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ACC NR: AP6010348 SOURCE CODE: CZ/0039/65/026/011/0658/0667

AUTHOR: Zima, Jiri (Engineer)

ORG: A. S. Popov Research Institute of Communication Engineering, Prague (Vyzkumny ustav pro sdelovaci techniku A. S. Popova)

TITLE: Properties and possibilities of application of solid state differential amplifiers

SOURCE: Slaboproudy obzor, v. 26, no. 11, 1965, 658-667

TOPIC TAGS: electronic component, solid state amplifier, SN522 solid state amplifier

ABSTRACT: The article gives a brief survey of the possibilities afforded by solid state techniques for the design of differential amplifiers and describes the properties and production techniques of several differential amplifiers currently being manufactured. Measurements of the SN 522 amplifier are given and experience gained with it is surveyed. Orig. art. has: 23 figures and 9 tables. [JPRS]

SUB CODE: 09 / SUBM DATE: 11Feb65 / OTH REF: 007

Card 1/1

UDC: 621.396.645.5: 621.396.69

ZIMA, Josef, inz.

"Long-distance electric power transmission" by V.A.Venikov. Reviewed by Josef Zima. El tech obzor 50 no.11:659 N '61.

ZIMA, Josef, inz.

A method for determining the cross axis parameters of a synchronous machine. El tech obzor 51 no.7:372 Jl '62.

1. Ceske vysoke uceni technicke.

ZIMA, Josef, ing.

"Principles of the theory of transient phenomena of synchronous alternator" by A.I.Vaxnov. Reviewed by Josef Zima. El tech obzor 50 no.12:702 D '61.

CZECHOSLOVAKIA

ZIMA, K.

Water Authority (Vodni zdroje), Prague

Prague, Vestnik ustredniho ustavu geologickeho, No 6, 1963, pp 387-397

"Tectonics of the Cretaceous between Rip and Sovice in the Roudnice Area."

ZIMA, Karel, dr. inz.

Hydrogeological importance of older river terraces in the Roudnice area. Vod hosp 15 no.1:4-6 '65.

1. Vodni zdroje, Prague.

ZIMA, Karel, dr.

On hydraulic jump on the well casing. Vodohosp cas 10 no.1:38-54 '62.

1. Vodni zdroje, Praha.

ZIMA, Karel, dr. inz.

Artesian waters of the southern Bohemia basins. Vodni hosp 14 no.9: 329-333 '64

1. Vodni zdroje, Prague.

ZIMA, K. (Katowice)

A differential inequality with retarded argument. Annales Pol math 13 no.3:303-308 '63.

ACCESSION NR: AT4016460 P/2508/63/013/003/0303/0308

AUTHOR: ZIMA, K. (Katowice)

TITLE: On a differential inequality with retarded argument

SOURCE: Polska akademia nauk. Instytut matematyczny. Annales polonici mathematici, (Polish mathematical annals), v. 13, no. 3, 1963, 303-308

TOPIC TAGS: differential inequality, retarded argument, ordinary differential

ABSTRACT: The paper demonstrates under certain stated hypotheses the theorems:
I. If function z(t) is differentiable and satisfies the conditions

(a) $z(t) \geqslant \varphi(t)$ for $t \leqslant A$

(b) $z'(t) > \int_0^\infty F(z(t-s))\,dr(t,s) + f(t)$ for $t \in [A, B)$,

then $y(t) < z(t)$ for $t \in (A, B)$, where y(t) is a solution of

(1) $y'(t) = \int_0^\infty F(y(t-s))\,dr(t,s) + f(t)$, $t \in [A, B)$, $B \leqslant +\infty$,

Card 1/4

with the initial function $\varphi(t)$.

II. If in theorem I we replace hypotheses (a) and (b) by

(a) $z(t) \leqslant \varphi(t)$ for $t \leqslant A$,

(b) $z'(t) < \int_0^\infty F(|z(t-s)|)\,dr(t,s) + f(t)$ for $t \in [A, B)$,

one can demonstrate in an analogous manner that in the interval (A, B) one has the inequality $z(t) < y(t)$.

III. If z(t) is for $t \in [A, B)$ an integral of equation

$$z' = |F(z)| \cdot M(t) + |f(t)| + \varepsilon,$$

with the initial condition z(A) K and z(t) = (A) when t A, and if, moreover, y(t) is an integral of equation (1) in the interval $[A, B)$ for the initial function $\varphi(t)$, then for $t \in (A, B)$ one has the inequality $y(t) < z(t)$.

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ACCESSION NR: AT4016460

IV. If in theorem III one replaces hypothesis (e) by hypothesis (e) $\inf \varphi(t) = k$, then in the interval (A,B) one has the inequality $z(t) < y(t)$, where z(t) is an integral of the equation

$$z' = -|F(z)| \cdot M(t) - |f(t)| - \varepsilon, \quad z(A) \leqslant k \text{ and } z(t) = z(t) \text{ for } t \leqslant A, \text{ and}$$

y(t) is an integral of equation (1) with the initial function $\varphi(t)$.

The paper generalizes theorems I-IV into systems of differential inequalities and evaluates the integrals of the system

$$y_\nu'(t) = \int_0^\infty F_\nu(y_1(t-s), \ldots, y_n(t-s))\, dr_\nu(t, s) + f_\nu(t), \quad t \in [A, B],$$

$$y_\nu(t) = \varphi_\nu(t) \quad \text{for } t \leqslant A, \quad \nu = 1, 2, \ldots, n.$$

by an integral of the corresponding system of ordinary differential equations. Orig. art. has: about 40 equations.

Card 3/4

ZIMA, Karel, dr. inz.

Supplying Budapest with drinking and utility water. Vodni hosp 14 no.8: 3 of cover '64.

ZIMA, K., inz.

Sinking of wells of large diameter. Vodni hosp 13 no.1:5-6 '63.

1. Vodni zdroje, Praha.

BLAZ, J.; ZIMA, K.

A differential inequality with lag. Annales Pol math 14 no.3:311-319 '64.

ZIMA, Karel, dr.; KNEZEK, V., promovany geolog

Underpressure pumping from a well. Vodni hosp 13 no.2:49 '63.

1. Vodni zdroje, Praha.

ZIMÁ, Karel, dr.

Increasing attention to the arid regions. Vodní hosp 13 no.2:61 '63.

ZIMA, Karel, dr.

Supplying Vienna with drinking and service water. Vodní hosp 13 no.2:61 '63.

ZIMA, Karel, dr. inz.

Preparatory work for the second Brno water main. Vodní hosp 14 no. 1:5-7 '64.

1. Vodni zdroje, Praha.

ZIMA, Karel, dr., inz.

Grain size curves in well designing. Vodní hosp 13 no.3:85-88 '63.

1. Vodni zdroje, Praha.

ZIMA, Ladislav

SURNAME, Given Names

Country: Czechoslovakia

(1)

Academic Degrees: (not given)

Affiliation: Director, Government Scientific Veterinary Institute (reditel, Statni vedecky veterinarni ustav) Prague

Source: Prague, Sbornik CSAZV Veterinarni Medicina, Vol 6(34) No 8, Aug 61; pp 589-596

Data: "Role of Dietetics in Health and Increased Productivity of Domestic Animals"

dfo 961643

ZINA, L.

"Icterogenetic Leptospirosis In Pigs." p. 245.
(Spisy, Vol. 19, No. 177-184, 1951, Brno.)

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

Zima, M.

Zima, M. Comments of the technicians of the Czechoslovak broadcast in Bratislava on the article "Modulation quality of Czechoslovak broadcasts." p. 341.

Vol. 4, no. 11, Nov. 1956
SDELOVACI TECHNIKA
TECHNOLOGY
Czechoslovakia

So. East European Accessions, Vol. 6, May 1957
No. 5

MISYUS, P.; ZIMA, M.B.

Materials on the stratigraphy of Ordovician sediments of the Nura-Tau. Mat po geol. Tian'-Shania no.1:15-22 '61.(MIRA 17:2)

ZIMA, M.B.

Age boundaries of the Ordovician sediments of the Dolon Passage (Tien Shan). Mat. po geol. Tian'-Shania no.4:57-61 '64.

Ordovician and prospective Silurian sediments in the Ak-Kul' region (Tien Shan). Ibid.:62-72

(MIRA 17:10)

KLIMKOV, V.; ZIMA, N.

Air-lift conveyance of the dredged slush. Rech. transp. 24 no.11: 46 '65. (MIRA 19:1)

1. Glavnyy inzh. Kuybyshevskogo porta (for Klimkov). 2. Starshiy tekhnolog Kuybyshevskogo porta (for Zima).

ZIMA, N.A.

HERBST, V.V.; ZIMA, N.A.

Intracutaneous vaccinotherapy of brucellosis. Sovet.med. no.4: 19-21 Ap '50. (CLML 19:3)

1. Of the Therapeutic Division (Head -- Prof. V.V. Gerbst), Ust'-Kamenogorsk Oblast' Hospital (Head Physician -- M.I.Lukoshkov).

