

NICULESCU-ZINCA, D.

Determination of tissue levels of thyroid hormones. Stud. cercet.
endocr. 14 no.1:75-88 '63.
(THYROID HORMONES) (IODINE ISOTOPES)
(RADIOMETRY)

NICULESCU-ZINCA, D.

Aspects of radioisotope investigations of incipient hyperthyroidism.
Stud. cercet. endocr. 14 no.4/5/6:627-636 '63.

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LUPU, N.Gh. acad; BALACEANU, Mariana; NICULESCU-ZINCA, D.; CIOBANU, V.;
STAN, M.

Clinical and laboratory study of thyroid function in chronic
evolutive polyarthritis and of the relations between Hashimoto's
disease and chronic evolutive polyarthritis. Stud. cercet. med.
intern. 5 no.1:19-29 '64

~~PA~~ Niculiu, C. TA

5

Indigenous sands for the manufacture of glass. Gr. Bondog and C-Ta Niculiu. *Ind. apard* (Bucharest) 3, 244-8 (1950).—Among the many sand deposits found in Romania, those near the following locations are satisfactory for the manuf. of glass: Lipova, with a Fe₂O₃ content of 1.00%, useable for manufg. green glass; Vulcan de Munte and Arghires, with a Fe₂O₃ content below 0.7%, for window glass and lab. ware. Recent findings near Feldioara and Vulcan Codlea might become of great interest. The deposit found at Miorcani, at the Frut River, is extremely white, having an Fe₂O₃ content below 0.05%, but must be washed before use because of its high clay content. Other small deposits were recently uncovered in the Banat and in Dobruza.

Franziska Kertész

RB
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110

DZHEROTA, D. [Gerota, D.]; DIMITRIU, K. [Dimitriu, C.]; KHALEVI, S.
[Halevi, S.]; ~~NIKULIU, G.~~ [Niculiu, G.]; TEODORIU, M.

Acute postoperative insufficiency of the adrenal glands. Vest.
khir. 89 no.7:58-66 J1 '62. (MIRA 15:8)

1. Iz 1-y khirurgicheskoy kliniki (dir. - prof. Voynya Marin-
nesku [Voinea Marinescu]) fakul'teta po usovershenstvovaniya
vrachey (Bukharest).
(ADRENAL GLANDS) (OPERATIONS, SURGICAL)

HALMAGYI, Iuliu; NICULOIU, Ion, ing.

Movement of inventions and innovations in Rumania. Probleme econ
17 no.1:152-153 Ia '64.

1. Inger sef, Uzinele chimice Risnov (for Halmagyi). 2. Seful
serviciului tehnic, Uzinele chimice Risnov (for Niculoiu).

NICZYPOROWICZ, E. (Bialystok)

Problem of discontinuous limits in the theory of analytical functions. Annales Pol math 14 no.3:269-288 '64.

IDENTAL, G.I.

~~IDENTAL, G.I.~~ (St. Shira, Krasnoyarskoy sh.d., Khakasskaya avtonomnaya oblast', ul. Oktyabr'skaya, d.123)

Two-chamber cyst of the sigmoid mesentery. Vest. khir. 75 no.1:67
Ja-F '55. (MLRA 8:4)

1. Iz Shirinskoy rayonnoy bol'nitsy, Khakasskoy avtonomnoi oblasti, Krasnoyarskogo kraya.

(CYSTS,
mesentery, two chamber cyst)
(MESENTERIES, cysts,
two-chamber cyst)

ABDULKABIROVA, M.A.; ALEKSANDROVA, M.I.; AFONICHEV, N.A.; BANDALETOV,
S.M.; BESPALOV, V.F.; BOGDANOV, A.A.; BOLOVIKOV, L.I.; BORSUK,
B.I.; BORUKAYEV, R.A.; BUVALKIN, A.K.; BYKOVA, M.S.; DVORTSOVA,
K.I.; DEMBO, T.M.; ZHUKOV, M.A.; ZVONTSOV, V.S.; IVSHIN, N.K.;
KOPYATKEVICH, R.A.; KOSTENKO, N.N.; KUMPAN, A.S.; KULDYUKOV,
K.V.; LAVROV, V.V.; LYAPICHEV, G.F.; MAZURKEVICH, M.V.;
MIKHAYLOV, A.Ye.; MIKHAYLOV, N.P.; MYCHNIK, M.B.; NIDLENKO, Ye.N.;
NIKITIN, I.F.; NIKIFOROVA, K.V.; NIKOLAYEV, N.I.; PUPYSHEV, N.A.;
RASKATOV, G.I.; RENGARTEN, P.A.; SAVICHEVA, A.Ye.; SALIN, B.A.;
SEVRYUGIN, N.A.; SEMENOV, A.I.; CHERNYAKHOVSKIY, A.G.; CHUYKOVA,
V.G.; SHLYGIN, Ye.D.; SHUL'GA, V.M.; EL'GER, E.S.; YAGOVKIN, V.I.;
NALIVKIN, D.V., akademik, red.; PERMINOV, S.V., red.; MAKUSHIN,
V.A., tekhn.red.

[Geological structure of central and southern Kazakhstan]
Geologicheskoe stroenie Tsentral'nogo i Iuzhnogo Kazakhstana.
Leningrad, Otdel nauchno-tekhn.informatsii, 1961. 496 p.
(Leningrad. Vsesoiuznyi geologicheskii institut. Materialy, no.41)

(MIRA 14:7)

* (Kazakhstan--Geology)

NIDEREK, Leon A.

First results of the revised documentation of capital investments in building-assembling enterprises of the Administration of Building and Building Materials Industry. Przegl budowl i bud mieszk. 33 no.1:20-22 Ja '61

NIDEREK, Leon A. (Warszawa)

Summary of results of the first stage of revising the capital investment plan for 1961-1965 in building. Przegl budowl 1 bud mieszk 33 no.5:275-278 My'61

NIDERSHTRAT, B.M.

Interaction between antagonistic muscle of the shoulder in children
3-17 years of age. Fiziol.zhur. 50 no.6:727-735 Je '64. (MIRA 18:2)

1. Kafedra fiziologii Instituta fizicheskoy kul'tury imeni
Lesgafta, Leningrad.

MERTSLIN, R.V.; NIDURASHINA, N. I.

Properties of the lower separation field in ternary systems
including one binary predominating system. Part 1. Zhur.fiz.
khim. 35 no.11:2616-2622 N '61. (MIRA 14:12)

1. Saratovskiy gosudarstvennyy universitet.
(Systems(Chemistry))

YUGOSLAVIA

Zivorad NIDZOVIC [Affiliation not given.]

"Impression from Pharmacy Student Apprenticeship in Western Germany."

Belgrade, Arhiv za Farmaciju, Vol 13, No 1, 1963; pp 76-79.

Abstract : Vivacious and entertaining account of Yugoslav pharmacist who spent 2 months on study trip in W. Germany "...surely there is no place in the world where there are as many specialty preparations as in Western Germany .." "... unusual courtesy toward customers .. is understandable since pharmacies are privately owned and compete for profit .. mark-up on sale for drugs amounts even up to over 30% .." Amazement that homeopathic drugs are still sold, that liquors and toothbrushes etc. are sold in pharmacies but generally not unsympathetic.

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CA NIDZYAN, Ye. I.

