

NYIRO, Gyula, dr.; SZOBOR, Albert dr.; SOOS, Imre, dr.

Data on autonomic diencephalic epilepsy, in connection with a case cured with chlorpromazine. Orv. hetil. 97 no.9:227-232  
26 Feb 56

1. A Budapesti Orvostudományi Egyetem Elméleti és Idegklinika-jának (igazgató: Nyíró Gyula dr. egyet. tanár) közleménye.

(EPILEPSY

autonomic diencephalic, ther., chlorpromazine (Hun))

(CHLORPROMAZINE, ther. use

epilepsy, autonomic, diencephalic (Hun))

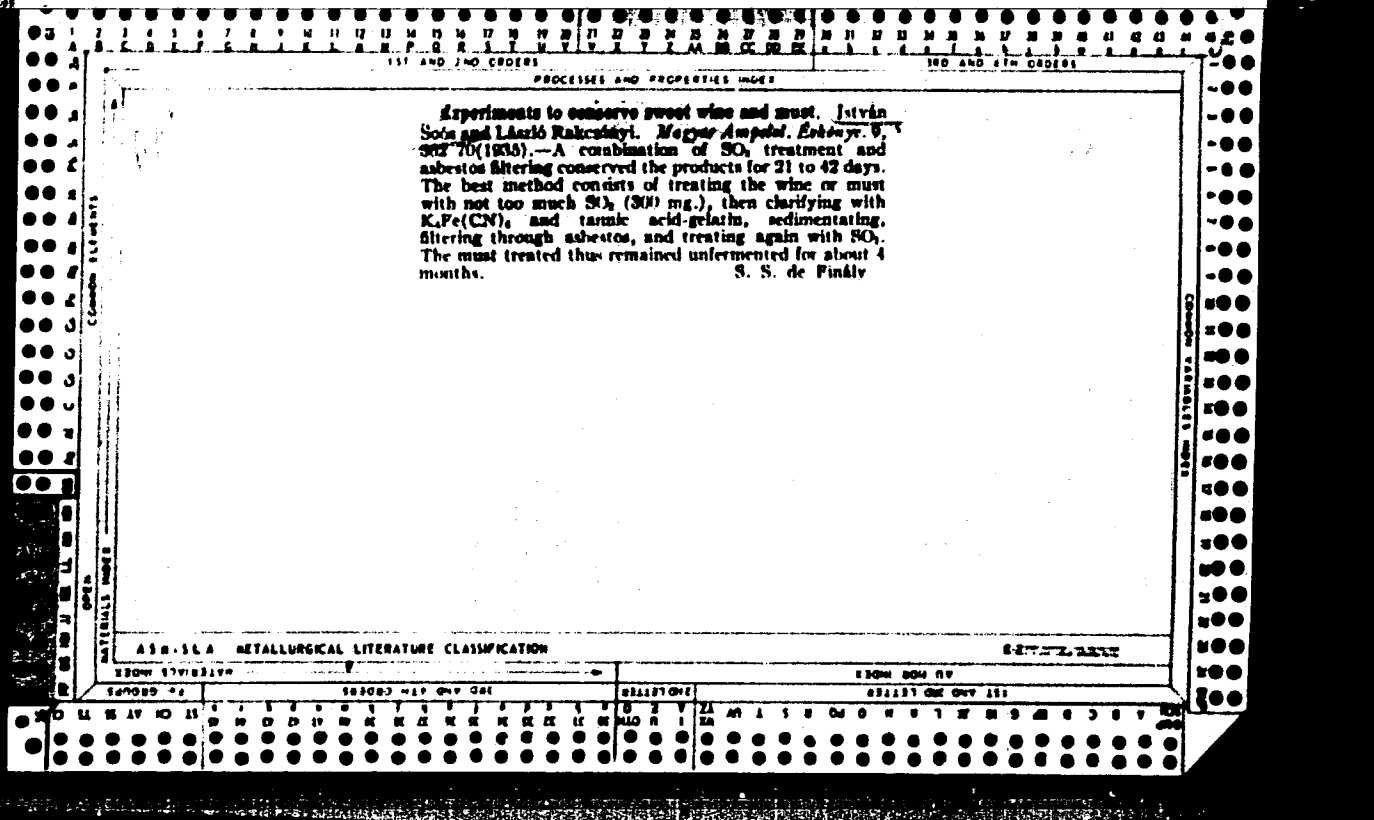
SZENDEI, Adam, dr.; VIRANYI, Andras, dr.; KOMAROMY, Jozsef, dr.;  
SZECSENY, Andor, dr.; BARTA, Lajos, dr.; SOOS, Imre, dr.

Experiences on the diagnosis and therapy of pheochromocytoma.  
Orv. hetil. 97 no.12:316-319 18 March 56.

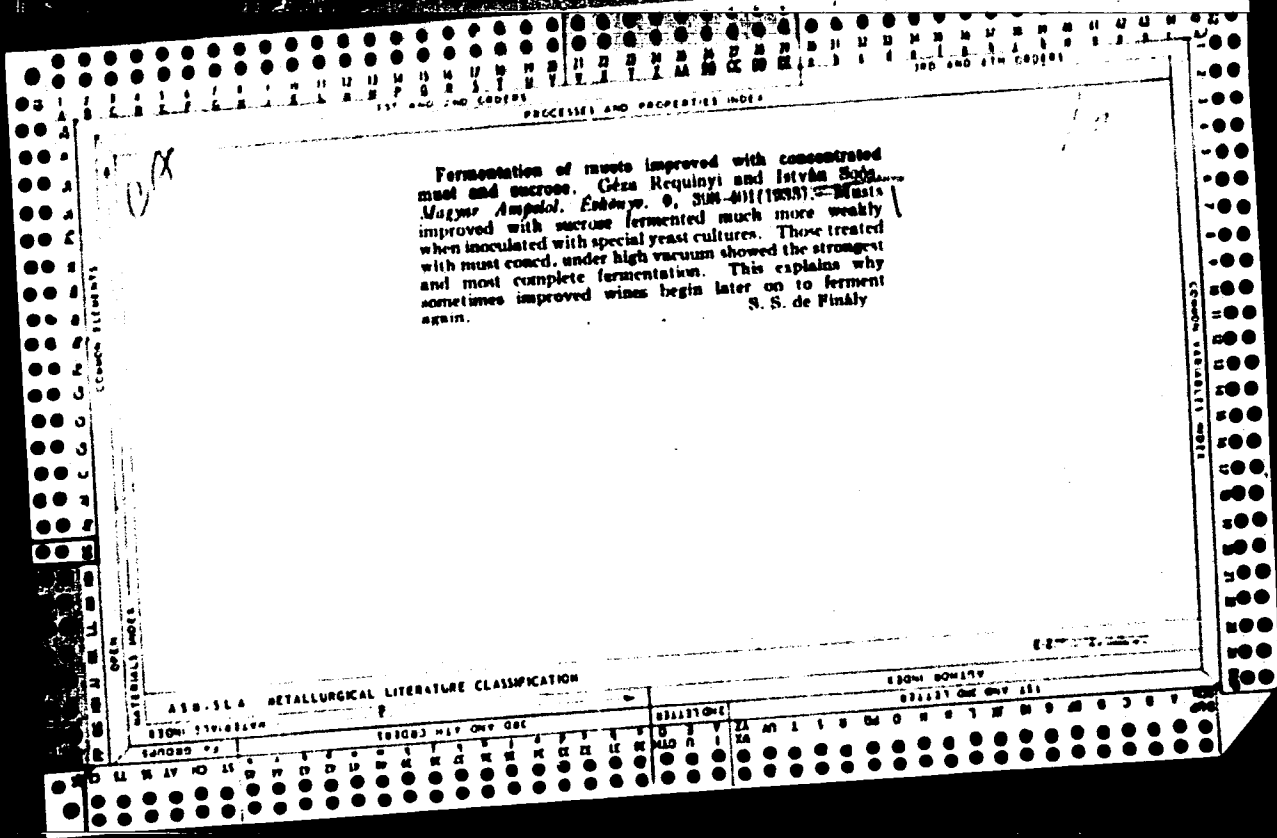
1. A Budapesti Orvost. Egyetem III. sz. Belk. (igaz. Gomori, Pal dr.  
egyet. tanar), II. sz. Sebészeti Klin. (igaz. Rubanyi, Pal dr.  
egyet. tanar), I. sz. Gyermekklin. (igaz. Gagesi-Kiss, Pal dr.  
egyet. tanar), Ideg.- es Elmeklinikájának (igaz.: Nyiro, Gyula dr.  
egyet. tanar) kozl.

