír, Mostecký, Jiří

TITLE: The Chemistry of alkali metal hydrides. I. The production of alkali metal hydrides

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 4, 1962, 97, abstract 4V30 (Sb. Vysoké školy chem.-technol. Praze. Odd. Fak. anorgan. a organ. technol. v. 2, 1958, 495-503)

TEXT: A method is described for the production of LiH, NaH and KH by the action of H_2 on the metals in question under a pressure of about 120 atm, at temperatures between the melting points of the metals and of the hydrides, using MoS_2 and WS_2 as catalysts. [Abstracter's note: Complete translation.

Card 1/1

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240620008-8

PETRL, F.; KUTEK, F.

Contribution to the chemistry of rare elements. X. Basic scandium halogenides. Coll Cz Chem 25 no.4:1143-1147 Ap '60. (EEAI 9:12)

1. Institut fur anorganische Chemie, Technische Hochschule fur Chemie, Prag.
(Scandium) (Halogenides) (Bare elements)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240620008-8"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240620008-8

PETRU, F

Distr: 4E2c

Lithium aluminum hydride and sodium aluminum hydride. Jaroslav Vít, Vladimír Procházka, and František Petrů (Vys. škola chem. technol., Prague). *Chem. průmysl* 10, 183-7(1960).—Br (600 ml.) was slowly dropped onto 210 g. of Al mixed with the same vol. of silica. $AlBr_3$ (2000 g. yield) was sepd. by distn. in a N atm. at reduced pressure. Et_2O (1500 ml.) previously dried with Na-K alloy and distd. from NaH was boiled 0.5 hr. with 0.1-0.2 mole of MeMgBr. From this soln. Et_2O was distd. onto 160 g. LiH (20 moles) until 100 ml. remained in the still. Into this soln. was slowly dropped a soln. of $AlBr_3$ in C_6H_6 prepd. as follows: 1000 ml. of C_6H_6 distd. from NaH was poured into 1067 g. melted $AlBr_3$ and the brown-violet color of this soln. was removed by a short boiling with LiH or NaH. When 1/3 of the $AlBr_3$ soln. had been added to the LiH soln., an addnl. 600 ml. of Et_2O was distd. from MeMgBr into the reaction mixt. during addn. of the remaining $AlBr_3$ soln. The reaction mixt. was then cooled and centrifuged. From the separated soln. solvent was distd. on the water bath at atm. pressure. Cryst. LiBr was removed and the remainder of the solvent was distd. off at 90° and 10-20 mm. Hg pressure. All operations were carried out in an atm. of dry N. The yield was 135-140 g. $LiAlH_4$ of purity <98%. $NaAlH_4$ was prepd. in the same way except for the substitution of tetrahydrofuran in equal amt. for C_6H_6; 480 g. of NaH was used. The reaction can be initiated with $LiAlH_4$. The yield was 130-140 g. of $NaAlH_4$ which decompd. at 190°. About 60 g. of $NaAlH_4$ is in the centrifuged solid and can be extracted with tetrahydrofuran. The reactions of $NaAlH_4$ with BCl_3, $AlCl_3$, $SiCl_4$, $TiCl_4$, $SnCl_4$, PCl_3, $AsCl_3$, $SbCl_3$, $B(MeO)_3$, $P(EtO)_3$, solid CO_2, CS_2, and I were studied; they were generally the same as those with $LiAlH_4$.

P. Čefelín

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240620008-8

PETRU, F.

The steric relationship between sandaracopimaric acid and the dextropimaric acids. Vlastimil Galík, František Petrů, and Josef Kuthan (Chem. Tech. Hochschule, Prague). *Naturwissenschaften* 46, 322-3(1959).—Partial dehydration of sandaracopimaric acid with Pd yielded the hydrocarbon $C_{18}H_{28}$, which, by its ultraviolet absorption spectra and mixed m.p. detn., proved to be identical with the hydrocarbon of Harris and Sanderson (*C.A.* 42, 6801b). I was identical with dextropimaric acid, not isodextropimaric acid.

Kathryn M. Wolfe

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240620008-8

PETRU, F

Distr: 4E2c

The chemistry of the rare earth elements. X. Basic scandium halides. F. Petrů and F. Kůtek (Vysoká škola chem. technol., Prague). *Collection Czech. Chem. Communs.* 25, 1143-7(1960)(in German); cf. *CA* 53, 21929e.—$ScCl_3.6H_2O$ and $ScBr_3.6H_2O$ are formed by adding Sc_2O_3 to an excess of boiling HCl and HBr, resp. When Sc_2O_3 is in excess, basic halide pentahydrates are formed: $Sc(OH)Cl_2.5H_2O$, $Sc(OH)Br_2.5H_2O$, and $Sc(OH)I_2.5H_2O$. Thermal decompn. of all the compds. gives Sc_2O_3 as final products, ScOCl and ScOBr being the intermediates. Formation of the trihydrate was noted in heating the hexahydrates.