11A

Enzymic transfer of phosphate from adenosine triphosphate to ribonucleic acid. S. E. Bresler and Ye. I. Nidzyan (Leningrad Phys.-Tech. Inst.). *Doklady Akad. Nauk S.S.S.R.* 79, 79-83(1950). --Adenosine triphosphate (ATP) labeled with P^{32} was obtained by injection of radioactive $H_2Na_2PO_4$ into rabbits, followed by usual extr. from the skeletal muscle. Incubation of this with polymeric ribonucleic acid and a small amt. of rat liver homogenate at 37° led to distinct transfer of P^{32} into ribonucleic acid. The reaction mixts. were made up with glycylglycine buffer at pH 7.3, containing 0.0005 M $MgSO_4$, 0.005 M K_2SO_4 , and 0.05 M NaF. The examn. of the final product was done by the fluorescence "chemiscope" (Brumberg, *et al.*, *ibid.* 74, 747-50(1950); *C.A.* 44, 9745e). Approx. 12-18% of ATP gives up its phosphate group to ribonucleic acid in a 0.5 hr. incubation. The transferred phosphate can be cleaved by phosphatase. G. M. Kosolapoff

NIDZYAN, Ye.I.

Using radioactive isotopes for the control and automatization
of technological processes. Obog. rud. 2 no.4:57-63 '57.

(MIRA 11:8)

(Ore dressing) (Automatic control)

(Radioisotopes—Industrial applications)

LOBANOV, Ye.M., NIDZYAN, Ye.I.

Experimental use of gamma rays to determine the density of
polymineral pulp. Obog. rud 2 no. 6:67-75 '57. (MIRA 11:8)
(Ore dressing)
(Gamma rays--Industrial applications)

NIEBUSEWICZ, H.

3444* Synthesis of Vinyl Acetylene. *Wzrost winylacety-
lenu.* (Polish.) B. Krawczak and H. Niebuszewski. *Przemysl
chemiczny*, 10, no. 7, July 1964, p. 686-687.
Use of $\text{CuCl-NH}_4\text{Cl-Cu-HCl-H}_2\text{O}$ as catalyst. Tables, diagrams,
graph. 13 ref.

*B**

NIEBROJ, S.

First aid in cases of electric shock; liberation of patients from the action of electric current. Med. pracy 4 no.3:211-222 1953. (CML 24:5)

NIEBROJ, S.

Effect of cold on quantitative modifications of plasma in organs of guinea pig. *Fol. morph., Warsz.* 4 no.4:257-268 1953. (CML 25:5)

1. Of the Institute of Histology and Embryology (Head--Prof. T. Pawlikowski, M.D.) of Silesian Medical Academy in Zabrze.

NIEBROJ, T.

PAWLIKOWSKI, T.; NIEBROJ, T.

Experimental silicosis in white mice. Med. pracy 5 no.2:149-151 1954.

1. Z Zakładu Histologii Prawidłowej i Embriologii Śląskiej Akademii Medycznej. Kierownik: prof. dr T.Pawlikowski.
(SILICOSIS, experimental,
factors inhib. develop. of dis.)

NIEBROJ, Tadeusz

NIEBROJ, Tadeusz

Method of determination of cholesterol and of its derivatives
in tissue. *Fol. morph., Wars.* 5 no.2:152-154 1954.

1. Z Zakladu Histologii Prawidlowej i Embriologii Slaskiej
Akademii Medycznej. Kierownik: prof. dr T.Pawlikowski.
(CHOLESTEROL, determination,
in tissue)

NIEBROJ, Tadeusz; ZAJUSZ, Kazimerz.

Modification of plasmal and fats contents in the digestive system following feeding. Fol.morph.,Warsz. 6 no.2:105-119 1955.

1. Z Zakladu Histologii Prawidlowej i Embriologii Slaskiej A.M.
Kierownik: prof.dr T. Pawlikowski, Zabrze 8, Sl. K.Marksa 19,
Zaklad Historii i Embriologii Sl. a.M.

(PLASMALOGEN,

plasmal in gastrointestinal system, eff. of food in guinea pigs)

(FOOD, effects,

on gastrointestinal fat & plasmal in guinea pigs)

(FATS,

in gastrointestinal system, eff. of food in guinea pigs)

(GASTROINTESTINAL SYSTEM, physiology,

fat & plasmal content after feeding in guinea pigs)

NIEBROJ, Tadeusz

Tadeusz Niebroj, "Ueber die Tagesrhythmik der Aktivitaet der neurosekret-
crischen Zellen im Hypothalamus der weissen Maus," Die Naturwissenschaften
(Berlin), 45/3, February 1958, p. 67.

Received on 18 November 1957.

The author is affiliated with the Histological Embryological Research
Laboratory of the Slask Medical Academy at Zabrze (Director: Prof. Dr.
med. T. Pawlikowski).

NIEBROJ, Tadeusz

NIEBROJ, Tadeusz: "Influence of Cobalt on White Mouse Skin Mast Cells,"
Nature, Vol. 181, No. 4614, 5 April 1958, p. 991.
Published from the Dept. of Histology, Silesian Medical Academy,
Zabrze, Poland. 7 January 1958.

NIEBROJ, Tadeusz

NIEBROJ, Tadeusz: "Diurnal Variations of Mast Cell Activity," Nature, Vol. 181,
No. 4514, 5 April 1958, p. 991.
Published from the Dept. of Histology, Silesian Medical Academy,
Zabrze, Poland. 7 January 1958.

PAWLIKOWSKI, Tadeusz; NIEBROJ, Tadeusz; ZAJUSZ, Kazimierz

Experimental studies on the effect of hyaluronidase on pulmonary silicotic changes in rats. Pat. polska 10 no.1:61-71 Jan-Mar 59.

1. Z Zakladu Histologii i Embriologii Slaskiej Akademii Medycyny
Kierownik: prof. dr T. Pawlikowski oraz z Panstwowego Instytutu
Medycyny Pracy Dyrektor: prof. dr B. Nowakowski. Adres autorow:
Lodz, ul. Nowotki 137.

(SILICOSIS, experimental,
eff. of hyaluronidase (Pol))

(HYALURONIDASE, effects,
on exper. silicosis (Pol))

MIGACZOWA, Teresa; NIEBROJ, Tadeusz

Effect of hyaluronidase on synechia iridis in a rabbit. Klin.
oczn. 30 no.2:143-155 '60.

1. Z Kliniki Chorob Oczu Sl. A.M. w Zabrze. Kierownik: prof.dr
med. M. Madroszkiewicz.

(IRIS dis.)

(HYALURONIDASE pharmacol.)

KOSCIELAK, J.; MURAWSKI, K.; NIEBROJ-DOBOSZ, I.

Para-phenylene diamine oxidase activity in protein fractions of human and animal blood serum. Acta physiol.polon. 10 no.6:685-689 N-D '59.

1. Neurological Clinic, Faculty of Medicine, Warsaw Medical School, Warsaw. Head: Prof.dr I. Hausmanowa. Psychoneurological Institute, Pruszkow. Director: Prof.dr Z. Kuligowski.

(OXIDASES blood)

(BLOOD PROTEINS chem.)

NIEBROJ-DOBOSZ, Irena; SPETT, Kazimierz; SPIOCH, Franciszek. M.

Effect of cytochrome c on the alkali reserve level in acute carbon monoxide poisoning in guinea pigs. Polski tygod. lek. 14 no.22: 1000-1002 1 June 59.