ZIMA, N. A. 176T83

USSR/Medicine - Brucellosis Apr 50

"Intracutaneous Vaccine Therapy of Brucellosis," Prof V. V. Gerbst, Head, Therapeutic Dept, N. A. Zima, Therapeutic Dept, Ust'-Kamenogroskiy Oblast Hosp

"Sov Med" No 4, pp 19-21

Briefs history of vaccine therapy of brucellosis, and results of tests on effectiveness of intracutaneous vaccine therapy of the disease. Discusses favorable results of subject therapy on 39 cases tested by authors. Chief Phys, Ust'Kamenogroskiy Oblast Hosp, M. I. Lukoshkov.

PA 176T83

ZIMA, O.

"Preventive maintenance of machinery in the Ostrava-Karvina mines."
Uhli, Praha, Vol 3, No 10, Oct. 1953, p. 294

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

SIMKOVIC, I.; BOLF, J.; SISKA, K.; GUPKA, M.; SMRECHANSKY, V.; SCHNORRER, M.; ZIMA, P.

Apparatus for artificial blood circulation designed in Czechoslovakia. Eksper. khir. 5 no.6:16-22 N-D '60. (MIRA 14:2)
(PERFUSION PUMP (HEART))

HOLEC,V.; SISKA, K.; HUBKA, M.; ZIMA,P.

Venous pressure changes in the portal vein during an extracorporeal circulation experiment. Bratisl. lek. listy 45 no.7:390-397 15 Ap '65.

1. Ustav experimentalnej chirurgie Slovenskej akademie vied v Bratislave (riaditel: akademik K. Siska).

HUBKA, M.; SILVAY, J.; SUJANSKY, E.; ZIMA, P.; HOLEC, V.

Evaluation of the physiological parameters of the type 3 apparatus for extracorporeal blood circulation. Bratisl. lek. listy 63 no.3:130-135 '63.

1. CSAV - Oddelenie experimentalnej chirurgie Ustavu experimentalnej mediciny SAV, veduci akademik CSAV K. Siska.
(HEART, MECHANICAL)

PTACEK, M., inz.; ZIMA, Pavel

Purification of industrial waste water from the surface treatment of metals; a draft of the purification plant design standard. Vodni hosp 13 no.10:398-399 '63.

SHIMKOVITS, I.; BOL'F, Yu.; SHISHKA, K.; GUBKA, M.; SMRECHANSKIY, V.; SHNORRER, M.; ZIMA, P.

Apparatus fo Czech design for artificial blood circulation. Trudy Inst.eksp.i klin.khir.i gemat. AN Gruz.SSR 10:25-34 '62. (MIRA 16:2)

(CZECHOSLOVAKIA--PERFUSION PUMP (HEART))

ZIMA, P.M.

Actinomycosis of the metatarsus. Ortop.,travm. i protez. 18 no.1:70 Ja-F '57. (MLRA 10:6)

1. Iz kafedry rentgenologii i radiologii (zav. - prof. I.M. Liberman) Krasnoyarskogo meditsinskogo instituta (dir. - dotsent P.G.Podzolkov) i Krayevoy klinicheskoy bol'nitsy (glavnyy vrach - V.K.Sologub).

(ACTINOMYCOSIS) (FOOT--DISEASES)

PROCESSES AND PROPERTIES INDEX

Cd

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A study of the cellulose of pulp in sugar beets. V. Konn and [illegible] *Listy Cukrovar.* 51, 123-4(1933).—Dry pulp (1 g.) in a 250-cc. flask was treated with 35 cc. of 12% NaOH, allowed to stand for 5 min., treated with 40 cc. more of 12% NaOH, allowed to stand 5 min. and treated again with 40 cc. 12% NaOH. It was then boiled for 15 min. and dild. with 75 cc. H_2O, filtered through a porous quartz plate and washed with H_2O. The mass was allowed to stand with 40 cc. of 10% AcOH for 5 min., washed with H_2O, allowed to stand with 40 cc. of 8% HCl, washed with H_2O, dried, weighed and ashed. Normal, abnormal and fibrous beets, resp. (15 samples of each) showed digestion of 18.10-22.59, 18.77-21.98%, 17.12-24.81%; pulp 4.85-7.04%, 4.50-5.81%, 6.02-8.64%; ash in the dry pulp 3.54-5.42%, 4.04-6.12%, 3.60-6.51%; ash in the pulp of the beet 0.153-0.322%, 0.193-0.335%, 0.235-0.438%; ashless cellulose in the dry pulp 20.3-26.8%, 22.7-28.7%, 21.0-28.0%; and ashless cellulose in beets 0.96-1.61%, 1.02-1.60%, 1.04-2.13%. The fibrous quality in sugar beets was in most cases not due to an increase in the cellulose content of the root; on the basis of av. values there is an increase in the cellulose content of fibrous beets. Abnormal beets show a greater tendency toward becoming fibrous and also a slight increase of cellulose over the normals.

Frank Maresh

ASA-SLA METALLURGICAL LITERATURE CLASSIFICATION

PROCESSES AND PROPERTIES INDEX

28

CA

A study of the cellulose of pulp in sugar beets. V? Korn and R. Zima.
Listy Cukrovar. 51,122-4(1932).-Dry pulp (1 g.) in a 250-cc flask was treated
with 35cc. of 12% NaOH, allowed to stand for 5 min., treated with 40 40 cc
more than 12% NaOH, allowed to stand 5 min. and treated again with 40 cc. 12%
NaOH. It was then boiled for 15 min. and dild. with 75 cc H_2O, filtered through
a porous quartz plate and washed with H_2O. The mass was allowed to stand with
40 cc. of 10% AcOH for 5 min., washed with H_2O, allowed to stand with 50 cc.
of 5% HCl, washed with H_2O, dried, weighted and ashed. Normal, abnormal and
fibrous beets, resp. (12 samples of each) showed digestion of 18.10-22.6%,
18.77-21.98%, 17.12-24.83% pulp 4.55-7.94%, 4.56-5.81%, 6.02-8.64%; ash in the
dry pulp 3.54-5.42%, 4.04-8.12%, 3.60-6.51%; ash in the pulp of the beet 0.183-
0.522%, 0.193-0.335% , 0.215%-0.428%; ashless cellulose in the dry pulp 20.3-
26.8%, 22.7-28.7%, 21.00-28.0%; and ashless cellulose in beets 0.9601.58%, 1.
02-1.60_, 1.0402.13%. The fibrous quality in sugar beets was in most cases not
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Abnormal beets show a greater tendency toward becoming fibrous and also a
slight increase of cellulose over the normals. Frank Maresh

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS

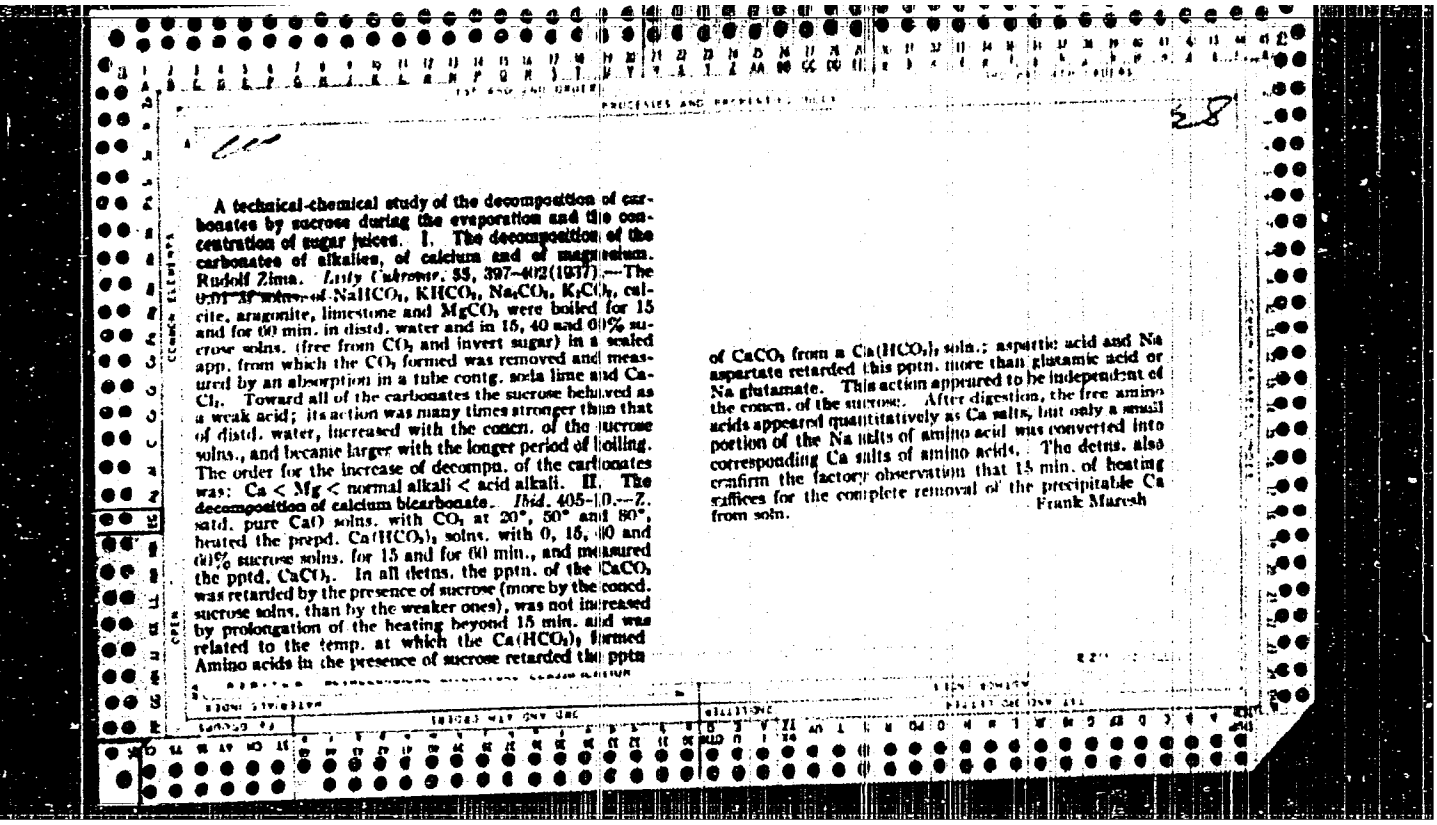
PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

