HULUBEI, H., acad.; MARTALOGU, N.; IVASCU, M.; BESLIU, C.; BERINDE, A.; NEAMU, I.; FRANZ, I.

Angular distribution of the protons of 6.2 MeV, elastically and nonelastically diffused on S^{32}. Studii cerc fiz 11 no.4:1023-1031 '60. (EEAI 10:8)

1. Institutul de fizica atomica, Bucuresti. 2.Comitetul de redactie, Studii si cercetari de fizica, redactor responsabil(for Hulubei).
(Angular momentum(Nuclear physics)) (Protons)
(Nuclear emulsions) (Sulfur) (Radioisotopes)

KHULUBEY, Khoriya [Hulubei, Horia], akademik; BARVIK, Gaynts, prof., laureat Leninskoy premii; RUSKOV, Konstadin; CHIOCHERSKU, F. [Ciocerscu, F.]

Atomic reactors today and tomorrow. Nauka i zhyttia 12 no.5:47-48 My '62. (MIRA 15:7)

1. Direktor Instituta atomnoy fiziki Akademii nauk Rumynskoy Narodnoy Respubliki (for Khulubey). 2. Zamestitel' direktora Ob"yedinennogo instituta yadernykh issledovaniy (for Barvik). 3. Zamestitel' direktora Instituta fiziki Akademii nauk Bolgarii (for Ruskov). 4. Zamestitel' direktora Instituta atomnoy fiziki Akademii nauk Rumynskoy Narodnoy Respubliki (for Chicherska).
(Nuclear physics—Congresses)

36449
S/089/62/012/006/014/019
B102/B104

26.2242

AUTHORS: Hulubei, H., Purika, I., Roshesku, T., Sabeu, M.

TITLE: Internal thermal columns for intensifying the thermal-neutron flux in water-moderated reactors

PERIODICAL: Atomnaya energiya, v. 12, no. 6, 1962, 528-531

TEXT: For reactors using enriched U^{235} and ordinary water as moderators, the contribution of thermalized epithermal and fast neutrons to the thermal-neutron flux has to be taken into account. Though the effect has been considered several times, no general results could be obtained. Here a moderator cylinder of given radius and infinite length is considered. The cylinder is positioned in a medium with a spatially constant neutron flux of given spectrum. The introduction of a thermal column should not interfere with the spatial distribution and the energy spectrum of the neutrons. The principal characteristics of the internal thermal columns are determined in two-group diffusion approximation: (a) the ratio between the maximum thermal neutron flux Φ_2^{max} inside the column and the thermal neutron flux Φ_2^0 in the medium when the column has been introduced; (b) the

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Internal thermal co[illegible] for ...

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dependence of the optimum column radius a_{opt} on the spectral composition of the flux and [illegible] moderator in order to obtain the highest possible value of Φ_2^{max}. Numerical calculations were carried out for H_2O, D_2O, C, and Be. H_2O was found to be the best moderator for internal thermal columns. The calculations were checked by experiments on a BBP-C (VVR-S) reactor. Agreement was found only for a < 4.5 cm. The critical mass of a VVR-S reactor grows the faster, the thicker the thermal columns, but can be reduced from 3.2 to 2.5 kg of U^{235} if the water reflector is replaced by one of C, Be, or BeO_2. There are 4 figures.

ASSOCIATION: Institut atomnoy fiziki AN Rumynskoy Narodnoy Respubliki, Bukharest (Institute of Atomic Physics of the AS of the Rumanian People's Republic, Bucharest)

SUBMITTED: August 14, 1961

Card 2/2

HULUBEI, HORIA (Acad.)

Q (14)

Bucharest, [illegible], Vol [illegible], No 1, Jan 62

1. "Achievements of the Technical Sciences in Our Country," Academician I.S. [illegible], President of the Technical Sciences Section (Presedintele Sectiei de Stiinte Tehnice) of the RPR Academy (Academia RPR); pp 3-5.

2. "The Inundation Zone of the Danube," Prof [illegible] N. [illegible]; pp 6-7.

3. "Nuclear Reactors," Academician Prof HORIA HULUBEI, I.F.A. –Institutul de Fizica Atomica; Institute of Atomic Physics, Director (director); pp 8-9.

4. "Interesting Achievements," Prof [illegible], Recipient of the Lenin Order (Laureat al Premiului Lenin), Adjunct Director (Director-Adjunct) of the "I.V. [illegible]" Institute of Atomic Power (Institutul de Energie Atomica "I.V. [illegible]"); pp 9.

5. "Nuclear Reactors. New Perspectives," Prof [illegible], Institute of Atomic Physics (Institutul de Fizica Atomica), Scientific Adjunct Director (Director-Adjunct Stiintific) and [illegible], Chief Engineer of the Nuclear Reactor (Inginer-Sef al Reactorului Nuclear) of the Institute of Atomic Physics (Institutul de Fizica Atomica); pp 10.

6. "The Area of the Application of Nuclear Reactors Is Being Extended," I. [illegible]; pp 11.

7. "5000 Kilograms of Corn Kernels per Hectare Without Irrigation," Gh. [illegible], Candidate in Agricultural Sciences (Candidat in Stiinte Agricole); pp 12-13.

8. "Parachuting at Supersonic Speeds," Engineer (Ing) [illegible]; pp 14-16.

9. "Useful Data on the Silk Worm," Asist [illegible]; pp 17.

10. "Deep Hypothermy," Dr [illegible] and Dr [illegible]; pp18-20.

11. "[illegible] Compressors," Engineer (Ing) V. COSCROIA; pp 21.

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— 1/2 —

HULUBEI, H., acad.; MARTALOGU, N.; BESLIU, C.; IVASCU, M.; ERINDE, A.

Inelastic diffusion of the neutrons of 5,2 Mev. over As.
Comunicarile AR 12 no.2:141-147 F '62.

1. Institutul de fizica atomica, Bucuresti.

HULUBEI, Horia, acad. prof.

A profitable meeting. St. si Teh Buc 14 no.1:8-9 Ja '62.

1. Director, Institute of Atomic Physics, Comuna Magurele.

KHULUBEY, Kh. [Hulubei, H.]; AUSLENDER, Y. [Auslander, I.]; FRIDLENDER, E. [Friedlander, E.]; TSITSEYKA, Sh. [Titeica, S.]

Angular distribution of μ-mesons in $\pi \to \mu$-decay. Zhur.eksp.i teor.fiz. 42 no.1:303-304 Ja '62. (MIRA 15:3)

1. Institut atomnoy fiziki Rumynskoy akademii nauk, Bukharest.
(Mesons—Decay)

38850
S/056/62/042/006/001/047
B104/B102

24.6610

AUTHORS: Hulubei, H., Neamu, I., Franz, I., Martalogu, N., Scîntei, N., Ivascu, M., Berinde, A.

TITLE: Scattering of low energy proton from S^{32}

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 42, no. 6, 1962, 1433 - 1437

TEXT: Experiments were carried out with the U-120 (U-120) cyclotron of the Institute of Atomic Physics in Bucharest. Protons of 5.70, 5.85, 6.02, 6.20 and 6.34 Mev with an energy spread of 150 kev were focused into a scattering chamber with a tantalum tube. 4 diaphragmas in this tube reduced the diameter of the incident particle beam to 4 mm. The vacuum sputtered S^{32} target had a surface area of 4 cm^2 and a thickness of less than 2 mg/cm^2. The sensitivity of the angular distributions of inelastically scattered protons to the incident proton energy (Fig. 2) indicates the formation of a compound nucleus. The asymmetry of the distribution curve may be explained by direct interaction. The angular distribution curves of

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Scattering of low energy proton from S^{32}

elastically scattered protons show that the reaction mechanism via compound nucleus formation in elastic processes with $E_p \simeq 6.02 - 6.34$ Mev plays an increasingly important role. There are 4 figures.

ASSOCIATION: Institut atomnoy fiziki Akademii nauk Rumynskoy Narodnoy Respubliki Bukharest (Institute of Atomic Physics of the Academy of Sciences of the Rumanian People's Republic, Bucharest)

SUBMITTED: November 12, 1961

Card 2/2

HULUBEI, H., academician; MORUZI, C.; ONCESCU, M.; SOROIU, M.

Contamination of some forms of vegetation by long life fission products resulting from nuclear experiences. Studii cerc fiz 14 no.1:25-29 '63.

1. Institutul de fizica atomica Bucuresti, Universitatea Bucuresti.

MIHAI, C., dr.; HULUBEI, P., chim.; OANCEA, C., dr.

Clinical value of urinary pentodyopent and porphobilinogen in patients with hepatic and renal diseases. Med. intern. 15 no.3:355-362 Mr '63.

1. Lucrare efectuata in Spitalul "C. Davila", Bucuresti.
(LIVER DISEASES) (KIDNEY DISEASES) (HEMOGLOBIN)
(BLOOD CHEMICAL ANALYSIS) (PYRROLES) (URINE)
(PORPHYRINS)

HULUBEL, P.

DIMITRIU, C. C., Prof.; RIMNICEANU, R., dr.; GEORGESCU, St., dr.; SOLMU, I., dr.; BULIGESCU, L., dr.; HULUBEL, P., dr.

Study of the effects of heparin in angor and in sequelae of myocardial infarct; clinical and electrophoretic results. Med. int., Bucur. 8 no.3:375-379 July 56.

1. Lucrare efectuata in clinica medicala Spitalul "dr. Carol Davila."
(ANGINA PECTORIS, therapy
heparin, clin. & electrophoretic results)
(MYOCARDIAL INFARCT, complications
ther., heparin, clin. & electrophoretic results)
(HEAPARIN, ther. use
angina pectoris & seq. of myocardial infarct. clin. & electrophoretic results)

5)

616.916-085.371

RUMANIA

CAJAL, N., CEPLEANU, Maria, SORODOC, Yolanda, IONESCU, S., GARTNER, Magda, IANOPOL, Ligia, BOGHITOIU, Gh., FRIEDMAN, O., HULUTA, Liliana, and IONESCU, Doina, of the Institute of Inframicrobiology (Institutul de Inframicrobiologie) of the Academy of the Socialist Republic of Rumania (al Academiei Republicii Socialiste Romania).