(PARAGANGLIOMA

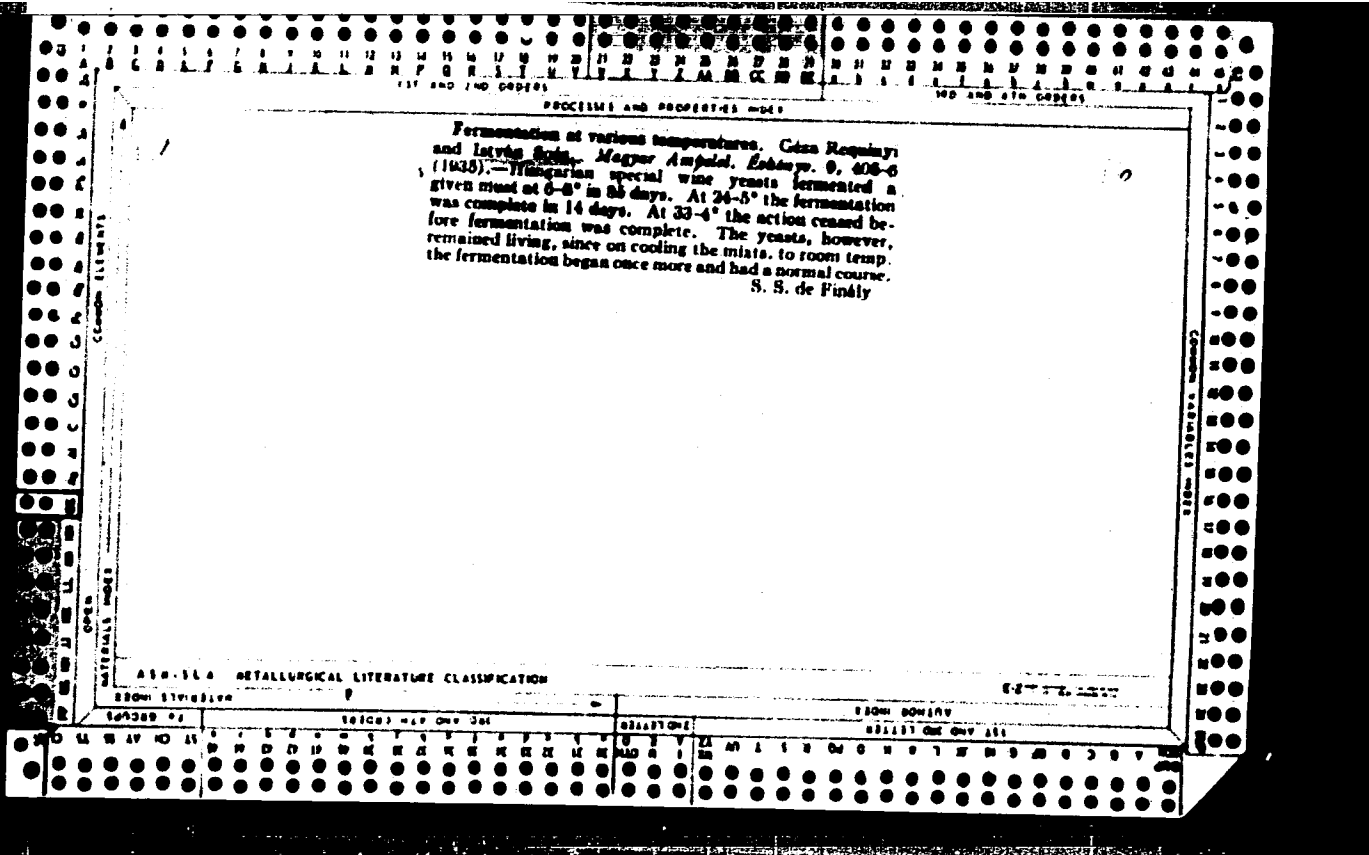
pheochromocytoma, diag. & ther. (Hun))







PROCESSES AND PROPERTIES INDEX	
Determination of wine to determine deficiency of nutritional salts for yeast. <i>Céza Requinyl and István Mészáros</i>	
<i>Magyar Anpdol. Érdőny. 9, 412-4(1935).</i> —A wine containing N compounds in a normal amount can be re-fermented three times in succession. The first process is normal; further fermentations became much slower. A fourth re-fermentation is possible only on addition of $(\text{NH}_4)_2\text{CO}_3$ . Yeast cells remained much longer in suspension when $\text{NH}_4$ salt was added and thus clarifying was much impeded. S. S. de Finálv	
16	
ASB-35A METALLURGICAL LITERATURE CLASSIFICATION	
GROUP	
SUBGROUP	
SECTION	
SUBSECTION	
PAGE	



PROCESSES AND PROPERTIES INDEX

100 AND 17th COPIES

16

The alcohol-tolerating capacity of Hungarian wine yeasts.  
Géza Rozsnyai and István Soós. *Magyar Ásványt.*  
*Értekez.* 9, 407-10(1955).—By means of special cultures  
alc. contents of 18.26-16.27% by vol. can be produced.  
The best types are "Tokaj 22" and "Eger 1."  
S. S. de Finály