The decomposition of carbonates by sucrose in boiling aqueous solutions. Rudolf Zima. *Listy Cukrovar.* 53, 345-51(1935).—Solns. of K_2CO_3, Na_2CO_3, $KHCO_3$ and $NaHCO_3$ and suspensions of aragonite, calcite and com. $CaCO_3$ equiv. to 0.0025 *M* concn. were boiled with 15, 30 and 60% sucrose solns. for 15 and 60 min. at a const. vol. at pressures of 760 and 240 mm. of Hg. For a control, the CO_2 evolved by boiling the carbonates with H_2O under identical conditions was detd. In the presence of sucrose the sol. carbonates evolved CO_2 after 15 min. of boiling and more rapidly than in the presence of water alone; the decompn. was hastened by the higher concns. of sucrose used, by the addn. of a reflux condenser to the bath and by a prolonged heating period; it was appreciably diminished at 240 mm. of pressure. The decompn. was not sufficient to make the action of the sucrose comparable to that of an acid. The insol. carbonates (aragonite, calcite) were not affected.

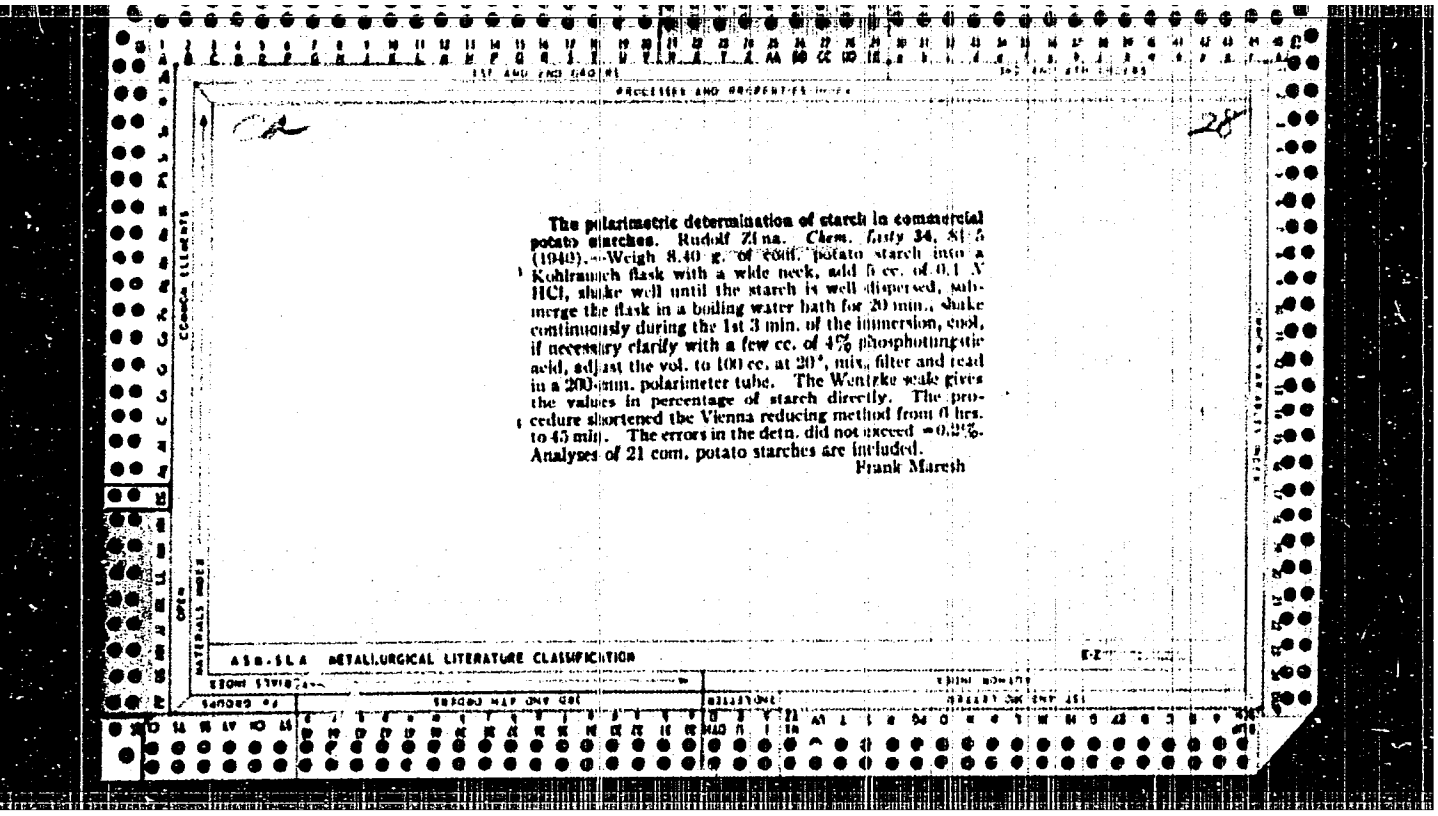
Frank Maresh

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



A technical-chemical study of the decomposition of carbonates by sucrose during the evaporation and the concentration of sugar juices. I. The decomposition of the carbonates of alkalies, of calcium and of magnesium. Rudolf Zima. *Listy Cukrovar.* 55, 397–402(1937).—The 0.01 M solns. of $NaHCO_3$, $KHCO_3$, Na_2CO_3, K_2CO_3, calcite, aragonite, limestone and $MgCO_3$ were boiled for 15 and for 60 min. in distd. water and in 15, 40 and 60% sucrose solns. (free from CO_2 and invert sugar) in a sealed app. from which the CO_2 formed was removed and measured by an absorption in a tube contg. soda lime and $CaCl_2$. Toward all of the carbonates the sucrose behaved as a weak acid; its action was many times stronger than that of distd. water, increased with the concn. of the sucrose solns., and became larger with the longer period of boiling. The order for the increase of decompn. of the carbonates was: Ca < Mg < normal alkali < acid alkali. **II. The decomposition of calcium bicarbonate.** *Ibid.* 405–10.—Z. satd. pure CaO solns. with CO_2 at 20°, 50° and 80°, heated the prepd. $Ca(HCO_3)_2$ solns. with 0, 15, 40 and 60% sucrose solns. for 15 and for 60 min., and measured the pptd. $CaCO_3$. In all detns. the pptn. of the $CaCO_3$ was retarded by the presence of sucrose (more by the concd. sucrose solns. than by the weaker ones), was not increased by prolongation of the heating beyond 15 min. and was related to the temp. at which the $Ca(HCO_3)_2$ formed. Amino acids in the presence of sucrose retarded the pptn of $CaCO_3$ from a $Ca(HCO_3)_2$ soln.; aspartic acid and Na aspartate retarded this pptn. more than glutamic acid or Na glutamate. This action appeared to be independent of the concn. of the sucrose. After digestion, the free amino acids appeared quantitatively as Ca salts, but only a small portion of the Na salts of amino acid was converted into corresponding Ca salts of amino acids. The detns. also confirm the factory observation that 15 min. of heating suffices for the complete removal of the precipitable Ca from soln.

Frank Maresh



The polarimetric determination of starch in commercial potato starches. Rudolf Zima. *Chem. Listy* 34, 85-5 (1940).—Weigh 8.40 g. of comm. potato starch into a Kohlrausch flask with a wide neck, add 5 cc. of 0.1 *N* HCl, shake well until the starch is well dispersed, submerge the flask in a boiling water bath for 20 min., shake continuously during the 1st 3 min. of the immersion, cool, if necessary clarify with a few cc. of 4% phosphotungstic acid, adjust the vol. to 100 cc. at 20°, mix, filter and read in a 200-mm. polarimeter tube. The Wentzke scale gives the values in percentage of starch directly. The procedure shortened the Vienna reducing method from 6 hrs. to 45 min. The errors in the detn. did not exceed ±0.2%. Analyses of 21 com. potato starches are included.