"Specific Prophylaxis in Measles. II. The Testing on Children of a Vaccine Prepared with Modified Live Virus."

Bucharest, Studii si Cercetari de Inframicrobiologie, Vol 17, No 5, 66, pp 377-387.

Abstract: An anti-measles vaccine prepared with modified live M60-5Huang virus was tested on 220 children. Only minor clinical reactions resulted, with a complete absence of rashes or convulsions. One month after vaccination serum conversion was 79.41 percent, and the titer of anti-measles hemagglutination-inhibiting antibodies varied between 1/80 and 1/320. After 4 months the corresponding values were 75 percent and 1/40 to 1/80. Thus the vaccination seems to confer a specific immunity, which so far has protected the vaccinated children against measles.

HULYAK, Katalin

"Economical mathematical modeling of socialist reproduction" by V. Dadayan. Reviewed by Katalin Hulyak.
Stat szemle 42 no.5:552-553 My '64.

HULYI, M. F.

TOXINS AND ANTITOXINS

Method for the purification of diptheria toxins and antitoxins. A. H. Sabaldyr, M. F. Hulyi, S. M. Terekhov, P. S. Astakhova, B. I. Niemtsova. Ukr. biokhim. zhur. 24 no. 2:137 - 148 '52

HULYI, M.F.

Study of diphtheria toxins and antitoxins purified and concentrated by the method of sedimentation at the isoelectric point. S.M. Terekhov, P.S. Astakhova, B.I. Nientsova, M.F. Hulyi, A.H. Sabaldyr'. Ukr. bio khim. zhur. 24 no.2:149-159 '52.

GULYY, M.F. [Hulyi, M.F.]; MARTYNENKO, F.P. [Martynenko, F.P.]; SABALDYR', A.G. [Sabaldyr, A.H.]

Nonspecific functions of nucleic acids and other polyanions in protein biosynthesis. Ukr.biokhim.zhur. 37 no.5:706-711 '65. (MIRA 18:10)

1. Institut biokhimii AN UkrSSR, Kiyev.

L 24211-66 EWT(1)/T JK

ACC NR: AP6015175 SOURCE CODE: UR/0300/65/037/002/0169/0176

AUTHOR: Dehtyar, R. G.--Degtyar, R. G.; Hulyy, M. F.--Guly, M. F.; Mayzel', E. B.--Maizel, E. B.

ORG: Institute of Biochemistry, AN UkrRSR, Kiev (Instytut biokhimiyi AN UkrRSR); Institute of Experimental Medicine, AMN SRSR, Leningrad (Instytut eksperymental'noyi medytsyny AMN SRSR)

TITLE: Certain properties of crystalline and purified noncrystalline glucosooxidase preparations from Penicillium vitale Pidopl. et Bilai

SOURCE: Ukrayins'kyy biokhimichnyy zhurnal, v. 37, no. 2, 1965, 169-176

TOPIC TAGS: enzyme, fungus, ultracentrifuge, electrophoresis

ABSTRACT: Certain properties of crystalline and highly purified noncrystalline preparation of glucosooxidase from Penicillium vitale Pidopl. et Bilai have been studied. It has been established that glucosooxidase crystals are homogenous both on investigation in the ultracentrifuge and in electrophoretic studies on an agar gel. The sedimentation constant calculated from sedimentation curves, $S^{\circ}_{20} = 7.8$. The pH optimum of crystalline glucosooxidase action is 5.6-5.8. The enzyme is strictly specific with respect to β-D-glucose. In the absence of substrate, crystalline glucosooxidase preserves its full activity after 15 minutes heating at pH 4.0 to 50°. Enzyme activity is inhibited by sulfhydryl and carbonyl toxins. The inhibition of its activity by sulfhydryl toxin is competitive with respect to glucose. Certain cations and anions (Ca^{++}, NH_4^+, and Cl^-), described

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ACC NR: AP6015175

earlier as glucosooxidase activators, stabilize the enzyme with respect to the action of the SH-toxins. Orig. art. has: 7 figures. [Based on authors' Eng. abst.] [JPRS]

SUB CODE: 06, 07 / SUBM DATE: 02Jun64 / ORIG REF: 008 / OTH REF: 002

Card 2/2 BLO

HULZSCH, E.

"New apparatus for measuring hobbing machines."

JEMNA MECHANIKA A OPTIKA, Praha, Czechoslovakia, Vol. 4, No. 3, March 1959.

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

Unclassified.

HUMEN, W.

How Polish pilots are training before the International Glider Contest. p. 356. SKRZYDLATA POLSKA, Vol. 10, No. 23, June 1954, Warszawa, Poland)

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

HUMENIUK, Bogdan

Brucellosis in the Olsztyn region. Przegl. epidem., Warsz. 10 no.3:199-203 1956.

1. Z Wojewodzkiej Stacji Sanitarno-Epidemiologicznej w Olsztynie.
(BRUCELLOSIS, epidemiology,
in Poland in farm workers (Pol))
(OCCUPATIONAL DISEASES, epidemiology,
brucellosis in farm workers in Poland (Pol))

L 02517-67 EWT(1)/EWP(e)/EWT(m)/T/EWP(t)/ETI/EWP(k) IJP(c) JD/WW/JG/WH
ACC NR: AP6023003 SOURCE CODE: UR/0185/66/011/004/0440/0441

95
92
B

AUTHOR: V'yuhov, P. N.; Humenyuk, V. S.

ORG: Physicotechnical Institute AN UkrSSR, Kharkov (Fizyko-tekhnichnyy instytut AN UkrSSR)

TITLE: The velocity of ultrasound in liquid aluminum 27

SOURCE: Ukrains'kyy fizichnyy zhurnal, v. 11, no. 4, 1966, 440-441

TOPIC TAGS: ultrasound, ultrasonic velocity, interferometer, aluminum, adiabatic compression, standing wave, nonferrous liquid metal, potentiometer/EPP-09 potentiometer

ABSTRACT: The authors study the speed of ultrasound in liquid aluminum as a function of temperature. All measurements were taken with a high-temperature interferometer consisting of a vertical tubular crucible with a rod made from the material to be studied. The rod is placed within the crucible and its lower part is water-cooled. An ultrasonic emitter is attached to the lower section of this rod. The upper part of the rod melts as the crucible is heated and a reflector is immersed in the melt. Standing waves are formed at the moment of melting and stress on the emitter varies. These variations are recorded on the EPP-09 electronic potentiometer. Both the crucible and the reflector are made from graphite during the first stage of the study, and from alundum for the second stage. A chromel-alumel thermocouple was used for temperature measurement. The thermocouple was fixed in the frame of the reflector

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ACC NR: AP6023003 3

approximately 1 mm from its surface. The rod specimens for the study were made from AV000 99.99% pure aluminum 20 mm in diameter and 400-450 mm long. The melt was maintained at a height of 60-120 mm depending on temperature. Once the reflector was immersed, it was left for the entire series of experiments to avoid formation of aluminum oxide. The speed of ultrasound at each temperature was determined by averaging 20-25 measurements. The results show that the speed of ultrasound in liquid aluminum is a linear function of temperature. Extrapolation shows a velocity approaching 4730±25 m/sec at the melting point with a temperature coefficient approaching 0.16 m/sec·deg. The coefficient of adiabatic compression approaches $1.88 \cdot 10^{-12}$ cm^2/dyne at the melting point, and $2.0 \cdot 10^{-12}$ cm^2/dyne at 1000°C. The coefficient of adiabatic compression is a nearly linear function of temperature. The experimental data for AD1 aluminum agree with those for AV000. Orig. art. has: 1 figure.

SUB CODE: 20, 11/ SUBM DATE: 11Oct65/ ORIG REF: 003

Card 2/2 egh

HUMHAL, M.

Dry electrofilters for dust separation from cupola gases.
Slevarenstvi 13 no.4:167 Ap '65.

Hummel J.

HUMMEL, Jan, MUDr.

Neurinoma colli. Cesk. otolar. 7 no.1:27-29 Feb 58.

1. Otorhinolaryngologicka katedra, vedouci: akademik A. Prezechtel, ORL oddeleni Fakultni poliklinika, prednosta doc. Dr. K. Blaha.

(NECK, neoplasms
neurilemmoma (Cz))
(NEURILEMMOMA
neck (Cz))

KOMALA, Zofia; KOSCIUSZKO, Halina; HUMICZEWSKA, Miroslawa

Further investigations on the occurrence of different varieties of Paramecium aurelia in Poland. Folia biol 8 no.1/2:59-63 '60.
(EEAI 10:4)

1. Department of Experimental Zoology, Polish Academy of Sciences, Krakow; head: Prof. Dr. S.Skowron.
(POLAND--PARAMECIUM AURELIA)

HUMIENIUK, B.

Epizootic vaccinia in cattle. Przegl. epidem., Warsz. 8 no.4:283-285 1954.

1. Z Wojew. Stacji Sanitarno-Epidemiologichnej w Olsztynie.
(VACCINIA,
in cattle)
(CATTLE, diseases,
vaccinia)

HUMINSKI, Stanislaw

Atypical female genital system in Ascaris suum Goeze, 1782.
Przegl zoolog 6 no.2:195 '62.

1. Katedra Zoologii, Wyzsza Szkola Rolnicza, Wroclaw.

HUMINSKI, Stanislaw

Wintering of dormice (Muscardinus avellanarius, Linnaeus 1758) in captivity. Przegl zool 8 no.2:171-173 '64.

1. Department of Zoology, College of Agriculture, Wroclaw.

HUML, Frantisek, inz.; SVOBODA, Jiri, promovany geolog; TRAXLER, Jindrich, dr.