M. Hudlický

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240620008-8

Z/009/60/000/04/004/041
E112/E253

3.2200(B)

AUTHORS: Vít, J., Procházka, V., and Petrů, F

TITLE: About Lithium- and Sodium-Aluminium Hydride

PERIODICAL: Chemický průmysl, 1960, Nr 4, pp 183-187

ABSTRACT: The authors have studied the preparation of sodium- and lithium-aluminium hydride from lithium or sodium hydride and aluminium tribromide, according to reaction:

$$4\ LiH - AlX_3 \rightarrow Li\ (AlH_4) + 3\ LiX\ (X = Cl,\ Br)$$

A critical survey or existing methods is given and reasons for discrepancies in yield and quality of product are analysed. It is held, that these can be accounted for by two main factors: A) presence of traces of moisture in the reactants and B) inactivation of the surface of lithium- or sodium hydride. The inactivation is explained by lack of solubility of lithium chloride in the reaction medium, which may lead to sedimentation on the surface of lithium hydride. As a result of these considerations and their own preliminary studies, the authors have given preference to aluminium tribromide as a starting material for their synthesis. Aluminium tribromide has also better solubility characteristics in benzene, than aluminium trichloride.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240620008-8

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About Lithium- and Sodium-Aluminium Hydride

In preliminary preparative studies the two compounds were prepared as follows: 1) The lithium compound was produced by reacting a solution of aluminium tribromide, dissolved in benzene, with lithium hydride, using diethylether as reaction medium. 2) The sodium derivative was synthesised from aluminium tribromide in benzene and sodium hydride using tetrahydrofurane as reaction medium. The mixture of benzene and tetrahydrofurane are the subject of Czechoslovak Patent 89.103 (15.3.1959). Diethyl ether has been found unsuitable, because the sodium aluminium hydride is decomposed in its presence. The importance of completely anhydrous conditions is again emphasized. If these conditions are adhered to, the addition of reaction catalysts can be dispensed with. It is pointed out that particularly in the preparation of sodium aluminium hydride the presence of free bromine, which could be formed from oxygen and aluminium tribromide, has a very deleterious effect on yields. It is therefore essential to carry out the reaction in an atmosphere of nitrogen, which had been previously freed from traces of oxygen. The authors have

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About Lithium- and Sodium-Aluminium Hydride

studied the separation of lithium and sodium aluminium hydride from the respective reaction mixtures and have also studied the solubility of sodium aluminium hydride in a mixture of benzene and tetrahydrofurane. They have established that the solubility of the product was 4.5 grms in 100 cc of the solvent consisting of two parts by volume of tetrahydrofurane to one part by volume of benzene Sodium-aluminium hydride was obtained by crystallisation from this mixture in colourless tetragonal crystals of up to a few mms in size. The crystallography is described in another Czechoslovak publication. The authors warn against the danger of explosion at the final drying of sodium aluminium hydride in vacuo. As a result of small-scale trials the authors then describe larger experiments, based on approximately 20 molar proportions. Experimental details and sketches of equipment are provided. The starting material, lithium hydride and sodium hydride were prepared according to Czechoslovak Patent 86,722. Aluminium tribromide was prepared according to Inorganic Syntheses, Volume III, page 30. The drying of the solvents is described in great detail. For the preliminary drying an

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About Lithium- and Sodium-Aluminium Hydride

alloy K-Na (60% to 40%) is suggested. The final drying is carried out either with lithium aluminium hydride as such, or with freshly prepared Grignard reagent. The yields of lithium-aluminium hydride and sodium-aluminium hydride were 89 to 92% and 88 to 93% respectively. A table illustrating some reactions of sodium-aluminium hydride is given Acknowledgments are expressed to T. Bartovský and P. Henger for their assistance in carrying out the here-described experimental work. There are 4 figures, 1 table and 33 references, 19 of which are English, 2 Soviet, 5 German, 3 French, 3 Czech and 1 Belgian.

ASSOCIATION: Katedra anorganické chemie, Vysoká škola chemicko-technologická, Praha (Department of Inorganic Chemistry, University of Chemical Technology, Prague)

SUBMITTED: December 15, 1959

Card 4/4

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240620008-8

Distr: 4E2c(j)/4E3d/4E2e

27

Chemistry of the rare elements. VII. Addition compounds of anhydrous [illegible] chloride and bromide with pyridine and piperidine. František Petrů and František [illegible] (Vysoká [illegible] Prague). *Chem. listy* 52, 1645-6(1958); cf. *C.A.* 53, 9702f.—Exposing at 24° $ScCl_3$ or $ScBr_3$ in a desiccator to vapors of pyridine or piperidine gives white cryst. addn. compds. partially sol. in nonpolar org. solvents: $ScCl_3.2C_5H_5N$, m. 235-6°; $ScCl_3.4C_5H_{11}N$, m. 245-8°; $ScBr_3.3C_5H_5N$, m. 203-4°; $ScBr_3.4C_5H_{11}N$, m. 245-50°. L. J. Urbánek

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240620008-8

PETROLE

1
2-may
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Distr: 4E2c(j)/4E3d

Preparation of addition compounds of anhydrous [illegible] and scandium bromide with [illegible]. [illegible], [illegible], and [illegible] (Chem.-Technol. Hochschule, Prague). Crest. Chem. Acta 29, 457-60(1957)(in German). —A no. of solid, well defined, addn. compds. of different additivity degrees was prepd. by treating anhyd. $ScCl_3$ and $ScBr_3$ with MeOH, EtOH, PrOH, BuOH, pentanol, hexanol, benzyl alc., allyl alc., iso-PrOH, and cyclohexanol vapors under varying pressure. The compn. of the compds. is given by the general formula $ScX_3 \cdot nROH$, with n being (to one exception) always integral. N. Plavšić