Frank Maresh

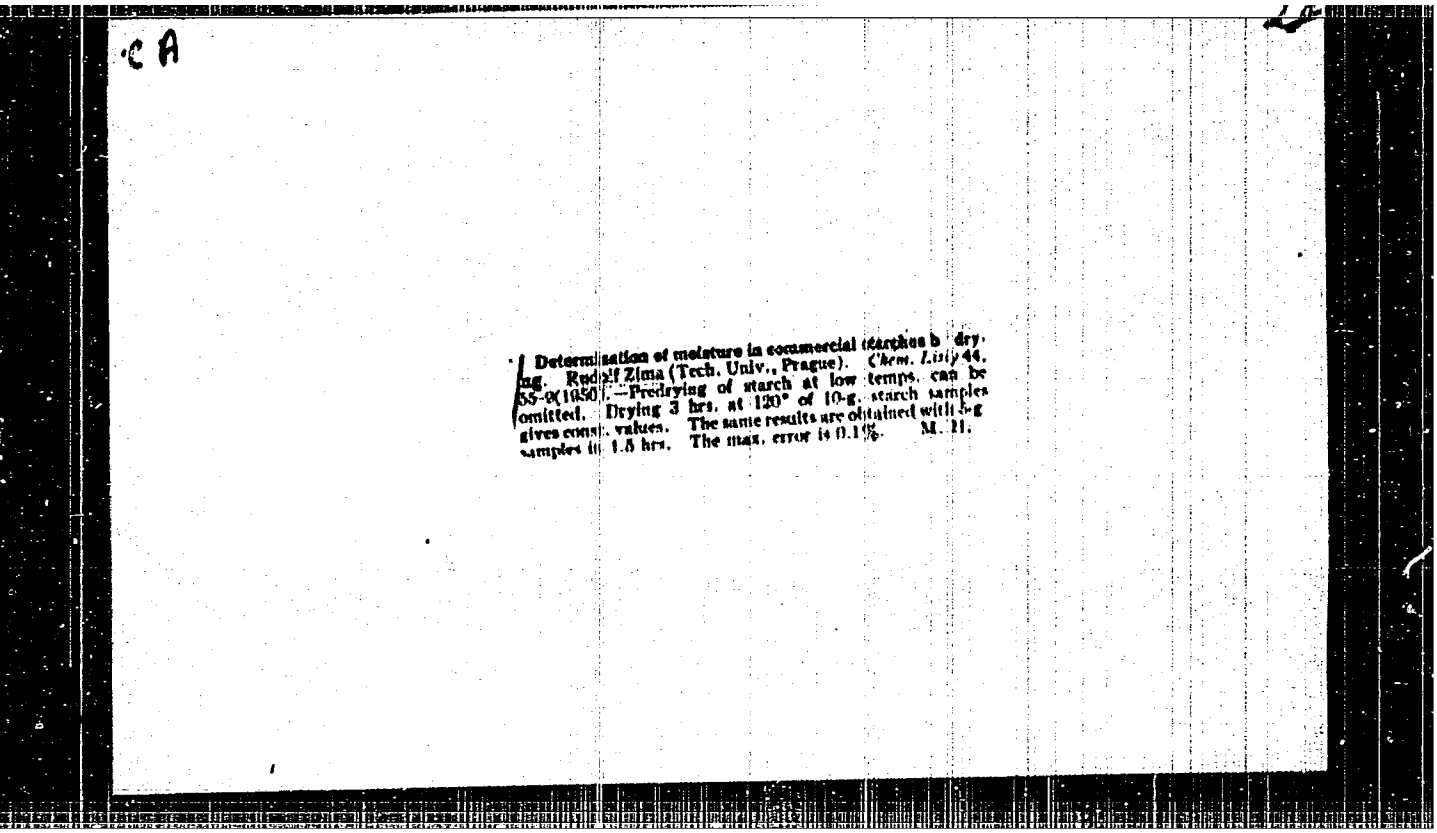
1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

28

The stability of raw sugar denatured with Amarite 38 during storage. Rudolf Zima. *Listy Cukrovar* 58, 304-6 (1940)(German condensation 304-5).—Raw sugar contg. from 0.005 to 0.021% invert sugar and denatured with 0.2, 1.0, and 5.0% Amarite (*principally octaacetylsucrose*; cf. Konn C. A. 34, 6833[a]), 1.0% silica gel, 0.2% *acetylsucrose*, 0.2% Na_2HPO_4, 0.2% Na_2CO_3, or 0.2% KH_2PO_4, after storage for more than a year under ordinary conditions contained from 0.013 to 0.038% invert sugar. Undenatured controls contained 0.011% invert sugar at the beginning and end of the storage. Neither the alky. nor the moisture content of the denatured sugar changed during storage. When the Amarite was used in mixts. (i.e., with middlings and fermented beet slices), the invert sugar rose from 0.01 to 11.05%, a 20-fold increase. Z. confirms the observations of Konn that the denaturants used alone do not influence the sugar during storage but the denaturants used in conjunction with other agents have a detrimental effect upon the moisture, alky., and invert sugar content of raw sugar during storage. F. M.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



CA

Determination of moisture in commercial starches by drying. Rudolf Zima (Tech. Univ., Prague). *Chem. Listy* 44, 55-9(1950).—Predrying of starch at low temps. can be omitted. Drying 3 hrs. at 120° of 10-g. starch samples gives const. values. The same results are obtained with 5-g samples in 1.5 hrs. The max. error is 0.1%. M. H.

ZIMA, S.F., Cand Chem Sci —(diss) " Changes in mine water during their accumulation in ponds." Novocherkassk, 1958. 21 pp with drawings (Min of Higher Education, Novocherkassk Polytech Inst im S. Ordzhonikidze), 130 copies (KL, 24-58, 116)

ZIMA, Vladimir, ing.

Wearing out of motor oils. Nafta Jug 12 no.7/8:218-221 Jl-Ag '61.

1. Rafinerija nafte, Rijeka.

(Lubrication and lubricants)

ZIMA, V.; STIKA, K.

"Relationships between four-terminal parameters of the basic configurations of a transistor." P. 372.

SLABOPROUDY OBZOR. (Ministerstvo presneho strojirenstvi, Ministerstvo spoju a Vedecka technicka spolecnost pro elektrotechniku pri CSAV). Praha, Czechoslovakia, Vol. 20, No. 6, June 1959.

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

ZIMA, V.

Computations of a frequency discriminator.

P. 662. (SLABOPROUDY OBZOR.) (Praha, Czechoslovakia) Vol. 18, No. 10, Oct. 1957

SO: Monthly Index of East European Accession (EEAI) LC. Vol. 7, No. 5, 1958

ZIMA, V.

Impulse counters. p. 116.
SLABOPROUDY OBZOR, Prague, Vol. 15, no. 3, Mar. 1954.

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

ZIMA, V.

Ammonia generator in operation. Vestnik CSAV 72 no.3:368-369 '63.

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9.2572

Z/037/60/000/005/054/056
E192/E382

AUTHOR: Zima, V.

TITLE: Parametric Amplifiers

PERIODICAL: Československý časopis pro fysiku, 1960, No. 5, pp. 499 - 510 + 1 plate

TEXT: The amplifiers considered are based on the beat-frequency phenomenon. Such a system can be represented by means of an active three-terminal network with complex parameters. This is illustrated in Fig. 1. A system of this type can be described by the admittance matrix:

$$[Y] = Y_1 \begin{bmatrix} q_1 + jy_1, & q_{12} + jy \\ q_{21} + jy, & q_2 + jy_2 \end{bmatrix} \qquad (1)$$

where Y_1 is the characteristic admittance of the reactive input network,

q_1 is the input damping,

q_2 is the output damping relative to the characteristic admittance Y_1,

q_{21} is the coupling gain.

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Parametric Amplifiers

y_1 is the normalised input admittance,

y_2 is the normalised output admittance and

y is the normalised coupling admittance

The symbol Δ_q is the determinant of the matrix composed of q_1, q_2, q_{12} and q_{21}.

By assuming that the system is selective, Eq. (1) is used to define its stability factor k, gain, bandwidth and gain-bandwidth figure. A practical parametric amplifier system is analysed in some detail. This is shown in Fig. 5. The system is followed by a nonlinear element DZ. This element performs the following functions:

1) the element has no effect before the appearance of the oscillations in the system;

2) when the oscillations appear, the element limits their amplitude;

3) if an input signal is applied to the active three-terminal system, the output element acts as a detector producing a

Parametric Amplifiers

signal proportional to the input signal.
The element DZ can be represented by the equivalent network shown in Fig. 6. The inductance L and the capacitance C in this network are linear, while the resistance R is a non-linear function of voltage. It is assumed that the current and voltage in the resistance are related by:

$$I_R = - aU + bU^3; \quad a, b > 0 .$$

IX

The behaviour of the network can therefore be described by Eq. (32). By introducing the constants defined by Eqs. (33), Eq. (32) can be written as Eq. (34). This system can be solved by the method of quasivariable amplitudes. It is assumed that the solution is in the form of Eq. (35), where A and B represent amplitudes which are assumed constant during one period of the oscillation frequency. The overall amplitude is defined by Eq. (37). The magnitude of this amplitude in the steady-state is given by Eq. (39). From this it is seen that

Parametric Amplifiers

the modulation depth m is expressed by Eq. (40). If the modulation signal is passed through an ideal detector and a filter, the output signal is given by:

$$\left|U_m\right| = \frac{U_o}{\mu} \quad .$$

From the above it is seen that if an external signal U_o, having a frequency near to that of the oscillation frequency of the system, is applied to the circuit, an amplitude modulation of the oscillations takes place. The period of the modulation envelope is determined by the difference frequency between the two signals. The depth of the modulation is directly proportional to the amplitude of the input signal U_o and inversely proportional to the amplitude of the oscillations C_o. The modulation effect can be used for amplifying the signals. Provided the signal frequency does not differ appreciably from the oscillation frequency, the amplitude of

Parametric Amplifiers

the output signal is approximately independent of the nonlinearities of the system. A beat oscillator of the type illustrated in Fig. 5 was investigated experimentally. The results are shown on the plate on p. 516d. Figs. 7a, b, c and d show the collector current in a transistor when a control voltage at the emitter was varied in steps (through a a high resistance). Fig. 8 of the plate illustrates the frequency response of the amplifier. It was also found that the noise figure of the system was very near to unity. There are 8 figures and 10 references: 3 English, 1 German, 4 Soviet and 2 Czech.