New raw material area for preparation of high quality glass sands. Sklar a keramik 14 no. 1: 24-25 Ja '64.

1. Ustav nerostnych surovin, Kutna Hora.

HUML, Frantisek; JANDAK, Josef; SVOBODA, Jiri

Increasing the efficiency of magnetic separation. Sklar a keramik 14 no.12:340-342 D '64.

1. Institute of Mineral Raw Materials, Kutna Hora.

TRAXLER, Jindrich; HUML, Frantisek; SVOBODA, Jiri

Use of kaolin sands in founding. Slevarenstvi 11 no.1:22-25 Ja '63.

1. Ustav nerostnych surovin, Kutna Hora.

HUML, Irena, st. asystent

A contemporary artist of the Renaissance type, Wojciech Jastrzebowski. Problemy 18 no.5:364-372 '62.

1. Instytut Sztuki, Polska Akademia Nauk, Warszawa

HUML, Jaroslav, inz. dr.

Comparison of traction properties of tractor tires. Zemedel techn 10 no.6:381-388 Je '64

1. Development Center of the Rudy rijen National Enterprise; Enterprise Manager: L. Petru, inz.

HUML, Irena, mgr

Craftsmanship; in connection with the World Congress. Problemy 21 no.3:165-166 '65.

HUML, Karel; SIMECEK, Tomislav

Laboratory tube furnaces for temperatures up to 1,300°C.
Cs cas fys 14 no. 1:46-68 '64.

1. Katedra fyziky pevnych latek, Matematicko-fyzikalni fakulta Karlovy university, Praha (for Simecek).
2. UMCH, Ceskoslovenska akademie ved, Praha (for Huml).

26323
Z/028/60/000/003/002/005
D253/D302

21.6000
9.6150

AUTHOR: Huml, Karel

TITLE: The use of semiconducting photoresistors for detecting ionizing radiation

PERIODICAL: Pokroky matematiky fysiky a astronomie, no. 3, 1960, 275-287

TEXT: There are many uses for simple detectors in the measurement of ionizing radiations. Most semi-conductors will change their electric resistance when so irradiated. This article gives some of the advantages and disadvantages of semi-conductors in this field, especially the CdS type. When constructing dosimeters the main problem is to obtain good sensitivity, and inertia. CdS is at present the best known material. More recently CdSe and CdTe have been developed - compared with CdS they are more sensitive at longer wavelengths. S.V. Svečnikov (Ref. 15: ŽTF 27 (1957) 2492) states that CdSe is more sensitive and has less

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The use of...

inertia than CdS. Monocrystals of all these materials are manufactured at a temperature of around 800 to 1200°C - strict control is necessary, as slight variations will influence the properties of the materials. Svečnikov shows that for best results a monocrystal should be used, with d.c., in an evacuated container. The following properties are of interest in the case of the dosimeter: a) sensitivity to the type of radiation; this can be controlled by the selection of materials and methods, for X-ray, gamma ray, α, and β particles, protons, and deuterons. Luminescence is one of the methods for selection. b) dosimetric properties; the dependence of the current on the wavelength. c) Voltampere characteristics - at steady irradiation Fig. 6 shows the dependence of the current on the voltage. d) Photocurrent inertia; mono - and polycrystals have been investigated by Svečnikov, who gives for monocrystals a relaxation time of 10^{-2}sec while for polycrystals it is several seconds. For theoretical investigations, Svečnikov used a model built according to Laškerev [Abstractor's note: No details given]. The sensitivity of the detectors depends on their properties and on the circuit used. For low sensitivity a direct connection is adequate, if higher sensitivity is needed an amplifier is

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The use of...

used. The work of S.M. Rivkin, (Ref.28: ŽTF 26 (1956) 2667) gives details for selecting components (RC) to obtain suitable pulses for a given photoresistor. It is possible to improve the sensitivity by additional irradiation of the CdS crystal with blue or green light. These detectors are very suitable for soft radiation, but not for hard rays (from Co^{60}). In this case a phosphorescent material is used. The sensitivity of the CdS can be increased 169 times by the use of NaI (as phosphor). The reason why these semi-conductors have not been used very much so far is the complicated technology of semi-conductors. Further disadvantages are that the time constant is not as good as with gas-filled counters; the sensitivity varies over the surface; temperature influences the reading. The advantages are good absorption; the height of the pulse is proportional to the incoming particle; simple arrangement - no need for complicated electronic circuitry; small dimensions. There are 14 figures and 33 references: 12 Soviet-bloc, and 21 non-Soviet-bloc. The 4 most recent references to English-language publications read as follows: W.S. Moos, F. Sponberg:

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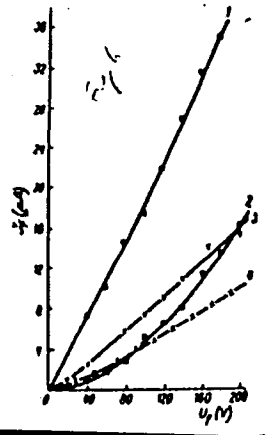
26323
Z/028/60/000/003/002/005
D253/D302

The use of...

Nucleonics 6 (1955) 88. Brother H. Brian, H. Cole: Rev. Sci. Instr, 30, (1959) 90. J.T. Sihvonen, Rev. Sci. Instr. 27(1956) 330. L. Ruby: Nucleonics 5 (1956) 101.

ASSOCIATION: Katedra fysiky pevných látek Mat.fys. fak. KU (Section for Mathematics/Physics, Department of Solid Physics, Charles University, Prague)



Card 4/4

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86686
Z/028/60/000/004/001/001
A205/A026

AUTHOR: Huml, Karel

TITLE: Exploitation of the p-n Junction of Semiconductors for Detection of Ionizing Radiation

PERIODCICAL: Pokroky matematiky, fysiky a astronomie, 1960, No. 4, pp. 424 - 431

TEXT: The author states that semiconductors which change their impedance upon irradiation are being introduced for measuring radiation intensities above $2 \cdot 10^6$ particles/sec. The p-n junction of semiconductors is also suitable for measuring ionizing radiation. The first part of the paper is a general description of functions and properties of "n" and "p" type semiconductors and of the p-n junction. The energy-band scheme of electrons in a p-n junction at the state of equilibrium without irradiations is shown in Figure 1, that at stationary illumination in Figure 2. The electric equivalent scheme of a photovoltaic element with a load impedance (R) is shown in Figure 3, that of a photodiode with negative bias (V) in Figure 4. The relation between the shorted current (I_k) of a GaAs p-n diode and the intensity of X-ray irradiation is shown in Figure 5, an AlSb spectrogram (Mo anode, unfiltered radiation) detected by a GaAs p-n diode

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A205/A026

is shown in Figure 6 and the relation between the no-load voltage (φ) of a GaAs photovoltaic cell and the incident radiation (X) is shown in Figure 7. The latter 3 diagrams are taken from Reference 2: H. Pfister, Zeitschrift für angewandte Physik 11 (1959) 290. The application of these three methods in dosimetry is described in the following part of the paper. Medium radiation intensities can be measured with a shorted p-n junction. The deflection of a sensitive galvanometer is then directly proportional to the amount of particles striking the diode surface (Fig. 5). The shorted current is practically temperature independent. In case of small radiation intensities, the value "elms φ" is measured (Equation 5a), which is a measure for current carriers generated by the radiation. A disadvantage of this method is the non-linearity of the φ-radiation intensity relation. The temperature dependence of the value φ is compensated by the opposite temperature dependence of the saturation current (I_s), so that the product $\varphi \cdot I_s$ is practically temperature independent. An apparatus based on this method is used in interference goniometry of powders. A.V. Arvanetvants and S.M. Ryvkin (Ref. 3) developed an n-p Ge photodiode instrument for counting impulses originating at the absorption of heavy, electrically charged particles.

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Exploitation of the p-n Junction of Semiconductors for Detection of Ionizing Radiation

The block schematic of the apparatus is shown in Figure 8, its wiring in Figure 9. The impedance (R) serves as load, the capacitance (C) comprises both, the capacitance of the p-n junction and of the external leads. A third magnitude influencing the properties of the counter is the negative bias (V), which must have a certain minimum cutoff value (V_o). The dependence of impulse counts/min on the bias (V) of a p-n Ge photodiode, irradiated with alpha-particles is shown in Figure 10. The kinetics of the junction are determined 1) by the lifetime (τ) of minority carriers and 2) by the actual time (t_o) of minority-carrier passage from the place of their origin to the p-n junction. Material with a large τ value is generally used, so that $\tau > t_o$. Calculations made by the author are limited to values for t_o and RC. A favorable pulse pattern can be achieved by suitable proportioning of these values. Ryvkin calculated a t_o value of 10^{-5} sec for R>200 kΩ and C = 26.5 pF. Tests proved the good coincidence of the Ryvkin method with the theory. In conclusion, the author states that old semiconductor diodes had large saturation currents (I_s) and were not suitable for radiation measuring. However, modern Si, Ge and GaAs diodes have only small negative saturation current and can be used for this purpose. Compared with conventional

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A205/A026

Exploitation of the p-n Junction of Semiconductors for Detection of Ionizing Radiation

dosimeters, p-n junction counters have several advantages. It can, therefore, be expected that semiconductor dosimeters will be soon available in the ČSR. Finally, the author gives credit to Docent Doctor E. Klier for valuable advice. There are 12 figures and 3 references: 2 Soviet and 1 West-German.

ASSOCIATION: Katedra fysiky pevných látek Mat.-fys. fak. KU (Department of Solid Matters, Faculty of Mathematics and Physics, Charles University, Prague)

Card 4/4

23535

Z/037/61/000/004/003/004
E073/E535

5,1150

AUTHOR: Huml, K.