1. (Z Instytutu Medycyny Pracy w Przemysle Węglowym i Hutniczym w Zabrze-Rokitnicy, dyrektor: prof. dr Brunon Nowakowski) Otrzymano: 21.XI.1958; adres: Warszawa, ul. Washingtona 42 m. 11.

(ACID BASE EQUILIBRIUM

alkali reserve in acute carbon monoxide pois., eff. of cytochrome c in guinea pigs (Pol))

(CARBON MONOXIDE, pois.

eff. of cytochrome c on alkali reserve in acute pois. in guinea pigs (Pol))

(CYTOCHROMES, eff.

c, on alkali reserve in acute carbon monoxide pois. in guinea pigs (Pol))

NIEBROJ-DOBOSZ, Irena

Determination of the degree of hemoglobin oxidation by means of
Pulfrich's photometer. Polski tygod.lek. 15 no.28:1059-1061
11 JI '60.

1. Z Zakladu Chemii Fizjologicznej Sl.A.M. w Zabrze-Rokitnicy;
kierownik: doc. dr Stanislaw Jozkiewicz
(HEMOGLOBIN chem)
(PHOTOMETRY)

KOSCIELAK, Jerzy; NIEBROJ-DOBOSZ, Irena; WARECKA, Krystyna

Cerebrospinal fluid proteins in multiple sclerosis. *Neurol. neurochir. psychiat. pol.* 12 no.1:21-27 '62.

1. Z Kliniki Neurologicznej AM w Warszawie Kierownik: prof. dr I. Hausmanowa-Petrusewicz.

(PROTEINS csf) (MULTIPLE SCLEROSIS csf)

NIEBROJ-DOBOSZ, Irena

The level of cholesterol and lipid acids in the blood serum of apoplectic patients. Neurol neurochir psych 12 no.2:215-217 Mr-Apr '62.

1. Klinika Neurologiczna, Akademia Medyczna, Warszawa. Kierownik:
prof. dr med. Hausmanowa-Petrusewicz, I.

*

NIEBROJ-DOBOSZ, Irena; HAUSMANOWA-PETRUSEWICZ, Irena

Protein, lipoprotein and glycoprotein fractions of the blood serum in muscle diseases. Neurol. neurochir. psychiat. pol. 13 no.2:165-172 '63.

1. Z Kliniki Neurologicznej AM w Warszawie Kierownik kliniki:
prof. dr I. Hausmanowa-Petrusewicz.

(MUSCULAR DISEASES) (BLOOD PROTEINS)
(GLYCOPROTEINS) (LIPOPROTEINS)
(BLOOD CHEMICAL ANALYSIS)

KOSCIELAK, Jerzy; NIEBROJ-DOBOSZ, Irena; WARECKA, Krystyna

Blood serum proteins in multiple sclerosis. Neurol. neurochir.
psychiat. pol. 13 no.2:179-182 '63.

1. Z Kliniki Neurologicznej AM w Warszawie Kierownik: prof.
dr I. Hausmanowa-Petrusewicz.

(BLOOD PROTEIN ELECTROPHORESIS)
(MULTIPLE SCLEROSIS)
(BLOOD PROTEINS)

NIEBROJ-DOBOSZ, Irena; HAUSMANOWA-PETRUSEWICZ, Irena

The level of potassium in dystrophic muscles. *Neurol. neurochir. psychiat. pol.* 13 no.4:461-468 '63.

1. Z Kliniki Neurologicznej AM w Warszawie Kierownik: prof. dr med. I. Hausmanowo-Petrusewicz.

(MUSCULAR DYSTROPHY) (POTASSIUM)
(NITROGEN) (MUSCULAR ATROPHY)
(CREATINE AND CREATININE)
(CHEMISTRY, ANALYTICAL)

NIEBROJ-DOBOSZ, Irena; HAUSMANOWA-PETRUSEWICZ, Irena

Biochemical disorders in muscle diseases. Pt. 2. *Acta med.*
Pol. 6 no.2:117-123 '65.

Biochemical disorders in muscle diseases. Pt. 3. *Ibid.*:
125-135

1. Department of Neurology, Medical Academy, Warsaw (Director:
Prof. Dr. I. Hausmanowa-Petrusewicz).

MIERZYDOWSKI, K.

Dziaszewski, J. Hydrophore method a plant for protection of pumps in sewage pumping stations. p. 25.

WAZ, WODA I TECHNIKA SANITARNI, Warszawa, Vol. 20, no. 7, July 1987.

SO: Monthly List of East European Accessions, (L. 2), LC, Vol. 4, no. 2, Oct. 1985,
Uncl.

NIEC, HELENA

Uprawa warzyw pod szklen. Warszawa, Panstwowe Wydawn. Rolnicze i Lesne, 1951.
194 p. (Greenhouse vegetable cultivation)
DA Not in DLC

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

NIEC, Jan

Complete luxation of the elbow joint towards the front with fracture of the olecranon process. Polski tygod. lek. 10 no.26:871-873 27 Je '55.

1. Z I Kliniki Chirurgicznej A M w Krakowie: Kierownik: prof. dr med. J. Bogusz. Krakow, I. Klin. Chirurgiczna Kopernika 40.

(ELBOW, dislocation
with fract. of olecranon process)

(ULNA, fracture
olecranon process fract., with elbow luxation)

NI EC. Jan

Spontaneous rupture of the inferior thyroid artery. Polski tygod. lek. 11 no.52:2201 24 Dec 56.

1. (Z I Kliniki Chirurgicznej A.M. w Krakowie; kierownik prof. dr. J. Bogusz) Krakow, I Kl. Chir. Ak. Med.

(THYROID GLAND, blood supply,
inferior thyroid artery, spontaneous rupt. (Pol))

1. 2 I. TAN
NIEC, Jan; SZNAJDER, Włodzimierz; BUTEJSKI, Włodzimierz; WASOWICZ, Stefan

Remote results in partial gastrectomy in gastric and duodenal ulcer.
Polski przegl. chir. 29 no.7:663-670 July 57.

1. 2 I. Kliniki Chirurgicznej A. M. w Krakowie im. prof. M. Rutkowskiego
Kierownik: prof. J. Bogusz.

(GASTRECTOMY, in various diseases,
peptic ulcer, remote results in partial excis. (Pol))

WIEC, YHN.

NIEC, Jan

Retroneritoneal peri-renal lipoma. Polski przegl. chir. 29 no.7:717-719 July 57.

1. Z I. Kliniki Chirurgicznej A. M. w Krakowie. Kierownik: prof. J. Bogusz.

(LIPOMA, case reports,
retroperitoneal peri-renal (Pol))
(RETROPERITONEAL SPACE, neoplasms,
lipoma, peri-renal (Pol))

NIEC, Jan; SZNAJDER, Włodzimierz

Early radiological studies in bleeding from the upper segment of the digestive system. Polski przegl. chir. 30 no.5:471-473 May 58.

(GASTROINTESTINAL SYSTEM, hemorrhage,
upper segment, x-ray's early manifest. (Pol))

NIEC, L; ZADURA, J.

"Mass Poisoning of Horses with Phosphorus Compounds Containing Zinc."
p. 550. (MEDYCYNA WETERYNARYJNA, Vol. 9, No. 12, Dec. 1953, Warszawa,
Poland.)

SO: Monthly List of East European Accessions, (EEAL), LC,
Vol. 4, No. 5, May 1955, Uncl.