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240620008-8

PETRU, F.: BEDNARIKOVA, M. K. ANDRIK

Zaklady priemyselnej chemie (Basic Industrial Chemistry) : p. 333

TECHNICKA PRACA. Czechoslovakia Vol. 7, No. 7, July 1955

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

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4
2 May
3

Distr: 4E2c/4E2c(j)/4E3d

The chemistry of rare elements. V. Catalytic properties of scandium oxide. Josef Pašek, František Jošt, and František Petrů (Vysoká škola chem. technol., Prague). Chem. listy 52, 405-9(1958); cf. C.A. 52, 19641d, 19665b.—Sc_2O_3, prepd. by dissolving 20 g. anhyd. $ScCl_3$ in 1300 ml. H_2O, pptg. the hot soln. with 0.1 M NH_4OH at pH 8, filtering the ppt., decanting, dissolving in 800 ml. 0.5 N HNO_3, pptg. the soln. with NH_4OH, drying at 90°, and igniting at 420° for 2 hrs., showed a surface area of 100.2 sq. m./g. and was used as a catalyst for dehydration and dehydrogenation. Iso-PrOH gave at 380-440° 59% dehydration and 40.9% dehydrogenation, EtOH 74.3% dehydration and 25.5% dehydrogenation, and AcOH gave quant. yield of Me_2CO at temps. above 400°. Treatment of Sc_2O_3 with dil. NaOH decreases the dehydrating, and increases the dehydrogenating, properties, whereas treatment with dil. H_2SO_4 suppresses dehydrogenation and makes the dehydration almost exclusive.

M. Hudlický

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240620008-8

PETRU, F.

"Course of inorganic chemistry" by Gh. Banateanu. Reviewed by F. Petru. Chem prum 14 no.6:337 Je '64.

1. Higher School of Chemical Technology, Prague.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240620008-8

PETRŮ, F

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Reaction of D-sabinol with selenium dioxide. F. Petrů and J. Kovář (Vysoká škola chem. technol., Prague). ~~Collection~~ *Czechoslov. Chem. Communs.* 24, 2079–82(1959)(in Russian). —Some reactions were given of the *compd. A*, $C_{10}H_{16}O_2$, m. 138°, obtained (*C.A.* 46, 7545*d*) by oxidation of D-sabinol with SeO_2. The corresponding *oxime*, amorphous non-cryst. powder [*p-nitrophenylhydrazone*, m. 151–6° (EtOH); *2,4-dinitrophenylhydrazone*, m. 196–8° (EtOH); and *semicarbazone*, m. 126° (aq. EtOH) (decompn.)], could not be obtained in anal. purity. By a Grignard reaction of *compd. A* with MeMgI and chromatography on Al_2O_3, needles, m. 48° (EtOH) (found C 79.40, H 10.25%), were obtained. Clemmensen reduction of *compd. A* and chromatography on Al_2O_3 gave the *compd. B*, $C_{10}H_{20}O$, b_1 142–5° (bath-temp.), d^{18} 0.973, n^{18}_D 1.5201. Reduction of *compd. B* with 57% aq. HI, chromatography on Al_2O_3 and fractionation gave two $C_{10}H_{20}$ compds.: the *compd. C*, b_1 138–45° (bath-temp.), d^{20}_{20} 0.9460, n^{20}_D 1.5250, and the *compd. D*, b_1 145–8° (bath-temp.), d^{20}_{20} 0.9595, n^{20}_D 1.5434. In the attempted reduction of the *compd. A* with NaHg, the starting material, m. 136–7°, was recovered. Dehydrogenation of the *compd. A* with Se yielded the *compd. E*, $C_{10}H_{14}O_2$, lustrous plates, m. 140–1° (aq. EtOH). The phenolic character of the *compd. E* was shown by the Liebermann reaction (the presence of 2 phenolic groups was then detd. by a conductometric titration). A discussion of the exptl. results obtained was presented. JiM ~~Bienl~~

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240620008-8

[illegible]

"Nature of the precipitate [illegible] contributions [illegible] rare [illegible]."

[illegible], Praha, [illegible], April [illegible].

Monthly List of East European Accessions (EAI), [illegible]

Unclassified.

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240620008-8"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240620008-8

PETRU F., and others.

"Contributions ot the chemistry of rare elements. I. Isolation of scandium from tungsten ore residues."

p. 1534 (Collection of Czechoslovak Chemical Communications. Praha, Czechoslovakia.)

Monthly Index of East European Acessions (EEAI), LC. Vol. 22, no. 5, Oct. 1957

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240620008-8"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240620008-8

PETRU, F.; HAJEK, B.; ZAVORKA, F.

"Contribution to the chemistry of rare elements. II. Scandium pyrophosphate.

p. 1911 (Collection of Czechoslovak Chemical Communications. Praha, Czechoslovakia.)

Monthly Index of East European Acessions (EEAI) LC. Vol. 22, no. 5, Oct. 1957

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240620008-8"

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PATA / F

CZECHOSLOVAKIA/Physical Chemistry. Kinetics. Combustion. Explosions. Topochemistry. Catalysis.