TITLE: Method of Drawing Single CdSe Crystals from Vapours

PERIODICAL: Československý časopis pro fysiku, 1961, No.4, pp. 357-359

TEXT: According to an older method of the author, E. Klier and T. Pečený (Ref.1: Patent specification PV 6330 60), an electric furnace was used which had three independently heated parts. Into this furnace a silicon tube was placed, into one side of which two silicon tubes of a smaller diameter were inserted, the ends of which protruded into the reaction space. Into these two tubes boats with a charge of selenium and cadmium were inserted. The necessary temperature of the components could be adjusted by heating the first and second parts of the furnace. The vapours of the components were driven into the reaction space by an argon stream. A disadvantage of this method is that only small charges can be handled. In this paper a further variant is described which enables using a larger charge. The set-up is shown in Fig.1. The furnace and the main tube are the same as

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those used previously. However, only one tube, containing a blown-in space for the selenium charge, is inserted into the main tube; the boat containing cadmium is placed deeper into the furnace, where the temperature is higher. With increasing size of the charge there will be a greater danger of the crystal growing space rapidly clogging up with small crystals. This can be counteracted, for instance by gradual cooling of the space during crystal growing. As a result of that, the spot with optimum crystal growing conditions will be shifted towards the reaction space and the crystals will grow from germinations over a sufficiently large area (Ref.3: P. D. Fochs, J.Appl. Phys. 31 (1960), 1733). Heating of the third part of the furnace must be so controlled that at the spots where crystals grew in the first instance the temperature will not drop below 500°C during the gradual cooling, since otherwise vapours of uncombined components may deposit on the surface of the crystals. The table below gives the applied growing conditions for an argon stream of 50 cm^3/min above the selenium level and 150 cm^3/min above the boat with molten cadmium. The temperature of the selenium was

Method of Drawing Single CdSe ... Z/037/61/000/004/003/004
E073/E535

470°C, that of the cadmium 580°C and the highest temperature in the reaction space was 1100°C. In agreement with J. Nishimura (Ref.4: Sci. Rep. RITU 12 (1960), 384) it was found that larger crystals without macroscopic defects will grow, provided that the growth area has a higher temperature and simultaneously a steeper temperature gradient. All the crystals have a hexagonal structure, whereby the axis c in acicular crystals and prisms, is in the direction of the longitudinal axis of the crystals, whilst in plates, it is parallel to their surface. Acknowledgments are made to H. Sichová, K. Hauptmannová and J. Fiala for their assistance with the preparation and evaluation of the X-ray photographs.
There are 1 figure, 1 table and 4 references: 2 Czech and 2 non-Czech.
[Abstractor's Note: Slightly abridged translation.]

ASSOCIATION: Katedra fysiky pevných látek KU, Praha
(Chair of Solid State Physics, Charles University, Prague)

SUBMITTED: February 11, 1961

HUML, K.

Preparing of semiconductor monocrystals from vapor. Cs cas fys 11 no.6:535-555 '61.

1. Katedra fysiky pevnych latek matematicko-fysicke fakulty Karlovy university, and Ustav technicke fysiky, Ceskoslovenska akademie ved, Praha.

G/030/63/003/002/001/012
B163/B138

AUTHORS: Hüml, K., and Bohun, A.

TITLE: Optical and electrical effects in LiF crystals with cobalt

PERIODICAL: Physica status solidi, v. 3, no.2, 1963, 250-253

TEXT: LiF crystals were grown from the melt, which contained 1 mole percent CoF_2. Optical absorption measurements performed with the spectrophotometers CF 4 of Optica Milano and SE 2-M at room temperature show that the non-irradiated crystals have absorption bands in the yellow-red and ultraviolet region which do not exist in an aqueous CoF_2 solution. After X-ray irradiation the originally violet-blue crystals become yellow-green, and new absorption bands appear, an F band at 2500 Å, an M band at 4400 Å, and another wide band around 3600 Å. It is concluded that at least two different types of cobalt complex exist in the crystals, probably one of octahedral and one of lower symmetry. Which fluorine ions in the octahedrons are substituted and by what, is not yet clear. Thermal exoelectron emission (TE) and thermal luminescence

Optical and electrical effects ... G/030/63/003/002/001/012
B163/B138

are studied using the usual Bohun measuring arrangement. For untempered crystals, which were X-irradiated (50 kv, 30 ma, 10 min) immediately before measurement, there was no particular TL but a marked TE-peak at 400°K. When the same crystal was heated to 400°C and quenched, it showed after X-ray irradiation a considerably increased TL up to temperatures above 500°K. This is explained on the assumption that coalesced Co-ions are separated at high temperatures, this increasing the concentration of cobalt complexes. There are 4 figures.

ASSOCIATION: Institut für Festkörperphysik der Tschechoslovakischen Akademie der Wissenschaften, Prag (Institute of Solid State Physics of the Czechoslovakian Academy of Sciences, Prague)

SUBMITTED: November 9, 1962

Card 2/2

BOHUN, A.; DOLEJSI, J.; HUML, K.; KANTUREK, J.; KUNZLOVA, I.; LEBL, M.; TRNKA, J.

Optical and electric occurrences in sodium chloride crystals activated with copper. Chekhosl fiz zhurnal 13 no.3:211-215 '63.

1. Ustav fyziky pevnych latek, Ceskoslovenska akademie ved, Praha.

HUML, Karel

X-ray diffractio· methods used in the study of textures of macromelocular substances. Cs cas fys 15 no.3:245-272 '65.

1. Institute of Marcomolecular Chemistry of the Czechoslovak Academy of Sciences, Prague. Submitted March 25, 1964.

HUMLOVA, A.

On the oscillographic behavior of some purine and pyrimidine bases of nuclear acids and their analogs. Coll Cz Chem 29 no.1:182-187 Ja'64

1. Institut fur medizinische Chemie, Karlsuniversitat, Plzen.

HUDEC, B.

Conference of the Czechoslovak Academy of Sciences on the fight against inhalation of dust in mining, p. 193, RUDY (Ministerstvo hutniho prumyslu a rudnych dolu) Praha, Vol. 3, No. 7, July 1955

SOURCE: East European Accessions List (EEAL) Library of Congress, Vol. 5, No. 12, December 1956

HUMMEL, Frantisek

"Planer's handbook" by [inz.] A.Vendr and others. Reviewed by Frantisek Hummel. Stroj vyr 11 no.9:474 S '63.

HUMMEL, Frantisek

"Work on shaping machines" by Jiri Outrata. Reviewed by Frantisek Hummel. Stroj vyr 11 no.11:586 N'63.

HUMMEL, F.

Removing broken tools. p. 595.
TECHNICKA PRACA, Bratislava, Vol. 6, no. 10, Oct. 1954.

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 5, No. 6, June 1956, Uncl.

HUMMEL, F.

Notes on some of the present problems of metalworking with ceramic tools. p.357

TECHNICKA PRACA. Czechoslovakia. Vol. 7, No. 8, Aug. 1955

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

HUMMEL, F.

Actual experience with the introduction of metalworking with ceramic cutting tools in the CKD Sokolovo, National Enterprise, Prague. p. 393

TECHNICKA PRACA. Czechoslovakia Vol. 7, No. 9, Sept. 1955

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

HUMMEL, F.

"Using large sintered carbide cutters for machining steel. p. 3"

STROJIRENSKA VYROBA (Ministerstvo tezkeho strojirenstyi, Ministerstvo presneho strojirenstvi a Ministerstvo automobiloveho prumyslu a zemedelskych stroju) Praha, Czechoslovakia, Vol. 7, No. 1, 1959

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

HUMMEL, F.

"Use of IKS copying attachment for machining large pistons." p. 283.

STROJIRENSKA VYROBA. (MINISTERSTVO TEZKEHO STROJIRENSTVI, MINISTERSTVO PRESNEHO STROJIRENSTVI A MINISTERSTVO AUTOMOBILOVEHO PRUMYSLU A ZEMEDELSKYCH STROJU.) Praha, Czechoslovakia, Vol. 7, no. 7, July 1959.

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

HUMMEL, Frantisek

"One hundred examples of advanced machining" by B. Muzicka. Reviewed by Frantisek Hummel. Stroj vyr 12 no.6:461 Je '64.

HUMMEL, H.

Still more about ozone. p. 297

OCHRONA PRACY: BEZPIECZENTWO I HIGINA PRACY
Vol. 9, no. 9, Sept. 1955
Warszawa

Source: Montly List of East European Accessions (EEAL), LC, Vol. 5, no. 2, Feb. 1956

HUMMEL, H.