ASAC-51A METALLURGICAL LITERATURE CLASSIFICATION

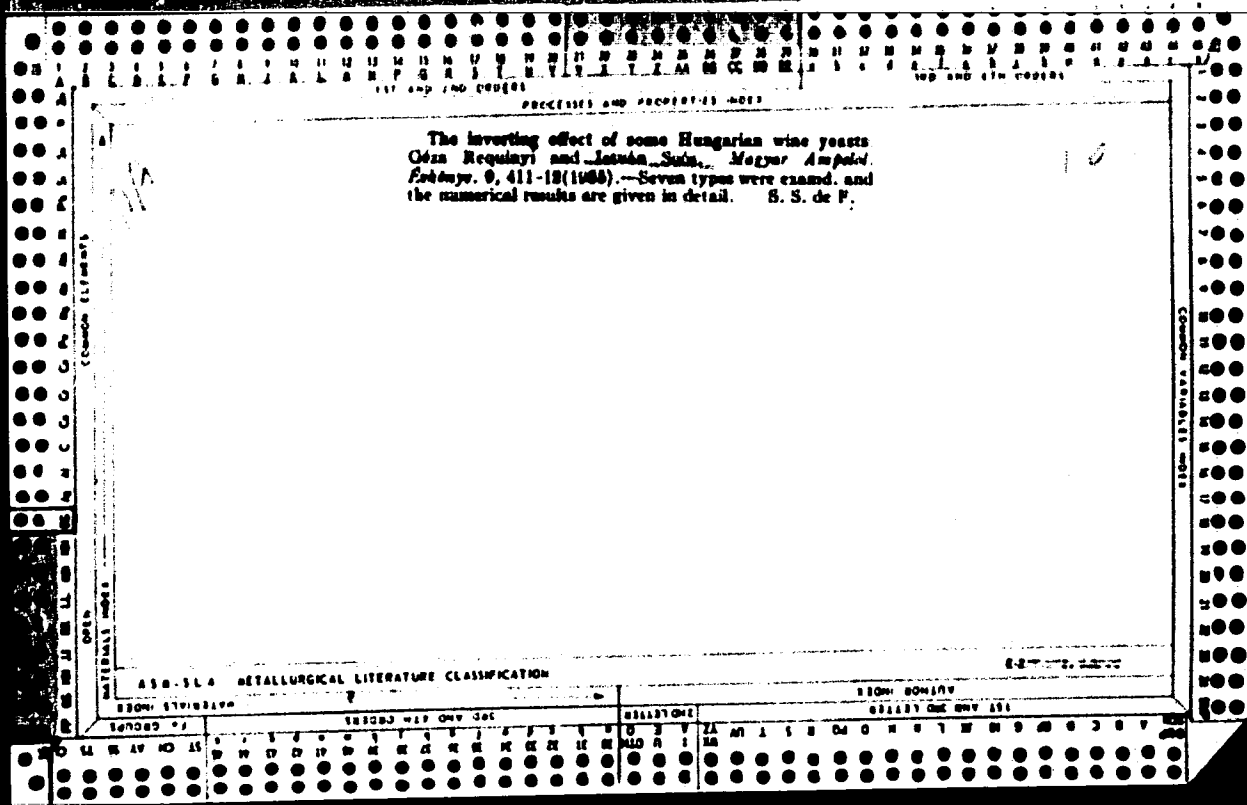
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COMMON ELEMENTS

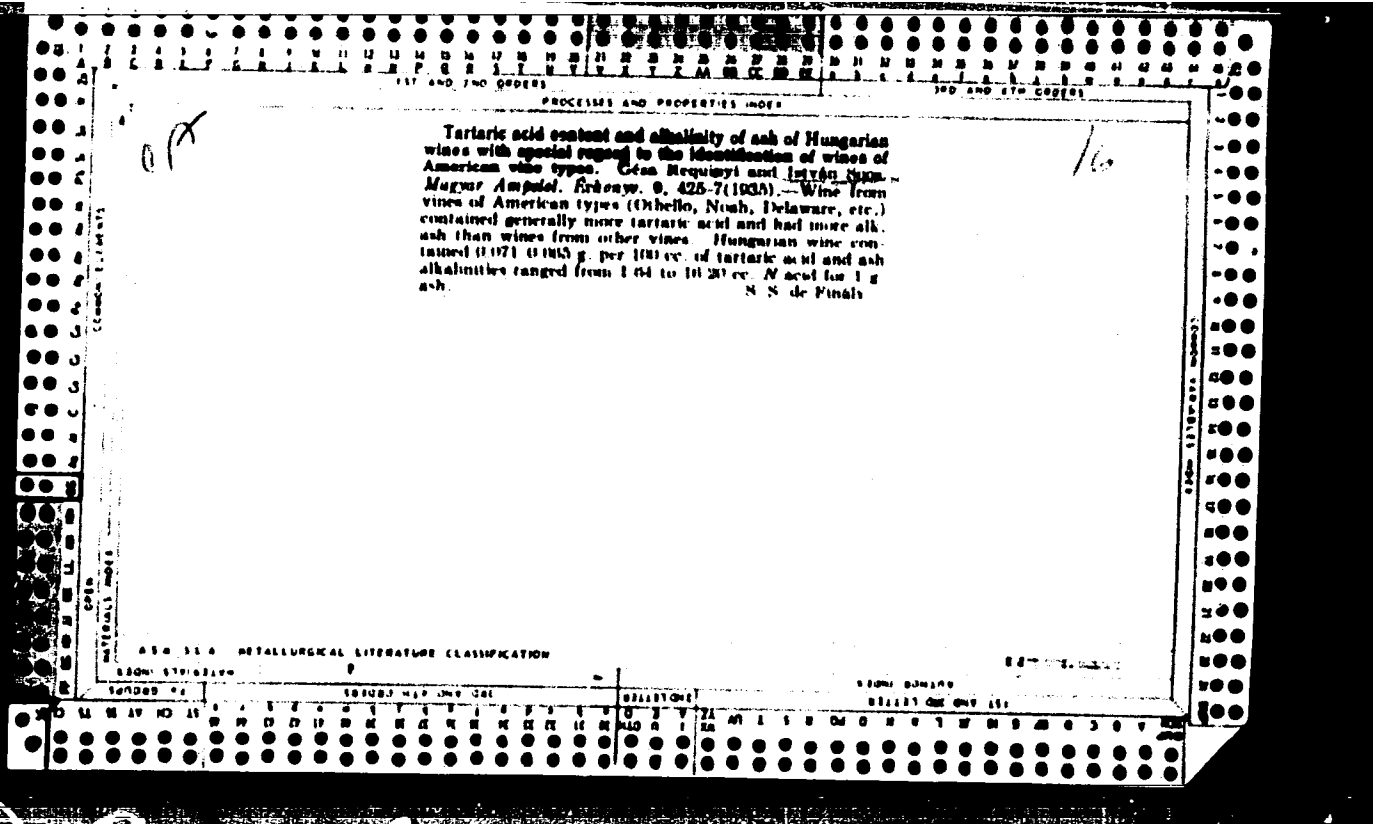
MATERIAL INDEX

COMMON ELEMENTS









PROCESSES AND PROPERTIES INDEX

Sulfuration methods of wine. *Mrs. Hequini and István Szék. Magyar Ásvány. Érdész. 9, 440-2(1938).* -