ZADURA, J.; NIEC, L. (Pulawy)

Anatomic and histopathologic studies on lesions in the preputial diverticulum of swine with particular reference to the presence of bacterial flora. Rocznik nauki rolnej 70 no.1/4:296-297 '60.
(EEAI 10:9)

(Swine) (Bacteria)

NICO, W.

The raw-material basis of the ancient iron metallurgy in Gory Swietokrzyskie. p. 111.

PRZEWIDZ GEOLOGICZNY. (Wydawnictwa Geologiczne) Warszawa, Poland
Vol. 7, no. 9, Sept. 1959.

Monthly List of East European Accessions (EEAI) 13, Vol. 9, no. 2, Feb. 1959.

Uncl.

NIEC, Marek

Bauxite clays in the Staszic Mine in Rudki (Gory Swietokrzyskie Mountains). Przegł geol 10 no.8:428-430 Ag '62.

1. Katedra Geologii Kopalnianej, Akademia Gorniczo-Hutnicza, Krakow.

NIEC, Marek, mgr inz.

Statistical analysis of copper deposits of the pre-
Sudetic monocline. Rudy i metale 9 no.6:300-302 Je '64.

1
POLAND

NIEC, Marek; LABUS, Jerzy

1. Academy of Mining and Metallurgy (Akademia Gorniczo-Hutnicza)
[Crakow] (for Niec); 2. Sobieski Coal Mine (Kop. Sobieski), near
Jaworzno (for Labus)

Warsaw, Przeglad geologiczny, No 7, July 1966, pages 321-323

"Barite occurrence in the Sobieski Coal Mine near Jaworzno."

11, .

"Hand, ing real letters with a ...", Library, ...
100111, 7.1.12, 10.11, ...

CC: ... List of ...
March 1957, ...

NIEC, "

"Durability and workability of coal cutters. Biuletyn."

r. 4 (Przegląd Gorniczy) Vol. 12, no. 2, Feb. 1956
Katowice, Poland

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

NIEC, W.

Modernization of cutter chains. Buletyn lecn. 1.3.

(PRZEMIAŁ GOSPODZ. Vol. 13, No. 3, Mar. 1957. Warszawa, Poland)

SO: Monthly List of East European accessions (LAC) 1. Vol. 1, No. 1, October 1957. Incl.

NIECHAJ, Andrezej; TOKARSKI, Juliusz

Certain characteristics of Goltz reflex in a frog in the light
of cardiographic studies. Acta physiol.polon. 11 no.3:371-384
My-Je '60.

1. Z Zakladu Fizjologii Czlowieka A.M. w Lublinie Kierownik:
prof. dr. W.Holobut
(REFLEX)
(HEART physiol)

NIECHAJ, A.; TOKARSKI, J.

On the effect of the sympathetic ganglia on Goltz reflex in frogs.
Acta physiol.polon. 11 no.5/6:849-850 '60.

1. Z Zakladu Fizjologii Czlowieka A.M. w Lublinie, Kierownik: prof.
dr W.Holobut.

(GANGLIA AUTONOMIC physiol)

(HEART physiol)

(REFLEX)

NIECHAJ, A.; TOKARSKI, J.

Certain characteristics of the cardiographic picture of Golts reflex in frogs. Acta physiol.polon. 11 no.5/6:850-851 '60.

1. Z Zakladu Fizjologii Czlowieka A.M. w Lublinie, Kierownik:
prof.dr W.Holobut.
(REFLEX)
(HEART physiol)

NIECHAJ, Andrzej; TOKARSKI, Juliusz

Cardiographic investigations on Goltz's reflex in frog (peripheral part of an afferent neurone). Ann. univ. Lublin sec. B **15**:135-150 '60.

1. Z Katedry i Zakładu Fizjologii Człowieka Wydziału Lekarskiego Akademii Medycznej w Lublinie Kierownik: prof. dr med. Wiesław Holobut.

(REFLEX) (HEART physiol)

NIECHAJ, Andrzej

Studies on the seasonal fluctuations of the reaction of the heart
to stimulation of the afferent segment of the sciatic nerve.
Acta physiol. Pol. 16 no.2:259-274 Mr-Ap'65.

1. Zaklad Fizjologii Czlowieka Akademii Medycznej w Lublinie
(Kierownik: prof. dr. W. Holobut).

NIECHAJ, Andrzej

Changes in reflex reactivity under the influence of prolonged administration of noradrenaline. Acta physiol. Pol. 16 no.3: 415-426 My-Je '65.

1. Katedra Fizjologii Czloweka AM w Lublinie (Kierownik: prof. dr. W. Holobut).

J. A. Niechodzki J. A.

Distr: 4E20

27

Introduction of alloying elements into the alloys for cast-
ing. J. A. Niechodzki. *Przebieg Odlewnictwa* 9, 32-41
(1959). A series of alloys contg. C 0.12 or 0.35, Cr 20, and
Ni 0-80%; iron-based alloys Cr20Ni10, Cr15Ni15, Cr15Ni-
35, and Ni-based alloys of the Nimonic type were investi-
gated. The iron- and Ni-based alloys contd. additionally 10
or 20%, resp., Mo, W, Nb, V, Ti, and Al (total). To some
of the alloys Mn, Cu, Co, and N were introduced. The
metallurgical problems of manuf. of sound creep-resistant
alloy castings were briefly discussed. The difficulties in
obtaining a nondefective castings were referred to a high vis-
cosity in liquid state, metallurgical condition of primary
crystn., and thermal contraction near the solidus temp., that
might caused intercryst., hardly detectable cracks. Dur-
ing the casting, changes were likely to occur owing
to oxidation, decarbonization, graphitization, recrystn.,
grain growth, and formation of new phases. The mech.
properties the alloys should meet were also discussed.
The most important factors to be considered were creep and
fatigue strength. The necessity of making an allowance for
cooling rate of casting, when considering the effect of alloy-
ing addn., was emphasized, and a relation between the
process of solidification and castability was established.
The introduction of Ti, Nb, Al, and Mo into the alloy
Cr20Ni80 lowered the liquidus and solidus temp. The
castability of alloys contg. C 0.12 or 0.35 and Cr 20% im-
proved with the increase in Ni addn. from 50 to 60%, but
diminished at higher Ni contents. Ti and Nb increase the

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S.A. NIECHENBU

range of solidification temp., but reduced the time of solidification remarkably. Preheating of molds improved castability, due to increase in the rate of metal flow. To avoid the formation of Ti and Al compds. during the pouring of metal into the molds, an inert Ar atm. should be applied. The addn. of Mo, W, Nb, V, and Ti in excessive amt. to the austenitic steel contg. Cr 20, Ni 10, Cr 15, Ni 15, or Cr 15, Ni 35% effected the formation of a phase, which deteriorated the creep strength and plastic properties of alloys. The optimum properties were obtained when an austenitic equill. was secured, and formation of a ferrite was avoided. The C contents should be <0.1%, when high plastic properties were required, or 0.35%, when the strength had to be increased on the expense of plasticity. On the basis of established principles a series of new alloys with lower contents of Ni, 10-15%, instead of 20-35%, and without Mo was designated. The addn. of N for securing the austenitic equill. of these alloys was emphasized. W-T-5

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NIECHWIEDOWICZ-Obada; CHORZEWSKI, Zenon

A case of multifocal eosinophilic granuloma. Polski przegl.radiol.
24 no.2:101-111 Mr-Ap '60.