Sanitary protection of water supplies in the USSR. p. 34.
(OCHRONA PRACY; BEZPIECZENSTWO I HIGIENA PRACY. Vol. 12, no. 9, Sept. 1957, Warszawa, Poland)

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

COUNTRY : Czechoslovakia
CATEGORY : H-27

ABS. JOUR. : RZKhim., No. 16 1959, No. 58765

AUTHOR : Jemmel, J.
INST. : Not given
TITLE : Improving Beer Quality

ORIG. PUB. : Kvasny Prumysl, 5, No 2, 41-44 (1959)

ABSTRACT : The author discusses measures for the improvement of beer quality which do not require modification of the filtration and pasteurization procedures. The following are recommended: (1) when the beer contains sufficient CO_2, aeration should be held to a minimum and the air removed by shaking prior to the sealing of the bottles; (2) the empty space in the neck of the bottle should be reduced to 2.5-3% of the volume of the bottle; (3) sufficient reserves of CO_2 should be available

CARD: 1/2

CATEGORY : H-27

ABS. JOUR. : RZKhim., No. 16 1959, No. 58765

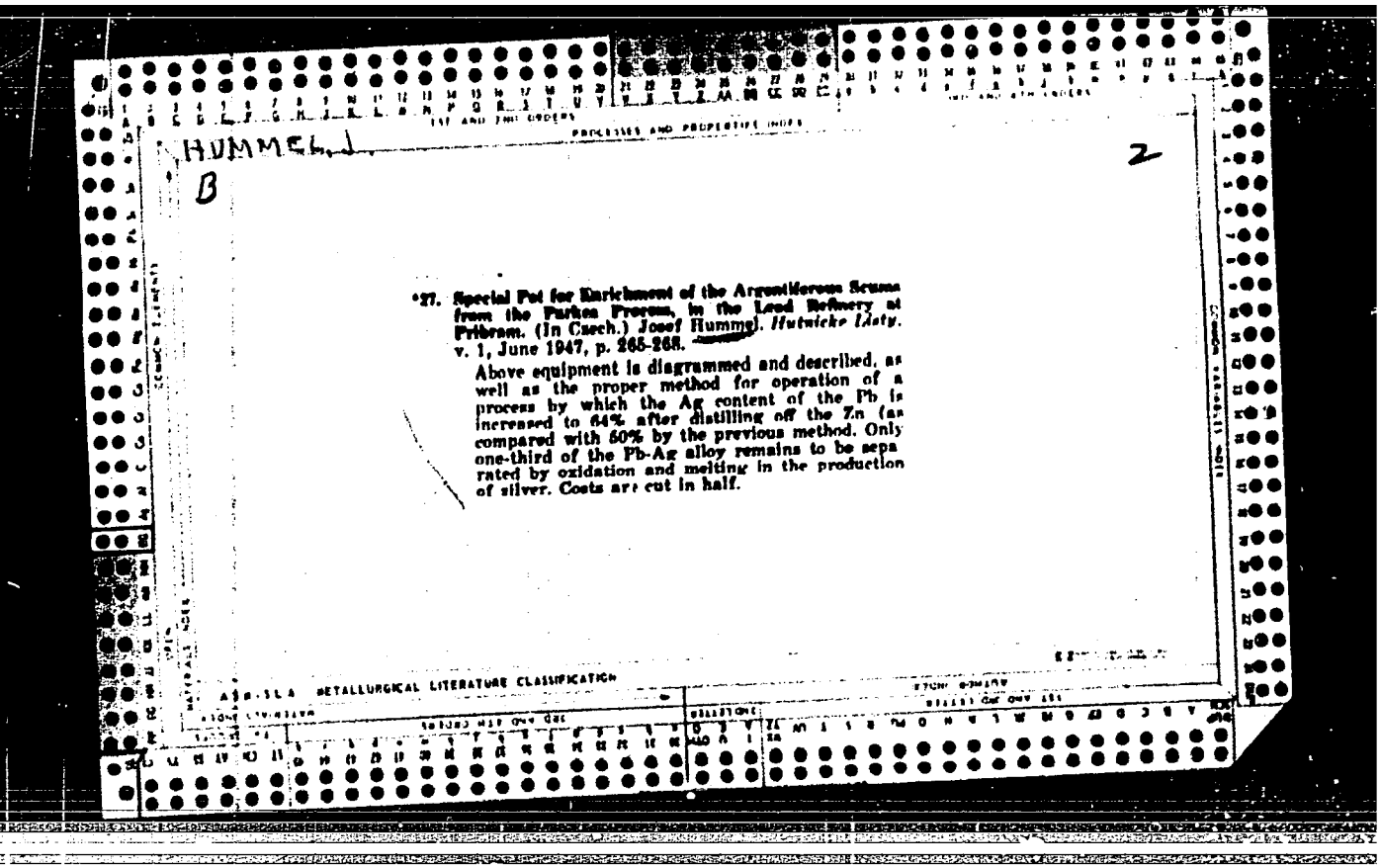
AUTHOR :
INST. :
TITLE :

ORIG. PUB. :

ABSTRACT : at the filling and bottling rooms together with the necessary equipment for the pumping of the CO_2 into the tanks; (4) the biological purity of the filter sludge should be controlled by the use fo H_2O_2 for its sterilization.

A. Yemel'yanov

CARD: 2/2



HUMMEL J.
B
2

*27. Special Pot for Enrichment of the Argentiferous Scums from the Parkes Process, in the Lead Refinery at Pribram. (In Czech.) Josef Hummel. *Hutnicke Listy*. v. 1, June 1947, p. 265-268.

Above equipment is diagrammed and described, as well as the proper method for operation of a process by which the Ag content of the Pb is increased to 64% after distilling off the Zn (as compared with 50% by the previous method. Only one-third of the Pb-Ag alloy remains to be separated by oxidation and melting in the production of silver. Costs are cut in half.

METALLURGICAL LITERATURE CLASSIFICATION

HUMMEL, J.

Ca

PROCESSES AND PROPERTIES INDEX

Metallurgy and geology. Josef Hummel (Moravska Ostrava, Czechoslovakia). [illegible] 3, 16-18 (1948).—The analogies between metallurgical processes and those involved in the formation of the earth crust, with a special regard to the comparison of magma and melts, their segregation, the formation of volcanic rocks and slags, are noted. J. G. Gibian

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

HUMMEL, J.

CA

9

Processing of Chvaletice iron ore. Josef Hummel. *Hutnické Listy* 5, 247–8(1950).—The Chvaletice iron ore has the following av. compn.: SiO_2 14.94, Al_2O_3 0.10, Fe_2O_3 10.54, FeO 8.63 (total Fe 14–16%), MnO 21.51 (Mn 16.67), CaO 7.48, MgO 3.06, P_2O_5 3.67 (P 1.6), S 0.37, CO_2 21.52, moisture 0.32%. Earlier industrial interest was restricted to the weather-decompd. top layers. H. suggested roasting the ore with sulfate. Lab. tests were carried out in an electrically heated glass tube at temps. of 600 to 700°, in an atm. mixed with SO_2. Apprex. 85% of the Mn content of the ore is transformed rather rapidly into $MnSO_4$, which can be extd. by water contg. a small quantity of sulfate; this process is considerably accelerated by heat. Expts. on a semiproduction scale are now in progress and rotary-drum-type furnaces with a changeable tilting angle are used. Since in natural conditions the process is exothermic, and proceeds at low temps., little heating is likely to be necessary. The results will be published later. E. Gros

APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00051831(

HUMMEL, Jaroslav

Effect of the ingredient composition and technological process on the surface and foaming properties of beer. Kvasny prum 9 no.9:206-209 S '63.

1. Vyzkumny ustav pivovarsko-sladarsky Praha, pracoviste Plzenske pivovary, n.p.

HUMMEL, Jaroslav

Division of sulfur containing beer albumins. Kvasny prum 10 no.10:217-219 O '64.

1. Research Institute of Brewing and Malting Industry, Prague, Worksite Plzen.

Hummel, J.

Carbon dioxide as a waste product in the brewing industry. p. 82.
KVASNY PRUMYSL. (Ministerstvo potravinarskeho prumyslu) Praha.
Vol. 1, no. 4, Apr. 1955.

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

~~JAROSLAV~~, HUMMEL, J.

CZECHOSLOVAKIA/Chemical Technology. Chemical Products and Their Application. Fermentation Industry. H-27

Abs Jour: Referat Zhur-Khimiya, No 5, 1958, 15955.

Author : Hummel Jaroslav
Inst :
Title : Oxidation-Reduction Potential and Biological Stability of Beer.

Orig Pub: Kvasny prumysl, 1957, 3, No 9, 193-195.

Abstract: A correlation has been ascertained between the rH values, determined by the potentiometric method, and the O_2-content of beer: with a decrease of the latter the rH also decreases, and vice versa. Beer having low rH value is more stable biologically after being poured into containers. On pouring into barrels, out of contact with O_2, of beer filtered according to the precedure of Sayts [transliterated] its stability increases indefinitely.

Card : 1/1

HUMMEL, J.

Country : CZECHOSLOVAKIA H

Fermentation Industry
Abs. Jour. : Ref Zhur-Khim, 1959, No 7, 25097

Author : Hummel, J.
Institut. : -
Title : On the Binding of Carbon Dioxide by Beer

Orig Pub. : Kvasny prumysl, 1958, 4, No 4, 79-80

Abstract : An investigation was made of different brands of beer for the purpose of determination of the stability of the binding of CO_2 by beer. It was found that the determination of the amount of CO_2 in beer, remaining after its foaming, may serve as an indicator for the stability of the binding of CO_2. A technique used for the determination of the residual CO_2 is described. During the foaming of different brands of beer, CO_2 is removed in the amount of 45% to 64.8%.

Card: 1/2

HUMMEL, J.