Sulfuration of wines by means of sheets of elementary S, liquefied SO<sub>2</sub> and K metabisulfite was examined. The fixation of SO<sub>2</sub> was the same in each case. The application of K metabisulfite increased the ash content by 8-9%. Also the alkali of the ash was somewhat higher. There was no difference in the tastes of the wines sulfurated by the different methods. S. G. de Pindly

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

FROM SOURCE

BIBLIOTHEQUE CENTRALE

MATERIALS INDEX

COMMON PARAMETERS INDEX





R. J. AM

№008 (1.). A szőlő és borsótermékek penészesedése és az erjedés a must és szőlőlében.  
[The effect of moulds on the composition of (grapes and must).] *Kisfal. Közl.*,  
xlvii-xlix, pp. 33-40, 1947. [English and Russian summaries.]

The influence of the moulds *Botrytis cinerea*, *Penicillium glaucum*, *Mucor* sp., and *Aspergillus niger* on media containing dextrose, fructose, tartaric, and malic acids was investigated at the Ampelological Institute, Budapest. *B. cinerea* and *P. glaucum* consumed large amounts of tartaric and afterwards of malic acid. On the other hand, if sugar was the sole source of carbon the acid content was increased through the formation of new acid out of sugar. *M.* sp. utilized tartaric acid to a slight extent in the presence of sugar only. *A. niger* caused a decrease in acidity only in sugar-free solutions. All four moulds produced acids from sugar. On a medium containing 0.8 per cent. dextrose, for instance, *B. cinerea* produced 0.27 per cent. oxalic acid, *A. niger* 1.96 per cent. oxalic and 1.74 per cent. citric acid, and *P. glaucum* 1.47 per cent. citric acid. The same species and the *Mucor* evolved little formic acid in this sugar solution. Similar results were obtained, but less rapidly, in a medium containing 9.8 per cent. fructose. The addition to the substratum of 0.6 per cent. tartaric acid stimulated *A. niger* to the copious production of oxalic and citric acids, but again only scanty amounts of formic acid developed.

SI03, I.

Our viticultural and winegrowing problems during the second Five-Year Plan;  
also, remarks by L. Czegledy and others. p. 159.  
(ROZLAZENI. Vol. 12, no. 1/4, 1957, Budapest, Hungary)

SO: Monthly List of East European Accessions (EEM) LC. Vol. 6, no. 12, Dec. 1957.  
Incl.



SYNOPSIS : HUNGARY  
COUNTRY :  
ABST. JOUR. : Rakhs., No. 1959, No. 88194  
AUTHOR : Soos, I.  
INST. :  
TITLE : Wine Components  
ORIG. PUB. : Kerteszlet es szoleszet, 1959, 8, No 6, 4-5  
ABSTRACT : Qualitative characteristics of Hungarian wines, in particular of Tokay wines, and quantitative contents of individual components -- organic acids, alcohol, fusel oils, carbohydrates, nitrogen compounds, tannins, coloring substances, vitamins, and mineral salts.  
S. Rozenfel'd

CARD:

245

EXCERPTA MEDICA Sec. 6 Vol. 11/11 Nov. 57

6711. <sup>SOÓS J.</sup> SOÓS J. and HORVÁTH Z. Geburtshilf. und Gynäk. Abt., Rat-Krankenh.,  
Komitat Győr-Sopron. \*Über die Behandlung von akuten Entzündungen mit  
Insulinschock. The treatment of acute inflammations with in-  
sulin shock Z.GEBURTSH.GYNÄK. 1956, 146/1 (80-100) Tables 1  
Illus. 4

In gynaecological inflammations and septic affections, shock or shock-like con-  
ditions were induced by means of insulin. Out of 51 cases treated with insulin  
alone, complete recovery was obtained in 31. The sudden lowering of fever was  
also observed in cases in which antibiotic therapy had been unsuccessful. In the  
mechanism of action, the aspecific reactions are supposed to play the prominent  
role. These reactions are induced by the stressor action of the insulin in such a  
way that the cerebral cortex also takes part in Selye's adaptation mechanism.

Szemesi - Budapest (X, 6)

SOOS, Janos (Miskolc, Kallo u.12.)

From Miskolc to Miskolc. Auto motor 13 no.17:9 S '60.

3003, Janos

dynamic compressor for proportional counters. Kez fiz kozl  
MOS 11 no.2:147-154 '63.

SOOS, Janos Mihaly (Budapest, XI., Budafoki u.8); SZEKERES, Tamas  
(Budapest, XI., Budafoki u.8)

High frequency capacity meter. Periodica polytechn chem 8 no.1:  
29-39 '64.

1. Department for Physical Chemistry, Polytechnical University,  
Budapest. Presented by Prof. Dr. G. Schay.

DETREHAZY, Karoly,; SOOS, Jozsef.

Hemorrhagic pachymeningitis complicated by intradural hemorrhage.  
Kiserletes orvostud. 7 no.2:217-219 Mar 55.

1. Gyor-Sopron megyei Tanacs Korhaz Prosecturaja.  
(MENINGITIS, complications,  
hemorrh. pachymeningitis with intradural hemorrh.)  
(CEREBRAL HEMORRHAGE,  
intradural, in pachymeningitis)

SOCs, I.

Mechanical Measuring Instruments Factory in a new building, p. 8.

Saving several millions by the use of innovations at the Accumulator Factory, p.8.

With the aid of innovations for development of heavy industrial export, p. 9.

(Ujitok Lapja, Budapest, Vol. 6, no. 23, Dec. 1954.)

SO: Monthly List of East European Accessions, (EEAL), IC, Vol. 4, No. 1, Jan. 1955, Uncl.

S.08, 1.

Series of resourceful innovations at the Chemical Paper Factory. . . 7.  
MITEK LAPJA, Budapest, Vol. 7, no. 4, Feb. 1955.

See: Monthly List of East European Accessions, (HEAL), IC, Vol. 4, no. 10, Oct. 1955,  
Incl.



SZIS, I.

Promenade at the Fair of Local Industry. p. 11.

Promising results of innovations of the Carbric Association. p. 12.

The leather-processing industry appears at the Fair with innovations. p. 12.

Streetcar traffic improves as a result of passengers' innovations. p. 13.

UJITOK LAPJA, Vol. 7, No. 9 May 1955

(Cszagos Talalmanyi Hivatal) Budapest

SOURCE: EAST EUROPEAN ACCESSIONS LIST Vol. 5, No. 1 September, 1956

810, 1270.

"Czihak. Gastropoda."

Budapest, Hungary, Akademiai Kiado, 1959. 158 p.