Card 5/5

ZIMA, Vaclav, inz. CSc.

Staggered time courses. El tech cas 15 no.3:158-168 '64

1. Institute of Radio Engineering and Electronics, Czechoslovak Academy of Sciences, Prague 8, Lumumbova 1.

ACC NR: AM5004545 Monograph UR/

Zima, Vaclav; Kubin, Boris .

Electronic methods of measuring small intervals of time (Elektronnyye metody izmereniya malykh intervalov vremeni) Moscow, Izd-vo "Energiya", 65. 0245 p. illus., biblio.
Translation of Elektronicke mereni kratkych casu [Prague] SNTL, 1962 5,690 copies printed

TOPIC TAGS: time measurement, measurement apparatus, mechanical measuring tool, electric measuring instrument, oscillograph, phase meter, pulse counter, frequency meter, time interval counter, flip-flop circuit, electronic circuit, coincidence circuit, nuclear physics apparatus

PURPOSE AND COVERAGE:
The book examines methods of measuring intervals of time. Particular attention is paid to measuring with electronic meters, although other methods are examined: the electromechanical, oscillographic, integral, method of coincidence. The accuracy of these methods of measuring small intervals of time is evaluated. The book is intended for engineering-technical workers in the field of weak-current electrical engineering and experimental physics.

Card 1/2 UDC:681.118.4

ACC NR: AM5004545

TABLE OF CONTENTS (abridged):

SUB CODE: 20,09/ SUBM DATE: 10Aug65/ ORIG REF: 046/ OTH REF: 151/

Card 2/2

ACCESSION NR: AP4021557 Z/0042/64/000/003/0158/0168

AUTHOR: Zima, Václav (Engineer, Candidate of sciences).

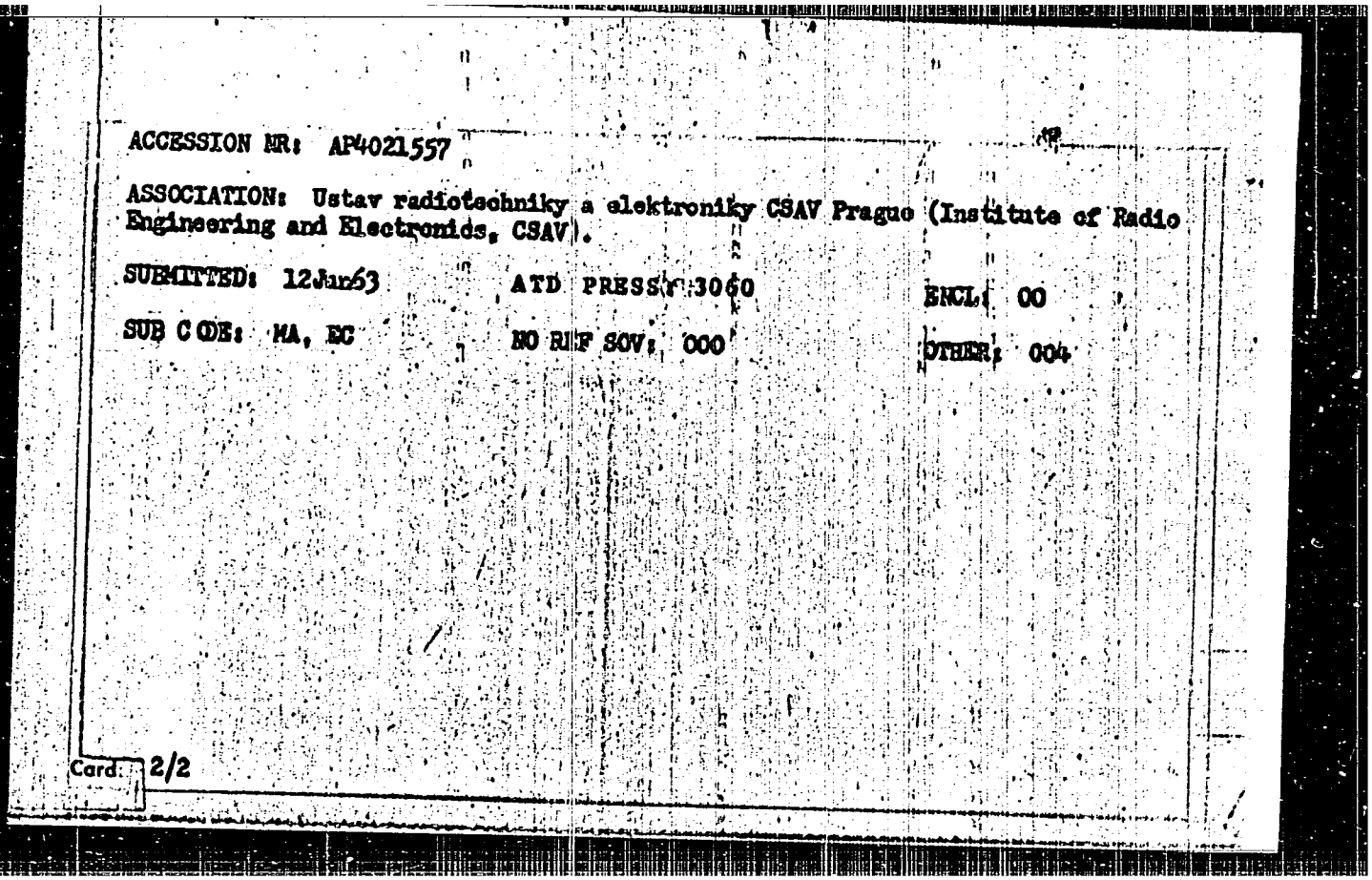
TITLE: Periodic staggered functions

SOURCE: Elektrotechnický časopis, no. 3, 1964, 158-168

TOPIC TAGS: pulse counter, automation, step function, Fourier H series coefficient, spectral density, measurement automation

ABSTRACT: The author investigated classes of periodic staggered functions of current and voltage formed in a resistance network with binary pulse counters in the time and frequency which find application in the automation of H-range measurements. The Fourier coefficients and the effective value of the H-series staggered signal were calculated as periodic functions and the spectral density as a synchronous function; the response of a linear dynamic system to staggered excitation also was determined by the method of Z transformation. The results were verified experimentally. The method described is more convenient, precise, and rapid than calculation by methods of harmonic analysis. Orig. art. has: 4 figures and 96 formulas.

Card 1/2



ACCESSION NR: AP4021557

ASSOCIATION: Ustav radiotechniky a elektroniky CSAV Prague (Institute of Radio Engineering and Electronics, CSAV).

SUBMITTED: 12Jun63 ATD PRESS: 3060 ENCL: 00

SUB CODE: MA, EC NO REF SOV: 000 OTHER: 004

Card: 2/2

ZIMA, Vaclav, inz. CSc.

Relations between ladder networks of identical and progressive links. Slaboproudy obzor 25 no. 2: 79-84 F '64.

1. Ustav radiotechniky a elektroniky, Ceskoslovenska akademie ved, Praha.

27107
Z/039/61/022/008/002/007
D260/D303

9.6000 (1159)

AUTHOR: Zima, Václav, Engineer

TITLE: A binary divider of frequencies up to 30 Mc/s and counter up to 10 Mc/s

PERIODICAL: Slaboproudý obzor, v. 22, no. 8, 1961, 461-468

TEXT: The article deals with broadband frequency dividers used for designing digital frequency meters. Fast counters enable the construction of electronic stop watches with a basic step of 10^{-7}s as well as particle computation in nuclear physics with the same resolving power. Possible modi operandi are investigated of a symmetric multi-vibrator circuit and the function is explained of an aperiodic divider which is different in quality from the known types of monostable, bistable, and astable multi-vibrators. Avalanches in the flip-flop circuit are dealt with in detail and the non-stable section of the response to a current unit-step is calculated. Some very economic and simple circuits are described, permitting digital

Card 1/5

A binary divider...