TECHNOLOGY

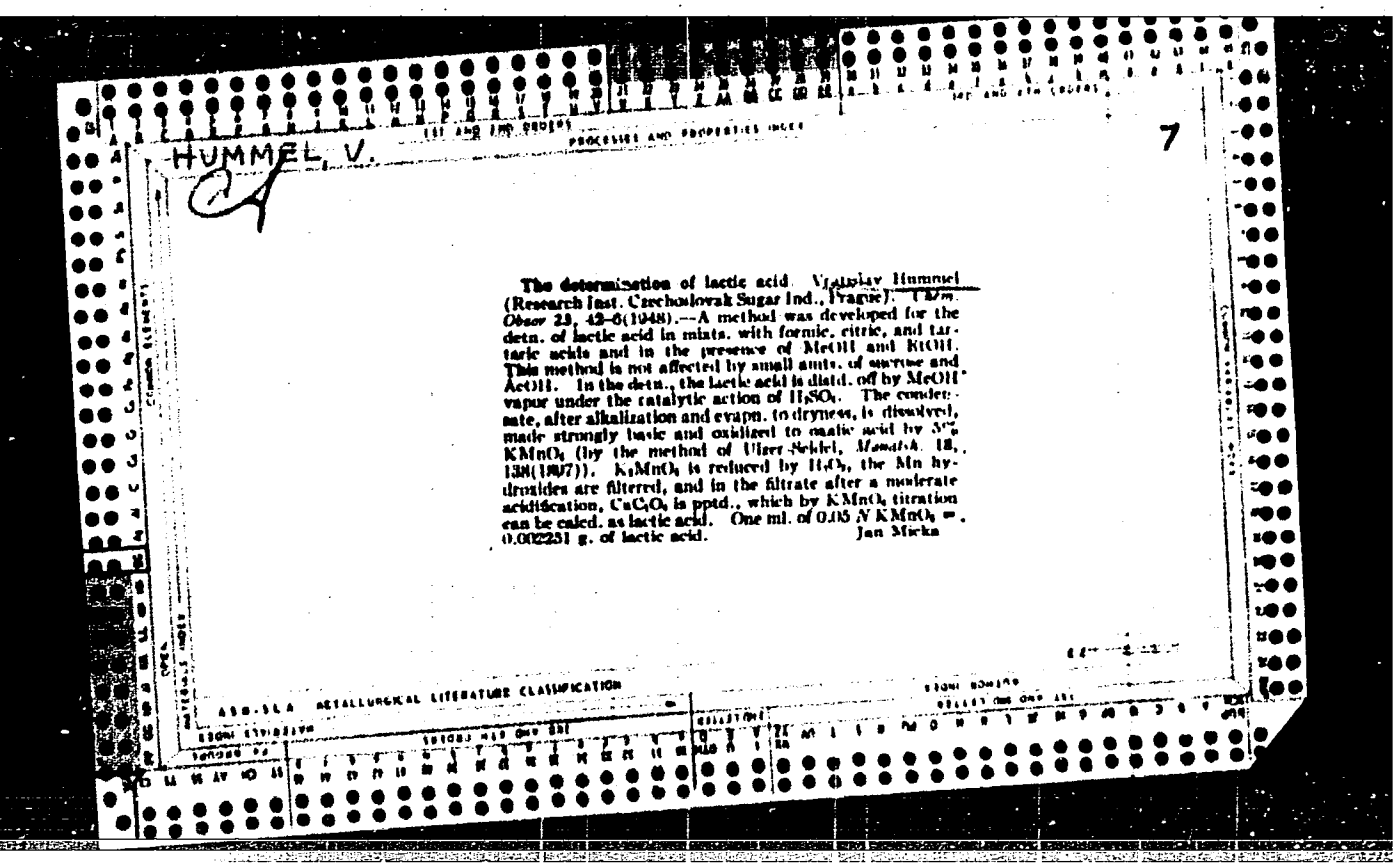
periodicals: RUDY Vol. 6, no. 9, Sept. 1958

HUMMEL, J. Mining by the roof-caving method in the Nucice iron-ores basin. p. 302.

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

HUMMEL, Vratislav, inz. dr.

"Hydrocyclones and their use" by D. Dinter. Reviewed by Vratislav Hummel. Rudy 11 no.11: 380 N'63.

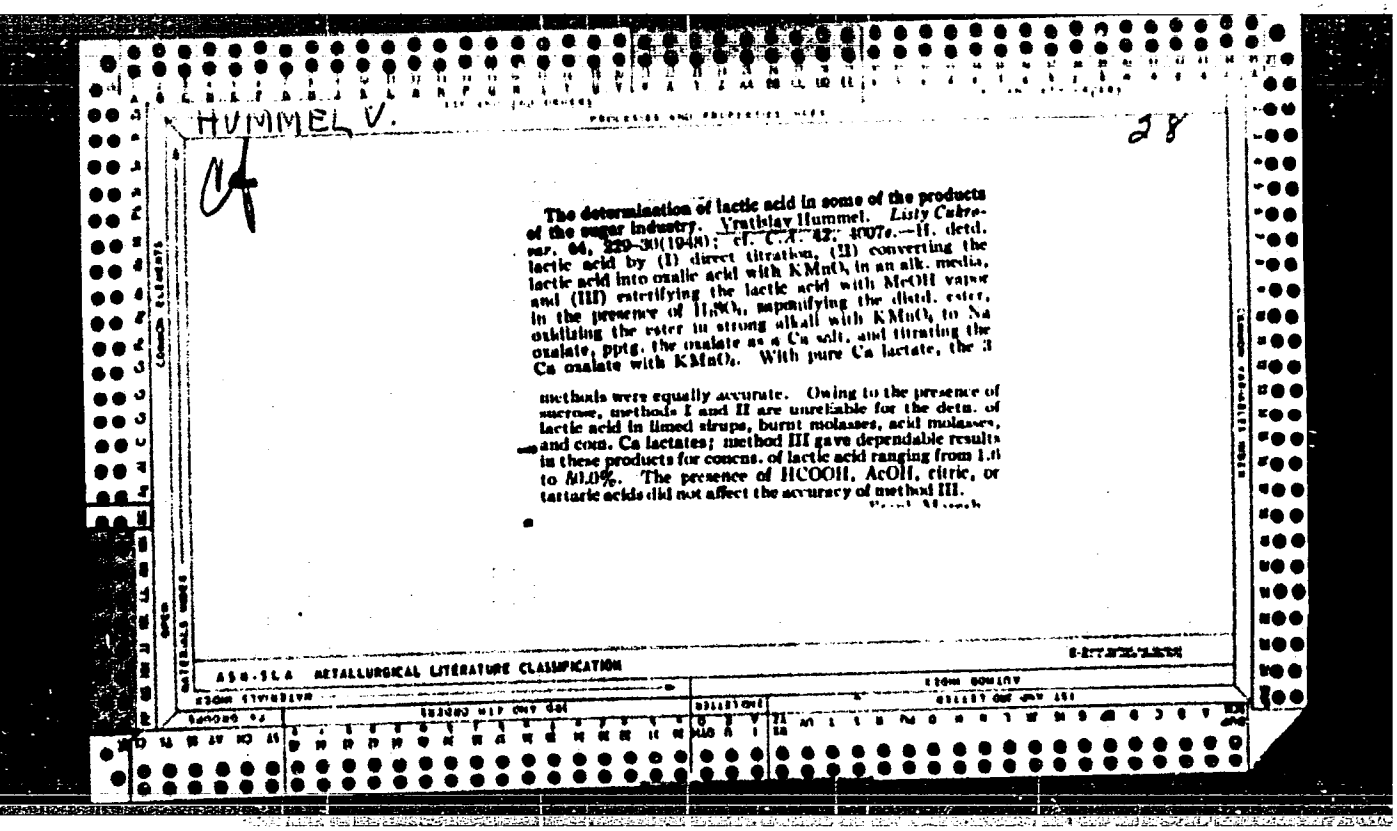


HUMMEL, V.

7

The determination of lactic acid. Vratislav Hummel (Research Inst. Czechoslovak Sugar Ind., Prague). *Chem. Obzor* 23, 42–6(1948).—A method was developed for the detn. of lactic acid in mixts. with formic, citric, and tartaric acids and in the presence of MeOH and EtOH. This method is not affected by small amts. of sucrose and AcOH. In the detn., the lactic acid is distd. off by MeOH vapor under the catalytic action of H_2SO_4. The condensate, after alkalization and evapn. to dryness, is dissolved, made strongly basic and oxidized to oxalic acid by 5% $KMnO_4$ (by the method of Ulzer-Schickl, *Monatsh.* 18, 138(1897)). K_2MnO_4 is reduced by H_2O_2, the Mn hydroxides are filtered, and in the filtrate after a moderate acidification, CaC_2O_4 is pptd., which by $KMnO_4$ titration can be calcd. as lactic acid. One ml. of 0.05 *N* $KMnO_4$ = 0.002251 g. of lactic acid. Jan Micka