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

SOOS, Laszlo (Budapest)

Data on the formation of some coal compounds. Kem tud kozl MTA 16  
no.1:118 '61.

1. Magyar Tudomanyos Akademia Geokemiai Kutato Laboratoriuma, Budapest.

(Coal)

SOOS, Laszlo

Data on the genetics of some brown coal intermixtures. Kem  
tud kozl MTA 18 no.1:7-14 '62.

1. Magyar Tudomanyos Akademia Geokemiai Kutato Laboratoriuma,  
Budapest.

300, Linné, dr.

Theory of self-combustion of stored coal and its aspects in the  
bordered coal basin. Földt keel 93 no.2:173-185 Ap-Je '63.

S003, L.

An objective method for determining the reflection of micro-opaque minerals and rock components. Acta geol Hung 8 no.1/4: 3-18 '64.

Studies on the coal petrography and coal chemistry of melanoresins. Ibid.:145-162

1. Geochemisches Forschungslaboratorium der Ungarischen Akademie der Wissenschaften, Budapest.

Soos, PAUL

5

Chemical

✓ A micromethod for the determination of fluorine. Paul Soos and Suzana Selényi (Hyg. Inst., Tg.-Mures, Romania). ~~Food. rep. popular. Romania, Filiala Cluj, Studii cercetari stiint. 3, No. 3/4, 103-8(1952).~~—Two methods are used. The qual. or semiquant. method is based on the fact that  $H^+$  destroys the color of the Zr-alizarin complex, the color change is detd. colorimetrically, and the sensitivity is 100  $\gamma$ . The exact method is a titrimetric one, having been developed as a combination of the two Fellenberg methods (C.A. 32, 247; 42, 7418d) with a modification that the liberated  $F_2H_2$  is steam distd. and the distillate is titrated in the presence of Na alizarin sulfonate with 0.01N  $Th(NO_3)_3$ . W. J.

2

CM/PA

D

SOOS, P.

Rumania/Cosmochemistry. Geochemistry. Hydrochemistry.

Abs Jour : Ref Zhur-Khimiya, No 2, 1958, 4255.

Author : Soos P., Selenyi Zs., Szocs J.

Inst : Not given.

Title : Studies on Determination of Chemical Composition of Mineral Waters in Hungarian Autonomous Oblast and in Rodnei Mountains.

Orig Pub : Studii si Cercetari stiint Oblast. Acad. RPR Fil. Cluj. Ser. 1, 1955, 6, No 3-4, 161-192.

Abstract : Different in composition mineral waters are described. Ferrous waters in the majority of cases originate from the andesites of the range of Mount Khrgit. The content of Ca and Mg is connected with limestones and dolomites. Hydrocarbonate-chloride-sodium waters are

Card 1/2



Rumania/Cosmochemistry. Geochemistry. Hydrochemistry. D

Abstract Jour : Ref Zhur-Khimiya, No 2, 1958, 4255.

Abstract : formed in sandstones, and chloride-in the salt massiff in the western foothills of volcanic mountains. The waters contain different micro-elements (in mg/kg): Br 0.077-90.0; I traces-6.4; F 0.0098-1.15;  $\text{HBO}_2$  traces-10.58;  $\text{HAsO}_4$  till 1.7. Some of the springs are radioactive with a maximum Ru content till 50 MaXe units.

Card 2/2

RUMANIA / Chemical Technology, Chemical Products and Their  
Application. Pharmaceuticals. Vitamins. Antibiotics.

H-17

Abs Jour : Ref Zhur - Khimiya, No 5, 1959, No. 16493

Author : Soos, P.; Virf, L.; Blazsok, A.

Inst : Not given

Title : Determination of Glucosides in Digitalis Employing the  
"Xanthidrol" Method

Orig Pub : Rev. med. (R.P.R.), 1956, 2, No 3, 68-73

Abstract : The "xanthidrol" method determines quantitatively the digitoxino content in digitalis and in preparations derived from it in the three following ways: colorimetrically, photocolormetrically, and by the standard series. The obtained results are comparable. It was demonstrated for the first time that quantities of alcohol and xanthidrol (dibenzo- $\gamma$ -pyranolo) greatly affect the intensity of color of the product when subjected to the

Card 1/2

RUMANIA / Chemical Technology, Chemical Products and Their  
Application. Pharmaceuticals. Vitamins. Antibiotics.

E-17

Abs Jour : Ref Zhur - Khimiya, No 5, 1959, No. 16493

colorimetric test, thus representing the main source of errors in the determination. The optimum quantity of the reagents that do not affect this determination was established. A simple and rapid colorimetric method was developed. It involves the preparation of standard solutions of cobalt nitrate that permit performance of the digitoxin determination in apothecaries without the use of optical apparatuses. -- E. Natkhan

Card 2/2

H-51

RUMANIA / Cosmochemistry. Geochemistry. Hydrochemistry. D

Abs Jour: Ref Zhur-Khimiya, No 4, 1959, 11436.

Author : ~~Sosa, P.~~ Virf, L., Blazsek, A., Selenye, Zs., Szabo, A., Soo, A.

Inst : Rev. Med. (RPR).

Title : A Chemical and Radiological Analysis of the Medicinal Salt Waters of Singeorgiul de Muresh and Orzga and of the Mud of Singeorgiul de Muresh.

Orig Pub: Rev. med. (RPR), 1957, 3, No 4, 85-91.

Abstract: A chemical analysis was performed to test the spring waters of Singeorgiul de Muresh (in g/l):  
Li / 0.035, Na / 48.853, K / 0.238, NH<sub>4</sub> / 0.203,  
Ca / 4.258, Mg / 1.997, Fe<sup>2+</sup> / 0.019, Mn<sup>2+</sup> / 0.001,  
Al<sup>3+</sup> / 0.004, F<sup>-</sup> 0.0098, Cl<sup>-</sup> 84.201, Br 0.090,  
I 0.006, HCO<sub>3</sub><sup>-</sup> - 0.089, SO<sub>4</sub><sup>-2</sup> 0.009, HBO<sub>2</sub> 0.019,  
H<sub>2</sub>SiO<sub>3</sub> 0.011; the dry residue is 139, 335; pH, 6.8:

Card 1/2

5

RUMANIA / Cosmochemistry. Geochemistry. Hydrochemistry. D  
istry.

Abs Jour: Ref Zhur-Khimiya, No 4, 1959, 11436.

Abstract: temperature, 17.5°; yield 20 l in one min.;  
radioactivity, 0.2 m<sup>3</sup> curie; Rn, 0.55 Mache  
unit; Ra, 69.10<sup>12</sup>. The composition of the spr-  
ings in Ogra is analogous in smaller concentrations  
(dry residue is 105 g/l). The chemical analysis  
of the mud showed it to be similar, in a number  
of components, to the composition of the water.  
-- M. Yanshina.

Card 2/2

APPROVED FOR RELEASE: 08/25/2000

CIA-RDP86-00513R001652420004-7"

Category : Analytical Chemistry.