1. Ze Szpitala M.S.W. w Gdansk w Gabinetu rtg oraz z Oddzialu
Chirurgicznego. Ordynator: dr med. Z. Chorzewski.
(EOSINOPHILIC GRANULOMA case reports)

KOWALSKI, Henryk, inż., mech.; NIECIECKI, Kazimierz, inż., energ.;
ZAREBSKI, Rajmund, techn., energ.

Rebuilding of a coal feeder. Energetyka przem 10 no.2:66-67 '62.

1. Elektrownia Jaworzno II.

NIECIUNSKI, Witold

Housing problems in the prospective plan. Inst bud miesz prace 15
no. 45:11-25 '64.

NIECIUNSKI, Witold, mgr; KORNILOWICZ, Jan, mgr; DOMINIAK, Wladyslaw, mgr

Working on the way to new centers of developing industry.
in: GOSMIERZ praca 15 no.47:1-1-2 '64.

NIECZAJEK, Andrzej

Rheumatic disease in research of Soviet scientists. Polskie arch.
med. wewnetrz. 24 no.3a:455-465 1954.

1. Z Kliniki Chorob Wewnetrznych Pomorskiej Akademii Medycznej
w Szczecinie. Kierownik: prof. dr E.Gorskowski.

(RHEUMATISM,

*hist. of research in Russia)

NI ECZAJEW, Andrzej

Treatment of psoriatic arthritis with post-insulin mild hypoglycemic states. *Polskie arch. med. wewn.* 25 no.6a: 1275-1284 1955.

1. Z Kliniki Chorob Wewnętrznych P. A. M. w Szczecinie
Kierownik: doc. dr. med. E. Gorskowski Szczecin. Al. Wojska
Polskiego 158/2.

(ARTHRITIS, RHEUMATOID, Therapy,
insulin in psoriatic arthritis. (Pol))

(INSULIN, therapeuticuse,
arthritis, psoriatic. (Pol))

(PSORIASIS, complications,
arthritis, ther., insulin. (Pol))

NIECZAJEW, Andrzej; LICHT, Edward; FIEDOROWICZ, Irena; NOWOTARSKA, Teresa

Value of latex test in the diagnosis of rheumatic diseases. Polski tygod. lek. 16 no.13:479-482 27 Mr '61.

(RHEUMATISM diag)

NIECZAJEW, Andrzej; SZYMANSKI, Hanna

Jirgl's flocculation test in the differential diagnosis of jaundice.
Polski tygod. lek. 16 no.34:1313-1315 21 Ag '61.

1. Z II Kliniki Chorob Wewnętrznych P.A.M. w Szczecinie; kierownik:
prof. dr med. E. Gorzkowski.

(JAUNDICE diag) (LIVER FUNCTION TESTS)

GORZKOWSKI, Edward; NIECZAJEW, Andrzej; SZYMANSKA, Hanna

On the problem of the treatment of liver cirrhosis with prednisone.
Pol. tyg. lek. 17 no.30:1185-1187 23 JI '62.

1. Z II Kliniki Chorob Wewnętrznych P.A.M.; kierownik: prof. dr med.
Edward Gorzkowski. Pol. tyg. lek. 17 no.30:1185-1187 23 JI '62.
(LIVER CIRRHOSIS) (PREDNISONE)

FIEDOROWICZ, Irena; NIECZAJEW, Andrzej

Clinical forms of ankylosing spondylitis. Roczn. Pom. akad.
med. Swierczewski 10:397-418 '64.

1. Z II Kliniki Chorob Wewnętrznych Pomorskiej Akademii
Medycznej (Kierownik: prof. dr Edward Gorzkowski).

NIEDEK, Tomasz (Warszawa, ul. Zabkowska 39)

Problems of boxing from the medical viewpoint. Polski tygod. lek.
14 no.13:592-596 30 Mar 59.

1. (Z Instytutu Naukowego Kultury Fizycznej: dyrektor: prof. dr med.
Włodzimierz Kissiuro, z Kliniki Zdrowego Człowieka: kierownik: doc.
dr med. Stanisław Bober przy I Klinice Chorob Wewnętrznych Akademii
Medycznej: kierownik: prof. dr nauk med. Andrzej Biernacki)

(ATHLETICS

boxing, med. aspects (Pol))

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pton EXCERPTA MEDICA Sec 9/Vol 13/5 SURGERY May 59 .sym-
. 5, 16)

2680. A CONTRIBUTION ON THE TUMOURS OF MECKEL'S DIVERTICULUM -
Ein Beitrag zu den Tumoren des Meckelschen Divertikels - Niedenzu H.
Chir. Abt., Marienhosp., Bottrop - ZBL. CHIR. 1958, 83/11 (679-683)
Illus. 34

First a survey is given of the pathology of Meckel's diverticulum with special reference to the tumours themselves. Special attention has also been paid to the diagnosis of the tumours of Meckel's diverticulum. Finally, a case of a neurofibroma of Meckel's diverticulum is reported, which had adhered to the bladder and the other structures of the small pelvis, caused serious symptoms and clinically and radiologically gave the impression of being a cancerous process in the sigmoid region. On the basis of the anamnesis the existence of a tumour for about 10 yr. could be assumed. The report re-emphasizes the need to look whenever possible for a Meckel's diverticulum in every appendectomy. It should be further emphasized that in case of unexplained abdominal complaints the entire stomach-intestinal tract should be examined clinically and radiologically, not just stomach, colon, sigmoid and rectum, as happens all too often. (IX, 5, 16)

HINDENBURG, EMIL

Geography and Geology

Bulgaria új eletelbi; cikszujitomeny. Budapest, Muvelt. Ica:
Kenyvkiado, 1953. 133 .

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

N. N. D. K. N. J.

Current efficiency as a function of the current density in the electrolysis of fused cryolite-alumina. L. N. Antipin

and I. Niderkorn. *Zhur. Priklad. Khim.* 29: 677-83 (1966).
 — The current efficiency, η , in the electrolysis of cryolite- Al_2O_3 was detd. at 1050° as a function of the cathode c.d., D , and the period of time, t , during which the cathode had been submerged in the fused electrolyte before electrolysis started. The electrolytic cell consisted of a corundum crucible fitted closely into a larger graphite tumbler. Metallic Al, 4.70 ± 0.05 g., connected with a Mo wire was placed at the bottom of the corundum crucible. It served as the cathode; the graphite tumbler was the anode. The electrolyte was cryolite contg. 16 wt. % Al_2O_3 . Before electrolysis started the cathode was kept submerged in the fused electrolyte for periods t of 5, 13, and 20 min.; electrolysis continued for 10 min. The difference between the total loss in wt. of the cathode and the loss due to soly. during t gave the amt. of Al electrolyzed. The curves η vs. D passed through a max. and a min. Both were more pronounced and shifted toward higher values of D as t increased, i.e. with the increasing degree of satn. of the electrolyte with Al before electrolysis started. η increased with t . These facts were explained by the assumption of the following reactions: $2 Al + Al^{+++} \rightarrow 3 Al^+$ and $Al^{+++} + 2 Na \rightarrow Al^+ + 2 Na^+$. The exper. data agreed with Rotinyar's equation (cf. *C.A.* 43, 649) but not with Abramov's (cf. *C.A.* 31, 3702).
 I. Benconits

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Ural Polytech Inst. in S.M. Krasov

137-58-6-12038 D

Translation from Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 121 (USSR)

AUTHOR Niderkorn, I.