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

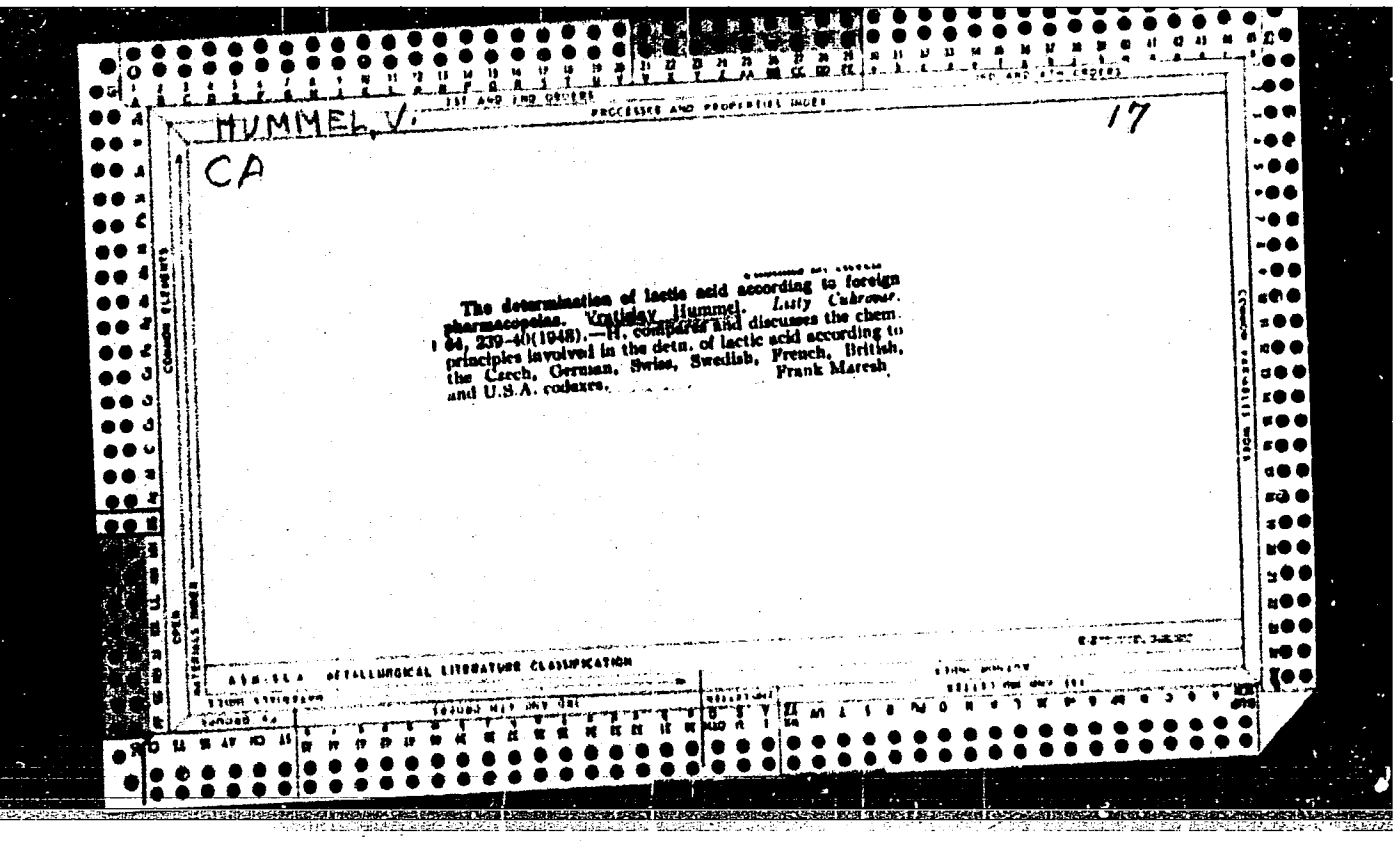


HUMMEL V.

28

The determination of lactic acid in some of the products of the sugar industry. Vratislav Hummel. *Listy Cukrovar.* 64, 229-30(1948); cf. *C.A.* 42: 8007e.—H. detd. lactic acid by (I) direct titration, (II) converting the lactic acid into oxalic acid with $KMnO_4$ in an alk. media, and (III) esterifying the lactic acid with MeOH vapor in the presence of H_2SO_4, saponifying the distd. ester, oxidizing the ester in strong alkali with $KMnO_4$ to Na oxalate, pptg. the oxalate as a Ca salt, and titrating the Ca oxalate with $KMnO_4$. With pure Ca lactate, the 3 methods were equally accurate. Owing to the presence of sucrose, methods I and II are unreliable for the detn. of lactic acid in limed sirups, burnt molasses, acid molasses, and corn. Ca lactates; method III gave dependable results in these products for concns. of lactic acid ranging from 1.0 to 80.0%. The presence of HCOOH, AcOH, citric, or tartaric acids did not affect the accuracy of method III.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

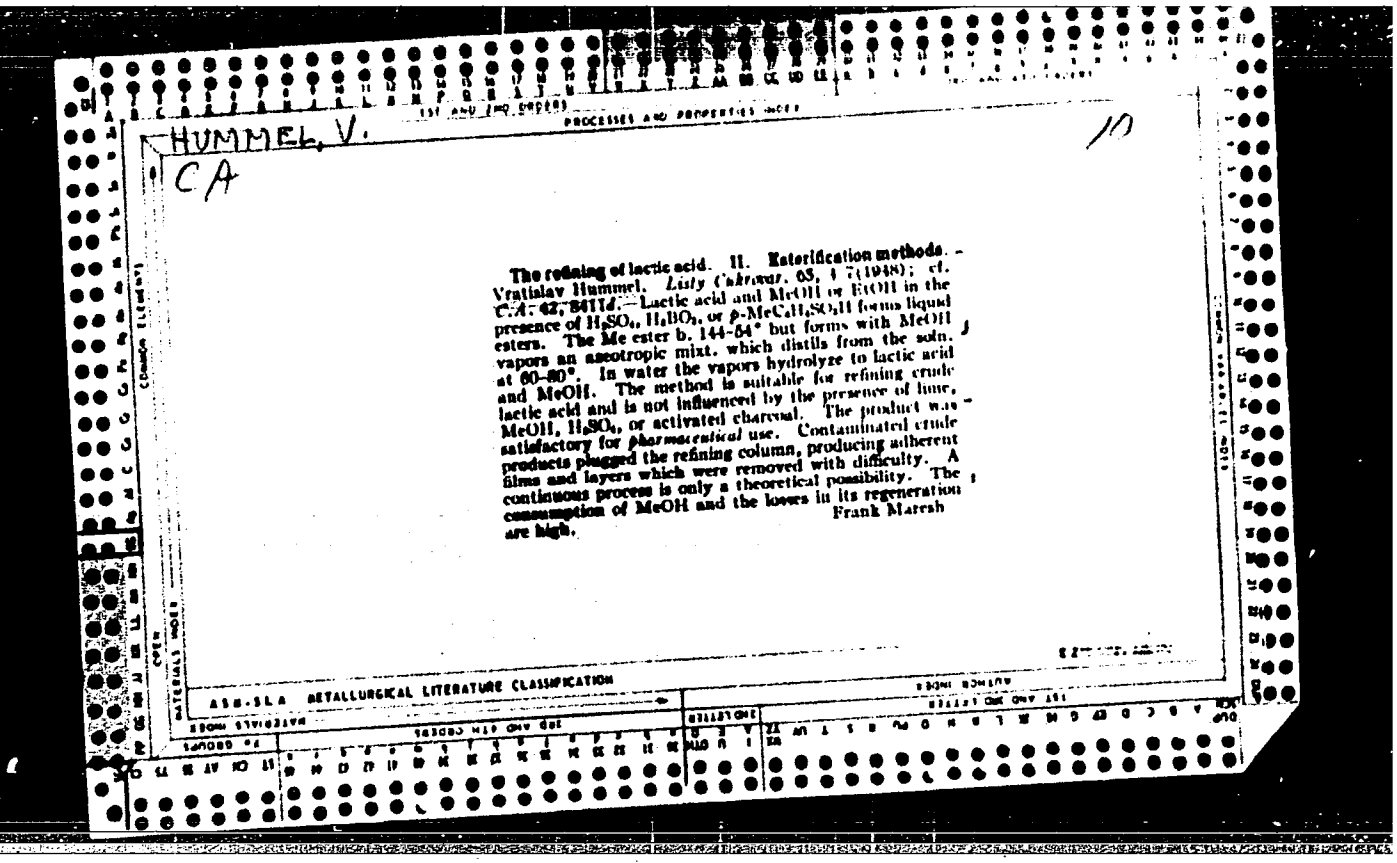


HUMMEL, V.

CA

17

The determination of lactic acid according to foreign pharmacopoeias. Vratislav Hummel. *Listy Cukrovar.* 64, 239-40(1948).—H. compares and discusses the chem. principles involved in the detn. of lactic acid according to the Czech, German, Swiss, Swedish, French, British, and U.S.A. codexes. Frank Maresh



HUMMEL, V.

CA

10

The refining of lactic acid. II. Esterification methods. Vratislav Hummel. *Listy Cukrovar.* 65, 177(1948); cf. *C.A.* 42, 8411*d*.—Lactic acid and MeOH or EtOH in the presence of H_2SO_4, H_3BO_3, or *p*-$MeC_6H_4SO_3H$ forms liquid esters. The Me ester b. 144–54° but forms with MeOH vapors an azeotropic mixt. which distils from the soln. at 60–80°. In water the vapors hydrolyze to lactic acid and MeOH. The method is suitable for refining crude lactic acid and is not influenced by the presence of lime, MeOH, H_2SO_4, or activated charcoal. The product was satisfactory for *pharmaceutical* use. Contaminated crude products plugged the refining column, producing adherent films and layers which were removed with difficulty. A continuous process is only a theoretical possibility. The consumption of MeOH and the losses in its regeneration are high.

Frank Marsh

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

HUMMEL, V.

CA

2

The development of the chemical literature in the scientific and technical documentation center. Vratislav Hummel. Chem. Obzor 26, 116-21(1960).—The activities of the Czech. scientific and tech. documentation center are given. Jan Micka

APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R000 31(

Hanč, O., Hummel, V., and Hlavica, B.: Chemická literatura, její dokumentace a použití. Prague: Nakladatelství ČSAV. 1954. 422 pp. Kčs. 75. Reviewed in *Chem. Listy* 49, 1099(1955).

CZECH

Chem & Educ

2

Hanc, O., Hummel, V., and Hlavica, B.: Chemical Literature, its Documentation and Use. Prague: Publishing House CSAV. 1954. 422 pp. Kcs. 75. Reviewed in Chem. Listy 49, 1099(1955).

HUMMEL, V.

Some signs of the occurrence of micaceous iron ore in the Spis-Gemer area. p. 113. RUDY, Praha, Vol. 3, no. 4, Apr. 1955.

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, no. 10, Oct. 1955, Uncl.

HUMMEL, V.

Calculation of the output in a closed flotation cycle. p. 27. (Rudy, Vol. 5, No. 1, Jan 1957, Praha, Czechoslovakia)

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

HUMMEL, V.

"Fast method for determining specific weight of ore and concentrate density in ore dressing." p. 125

RUDY. Praha, Czechoslovakia, Vol. 7, No. 4, April, 1959

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

HUMMEL, V.

"Treatment of Czechoslovak pegmatites." p. 161

RUDY. Praha, Czechoslovakia, Vol. 7, No. 5, May, 1959

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

HUMMEL, V.

Calculation of the surfaces of settling tanks. p. 263.

STAVIVO. (Ministerstvo stavebnictvi) Praha, Czechoslovakia. Vol. 37, no. 8, Aug. 1959.

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

HUMML, H.

Catalog of the fossil flora kept in the Regional Museum of Banat, Timisoara. Studii agr Timisoara 10 no.1:185-201 Ja-Je '63.

HUMO, A.

Work of the Party on the armed rebellion in Bosnia and Hercegovina. p. 231.

VOJNO DELO. Beograd, Yugoslavia. Vol. 11, no. 4/5, Apr./May 1959.