Abs Jour: Ref Zhur-Khim., No 5, 1959, 14692.

Author : Pasek J., Jost F., Petru F.
Inst :
Title : Concerning the Chemistry of Rare Elements. Certain Catalytic Properties of Scandium Oxide.

Orig Pub: Chem. listy, 1958, 52, No 3, 405-409.

Abstract: The catalytic activity of scandium oxide (I) has been studied during the decomposition of isopropanol (II), ethanol (III) and acetic acid (IV). The dehydration and dehydrogenation of II pass through I in relation 1.44:1.00. This ratio does not depend on the temperature. The apparent activation energy of the decom-

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of IV into acetone, CO_2 and water, [illegible] selective catalyzer. At temperatures > 400° and a volume rate of 7 volus per minite per 1 liter of the

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CZECHOSLOVAKIA/Physical Chemistry. Kinetics. Combustion. Explosions. Topochemistry. Catalysis.

Abs Jour: Ref Zhur-Khim., No 5, 1959, 14692.

catalyzer, the decomposition proceeds practically quantitatively (100%) (at 350°, 46%) practically without secondary reactions. For the preceding report see Ref Zhur-Khim., 1958, 70300. -- Vlastimil Ruzicka.

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CZECHOSLOVAKIA/Organic Chemistry. Synthetic Organic Chemistry. 3-2

Abs Jour: Ref Zhur-Khim , No 24, 1958, 81573.

Author : Petru F., Galik V.
Inst :
Title : The Decomposition of Triscyclopentenbenzene and Triscyclohexenbenzene with Ozone.

Orig Pub: Chem. listy, 1957, 51, No 12, 2371-2373.

Abstract: It was established that glutaric and adipronic acids are the sole products of the ozonolysis of triscyclopentenbenzene (I) and triscyclohexenbenzene (II) with 3% O_3 (12 hours in CCl_4, by cooling off with ice and salt, the ozonide is boiled for one hour with water). I was obtained by boiling (14 hours) cyclopentenone (500 grams) with alcoholic solution of H_2SO_4, yield 32 grams, m.p. 95 to 97°C. (from alcohol). In the

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CZECHOSLOVAKIA/Organic Chemistry Synthetic Organic Chemistry

Abs Jour: Ref Zhur-Khim No 24 1958, 81[illegible]

Author : Petru F., Rehor J

Inst : -

Title : The Chloromethylation of 1 2-Dihydronaphthalene

Orig Pub: Chem listy, 1958 52 No 2 353-355

Abstract: By the Sommele reaction 3,4-dihydro-2-naphthaldehyde (I) was synthesized from 3 4-dihydro-2-chloromethyl naphthalene (II) which was obtained from the chloromethylation of 1 2-dihydronaphthalene (III) The bromination of tetraline (5.7 moles) by the action of Br_2 (10 moles) at 100°C for 3-4 hours and by heating in a stream of H_2 (or N_2 CO_2 Ar) for 4 hours at 120-125°C and with the addition of 100 ml of benzene, leads to the formation of 1,2-dibromo-

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CZECHOSLOVAKIA/Organic Chemistry Synthetic Organic Chemistry

Abs Jour: Ref Zhur-Khim. No 24 1958, 81614.

tetraline, yield 55-60% m.p. 69-70°C. from alcohol. By the action of metallic Mg (1 mole) in absolute ether on one mole of the above product, followed by the decomposition with aqueous sulfuric acid and a subsequent vacuum distillation was obtained III, yield 90-99%, b.p. 83°C./12 mm. The chloromethylation of III (1 mole) with paraformaldehyde (1.4 moles, in concentrated HCl for (1 l L) 4 hours at 89°C., the decomposition of the mixture with water and subsequent vacuum distillation led to II, yield 70% b.p. 141-144°C. 13 mm. [illegible] 1.6032, [illegible], 1.1382. Upon heating one mole of II for 3 hours at the boiling point with 2.5 moles of hexamethylene tetramine in one liter of 50% acetic acid solution, followed by boiling for 20 minutes with concentrated HCl and a subsequent vacuum distillation, one

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CZECHOSLOVAKIA/Organic Chemistry. Synthetic Organic Chemistry G-2

Abs Jour: Ref Zhur-Khim No 24, 1956, 81614

obtained I yield 80%, b.p. 150-153° C 17 mm, n D 1 6032 d 1 1069, oxime m.p. 141-142° C semicarbazone m.p. 241-242° C. The oxidation of 10 grams of I with a solution of 21 grams of silver nitrate and 9.5 grams of NaOH in 80 ml of water at 60° C., led to the formation of 3,4-dihydro-2-naphthoic acid (IV) m.p. 119° C (from acetone), amide m.p. 155° C; bromination of IV in chloroform gives 1,2-dibromo-1,2,3,4-tetrahydro-2-naphthoic acid, m.p. 189-190° C

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CZECHOSLOVAKIA / Inorganic Chemistry. Complex Compounds.

Abs Jour: Ref Zhur-Khimiya, No 19, 1958, 63979

Author : Petru F, Prochazka V, Hajek B
Inst : Not given
Title : On the Chemistry of the Rarer Elements. III. The Extraction of Scandium in a Compact State.