TITLE Investigation of the Influence of the Current Density on the Current Efficiency in the Electrolysis of Cryolite-alumina Melts (Issledovaniye vliyaniya plotnosti toka na vykhod po toku pri elektrolize kriolito glinozemnykh rasplavov)

ABSTRACT Bibliographic entry on the author's dissertation for the degree of Candidate of Technical Sciences, presented to the Mosk. in-t tsvetn. met. i zolota (Moscow Institute of Nonferrous Metals and Gold), Moscow, 1957

ASSOCIATION Mosk. in-t tsvetn. met. i zolota (Moscow Institute of Nonferrous Metals and Gold), Moscow

1. Aluminum oxide-cryolite slags--Electrical properties
2. Aluminum oxide-cryolite slags--Electrolysis
3. Electric currents--Properties

Card 1/1

136-2-17/22

AUTHOR: Niderkorn, I.

TITLE: Notes on the Article of G.V. Forsblom and R.A. Sandler
"CO₂ Content of Anodic Gases as a Method for Controlling
the Process of the Electrolysis of Cryolite-Alumina Melts."
(Zamechaniya k stat'ye G.V. Forsbloma i R.A. Sandlera "Soder-
zhan'ye CO₂ v anodnykh gazakh kak metod kontrolya protsessa
elektroliza kriolit-alinozemnykh rasclavov)

PERIODICAL: Tsvetnyye Metally, 1957, no.2, pp. 83 - 84 (USSR)

ABSTRACT: In Tsvetnyye Metally 1956, no.6, Forsblom and Sandler
suggested that electrolysis in aluminium-producing electro-
lyzers could be controlled from CO₂ - determinations in the
anode gases. The present author rejects their views on the
mechanism of CO - formation from CO₂ and on the effects of
current density, alumina concentration and other factors on
anode-gas analysis.
1/1 There are 5 Slavic references.

ASSOCIATION: Mintsvetmetzoloto.

AVAILABLE: Library of Congress

НИДЕРКОРН, И.

AUTHOR: Niderkorn, I.

136-12-12/18

TITLE: Influence of Certain Factors on the Current Yield in the Electrolysis of Cryolite-alumina Melts (O vliyanii nekotorykh faktorov na vykhod po toku pri elektrolize kriolit-glinozemnykh rasplavov)

PERIODICAL: **Tsvetnyye Metally**, 1957, No.12, pp. 59 - 64 (USSR).

ABSTRACT: In this article, experiments on the influence of anodic current density and of the Al^+ ion on current yield in the electrolysis of cryolite-alumina melts are described. For the current-density experiments a special cell (Fig.1), in which the cathodic **aluminum** was not in contact with the graphite crucible, and in which anodic current density was altered by altering the anode surface was used, the melt being prepared from chemically pure AlF_3 , NaF and Al_2O_3 . Results at various current densities (Figs. 2, 3) showed that the yield with respect to current falls linearly with increasing anodic current density when the cathodic current density is kept constant; for industrial cells, high cathodic current densities with the lowest possible anodic densities are recommended. For studying the influence of Al^+ artificial cryolite with and without Card1/2 10% Al_2O_3 , sometimes saturated with **aluminum** and sometimes

136-12-12/18

Influence of Certain Factors on the Current Yield in the Electrolysis of Cryolite-alumina Melts

without dissolved **aluminum** were electrolysed in a cell consisting of a graphite crucible anode with a molybdenum cathode, which formed an alloy with deposited **aluminum** (Fig.4). The results (Figs. 5, 6 and Table 2) showed that with **aluminum**-saturated melts, yields of over 100% were obtained, indicating the formation of **aluminum** ions of valency less than 3. There are 6 figures, 2 tables and 5 Russian references.

ASSOCIATION: Mintsvetmetzoloto

AVAILABLE: Library of Congress

Card 2/2

NIDERKORN, I., referent.

Producing simultaneously alumina and sulfuric acid from bauxite and gypsum (from "Revista de Chimie" no.7 1956). TSvet. net. 30 no.4: 95-96 Ap '57.

(Rumania--Bauxite)

(MLRA 10:6)

NIDERKORN, I. referent.

Rate of solution of alumina in molten cryolite. Abstracted by
I. Niderkorn. *Tsvet. met.* 30 no.11:94-96 N '57. (MLRA 10:11)
(Alumina) (Cryolite)

РИДЕРКАРА, I.
NIDERKORN, I.

Effect of certain factors on current efficiency in the electrolytic process of alumina-cryolite smelting. TSvet. met. 30 no.12:59-64 D '57. (MIRA 11:1)

1. Mintsvetmetzoloto.
(Aluminum industry) (Electrometallurgy)

Influence of the current density at anode and cathode upon the current yields in the electrolysis of molten cryolite-alumina mixtures. *Iona Niederkorn. Acad. rep. populare Romine, Studii cercetari* 7: 319-44 (1958). -- If the current yields for the cryolite-Al₂O₃ bath were plotted as a function of the c.d.s., rather complicated curves were obtained. Neg. current yields appeared on occasion, confirming earlier findings by Rotinyan (C.A. 48, 9486). On the basis of the curves conclusions could be drawn that in the cathode process, the Al^{III} must be deposited in steps involving the formation of Al^I. Metallic Al was treated with this cryolite-Al₂O₃ bath, and formed Al^I, which ions discharged at a more electropos. potential than Al^{III}. The most electro-neg. process in the whole series of processes occurring was the formation of metallic Na. The anodic and the cathodic current efficiencies and the compn. of the anode gas were detd. in a completely sealed electrolysis vessel. The graphite anode was oxidized and the primary oxidation product was pure CO₂, which did not attack the graphite anode. The CO in the anode gas was due to the reduction of CO₂ by the metals in the electrolyte. There was therefore a direct relation between the gas compn. at the anode and the current efficiency. 26 references. W. I.]

Distr: 4E2c

J.D.

R/003/60/011/005/001/123
A125/A026

AUTHOR: Nieder Korn, I., Engineer, Candidate of Technical Sciences

TITLE: Some Thermodynamical Contemplations Upon the Reduction of TiCl₄

PERIODICAL: Revista de Chimie, 1960, Vol. 11, No. 5, pp. 249 - 254

TEXT: By using the most recent calorimetric determinations, the author performed some thermodynamical calculations for evaluating the processing possibilities of the reactions at the reduction of titanium tetrachloride with sodium and magnesium. The thermodynamical analysis was based on the principle that the condition of the processing probabilities of the chemical reactions is equal to the negative value of the free energy at a given temperature. The free energy variations of the chemical reactions studied in function of temperature have been calculated according to the equation of van't Hoff (Equations 1, 2 and 3). The final equation is presented. The phase transformations of the components have been taken into consideration according to the general rules. Seven chemical reactions (I - VII) have been studied between 0°K and 1,250°K. Table 1 shows the thermodynamical values of the standard enthalpy of the titanium chlorides. The values for ΔH_{298} indicated by Belov and Skliarenko have been accepted for the