manipulation of periodic signals up to 30 Mc/s as well as random pulse signals with a minimum time interval of 10^{-7} s. Fig. 2 shows the circuit diagram of a binary flip-flop circuit with an electron tube and with 2 germanium diodes D_1, D_2. The operations are controlled by the potentiometer R_2. The resistance elements of the circuit (Fig. 2) were determined with regard to the optimal stability of the flip-flop circuit by the cathode resistance. The investigation results of the dividing ratio of 2:1 are indicated in graphic form. The article also deals with the practical utilization of binary circuits within the aperiodic and bi-stable aspects in the construction of broadband frequency dividers. Fig. 11 shows the circuit diagram of the divider of frequencies at a ratio of 4:1 operating within a frequency range from 12 to 30 Mc/s. The operations are controlled by the linear potentiometer 10 kΩ. The level of the incoming voltage must be at least as high as 50 mV. The described devices are very economical and reliable. They are fed by a low-anode voltage of 70 V and their consumption amounts to 195 mA, excluding the input power for glowing. They operate within the range of anode-voltage

27107
Z/039/61/022/008/002/007
D260/D303

of 45 up to 120 V, and have, therefore, not to be fed from the stabilized source. There are 12 figures and 19 references: 7 Soviet-bloc and 12 non-Soviet-bloc. The references to the 4 most recent English-language publications read as follows: D.K. Lynn, D.O. Pederson: Switching and memory criteria in transistor flip-flops. IRE International Convention Record, Part 2, 1960, pp 3-7; P.R. Scot: A stabilized locked oscillator frequency divider. Proc. 48 (1960), no. 2, pp. 192-200; Anonym: 100 Mc/s counter times intervals to 10 nsec. Electronic 33 (1960), no. 47, p 120; V. Met: A high speed binary counter based on frequency script techniques. Proc. IRE 48 (1960), no. 2, pp. 243-244.

SUBMITTED: April 14, 1961

ZIMA, V.; KRIZIK MAXIGRAPHS

ZIMA, V.; KRIZIK MAXIGRAPHS. P. 603.

Vol. 45, no. 12, Dec. 1956
ELEKTROTECHNICKY OBZOR
TECHNOLOGY
Czechoslovakia

So: East European Accession, Vol. 6, No. 5, May 1957

ZIMA, Vaclav, inz.

A binary divider of frequencies up to 30 Mc/s and counter up to 10Mc/s. Slaboproudy obzor 22 no.8:461-468 '61.

(Frequency meters)

23667
Z/014/61/000/002/001/005
A205/A126

9,2580

AUTHOR: Zima, Václav, Engineer

TITLE: Square-wave generator

PERIODICAL: Sdělovací technika, no. 2, 1961, 62-64

TEXT: The article describes a rather simple square-wave generator for higher outputs and durations of 2 - 500 μs, with repetition rates of 0.125 - 220 cps. The instrument is meant for testing the response of af amplifiers and quadrupoles for testing impulse counters, flip-flops, logic systems, and for dynamical testing of relay assemblies. The wiring of the generator is shown in Fig. 1, the wiring of its voltage source in Fig. 2. The repetition-frequency source is a multivibrator, equipped with an "ECC82" tube, rough-controlled by change of capacitances (0.1 and 2 μF) of the two feedback branches, fine-controlled by the double-potentiometer P_1 (2 x 1 MΩ). The output voltage, converted upon derivation (by a 50 pF capacitance and a grid resistor) into a series of positive and negative pulses, controls the flip-flop circuit, equipped with another "ECC82" tube. In quiescent state, the left triode system is open (its

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Square-wave generator

grid leak is connected to the positive potential of the source) and the right system is closed (its grid leak is connected to the negative potential -150 v of the source). A negative trigger pulse changes the system into the opposite state. The duration of generated waves is controlled by the magnitude of the feedback capacitance and the magnitude of the grid leak which comprises the linear potentiometer P_2 (1 mΩ). The incompletely shaped output impulse is led over a 200 kΩ resistive coupling to the grid of an "EF 80" tube, which acts as a pulse shaper. The negative square waves derived from its plate are led over a resistive circuit to the grid of another "EF 80" tube, which acts as input of a d-c power amplifier, the output of which contains a "6L50" tube. The voltage (U) of the output signal is controlled by the potentiometer P_3, the voltage-level of the quiescent period is controlled by the potentiometer P_4. The output voltage is indicated by a voltmeter. The consistent galvanic coupling allows direct measuring of impulse-voltage levels. One voltage stage is measured at multivibrator anode-voltage disconnected by the switch (S_4), the other voltage state is measured at largest repition rate and shortest pulse duration. The power-amplifier circuit uses negative feedback for

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23667
Z/014/61/000/002/001/005
A205/A126
Square-wave generator

ZIMA, Vaclav, inz.

A survey of formulas for the cascade of indentical active four-terminal networks. Slaboproudy obzor 21 no.12:704-708 D '60.
(EEAI 10:3)

(Electric networks)

ZIMA, Vladimir, inz.

A motor method for testing the two-stroke motor oils. Nafta Jug 13 no.11/12:459-465 N-D '62.

1. Rafinerija nafte, Rijeka.

ZIRA, V.Kh.; ZHUKOVA, P.I.; KOVAL'CHUK, Ye.I.

Improving the operating properties of stoppers for casting steel from large-capacity ladles. Ogneupory 26 no.10:480-482 '61. (MIRA 14:11)

1. Zaporozhskiy ogneupornyy zavod (for Zira, Zhukova). 2. Zavod Zaporozhstal' (for Koval'chuk).
(Refractory materials)
(Zaporozh'ye—Open-hearth furnaces—Equipment and supplies)

ZIMA, V.

"Two special properties of binary circuits." P. 300.

SLABOPROUDY OBZOR. (Ministerstvo presneho strojirenstvi, Ministerstvo spoju a Vedecka technicka spolecnost pro elektrotechniku pri CSAV). Praha, Czechoslovakia, Vol. 20, No. 5, May 1959.

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

ZIMA, Vaclav, inz. (Praha)

Circle diagrams of four-terminal networks. Slaboproudy obzor 23 no.7:402-408 Jl '62.

ZIMA, Vaclav, inz., ScC.

Transmission of signals by linear quadrupole. Slaboproudy obzor: Suppl.: Priloha pro mlade inzenyry 24 no.7:133-P44 '63.

ACCESSION NR: AP4040770 S/0021/64/000/006/0752/0756

AUTHOR: Zina, V. L., Slobodyanyuk, V. V. (Slobodyanik, V.V.), Faydysh, O.M. (Faydysh, A. M.)

TITLE: Effect of oxygen on the photoconductivity and luminescence of anthracene crystals

SOURCE: AN UkrRSR. Dopovidi, no. 6, 1964, 752-756

TOPIC TAGS: Photoconductivity, intrinsic photoconductivity, luminescence, luminescence quenching, photooxide, oxidized anthracene, anthracene, naphthacene, phenazine, photoconductive quantum yield

ABSTRACT: The effect of oxygen on the photoconductivity and luminescence of anthracene crystals was studied between -170 and +90 C with light of wavelengths 3130, 3650 and 4050 A. The photoconductivity was found to increase (at all but the lowest temperatures) when the samples were exposed to oxygen; the luminescence was correspondingly quenched. The photoconductivity fell to its "vacuum" value upon evacuation of gases only when the crystals were simultaneously illuminated. The rates of rise and fall of photoconductivity and luminescence quenching were dependent upon temperature and the intensity of illumination. These facts indicated a mechanism whereby excited anthracene molecules interact with oxygen

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molecules to form an ionic complex:

$$A^0(\uparrow\downarrow) + O_2(\uparrow\uparrow) \rightarrow A^+(\uparrow) \cdot O_2^-(\uparrow\downarrow). \quad (1)$$

An exciton interaction scheme can also account for the vacuum rejuvenation of oxidized crystals:

$$A^0 + A^+O_2^- \rightarrow A^+ + A + O_2^- \quad (2)$$

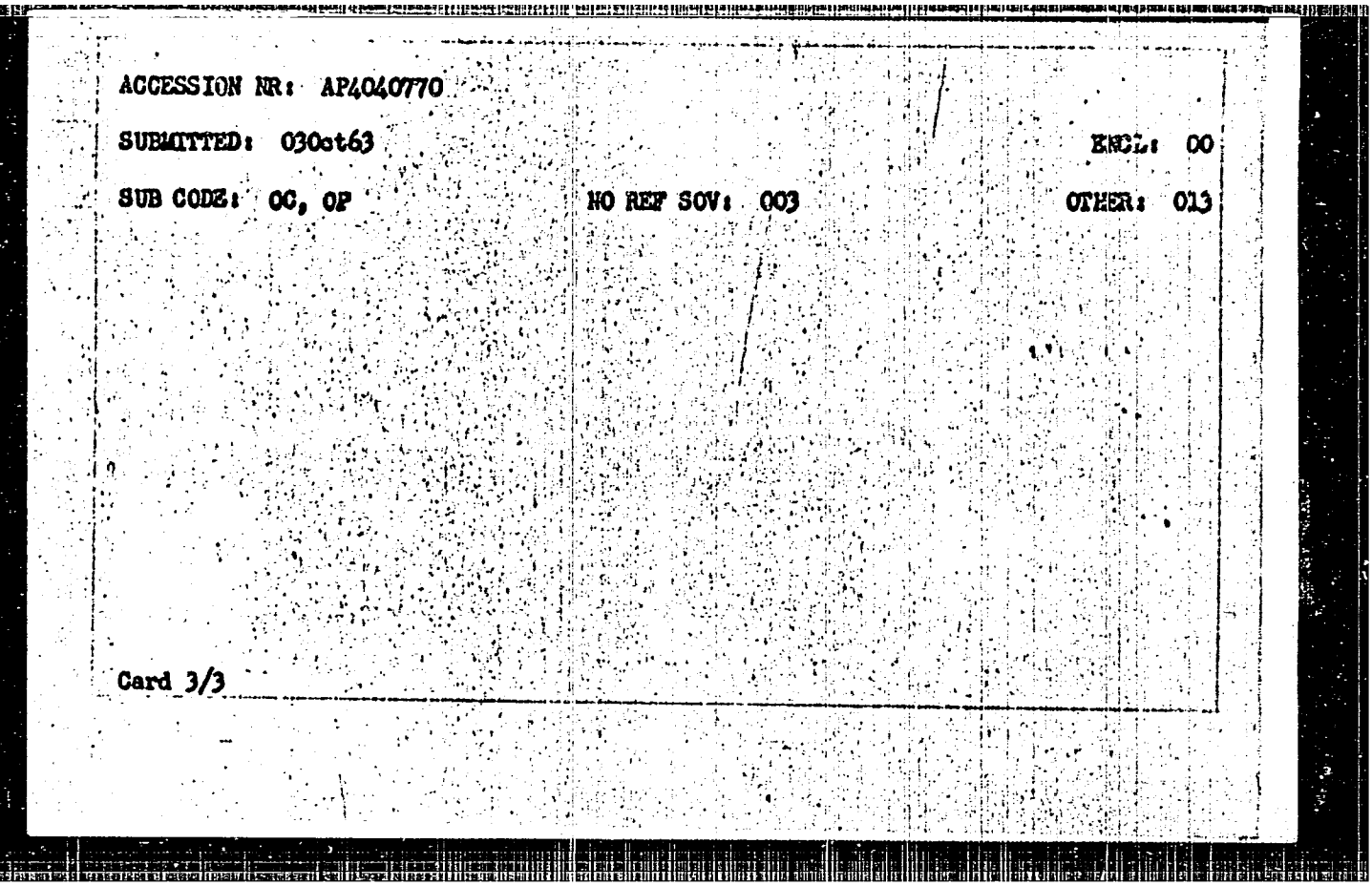
or

$$A^+O_2^- + A^0 \rightarrow A^+ + O_2 + A^- . \quad (3)$$

From studying the temperature dependence of the photoluminescence quenching by photooxides, an activation energy of 0.17±0.02EV was established.

The agreement of this energy with the activation energy for photoconductivity (as found in the literature) indicates that the thermal of the photoconductivity is not due to any temperature dependence of the mobility of charges, but that it is directly related to the formation of photooxides. Much evidence points to the conclusion that the observed "vacuum" photoconductivity is, in fact, an intrinsic phenomena. Orig. art. has 3 numbered equations, 2 graphs and 1 table.

ASSOCIATION: Ky*yivs'ky*y derzhavn*y universy*tet (Kiev State University)



ACCESSION NR: AP4040770

SUBMITTED: 030ct63 ENCL: 00

SUB CODE: OC, OP NO REF SOV: 003 OTHER: 013

Card 3/3

ZIMA, V.L.; PEKAR', G.S. [Pekar, H.S.]; FAYDYSH, A.N. [Faidysh, O.M.]

Polarization of the luminescence of pure and impurity anthracene crystals. Dop. AN URSR no.8:1043-1046 '64. (MIRA 17:8)

1. Kiyevskiy gosudarstvennyy universitet. Predstavleno akademikom AN UkrSSR S.I. Pekar' [Pekar, S.I.].

ZIMA, V.L.; SLOBODYANIK, V.V. [Slobodianyk, V.V.]; FAYDYSH, A.N. [Faidysh, O.M.]

Effect of oxygen on the photoconductivity and luminescence of anthracene crystals. Dop. AN URSR no. 6:752-756 '64. (MIRA 17:9)

1. Kiyevskiy gosudarstvennyy universitet. Predstavleno akademikom AN UkrSSR V.Ye.Lashkarevym [Lashkar'ov, V.IE.].

FAYDYSH, A.N.; ZIMA, V.L.

Effect of the impurity concentration on the relationship between the quantum yield of luminescence and the thickness of anthracene crystals. Opt. i spektr. 6 no.1:98-101 Ja '59. (MIRA 12:3)
(Anthracene crystals)
(Luminescence)

AUTHORS: Paydysh, A.N. and Zima, V.L. SOV/51-6-1-17/30

TITLE: Effect of Impurity Concentration on Dependence of the Luminescence Quantum Yields on Thickness of Antracene Crystals (Vliyaniye kontsentratsii primesi na zavisimost' kvantovykh vykhodov lyuminestsentsii ot tolshchiny kristallov antratsena)

PERIODICAL: Optika i Spektroskopiya, 1959, Vol 6, Nr 1, pp 98-101 (USSR)

ABSTRACT: One of the authors (Refs 1, 2) has shown that decrease of the anthracene crystal thickness increases the ratio of the luminescence quantum yields of anthracene (V_a) and naphthacene (V_n), when the latter is present as an impurity. The present paper reports studies of the effect of concentration of naphthacene in anthracene crystals on the behaviour of this ratio with change of crystal thickness. Four concentrations of naphthacene were used: 3×10^{-6}, 8×10^{-6}, 3×10^{-5} and 1×10^{-4} mole/mole. The quantum yields were measured photoelectrically and by heterochromatic photographic photometry. The results obtained are shown in Figs 1-4. Fig 1 gives the dependence of the quantum yield of anthracene luminescence on crystal thickness for four concentrations of naphthacene. Fig 1 shows that the quantum yield of anthracene with 10^{-6} mole/mole of naphthacene increases by 10% when the sample thickness is decreased

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Effect of Impurity Concentration on Dependence of the Luminescence Quantum Yields on Thickness of Anthracene Crystals

to about 1 μ; for anthracene with 10^{-4} mole/mole of naphthacene a 40% increase in the quantum yield is obtained on decrease of the crystal thickness. Fig 2 gives the dependence of the quantum yield of naphthacene luminescence on the thickness of anthracene layers. In this case decrease of thickness from 40 to 1 μ is accompanied by a considerable change in V_n (80 - 90%) at small concentrations of naphthacene and by a comparatively small change (about 10%) at high concentrations of naphthacene. Fig 3 shows the dependence of the ratio V_n/V_a on the crystal thickness. Decrease of V_n/V_a with decrease of the crystal thickness again depends on the concentration of naphthacene: curves 1 and 2 were obtained for anthracene with 3×10^{-6} and 1×10^{-4} mole/mole of naphthacene respectively. Fig 3 gives the distribution of energy in the luminescence spectrum of anthracene with 3×10^{-5} mole/mole of naphthacene for a thin crystal (curve 1: crystal thickness 0.2 μ) and a thick crystal (curve 2: crystal thickness 40 μ). Fig 4 confirms that transition from thick to thin crystals reduces considerably the quantum yield of naphthacene and increases the quantum yield of anthracene. Decrease of V_n/V_a with decrease of crystal thickness is

Effect of Impurity Concentration on Dependence of the Luminescence Quantum Yields on Thickness of Anthracene Crystals

due to two reasons. In thin layers decrease of crystal thickness produces an increase in the number of excitons reaching the crystal surface and most of these excitons transfer their energy to anthracene molecules. In thick crystals decrease of V_n/V_a with decrease of thickness is due to decrease of re-absorption of its own luminescence by anthracene. The effects of concentration of naphthacene on the V_n/V_a ratio are explained by increase of the probability of exciton capture by naphthacene with increase of its concentration. At low naphthacene concentrations decrease of crystal thickness will affect the quantum yield of naphthacene more strongly than the quantum yield of anthracene. The converse is true at high concentrations of naphthacene. There are 4 figures and 4 Soviet references.

SUBMITTED: May 29, 1958

L 4328-66 EWA(h)
ACC NR: AP5028636 SOURCE CODE: CZ/0039/65/026/002/0072/0077

AUTHOR: Zima, Vaclav (Engineer, Candidate of sciences); Novak, Mirko (Engineer, Candidate of sciences)

ORG: Institute of Radio Engineering and Electronics, CSAV, Prague (Ustav radiotechniky a elektroniky CSAV)

TITLE: Advances in circuit theory

SOURCE: Slaboproudy obzor, v. 26, no. 2, 1965, 72-77

TOPIC TAGS: circuit theory, electronic circuit, electric network

Abstract (Author's Russian and English summaries, modified): This article is a survey of the newest advances in the field of circuit theory. The scope of the field is defined and some of the technological processes used in the production of integrated electronic circuits are explained. Advances in the theory of passive and active networks, variable parameters networks and nonlinear networks are evaluated. [JPRS]

SUB CODE: EC / SUBM DATE: 30Sep64 / ORIG REF: 009 / OTH REF: 052 / SOV REF:

Card 1/1

ZIMA, Vaslav[Zima Vaclav]; KUBIN, Boris; VASIN, V.I.[translator]; DMITRIYEV, V.I., red.