Orig Pub: Collect. Czechosl. chem. communs, 1958, 23, No 3, 367-371

Abstract: See RZhKhim, 1958, 28159.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240620008-8

PETRU, Frantisek

Organicka chemia pro podoho p. technicke skoly. (Organic Chemistry for Agricultural Technical Schools. a textbook, Tr. from the Czech. 2d rev. ed. illus., index, notes, tables) Bratislava, SN, 1957. 149 p.

Bibliograficky katalog, CSR, Slovenske Khihy, Vol. VIII. 1957. No. 9. p. 276.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240620008-8

PETRU, Frantisek

Chemie a mineralogie. Ucebnice pro 1. a 2. rocnik pedagog. skol. pro vzdelani ucitelu narodnich skol a pro 1. rocnik pedagog. skol pro vzdelani ucitelek materskych skol. (Chemistry and Mineralogy; a Textbook for the 1st and 2d Grade of the schools of Education of Primary- School Teachers and for the 1st Grade of the Schools of Education of Kindergarten Teachers. 2d ed. illus., indexes, tables) Authors: Frantisek Petru, Marie Kamaradova, Jaroslav Bauer. Prague, SPN, 1957. 312 p.

Bibliograficky katalog, CSR, Ceske knihy, No. 33. 24 Sept 57. p. 711.

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CZECHOSLOVAKIA/Inorganic Chemistry. Complex Compounds

C

Abs Jour : Ref Zhur - Khimiya, No 3, 1958, No 7363

Author : F. Petru., B. Hazek, J. Zavorka
Inst : Not Given
Title : On the Chemistry of the Rare Elements. II. On Scandium Pyrophosphate.

Orig Pub : Chem. listy, 1957, 51, No 1, 21-26, Sb. chekhosl. khim. rabor, 1957, 22, No 5, 1541-1546

Abstract : The deposit of scandium pyrophosphate, as a result of interaction of solutions of $ScCl_3$ and $Na_4P_2O_7$ or $Na_2H_2P_2O_7$ at pH 3.6 and 0.5 was studied. On the basis of potentiometric and conductometric studies of the course of the formation of the deposit and of the results of the analysis of obtained substances, the authors conclude that a formation of $Sc_4(P_2O_7)_3$ takes place in all cases. Part I see RZhKhim., 1957, 50969.

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CZECHOSLOVAKIA/Inorganic Chemistry - Complex Compounds.

Abs Jour : Ref Zhur - Khimiya, No 11, 1958, 35651

Author : Petru Frantisek, Pokorny Josef
Inst : -
Title : The Obtaining of Alkali Metal Nitrites on a Laboratory Basis.

Orig Pub : Chem. Listy, 1957, 51, No 5, 964-965

Abstract : The derivation of $LiNO_2 \cdot H_2O$, $NaNO_2$, KNO_2, $RbNO_2$ and $CsNO_2$ through the interaction of ethyl-nitrite with hydroxides of the corresponding alkaline metals, is described. To an alcoholic solution of hydroxide has been added a freshly distilled ethyl-nitrite. The mixture has been preserved for two days (48 hours). The volatile elements have been driven off in a vacuum and the remaining nitrite (yield 91 to 96%) recrystallized from the water. The purity of the obtained compounds amounted

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CZECHOSLOVAKIA/Inorganic Chemistry - Complex Compounds.

Abs Jour : Ref Zhur - Khimiya, No 11,1958, 35651

to 99.5 - 99.87%. 50% alcohol has been applied in the case of $LiNO_2$.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240620008-8

PETRU, F.

Contributions to the chemistry of the rare elements. III. Preparation of metallic scandium in a compact state.

p. 672 (CHEMICKE LISTY) Vol. 51, no. 4, Apr. 1957,
Praha, Czechoslovakia

SO: Monthly Index of East European Accessions (EEAI) LC, Vol. 7, No. 3,
March 1958

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[illegible]

"[illegible] of the [illegible] of Alkali Metals."

[illegible] 964 (Institute of Applied Physics - Czechoslovak Academy of Sciences)
Vol. 51, No. [illegible], May 1957

S[illegible] Monthly Index of East European Accession (EEAI) [illegible], Vol. [illegible], No. 5, [illegible]

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240620008-8

[illegible]

[illegible] chemistry. [illegible]

[illegible]

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Frantisek Petru

27

Hydrides of metals. Stanislav Landa, František Petrů, Jaroslav Vít, Vladimír Procházka, and Jiří Mostecký. Czech. 86,722, July 15, 1957. The process of heating in an autoclave 55 parts Na and 0.32 part MoS_2 with H (initial pressure 120 atm.) for 2 hrs. to 270° gives NaH in quant. yield. Similarly WS_2 and the Cu-Cr-O-catalyst can be used.