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

22924

Author : SCOS, P.; Virf, L.; Blazsek, A.

Institut. : Rumanian Academy

Title : The Use of Sodium Sulfide in Separation of  
Cations.

Orig Pub. : Studii si cercetari chim. Acad. RPR. Fil.  
Cluj., 1957, 8, No 3-4, 231-241

Abstract : Description of an improved method for the  
separation of cations by means of a solution of Na<sub>2</sub>S in an  
alkaline medium saturated with CO<sub>2</sub>. After decomposition of  
the sample being analyzed, Ag<sup>+</sup>, Pb<sup>2+</sup>, Hg<sub>2</sub><sup>2+</sup> and Tl are re-  
moved by precipitation with a dilute solution of HCl. To the  
acid filtrate is added 3% solution of H<sub>2</sub>O<sub>2</sub>, excess H<sub>2</sub>O<sub>2</sub> is  
removed by boiling, the solution is neutralized (to a uni-  
versal indicator) with solid Na<sub>2</sub>CO<sub>3</sub>, made alkaline with a  
few ml of 30% solution NaOH (if NH<sub>3</sub> is present, it is re-  
moved by boiling), and treated with 10% solution of Na<sub>2</sub>S  
until a positive reaction is obtained for S<sup>2-</sup> with Pb(CH<sub>3</sub>-  
CCO)<sub>2</sub> (spot test). The precipitate, containing CuS, Bi<sub>2</sub>S<sub>3</sub>.

Card: 1/3

27 27  
Determination of alkali metal, alkaline earth, and zinc cations by paper chromatography. P. Soos and Agneta Blazsek (Fac. farm., Târgu-Mures, Romania). *Literaria prescolara conf. natl. farm., Bucharest 1958*, 120-30.—The method reported consists of direct titration of the cations of  $\text{Ca}^{++}$ ,  $\text{Mg}^{++}$ , and  $\text{Zn}^{++}$ ; the titration of the excess complexon (III) by 0.01N  $\text{MgCl}_2$  for the ions of  $\text{Ba}^{++}$  and  $\text{Sr}^{++}$ ;

4  
Indirect titration by the application of Na hexanitrocobaltinitrate for the ions of  $\text{K}^+$  and  $\text{NH}_4^+$ ; and indirect titration by using Zn and uranyl acetate for  $\text{Na}^+$  and  $\text{Li}^+$  ions. In addn. to these reagents, a mixt. of bromocresol and 8-quinolinol was also used, by first drying the paper at  $100^\circ$ , then dusting it with bromocresol purple, drying it again and then treating it with 8-quinolinol. With the mixt. of these reagents the  $\text{Ca}^{++}$  gives a specific red color in sunlight. Under ultraviolet light the  $\text{Zn}^{++}$  ion appears yellow,  $\text{Mg}^{++}$  white,  $\text{Li}^+$  green,  $\text{Na}^+$  reddish,  $\text{Ba}^{++}$  and  $\text{K}^+$  white.  
Pelicitus D. Goodman

LEHOCZKY, L.; SOOS, P.

Design of an outdoor radiation (gamma) field. Acta agronom  
Hung 13 no.1/2:1-20 '64.

1. University of Agricultural Sciences, Godollo-Budapest.  
Submitted January 25, 1963.

SOOS, Pal Zoltan, dr.

On psychogenic subfebrility. Orv. hetil. 105 no.16:743-745  
19 Ap'64

1. Papai Varosi Tanacs Rendetointezet, II. Belgyogyaszat.

\*



SOS, Pal Zoltan, dr.

Therapeutic conditions and problems concerning our diabetic patients. Orv. hetil. 106 no.40:1898-1899 3 0 '65.

1. Varosi Rendelointezet, Papa, Laboratorium es Belgyogyaszati Szakrendeles.

SIMON, Miklos, Dr.; KURTHY, Iaszlo, Dr.; ELODI, Pal a biologiai tudomanyok  
kandidatusa dr., SOOS, Sandor, Dr.; HORVATH, Bertalan, Dr.

Diagnostic significance of serum aldolase in liver diseases. Orv. hetil.  
99 no.35:1201-1207 31 Aug 58.

1. A Magyar Nephadsereg Egyszegugyi Szolgalatanak, a Budapesti Koz-  
egeszsegugyi-Jarvanyugyi Allomas (igazgato: Kapos Vilmos dr.) Hepatitis  
Korhazanak (fo orvos: Kurthy Iaszlo dr.) es a MTA Biokemiai Intezetének  
(Igazgato: Szorenyi Imre dr. akadémikus) kozlemenye.

(DESMOLASES, in blood

zymohexase in liver dis., diag. significance (Hun))

(LIVER DISEASES, blood in

zymohexase, diag. significance (Hun))

KURTHY, Laszlo, dr.; SIMON, Miklos, dr.; SOOS, Sandor, dr.

Relation of serum aldolase activity to histological changes in the liver in acute hepatitis and other liver disorders. Orv.hetil. 101 no.31:1098-1102 31 JI '60.

1. Fovarosi Pesthidegkuti Korhaz, II. sz. hepatitis osztaly,  
Magyar Nephadsereg Egesszeguyi Szolgalata es I. Kobanyai-uti  
Szakrendelointezet

(ALDOLASE blood)

(LIVER DISEASES pathol)

SOOS, Sandor, dr.

Changes of serum aldolase activity in Amanita phalloides poisoning.  
Orv.hetil.101 no.49:1738-1740 4 D'60.

1. Budapest X. ker. Kobanyai uti Szakrendelo Intezet, Belgyogyaszati  
Osztaly.

(ALDOLASE blood)  
(MUSHROOMS toxicol)

SOOS, Sandor, dr.

Medical aspects of treatment with melipramin. Orv. hetil. 103 no.7:  
310-312 18 F '62.

1. X ker. Szakorvosi Rendelointezet.

(ANTIDEPRESSIVE AGENTS ther)

S00S, Sandor, dr.

Peripheral vasodilator action of Mydeton. Orv. hetil. 105  
no.29:1369-1372 19 JI'64

1. Budapest , IV. ker. Szakorvosi Rendelointezet.

SC0., Sandor

Employment survey in agriculture. Fecsi musz szeml 9 no.4  
14-20 0-10 '64.

Antibiotics

HUNGARY

SOOS, Sandor, Dr, UJSZASZY, Laszlo, Dr; IV. District Institute of Specialist Services for Ambulatory Patients (IV. Keruleti Szakorvosi Rendelointezet), and Capital City Karolyi Hospital (Fovarosi Karolyi Korhaz), Budapest.

"Data on the Problem of Combined Antibiotic Preparations."

Budapest, Orvosi Hetilap, Vol 108, No 9, 26 Feb 67, pages 404-406.