[Electronic methods for measuring small time intervals. Translated from the Czech] Elektronnye metody izmereniia malykh intervalov vremeni. Moskva, Energiia, 1965. 245 p. (MIRA 18:10)

L 01264-66 EWT(m)/EPF(c)/EWP(j) RM

ACCESSION NR: AP5020786 UR/0048/65/029/008/1302/1303

AUTHOR: Zima, V. L.; Faydysh, A. N.

TITLE: Temperature dependence of the quantum luminescence efficiency of pure and doped anthracene and naphthalene crystals /Report, 13th Conference on Luminescence held in Khar'kov 25 June to 1 July 1964/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 29, no. 8, 1965, 1302-1303

TOPIC TAGS: luminescence center, impurity center, luminescent crystal, energy transfer, exciton, anthracene, naphthalene

ABSTRACT: The authors briefly review the experimental data, which they and collaborators have published in a series of papers beginning in 1959, on the temperature dependence of luminescence efficiency in pure and doped anthracens and naphthalene crystals. The anthracene crystals contained O and D centers and the naphthalene crystals were doped with β-methylnaphthalene. The following conclusions are drawn: 1) The quantum efficiency of the intrinsic luminescence of

Card 1/2

...from 90 to 293 K. 2) the quantum efficiency of the total luminescence of the

L 01264-66

ACCESSION NR: AP5020786

crystals investigated changes greatly over the above temperature range; this change is due to a change in the quantum yield of defect impurity molecules. 3) The efficiency of excitation energy transfer from the host material to the impurity molecules changes only slightly in the temperature...

ASSOCIATION: none

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

NO REF SOV: 009 OTHER: 001

Card 2/2

ZIMA, V.L.; KORSUNSKIY, V.M.; FAYDYSH, A.N.

Spectra and the conditions for the transfer of electron excitation energy in pure and doped anthracene crystals. Izv.AN SSSR.Ser. fiz. 27 no.4:519-523 Ap '63. (MIRA 16:4)
(Anthracene crystals—Spectra)

S/051/63/014/003/007/019
E039/E120

AUTHORS: Zima, V.L., and Faydysh, A.N.

TITLE: Luminescence of anthracene crystals obtained by sublimation in an oxygen atmosphere under irradiation

PERIODICAL: Optika i spektroskopiya, v.14, no.3, 1963, 371-377

TEXT: The sublimation is carried out in ampules containing oxygen at a pressure of 1 atm and a temperature of 165 - 170 °C. At the same time the vapor is irradiated with light from a -250 (DRSh-250) mercury lamp with a filter isolating the 365 or 313 mmk lines. Supplementary (O) luminescence spectra are observed in these crystals in which the polarization ratio is significantly larger than for the normal spectrum of pure anthracene crystals. From a rough estimate of the concentration of O - centers it is shown that absorption by the O - centers is only a small part of the energy absorbed by the anthracene crystal. It follows that the luminescence of O - centers is accounted for by the transfer of the energy of electron excitation from the crystal to these centers. With a high concentration of O - centers the total quantum yield of luminescent crystals is decreased by about 30% with respect to

Card 1/2

the luminescent quantum yield from pure anthracene crystals. The quenching of luminescence apparently depends on the trapping of excitons by photo-oxidized molecules with the subsequent radiationless degradation of the energy of electron excitation. The relatively small efficiency of transmission of energy from crystals to O - centers evidently explains the small overlapping of the luminescent spectra of anthracene crystals and the absorption spectra of O - centers.
There are 6 figures.

SUBMITTED: June 7, 1962

ACC NR: AP6018443 SOURCE CODE: UR/0051/66/020/006/1022/1029

AUTHOR: Zima, V. L.; Faydysh, A. N.

ORG: none

TITLE: Diffusion of excitons in naphthalene and anthracene crystals. II

SOURCE: Optika i spektroskopiya, v. 20, no. 6, 1966, 1022-1029

TOPIC TAGS: exciton, naphthalene, anthracene, absorption coefficient, quantum yield, ORGANIC CRYSTAL

ABSTRACT: Two exciton theories are reviewed and compared. In the first, various aspects of the diffusion theory of exciton motion in organic crystals are considered. Starting with the diffusion equation, which holds when reabsorption is negligible, the authors obtain the relation for the quantum luminescence output of the basic substance that has only one impurity, neglecting the emergence of excitons onto the crystal surface away from the exciting light. The theory uses a common basis to establish the dependence of the quantum outputs of the basic substance and the impurity on the concentration of impurity and defects, the coefficient of absorption, crystal thickness, thickness of layers with different impurity concentrations, etc. Experimental evidence convincingly proves the validity of the theory and provides a means for reliably determining the diffusion path length and the probability of exciton annihilation; all these are important factors in the energy migration and transfer processes in crystals

Card 1/2 ar UDC: 532.72 : 539.184 : 548.0

ACC NR: AP6018443

The theory is deficient in that it does not reveal the relation between exciton annihilation and the properties of the basic substance and the impurity. Furthermore, when the product of the diffusion length and the coefficient of excitation light absorption is less or approximately equal to 0.2, the determination of the diffusion path length is extremely poor. A second theory, using equations analogous to those used for the diffusion of particles in fluids, is compared with the diffusion theory and its advantages and disadvantages are discussed in detail. The quantum outputs are calculated according to the two theories and the results are compared, showing under which conditions the theories agree and diverge. Experimental results show that the exciton diffusion length in naphthalene is half that in anthracene. The diffusion length is but slightly dependent on temperature in the range of 90 to 293°K. It is shown that the probability of energy transfer is governed by the integral of spectral overlap, and depends also on the configuration of the donor-acceptor molecular pairs and the lattice distortions caused by impurity molecules. Orig. art. has: 3 tables.

SUB CODE: 20/ SUBM DATE: 28Dec64/ ORIG REF: 023/ OTH REF: 010

Card 2/2 af

PASHKEVICH, Oleg Nikolayevich, kand.ekonom. nauk; LUTOKHINA, Eleonora Alekseyevna; BARKAN, V.A., red.; ZIMA, Ye.G., tekhn. red.

[When you work for society you work for yourself] Trud dlia obshchestva - trud dlia sebia. Minsk, 1962. 31 p. (Obshchestvo po rasprostraneniiu politicheskikh i nauchnykh znanii Belorusskoi SSR, no.17) (MIRA 15:11)
(Work) (Incentives in industry)

ZIMA, Vladimir, inz.

The motor method for testing the two-stroke motor oils.
Nafta Jug 13 no. 11/12:459-466 N-D '62.

1. Petroleum Refinery, Rijeka.

ZIMAK, Jiri, dr.

Enterprise organization on punched cards. Podn org 18 no.9:417-419 S '64.

1. Automobilove zavody, Letnany.

ZIMAK, J.

Prodiction of frozen egg substance.

p. 174
Vol. 6, no. 4, 1955
PRUMYSL POTRAVIN
Praha

SO: Monthly List of East European Accessions (EEAL), LC. VOL. 5, no. 3
March 1956

ZIMAK, V.; DOUTLIKOVA, V.

Rare case of acute sterile myositis (polymyositis) in 12 year old boy. Cesk. pediat. 12 no.4:311-315 Apr 57.

1. Infekcni oddeleni Teplice lazne v Cechach, primar MUDr. Vojtech Zimak.

(MYOSITIS, in inf. & child
acute sterile myositis, postmortem diag. (Cz))

ZIMAK, V.

SURNAME, Given Names

Country: [illegible]kia

Academic Degrees: [illegible]

Affiliation: [illegible] Diseases Department (Infekcni oddeleni) Chief Dr V. ZIMAK; and [illegible]atomical Department (Patologickoanatomicke oddeleni) Chief [illegible] M. SCHROTTENBAUM; (Area Institute for People's Health (OUNZ), [illegible])

Source: Prague, Prakticky Lekar, Vol 41, No 15-16, Aug 21, 1961; pp 707-[illegible]

Data: "Unusual Medicinal Poisoning with Trifacid Spofa"

ZIMAK, V.; MD
POSENHAUEROVA, E.; graduate physician (prom. lekarka)
SCHROTTENBAUM, M.; MD

ZIMAK, V.; FOSENBAUEROVA, E.; PEYCHL, L.

Post-vaccination encephalitis. Cas.lek.cesk 100 no.9:264-268 3 Mr '61.

1. Infekcni oddeleni OUNZ Teplice Lazne v Cechach, prednosta prim. MUDr. V. Zimak.

(SMALLPOX immunol) (ENCEPHALITIS etiol)

CULIK, J.; ZIMAK, V.

Meningoencephalitis exanthematica. Cas. lek. cesk. 98 no.23:717-721 5 June 59.

1. IV. detska klinika KU v Praze, prednosta prof. MUDr Frantisek Blazek, Infekcni oddeleni OUNZ v Teplicich, prednosta prim. MUDr. Vojtech Zimak. J. C., J.C., Praha 2, Ke Karlovu 2.
(MENINGOENCEPHALITIS, case reports
exanthematica (Cz))

ZIMAK, Vojtech, MUDr.; PTACKOVA, Vera, MUDr.

Severe course of diphteria in the district of Usti n.L.
Prakt. lek., Praha 35 no.15-16:371-372 20 Aug 55.

1. Z inf. oddeleni OUNZ Teplice Lazne v C., primar MUDr. Vojtech Zimak.
(DIPHTERIA, epidemiology
in Czech., severe course in Usti n.L. region)