L. J. Urbánek

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240620008-8

Frantisek Petru

7

Ozonolysis of tricyclopentenobenzone and tricyclohexenobenzene. Frantisek Petrů and Vlastimil Galik (Tech. Univ., Prague). *Chem. listy* 51, 2371-3(1957).—Passing for 12 hrs., under cooling with ice-salt mixt., 3% O_2 into 2 g. tricyclohexenobenzene (I) in 50 ml. CCl_4, distg. CCl_4 *in vacuo*, boiling the white ozonide 1 hr. with H_2O, extg. the red-brown oil with Et_2O, and shaking with $NaHCO_3$ soln. gave 0.9 g. red-brown resin in the Et_2O layer and 0.5 g. adipic acid in the alk. ext., m. 151° (AcOEt). Similar treatment of tricyclopentenobenzene (II) gave glutaric acid, m. 97° (from C_6H_6). I obtained in 6 g. yield by condensing 100 g. cyclohexanone by means of H_2SO_4 to give crystals, m. 229-31° (C_6H_6). II obtained in 32 g. yield by refluxing 14 hrs. 100 g. concd. H_2SO_4, 100 g. cyclopentanone (III), and 100 g. EtOH, or in 20 g. yield by condensing 150 g. III by means of HCl to give crystals, m. 95-7° (from EtOH). Infrared and ultraviolet spectra of I and II are charted.

L. J. Urbánek

4

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PETRU, F.

4079 AEC-tr-3109

THE PREPARATION OF METALLIC SCANDIUM IN COMPACT STATE. F. Petru, B. Hlisk, and V. Procházka. Translated from Chem. listy 50, 2025(1956). 2p.

Metallic scandium has not yet been prepared in a compact state. In 1937 Fischer and coworkers obtained a preparation by electrolysis of scandium chloride which was sponge-like in appearance, almost grey in color, fragile and hard. Bommer and Hohmann, who used the reduction of scandium chloride by potassium, obtained only a small amount of a mixture of powdered scandium and potassium chloride. In the experiments reported, scandium fluoride or chloride were reduced by calcium for the preparation of metallic scandium. The reaction was performed in a molybdenum crucible heated in an argon atmosphere in a high-frequency induction oven. The reaction, which began at the temperature of 700 to 800°C, was very violent and took place within a short length of time. The metallic scandium was separated by distillation by further heating to 1500°C (under pressure 10^{-4} mm Hg). It was obtained in a compact state, as a silvery, comparatively soft metal which tarnishes in air. Its identity and purity were confirmed by chemical and spectral analysis. (auth)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240620008-8

PETRU, F.; HAJEK, B.; ZAVORKA, J.

Contribution to the chemistry of rare elements. II. Scandium pyrophosphate. p. 61. (Chemicke Listy, Praha. Vol. 51, no. 1, Jan., 1957.)

SO: Monthly List of East European Accession (EEAL) L , Vol. 6, no. 7, July 1957. Uncl.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240620008-8

Petrů, F.

Petrů, F., and Pokorný, S.: Organická chemie pro průmyslové školy chemické. Díl II. Prague: Státní nakl. tech. lit., 1955. 216 pp. Kčs. 12.40. Reviewed in *Chem. listy* 50, 2048(1956).

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240620008-8

PETRUF

Petrů, P., and Andrlík, K.: Organická chemie pro průmyslové školy chemické, Díl I. Prague: Státní nakl. tech. lit. 1955. 252 pp. Kčs 16.70. Reviewed in Chem. listy 50, 2048(1956).

2

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240620008-8

PETRU, F.

2133. Chemistry of the rare elements. II. Scandium pyrophosphate. F. Petrů, B. Hájek and J. Závorka (Inst. Inorg. Chem., High School Chem. Technol., Prague, Czechoslovakia). *Chem. Listy*, 1957, 51 (1), 21–26.—Potentiometric, derivative potentiometric and conductimetric methods show that scandium salts, when treated with $Na_4P_2O_7$, form an insol. ppt., the composition of which (after ignition) corresponds to the formula $Sc_4(P_2O_7)_3$.

J. Zýka

Chem

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Petrů, F.

5

Preparation of compact metallic scandium. F. Petrů, B. Hájek, and V. Procházka (Tech. Univ., Prague). *Chem. Listy* 50, 2025(1956).—ScF_3 or $ScCl_3$ were reduced with Ca by heating in a Mo crucible in an A atm. in a high-frequency induction oven. Short but extremely violent reaction began at 700-800°. On further heating to 1500° at 10^{-3} mm. Hg, Sc distd. to give a soft, silvery metal, unstable in air. Its identity and purity were checked by chem. and spectral analysis. L. J. Urbánek

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PETRU, FRANTISEK

7

The chemistry of the rare elements. II. Scandium pyrophosphate. Frantisek Petru, Bohumil Hajek, and Jiří Závorka (Vysoká [illegible] technol., Prague). Chem. Rev. 51, 21-6(1957); cf. C.A. 51, 2437g, 2849b.—Precipitation with $Na_4P_2O_7$ and $Na_2H_2P_2O_7$ of Sc solns. at pH 3.6 and 0.5, resp., yielded insol. $Sc_4(P_2O_7)_3$ (after ignition). Beck's proposed formula for the same compd. is believed to be incorrect (C.A. 45, 5059b). The size of the crystals is estd. to be of the order 10^{-4} to 10^{-7} cm, according to x-ray measurements.

M. Hudlický

MT

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L 41792-66 EWT(d)/FS(m)/EWT(1)/EWP(m)/EWP(w)/T-2/EWP(k) WW/RM
ACC NR: AP6018760 SOURCE CODE: RU/0608/66/021/001/0051/0069

AUTHOR: Savulescu, St.; Petru, I.