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

Uncl.

HUMO, Emir, dipl. inz.

Dynamic continuous analog memory. Automatika 5 no.4: 277-281 '64.

1. Boris Kidric Institute of Nuclear Sciences, Belgrade-Vinca.

S/137/62/000/003/079/191
A006/A101

AUTHOR: Humplik, J.

TITLE: Rolling a thin strip on multi-roll mills

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 3, 1962, 6, abstract 3D28 ("Hutnik", CSSR, 1961, vol. 11, no. 10, 471 - 475, Czech.)

TEXT: The author discusses the design of multi-roll rolling mills, used for the cold rolling of thin strip. For cold rolling < 5 mm thick strips, two-high, four-high and six-cluster mills are used. Very thin strips are rolled on 12- and 20-cluster mills or on combined four-high and 12- or 10-cluster mills. For the purpose of reducing the metal pressure on the rolls during cold rolling of strips, lubrication, and either forward or rear tension are used. Metal pressure on the rolls decreases with a lesser diameter of the working rolls. At the present, there are 80 multi-roll mills in the world, including mills for the rolling of alloyed steel strips of micron thickness. The width of a rolled super-thin strip attains 2,000 mm. In the CSSR several 12-cluster thin-strip rolling mills of Soviet manufacture have been mounted in the CSSR; the diameter of the working rolls is 38 mm and their length is 350 mm. The electric-motor power, driving the

Card 1/2

Rolling a thin....

mill is 150 kw; the power of the reeler drives is 60 and 18.5 kw. The mill is equipped with a centralized lubrication system. The working, backing and intermediate rolls are made of 9X (9Kh) steel containing in %: C 0.8 - 0.95; Mn 0.25 - 0.35; Si 0.25 - 0.45; Cr 1.4 - 1.7. The surface of the working and intermediate rolls is subjected to quenching with the aid of 2,500 cycle frequency current. The depth of the quenched layer is 4 - 6 mm, minimum hardness of the surface is 66 R_c. The extremal conicity of the rolls is 0.005 mm and the extremal oval shape is 0.002 mm. In the backing rolls conicity and ovalness should not exceed 0.005 mm. The working rolls are exchanged after 2 h operation; the intermediate rolls after 20 - 30 h operation, and the box in general after 3 - 4 days. The thickness of strip is checked with the aid of a contactless thickness gage, operating on Sr^{90} radioisotope. It is shown that the rolling of a strip 0.08 mm thick, from a 0.7 mm thick blank on a 12-cluster mill is carried out in 11 passes, while on a four-high mill (diameter of working rolls 130 mm) 14 passes are required. Moreover, in the former case 4 intermediate annealing processes are eliminated. The necessity is stressed of mounting 20-cluster mills in the CSSR plants for the rolling of super-thin strips of up to 1,200 mm width. There are 11 references.

[Abstracter's note: Complete translation] G. Mekhed

Card 2/2

SVANDA, Josef, inz.; HUMPOLA, Hubert, inz.

Experience of the Brno Research Worksite of the Branch Union of Mortar and Asbestos Cement Producing National Enterprises in improving the economical use of fuels and electric power According to Government Decision No.256/63. Energetika Cz 13 no.11:581-585 N'63.

1. Oborove sdruzeni narodnich podniku pro vyrobu maltovin a osinkocementu, Vyzkumne pracaviste, Brno.

HUMPOLA, H.

CZECHOSLOVAKIA/Chemical Technology. Chemical Products and Their Application - Silicates. Glass. Ceramics. Binders. I-9

Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 12666

Author : Humpola H.
Title : Tisovec Blast Furnace Slag as an Addition to Mixed Cements

Orig Pub : Tisovecka haldova trocka ado prosada do zmesnych cementov Stavivo, 1956, 34, 249-252 (Slovak; Russian and German summaries)

Abstract : Presented are the results of experiments relating to studies of the effect of a slag with a high content of MnO (up to 6%), used as a hydraulic addition to Portland cement. Addition of up to 30% is recommended.

Card 1/1

- 118 -

CZECHOSLOVAKIA/Chemical Technology. Chemical Products and [illegible] Ceramics. Glass. Binding Materials. Concrete. H

Abs Jour: Ref Zhur-Khim., No 10, 1959, 35783.

Author : Humpola, H.
Inst :
Title : Particle Size Distribution Analysis by the Method of Andreasen.

Orig Pub: Stavivo, 36, No 7, 268-272 (1958) (in Slovak with German, English, French, and Russian summaries)

Abstract: The author discusses the theoretical foundations and the accuracy of particle size distribution analyses (PSDA) of cements and other granulated substances by the Andreasen method. An improved Andreasen-Berner [spelling uncertain] apparatus is described

Card : 1/2

H-61

HUMPOLA, H.; [redacted]

TECHNOLOGY

periodicals: POZEMNI STAVBY Vol. 7, no. 2, Feb. 1959

NACHTMANN, J.; HUMPOLA, H. Control of the drying of floors by measurement of electric resistance. p. 94.

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

H-13

Czechoslovakia

CATEGORY :

ABS. JOUR. : RZKhim., No. 22 1959, No. 79350

AUTHOR : Humpola, H.
INST. : Not given
TITLE : The Fineness of Grinding of the Samples Used in the Analysis of Plaster Stone, Anhydrite, and Gypsum

ORIG. PUB. : Stavivo, 37, No 3, 91-92 (1959)

ABSTRACT : The author has made a comparison of the results obtained from the determination of SO_3 and of water of crystallization in plaster stone, anhydrite, and in gypsum. Samples of plaster stone and anhydrite with a fineness of grinding of $\geq$ 0.09 mm give higher results than similar samples ground to 0.20 mm and less [sic]. Grinding to a fineness of $\leq$ 0.09 mm [sic; see above] and of $\leq$ 0.20 mm is recommended for samples of plaster stone and anhydrite and gypsum, respectively.

From author's summary

CARD: 1/1

L 01250-67 EWP(1) RM
ACC NR: AT6035616 SOURCE CODE: HU/2502/66/047/004/0329/0342

33
B+1

TOROK, F., and HUN, Gy. B., Research Group for Inorganic Chemistry of the Hungarian Academy of Sciences, Budapest [Original-language version not given].

"Vibrational Spectrum of the Trimethylsilyl Group"

Budapest, Acta Chimica Academiae Scientiarum Hungaricae, Vol 47, No 4, 1966; pp 329-342.

Abstract [Authors' English summary; Article in English]: The force field of the trimethylsilyl group affixed to oxygen was approached by Urey-Bradley force constants. The group frequencies which are almost constant in different molecules have been separated from the framework frequencies by the method of King and Crawford. Matrices are given for the calculation of the remaining framework frequencies. The authors thank G. Koszo (Computing Center of Hungarian Academy of Sciences) for his assistance in resolving the numerical procedures on a NE-803B digital computer. Orig. art. has 9 tables. [JPRS: 36,862]

TOPIC TAGS: vibration spectrum, silicon compound

SUB CODE: 07 / SUBM DATE: 26 Jul 65 / ORIG REF: 001 / OTH REF: 011

Card 1/1 hs

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ROMANIA

HUN, N.

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MD

Member of staff of the Reghin Raion Hospital (Spitalul Raional Reghin), Mures-Hungarian Autonomous Regiune

Bucharest, Viata Medicala, No 2, 15 Jan 63, pp 81-88.

"New Aspects in Hepatology."

Co-author:

HORGIA, M., MD, Member of staff of the Reghin Raion Hospital.

(1)

ROMANIA

HUN, N., Dr; COVACI, V., Dr.

Reghin Hospital (Spitalul Reghin) - (For all).

Bucharest, Viata Medicala, No 13, 1 Jul 63, pp 907-908

"Emergency Treatment of Biliary and Renal Colics. (Using Substitutes for Morphine and Its Derivitives)."

(2)

CZECHOSLOVAKIA/Chemical Technology. Chemical Products and Their Applications. Fermentation Industry.

Abs Jour : Ref Zhur-Khimiya, No 6, 1959, 21237

Author : Huncikova, Sona
Inst :
Title : Method for Determining the Content of Soluble Oxygen in Fermented Substrata.

Orig Pub : Kvasny prumysl, 1958, 4, No 6, 132-139

Abstract : A comparative study was carried out of Kocherga, Winkler and polarographic methods. The change in the concentration of soluble oxygen was studied in the process of fermentation. -- From the author's summary.

Card : 1/1

HUH, Nandor, dr.

On social gerontology. Orv. hetil. 106 no.47:2216-2222
21 N '65.

1. Fovarosi Tanacs VB, XII. Egeszsegugyi Osztaly.

KORANYI, Gyorgy, dr.; WUNSCH, Walter, Dr. ing.; OECHELHAUSER, Kurt; PUTNOKY, Janos; SOMHEGYI, Karoly; SZUMAN, Witold; VALY, Ferenc, dr.; DOBO, Laszlo; NAGY BIRO, Sandor; VIDA, Miklos; TOBAK, Lajos; MAKOLDI, Mihaly; NASZALYI, Laszlo; HUNEK, Emil

Technical and economic questions relating to gas utilization. Ipari energia 3 no.1/2:9-14 Ja-F '62.

1. Fovarosi Gazmuvek muszaki igazgatoja (for Valy).

HUNEK, J.

"Securing Raw Materials for the Food Industry." p. 77 (Elemezesi Ipar, Vol, 6. no. 3, Mar. 1952, Budapest.)

Vol. 3, no. 6

SO: Monthly List of East European Accessions./Library of Congress, June 1954, Uncl.

HUNEK, J.

"Our system of collecting surplus agricultural produce to continue several years." Elemezesi Ipar, Budapest, Vol. 8, No. 2, Feb. 1954, p. 41.

SO: Eastern European Accessions List, Vol. 3, No. 11, Nov. 1954, L.C.