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R/003/60/011/005/001/023
A125/A026Some Thermodynamical Contemplations Upon the Reduction of $TiCl_4$

calculation in case that $TiCl_2$ and $TiCl_3$ have 123.0, respectively, 170.0 kcal/mol. The values of the entropies are given in Table 2. Since the findings of Hawkins and Carpenter (Ref. 10) have not yet been confirmed, $S_{289} = 60.3$ cal/mol $^{\circ}C$ has been used for the calculations. Except for the data by Belov and Skliarenko, no other are available on the specific heat. Table 3 lists the thermodynamical data used in the calculations. As an example, the author presents the equation of the free energy for the reaction (XIII). The derived equation of the free energy variation (8) is valid only for a sodium melting temperature of up to 371 $^{\circ}K$. For a higher temperature the thermal melting effect of the sodium has to be taken into consideration. The equation of the free energy variation has to be calculated for the solidification process of the sodium (XIV). In the calculation of the free energy equation for the reaction (XIV), the author uses the relations (9 and 10), obtaining for the sodium solidification the equation (11). By multiplying this equation by four and adding it to the equation (8), he obtains ΔE_T for a temperature interval of 371 - 409 $^{\circ}K$ (12). The results of the calculations are listed in Table 4 and some simplified equations are listed in Table 5. The values of the equilibrium constants have been computed on the basis of the equa-

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R/003/60/011/005/001/023
A125/A026

Some Thermodynamical Contemplations Upon the Reduction of $TiCl_4$

tion - $\Delta F = RT \ln K_p$. Figure 2 presents the variation of the equilibrium constant logarithms in function of the temperature. $TiCl_3$ and $TiCl_2$ in the equilibrium mixture can be neglected, which proves the total reduction of $TiCl_4$ with sodium. Practically, however, considerable quantities of $TiCl_3$ and $TiCl_2$ are present in the final product, a phenomenon which could not be clarified yet. There are 2 figures, 5 tables and 12 references: 4 Soviet, 2 German, 5 English and 1 Hungarian.

Card 3/3

S/137/62/000/003/043/19.
A006/A101

123100

AUTHOR: Niederkorn, I.

TITLE: Preparation of titanium by sodium-thermal reduction of titanium tetrachloride

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 19, abstract 9010 ("Studii si cercetari metalurgie Acad. RPR", 1961, v. 9, no. 2, 209 - 218, Roumanian, Russian and French summaries)

TEXT: Results are given of thermodynamical calculations of possible reactions in $TiCl_4$ and Na interaction (curves are presented showing the changes in free energy as functions of temperature). The laboratory unit and experimental results are described. Optimum Ti yield is 98%. At higher temperatures Ti density increased; the product obtained was partially spongy and partially dusty. The content of impurities was in %: Fe 0.00 - 0.25; Si 0.1 - 0.3; Cl 0.1; O 0.07 - 0.1. To determine O in Ti the Br-method was developed.

A. Tseydler

[Abstracter's note: Complete translation]

Card 1/1

Z. 056/62.019 005 003 008
1037 1237

AUTHOR: Niderkorn, N.

TITLE: Preparation of titanium by thermal reduction of titanium tetrachloride with sodium

PERIODICAL: Přehled technické a hospodářské literatury. Hutnictví a strojírenství, v. 19, no. 5, 1962, 286, abstract HS 62-3643 (Rev. Métall., Bucarest, v. 6, no. 2, 1961, 243-252)

TEXT: The advantages of this method as compared with the reduction by magnesium. A thermodynamic analysis of the system containing titanium chloride and sodium in the range of temperatures 0-1250 K. Construction of the set-up for the thermal reduction. A study of the dependence of the yield on the reaction temperature (e.g., 99% yield at 300°C., 85% at 800°C) and of the dependence of the formation of granular fraction on the reduction temperature. At 800°C the compact sponge of titanium together with the granular fraction (grain particles up to 1 mesh) form 90% of the total quantity of the titanium obtained. The Ti is of high purity. A method for fast determination of oxide in titanium was also worked out. There are 1 micro-photographs, 5 drawings, 4 diagrams, 1 table, and 11 references.

[Abstracter's note: Complete translation.]

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27000 R/003/61/012/003/001/004
D238/D302

AUTHORS: Niederhorn, I., Engineer, Candidate of Technical Sciences,
Creanga, O., Engineer, Craiu, V., Engineer, Burnei, M.
and Nicu, I., Engineers

TITLE: Manufacture of high-purity Si by means of the SiJ_4 method

PERIODICAL: Revista de chimie, v. 12, no. 3, 1961, 137-143

TEXT: The aim of this work is to provide the necessary technological data for producing transistor grade Si. The SiJ_4 method was chosen because of the efficient means available for purifying the intermediate. Specifically, this method comprises 3 steps: (a) Synthesis of SiJ_4 .

J_2 (99.8% pure) and Si (99.9% pure, obtained by treating a commercial grade with HCl and HCl/HF) were directly combined in a laboratory scale apparatus similar to that of G.J. Szekely (Ref. 1: J. Electrochem. Soc. 1957, v. 104, 663). It consisted of a quartz J_2 boiler, a vertical

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Manufacture of high-purity...

synthesis tube (quartz) and a SiJ_4 receiver. The J_2 vapors were produced by argon which was previously purified by passing it over CaH_2 at 350°C . CuO at 650°C , $\text{Mg}(\text{ClO}_4)_2$ and P_2O_5 and finally over glass spheres coated with silicon grease. The same installation was used also on a larger scale. The influence of temperature on purity and yield of SiJ_4 was investigated at $500\text{--}900^\circ\text{C}$, using a charge of 100 g of J_2 heated to 190°C ; 230g of Si packed in a column of 20 cm; 15 l/hr of argon; and a duration of synthesis of 2 hours. The optimum, attained at 700°C gave a yield of 98.8% of SiJ_4 analyzing 5.16% Si, $\sim 10^{-3}\%$ Ca, Al and no Ti, Fe, Cu. The best J_2/Si ratio at this temperature was found by varying separately the temperature of the J_2 boiler and the height of the Si column. The optimum combination was found to be 190°C and 20 cm respectively. (b) Purification of SiJ_4 . (1) The crystallization of SiJ_4 from n-heptane, using an 8-fold molar excess of solvent, proved satisfactory [Abstractor's note:

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Manufacture of high-purity...

Nature of the amelioration not clearly stated] (2) Alternatively, SiJ_4 was purified by distillation in an inert atmosphere. The charge of 2 kg heated in an air bath at 315°C , was distilled by means of a heated column made of quartz 1600 mm high and 30 mm wide, filled with Mo wire and provided with a magnetic reflux regulator. At a column temperature of 305°C a reflux ratio of 1/3 to 1/5 and a fractionation efficiency of 10 theoretical plates, a product was obtained, the middle fraction (60%) of which contains only $10^{-8}\%$ B and $10^{-4}\%$ Ca. The residue contained up to $10^{-2}\%$ B. This enrichment is probably due to the formation of B-complexes. (c) Thermal decomposition of SiJ_4 in vacuo. SiJ_4 was charged through a side-arm into a 1 lit. quartz vessel heated by an oil bath. The vapors of SiJ_4 passed into a horizontal "suprasil" quartz tube, protected by another quartz tube and heated to 1050°C . Silicon is compactly deposited on the "suprasil" tube, while the J_2 vapors are subsequently trapped. The whole system was evacuated to $5 \cdot 10^{-5}$ - $1 \cdot 10^{-5}$

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Manufacture of high-purity...

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Torr. Table 7 shows the relation of the yield of decomposition to the consumption of SiJ_4 . A spectrally pure Si is obtained. Activation analysis showed up to $10^{-5}\%$ of As, and Si from previously crystallized material contained only $10^{-8}\%$ of B. There are 6 figures, 7 tables and 3 references: 1 Soviet-bloc and 2 non-Soviet-bloc. The references to the English-language publications read as follows: G. Szekely, J. Electrochemical Soc. 1957, nr. 11, vol 104, p 663; Lifton, F.B. Andersen, H.C. J. Electrochemical Soc. 1954, nr. 6, vol. 101, p.287; 1951. vol. 98, p.488.