ORG: Institute of Fluid Mechanics, The Academy of the Rumanian Socialist Republic (Institut de mecanica fluidelor al Academiei Republicii Socialiste Romania)

TITLE: Theoretical and experimental investigations of the transitional boundary layer on the extrados of a wing profile at subcritical and critical Reynolds numbers

SOURCE: Studii si cercetari de mecanica aplicata, v. 21, no. 1, 1966, 51-69

TOPIC TAGS: turbulent boundary layer, laminar boundary layer, boundary layer thickness, aircraft wing, Reynolds number, TRANSITION BOUNDARY LAYER, PRESSURE GRADIENT

ABSTRACT: The effect of the longitudinal pressure gradient on the development of a finite and tridimensional turbulence in a boundary layer at subcritical and critical Reynolds numbers, was investigated in a miniature model of an A/6 laminar wing profile, equipped with 17 pressure intakes on its contour, and with a calculated chord length of 223 mm. The theoretical method for the calculation of the average characteristics (thickness of the layer, separation point, Re_{δ^*}, stagnation point, and distribution of the intensity of fluctuations) of the boundary

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ACC NR: AP6018760

layer with pressure gradient, is described. The theoretical results are compared with the data obtained experimentally, and the methods for turbulence induction and measurement elaborated for this experiment, are indicated. The method of development of the finite and tridimensional turbulences is compared with the indications provided by the theory of stability through small bidimensional turbulences. The structure of the transitional boundary layer is presented from a qualitative and quantitative point of view by means of oscillograms and spectrograms. Finally, the conclusions referring to the transitional boundary layer, in the presence or absence of a pressure gradient, are related. Orig. art. has: 9 figures, 3 tables, and 9 formulas.

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[illegible], [illegible].

What we have done in [illegible].
Mass distribution of our periodicals. [illegible].
[illegible], Bratislava, [illegible], no. [illegible], [illegible] p. [illegible].

SO: Monthly list of East European Accessions, [illegible], [illegible], Vol. [illegible], no. [illegible], [illegible], Incl.

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CA

The applicability of the Kuhn-Roth methyl determination method to the solution of structural problems in the terpene series František Petrů, Miroslav Jureček, and Jan Kovář (Tech. Univ., Prague, Czech.) *Chem. Listy* 45 [illegible] 1951. The effect of structure of cyclic compds. on the yields of AcOH in the C-methyl detn. (Kuhn-Roth method) was followed. Branched cycloparaffins give low yields, cycloolefins, cyclic alcs., and ketones give higher yields of AcOH. With the exception of isomerizable compds., the results are reproducible under the same conditions. However, no relations can be drawn between the structure and yield of AcOH. The following consts. are reported: [illegible] menthane, 0.7907, 1.4405; isopropylcyclohexane, b_{11} 38.2-8.5°, 0.8054, 1.4413; isopropenylcyclohexene, b_{10} 39-40°, 0.8262, 1.4500; menthene, b_{12} 49.8-50.2°, b_{13} 167-9°, 0.8134, 1.4513; methylcyclopentane, b 69.5°, 0.7382, 1.4125; 1-methylcyclopentene, b 74.5°, 0.7808, 1.4200; menthone, b_{14} 85°, 0.8963, 1.4503; pulegone, b_{16} 94-6°, 0.9401, 1.4849; thujane, b 151°, 0.8145, 1.4423; α-thujene, b_{15} 44.5°, 0.8334, 1.4550; *d*-sabinene, b_{15} 46.8°, 0.8398, 1.4676; thujyl alc., b 205°, 0.9173, 1.4637; *d*-sabinol, b_{16} 88.5-9°, 0.9495, 1.4888; *d*-sabinyl acetate, b_{17} 104-6°, 0.9704, 1.4696; thujone, b 198°, 0.9189, 1.4547; pinane, b 163.5-4°, 0.8608, 1.4643; α-pinene, b 153-4°, 0.8610, 1.4650. M. Hudlický

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L 62162-65 EWP(b)

ACCESSION NR: AP5019906 CZ/0032/64/014/012/0902/0909

AUTHOR: Petru, K. (Engineer) (Prague)

TITLE: Cam, Maltese cross and star mechanisms

SOURCE: Strojirenstvi, v. 14, no. 12, 1964, 902-909

TOPIC TAGS: mechanical power transmission device, mechanical engineering

Abstract (Author's English summary, modified): The article compares cam, Maltese cross and star mechanisms by the criterion of the maximum allowable acceleration of an arbitrary point of the working parts of the machine. On the basis of a detailed analysis of static and dynamic conditions in the mechanisms under consideration, a determination is made of the areas of their rational application where their specific properties can assure the maximum effectiveness. Certain possibilities of increasing the efficiency of the mechanisms and of bringing it close to the theoretical value are outlined. Orig. art. has 11 figures, 40 formulas, and 2 tables.

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ACCESSION NR: AP5019906

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: IE

NO REF SOV: 000 OTHER: 007 JPRS

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PETRUK, K.