Abstract: [Authors' Hungarian summary] The controversies associated with the clinical use of antibiotic combinations prepared by the manufacturers are described briefly. On the basis of the authors' own experiences and literature data, some examples are cited involving a selected medical patient material which did not respond or responded poorly to the individual antibiotics (penicillin, streptomycin, tetracycline, chloramphenicol) but showed good response to Sigmamycin (tetracycline + oleandomycin, 2:1). 15 Eastern European, 9 Western references.



ANGYAN, A.;SOOS, Z.P.

Neural and humoral regulatory factors in sexual function in the frog.  
4 Suppl:38-39 1953. (CLML 25:1)

1. Of the Institute of Physiology of Pecs University.

ANGYAN, A.J.; SOOS, Z.P.

Neurohumoral mechanism of the sexual function of male frogs. Acta  
physiol. hung. 4 no.1-2:45-53 1953. (CML 25:1)

1. Of the Institute of Physiology of Pecs University.

HONNIK, K., kand. tekhn. nauk; KALJUMAE, H., inzh. gidrotekhn.;  
KASK, R., kand. sel'khoz. nauk; KATUS, A., inzh. lesnogo khoz.;  
KILDEMAA, K., kand. geogr. nauk; KURKUS, J., agronom; LIPPMAA, A.,  
inzh. gidrotekhn.; PANT, R., preodavatel', agronom; RAIG, V.,  
inzh. gidrotekhn.; REMEL, A., inzh. melior.; TALPSEPP, E., kand.  
sel'khoz. nauk; SOOSAAR, V., inzh., lesnogo khoz.; STERNFELD, R.,  
inzh. stroit.; TOMINGAS, E., inzh. melior.; KARUS, G., red.;  
RAUD, M., red.; VAHTRE, I., tekhn. red.

[Handbook for soil improvement] Maaparanduse kasiraamat. Tal-  
linn, Eesti riiklik kirjustus. Vol.1. [Fundamentals of soil  
improvement] Maaparanduse alused. 1962. 473 p. (MIRA 15:5)  
(Soils)

SOOSAAR, V.B.

Case of Bennett's fracture complicated by fracture of the trapezium.  
Ortop. travm. i protez. 21 no. 10:63-64 '60. (MIRA 14:1)  
(TRAPEZIUM (ANATOMY)—FRACTURE) (HAND—FRACTURE)

ACCESSION NR: AT4020797

S/2613/63/000/023/0078/0096

AUTHOR: Soovik, Kh. A.

TITLE: Intra- and inter-center energy transfer in polyactivated, crystalline alkali halide phosphors

SOURCE: AN EstSSR. Institut kiziki i astronomii. Trudy\*, no. 23, 1963. Issledovaniya po lyuminesentsii (Research in luminescence), 78-96

TOPIC TAGS: luminescence, phosphor, crystalline phosphor, alkali-halide luminescence, polyactivated phosphor, phosphor energy transfer, quantum generator

ABSTRACT: Energy transfer in luminescent ionic crystals occurs in many optical and electrical phenomena which are of great theoretical and practical importance. The author discusses certain of the hypotheses that have been advanced to explain this phenomenon. One of the means of energy transport in solid bodies is the resonance transfer of energy between impurity centers ("sensitized processes"). Great promise attaches to the use of this phenomenon in, among other things, optical-band crystal quantum generators. The present paper is part of a continuing investigation of resonance energy transport in polyactivated ionic crystals. The tests were conducted on NaCl and KCl monocrystals, using the mercury-like ions  $\text{In}^+$  and  $\text{Sn}^{++}$  and the rare-earth ion  $\text{Eu}^{++}$  as sensitizers;  $\text{Mn}^{++}$  ions served as the activator. As an activator, manganese has the great advantage of the

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ACCESSION NR: AT4020797

practical absence of direct optical excitation of its ions in phosphors, since electron transitions in its ions are forbidden (quadrupole transitions). The author examined energy migration between impurity centers in the following polyactivated crystalline phosphors: NaCl-Sn, Mn; NaCl-Eu; Mn; KCl-Eu, Mn; NaCl-In, Mn and  $\text{Ca}_3(\text{PO}_4)_2$ -In, Mn. It is established that in the NaCl phosphors the excitation spectra of the  $\text{Mn}^{++}$  ions differ from those of the sensitizer ions. Measurements show that the presence in the phosphor of manganese ions has no effect on the luminescence decay rate of  $\text{Eu}^{++}$ ,  $\text{Sn}^{++}$  and  $\text{In}^+$  ions. The hypothesis is advanced that in NaCl-base phosphors intercenter sensitized luminescence is observed, while in hardened (temperature-treated) KCl-base crystals sensitized luminescence most probably arises as the result of intercenter energy transport. "The author wishes to express his profound gratitude to Ch. B. Lushchik for supervision of the work and discussion of its results, and also to N. Ye. Lushchik for constant assistance in the work itself." Orig. art. has: 2 tables and 10 figures.

ASSOCIATION: Institut fiziki i astronomii AN EstSSR (Institute of Physics and Astronomy, AN EstSSR)

SUBMITTED: 18Jan63

DATE ACQ: 07Apr64

ENCL: 00

SUB CODE: PH

NO REF SOV: 027

OTHER: 012

Card

2/2

L 2834-66 EWT(1)/EPA(s)-2/EWT(m)/EPF(c)/ETG/EPF(n)-2/ENG(m)/EWP(t)/EWP(b)  
ACCESSION NR: AT5021774 LJP(c) RDW/JD/JG UR/2613/64/000/028/0035/0044

57  
3+1

AUTHOR: Soovik, Kh. A. 44, 55

21, 55, 411

TITLE: Resonance migration of energy in crystal phosphor KCl-Tl, Pb

SOURCE: AN EstSSR. Institut fiziki i astronomii. Trudy, no. 28, 1964. Issledovaniya po lyuminestsentsii (Research on luminescence), 35-44

TOPIC TAGS: luminescence property, luminescence research, luminescence, luminescence spectrum, luminescent crystal, potassium chloride, tellurium, lead, phosphor

ABSTRACT: The energy transfer from  $Tl^{+}$  to  $Pb^{2+}$  impurities in KCl-Tl, Pb crystal phosphors, first discovered by K. K. Shvarts and U. A. Zirnitis (Trudy IFA AN ESSR, 11, 3, 1960) was studied experimentally. Single crystals of KCl-Tl, Pb, KCl-Tl and KCl-Pb were grown by the method of Kiropulos. Excitation and luminescence spectra of the above phosphors were measured and are presented graphically (see Fig. 1 on the Enclosure). It is concluded that the energy transfer from  $Tl^{+}$  to  $Pb^{2+}$  impurities is due to dipole-dipole interaction between the impurity centers. The author thanks Ch. B. Lushchik for his guidance and help. Orig. art. has: 6 graphs.