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(For Table 7 see next card)

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27001 R/003/61/012/003/002/004
D238/D302

AUTHORS: Niederhorn, I., Engineer, Candidate of Technical Sciences; Teodorescu, R., Engineer; and Călușaru, A., Engineer, Candidate of Technical Sciences

TITLE: Production of spectrally pure silicon by the dissociation of silanes

PERIODICAL: Revista de chimie, v. 12, no. 3, 1961, 144-150

TEXT: This study is part of a search for a convenient industrial preparation of ultra pure Si [Abstractor's note: See Niederhorn et al., Rev. Chim. 12, 137, 1961]. The method studied consists in preparing SiMg_2 from the elements, reacting SiMg_2 with HCl to form a mixture of silanes, $\text{Si}_n\text{H}_{2n+2}$, and decomposing the latter on a hot surface, where Si is deposited. Although poor yields averaging 20% were reported, this method is thought to be advantageous for the following reasons: (a)

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Production of spectrally...

The obvious case of purifying gases (b) The possibility of using glass, instead of quartz, for a large part of the apparatus (c) The limited number of volatile hydrides (d) the by-product is hydrogen, easy to handle. (e) the high performance of resulting silicon, crystals made of the latter having a resistivity of several thousands of ohms. Specifically, SiMg_2 was prepared by heating a mixture of technical Si and Mg powder at 650°C for 10-15 min, in an atmosphere of H_2 . The apparatus for the generation and subsequent dissociation of the silane mixture is shown in Fig. 2 and functions as follows: A controlled flow of purified H_2 forces a suspension of SiMg_2 in glycerine from the feeding bottle, 2 into a 40 lit. polyethylene container, 3: Here, silanes are generated by adding aqueous HCl flowing through R. The rate of generation is regulated by a contact manometer, 7, which opens the magnetic valve V whenever this rate increases. The valve causes the level of water in 1 to fall and thus the feed of SiMg_2 is cut off. The mixture of silanes and water vapors is freed from volatile hydrides in the heated

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Production of spectrally...

column, 8 (at 350°C) and then cooled in 9; water is removed in 10 and the last traces of it combine with SiCl_4 . The resulting silica aerosol is trapped in 12. Boranes are retained by ground SiH in 13 and aerosols - by glass spheres coated with silicon grease, in 14. The dissociation was studied by three methods, namely by deposition on quartz tube, Ta tube, and Ta wire, respectively. The quartz tube, 20, is protected by another quartz tube, 21, and heated by means of the furnace, 19. The Ta tube, made from 0.2 mm Ta sheet, is protected by means of an opaque quartz tube and heated in the same manner as 19. The apparatus for deposition on the Ta wire, 17 consists of water cooled copper pipes (serving as contacts); of a Ta wire connected to these pipes via Mo plates; and of a perforated quartz fork placed coaxially with the wire. The silanes enter the apparatus through the hollow fork and the Si formed is deposited on the wire. Any Si dust carried with the gases is collected in the cyclones, 22. Experimental results: (1) Generation of silanes. The gas mixture in 3 contained SiH_4 , 2.1%; Si_2H_6 , 1.7%; and Si_3H_8 , 1.3%. The reaction proceeds up to 4 hours after
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Production of spectrally...

R/003/61/012/003/002/004
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the feed of $MgSi_2$ has been cut off. The acid sludge contains a grey residue. (2) Purification of silanes. The cooler was lined with a deposit of SiO_2 . Otherwise the purification was satisfactory, (3) Dissociation. Most of the pertinent data were gathered from the deposition on a quartz tube. Si deposited at $1000^\circ C$ and over is metallic in appearance, while at lower temp. a grey powder is formed. The authors concluded that it was formed from gas molecules which did not dissociate on the walls and used deposition tubes with smaller diameters in order to increase the radial velocity of the gas. Consequently, the proportion of by-product was reduced from 10% (with a tube of $\varnothing 30$ mm) to 1-2% when using a tube of $\varnothing 12$ mm. The yields varied from 10 to 22%. The product was spectrally pure and contained less than $10^{-4}\%$ of Ca, Cu etc. and approx. $10^{-7}\%$ of B. The deposition on a Ta tube yielded a product contaminated with Ta. Two runs with Ta wire conducted, at $900^\circ C$ and $1000^\circ C$ respectively. There are 4 figures, 1 table and 14 references: 7 Soviet-bloc and 7 non-Soviet-bloc. The references to the English-language publications read as follows: Thorpe's Dictionary of Applied Chemistry, vol. X Longmans, Londra 1952; Kirk Othmer, Encyclopedia of Chemical

X

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27001

R/003/61/012/003/002/004
D238/D302

Production of spectrally...

Technology, vol. XII, Interscience, New York, 1954; Bell Telephone Manufg. Co. - Brev. Belg. 565604/12.IX.1958; International Standard Electric Corp. Brev. Fr ad. 70026/3.II.1959.

Legend to Fig. 2. Laboratory installation for the production of silicon from silanes. 1) automatic manometer, 2) feeding bottle, 3) silane generator, 4) beaker with water, 5) bottle, 6) liquid valve, 7) contact manometer, 8) heated column, 9) cooler, 10) CaCl_2 column, 11) diatomaceous earth column, 12) container for SiCl_4 , 13) SiH column, 14) container with greased glass spheres, 15) manometer, 16) flowmeter, 17) apparatus for dissociation on Ta wire, 18) manometer, 19) furnace, 20) quartz tube for dissociation, 21) quartz tube for protection, 22) cyclones, 23) to magnetic valve V, T - thermometer with relay, V - magnetic valve, $R_0 - R_6$ - stopcocks

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(For Fig. 2 see next card)

R/003/62/013/011/001/002
D272/D307AUTHOR: Niederkrone, I., Craiu, Viorica and Nicu, IuliaTITLE: Advanced purification of SiI_4

PERIODICAL: Revista de Chimie, no. 11, 1962, 648-652

TEXT: The purification of SiI_4 by recrystallization from *n*-heptane, was examined in detail. SiI_4 was synthesized directly from the elements at 650°C . It was established that the majority of the impurities in crude SiI_4 were concentrated on the residue of silica gel which was separated by hot filtration. A method was developed which permitted an advanced purification of the SiI_4 by the introduction of wet silica gel into the *n*-heptane solution, or by the formation of the gel in situ when wet H_2 was bubbled through the solution. The latter method was to be preferred because no additional impurities were introduced and because bubbling accelerated the dissolution and homogenization of the solution. It was found that 2 g silica gel per liter of *n*-heptane was sufficient for a good purification, and that no special control was necessary in the case of N_2 bubbling. The

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Advanced purification of SiI_4 R/003/62/013/011/001/002
D272/D307

purity increased when the molar ratio *n*-heptane to SiI_4 was raised from 1:1 to 8:1, but 5:1 was sufficient from the practical point of view. Two cycles of recrystallization were necessary for a purification below $10^{-4}\%$ for each element; further cycles might yield higher purities though the spectral analytical method employed was not sufficiently sensitive to detect these. Duration of the purification cycle was determined primarily by the duration of dissolution of SiI_4 in the boiling *n*-heptane. The yields were 86% at 5:1 and 80% at 8:1. There are 6 tables.

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