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DC 621.9.001.1

Petruk, K.; Non-Symmetrical and Composed Movements of Machines

Stroyirshstvi, Vol 8, Nr 6, 1958, pp 417-424

Distr: 4E2b

The method using analysis of working movements of machines as the basis for their design and for correcting the relation of movements has been so far worked out in detail for symmetrical movements only. Though this group of movements covers practically the majority of possible cases, they cannot meet all the requirements of the machine-building industries. The author extends therefore his method on non-symmetrical and composed movements, analysing their geometry and deriving formulas for determining time and performance components. Theoretical conclusions are illustrated by an example of box making machine.

August 28, 1958/ml

[Retyped clipped abstract]

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3)

Metal hydrides. II. Reaction of alkali metals with hydrogen at higher pressures and temperatures. Stanislav Landa, František Petrů, Jiří Mostecký, Jaroslav Vít, and Vladimír Procházka (Vys. škola chem.-technol., Prague). *Chem. listy* 52, 1357-9(1958); cf. Czech. 86,722 (*C.A.* 52, 6737*e*).—KH, NaH, and LiH were prepd. in quant. yields by hydrogenating in a 2500 ml. stainless-steel rotating autoclave 10 g. atoms of K, Na, and Li, resp., in the presence of 0.1% WS_2 (prepn., cf. *C.A.* 50, 771*d*) or MoS_2 (prepn., cf. *C.A.* 50, 13854*d*) at 120 atm. and 140-150°. Local overheating destroys the activity of catalyst. In the case of KH and NaH (not LiH) it is necessary to heat at the end of 250° and 350°, resp., to obtain a stable product. The hydrides prepd. are pure enough to be used in the synthesis of complex hydrides. Jiří Plíml

Distr: 4E2c/4E3c

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PETRU, FRANTISEK

4

Preparation of alkali nitrites. František Petrů and Josef Pokorný (Vysoká škola chem.-technol., Prague). *Chem. listy* 51, 904-5(1957).—Alkali nitrites were prepd. by allowing to stand 3 days at room temp. 0.4 mole of LiOH, NaOH, KOH, or 0.04 mole of RbOH, or CsOH in 160 ml. 90% EtOH (in the case of LiOH, 50% EtOH) with 40 ml. (20% excess) EtONO, bp 74-5°, d_{20} 0.8897, n_D^{20} 1.3775, by distg. the volatile components *in vacuo*, and crystg. the residue from H_2O. Yields ranged from 91 to 98% of the crude products. M. Hudlický

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LITERAT, R.; MEITERT, St.; ONCESCU, M.; PETRU, I.

The continuous measurement of the β radioactivity of atmosphere. Studii cerc fiz 12 no.1:87-101 '61. (EEAI 10:9)

1. Institutul de fizica atomica, Bucuresti.

(Atmosphere) (Beta rays) (Geiger-Muller counters)

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PETRU, K., inz. (Praha)

New information on cam mechanisma. Strojirenstvi 13 no. 12: 895-900 D '63.

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KALAB, Vladimir; PETRU, Kamil; VALICA, Vladimir

Effect of raw materials on the yield of ammonium nitrate.
Chem prum 12 no.9:484-486 S '62.

1. Chemicke zavody W. Piecka, n.p., zavod Zilina.

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GANTNER, Ivan, inz.; PETRU, Kamil, inz.

Connection of silamide driving belts by gluing and welding. Stroj vyr 12 no.4:270-271 Ap'64.

1. Technicka informacno-poradenska sluzba pre plasticke hmoty, Zilina (for Gantner).
2. Chemicke zavody W. Piecka National Enterprise, Branch Zilina.

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PETRU, P.

Measuring and grading machines in operation. p. 363. (Strojirenstvi, Vol. 7, No. 5, May 1957, Praha, Czechoslovakia)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, No. 8, Aug 1957, Unc.

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PETRU, K., Inz. (Prague)

Cam, Maltese cross and star mechanism. Strojirenstvi [illegible]
902-909 [illegible]

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PETRU, K.

"Movement relations with arbitrary acceleration." p. 186.

STROJIRENSTVI. (Ministerstvo tezkeho strojirenstvi, Ministerstvo presneho strojirenstvi a Ministerstvo automobiloveho prumyslu a zemedelskych stroju). Praha, Czechoslovakia, Vol. 9, No. 3, Mar. 1959.

Monthly list of East European Accessions (EEAI), LC, Vol. 6, No. 6, August 1959.
Uncla.

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PETRU, K.

Working cycles of machines performing several motions. P 494

STROJIRENSTVI (Ministerstvo tezkeho strojirenstvi, Ministerstvo vscobecnebo strojirenstvi) Praha, Czechoslovakia Vol. 9, no. 7 July 1959

Monthly List of East European Accessions (EEAI), LC. Vol. 9, no. 2, Feb. 1960

Uncl.

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PETRU, K., inz. (Praha)

Evaluation of movement dependences of cam mechanisms. Strojirenstvi 13 no.10:734-740 O '63.

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PETRU, K.

"Machines with working cycles consisting of one motion only." p. 267.

STROJIRENSTVI. (Ministerstvo tezkeho strojirenstvi, Ministerstvo presneho strojirenstvi a Ministerstvo automobiloveho prumyslu a zemedelskych stroju). Praha, Czechoslovakia, Vol. 9, No. 4, Apr. 1959.

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

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