ASSOCIATION: Institut fiziki i astronomii, AN EstSSR (Institute for Physics and Astronomy, AN EstSSR)  
Card 1/3 44, 55

L 2834-66

ACCESSION NR: AT5021774

SUBMITTED: 24Jan64

ENCL: 01

SUB CODE: 25, 02

NO REF SOV: 009

OTHER: 006

Card 2/3



L 2834-66

ENCLOSURE: 01

ACCESSION NR: AT5021774

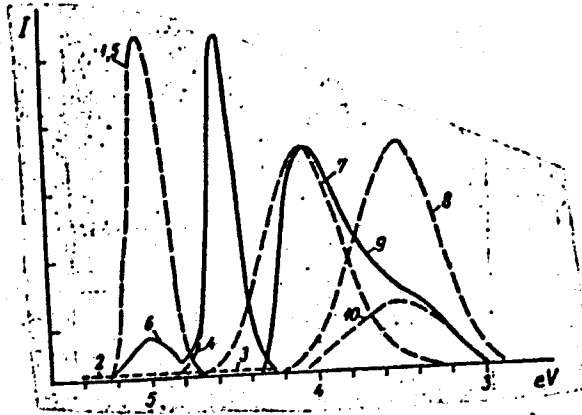


Fig. 1. Excitation spectra of Tl ions ( $h\nu_I$  4.25 eV) in the phosphors KCl-Tl-1, KCl-Pb-3, KCl-Tl, Pb-5, and Pb ions ( $h\nu_I$  3.3 eV) in the phosphors KCl-Tl-2, KCl-Pb-4, KCl-Tl, Pb-6, luminescence spectra KCl-Tl ( $h\nu_{Ex}$  5 eV)-7, KCl-Pb ( $h\nu_{Ex}$  4.55 eV) -8, KCl-Tl, Pb ( $h\nu_{Ex}$  5 eV)-9. Difference curve for spectra 9 and 7-10.

BVK  
Card 3/3

L 60920-65 EWT(l)/EWT(m)/EWP(t)/EWP(b) IJP(o) JD

ACCESSION NR: AT5013531

UR/2613/64/000/026/0038/0050

AUTHORS: Zazubovich, S. G.; Soovik, Kh. A.

TITLE: Polarized luminescence of impurity centers in the phosphors  
KCl.KI-Tl and KBr.KI-Tl

SOURCE: AN EstSSR. Institut fiziki i astronomii. Trudy, no. 26, 1964.  
Issledovaniya po lyuminesentsii (Research on luminescence), 38-50

TOPIC TAGS: alkali-halide, luminescence center, polarized luminescence, impurity center, luminor, iodine activation

ABSTRACT: This is a continuation of earlier studies of the polarization characteristics of the principal impurity centers in alkali-halide crystals activated with mercury-like ions. The present investigation was aimed at observing polarization luminescence of thallium centers by introducing iodine ions among the Tl<sup>+</sup> centers of KCl-Tl and KBr-Tl. The tested single crystals, containing thallium concentrations  $4.5 \times 10^{-4}$  and  $7 \times 10^{-4}$  molar per cent and iodine concentrations

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L 60920-65

ACCESSION NR: AT5013531

of 0.3 and 0.6 molar per cent, respectively, were grown by the Kiro-poulos method. The excitation and emission spectra of the investigated phosphors were measured with two monochromators, making it possible to separate narrow spectral regions. The polarization measurements were made on single crystals cleaved parallel to the (100) face, using a procedure described in the earlier papers (Trudy IFA AN ESSR no. 17, 38, 1961 and others). The results show that the absorption and emission spectra of the new centers in the KCl.KI-Tl and KBr.KI-Tl crystals are shifted to the long-wave side compared with the spectra of the main Tl<sup>+</sup> centers. At room temperature (293K) the new centers show a degree of luminescence polarization of about 30 -- 50 per cent. The polarization diagrams correspond to the absorption and emission by electric linear oscillators oriented along the C<sub>4</sub> axis.

The electronic structure of the spectra and the possible model of the investigated luminescence center are discussed, and it is concluded that the introduction of the I<sup>-</sup> ions in chlorides and bromides of alkali metals can be recommended as a method of producing activator anisotropic luminescence centers, which are qualitatively analogous to

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L 60920-65

ACCESSION NR: AT5013531

3

the ordinary activator ions in the crystal lattice site but produce polarized luminescence. This yields new interesting data for the detailed interpretation of the electron structure of spectra of luminescence centers in crystal phosphors activated by various single-valence activators. 'The authors thank Ch. B. Lushchik and N. Ye. Lushchik for suggesting the topic and discussing the results.' Orig. art. has: 3 figures

ASSOCIATION: Institut fiziki i astronomii AN EstSSR (Institute of Physics and Astronomy, AN EstSSR)

SUBMITTED: 13Jun64

ENCL: 00

SUB CODE: OP

NR REF SOV: 013

OTHER: 004

dm  
Card 3/3

L 01459-66 ENT(1) IJP(c)

ACCESSION NR: AT5013693

UR/2613/64/000/030/0088/0090

AUTHOR: Soovik, Kh. A. <sup>44, 55</sup>

TITLE: Sensitized phosphorescence of the crystal phosphor KCl-Tl,Pb <sup>21, 44, 55</sup>

SOURCE: AN EstSSR. Institut fiziki i astronomii. <sup>44 55</sup> Trudy, no. 30, 1964. Issledovaniya po lyuminestsentsii (Research on luminescence), 88-90 <sup>18</sup>  
<sub>34.1</sub>

TOPIC TAGS: crystal phosphor, phosphorescence, sensitization, resonance, sensitized phosphorescence

ABSTRACT: This is a continuation of earlier work by the author (Trudy IFA AN ESSR no. 23, 78, 1963), in which it was shown that energy transfer from Tl<sup>+</sup> to Pb<sup>2+</sup> ions is observed in the investigated crystal phosphor at the instant when the thallium centers are directly excited to the <sup>3</sup>P<sub>1</sub> state. The author therefore undertook a search for sensitized phosphorescence of this substance in single crystals of KCl-Tl and KCl-Tl,Pb grown by the Kiropoulos method and excited at 193 and 199 nm by an aluminum spark. The results show that besides the luminescence due to thallium, luminescence due to lead is also excited in the absorption band of the thallium ions. The lead luminescence can result from resonant transfer of energy or from reabsorption of the luminescence from the thallium ions by the lead ions. A check has shown that energy is transferred also when there is no reabsorption whatsoever,

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L 01459-66

ACCESSION NR: AT5013693

so that it is concluded that the phosphorescence observed is due to sensitization. It is also concluded that the relaxation processes preceding the transfer of energy from  $Tl^+$  to the  $Pb^{2+}$  ions have the same kinetics. Orig. art. has: 1 figure.

ASSOCIATION: none

SUBMITTED: 07Oct64

ENCL: 00

SUB CODE: OP

NR REF SOV: 006

OTHER: 000

Card 2/2

L 43938-65 EEC(b)-2/EWT(1)/T P1-4 IJP(c) GG

ACCESSION NR: AF5009609

S/0049/85/029/003/0383/0386

AUTHOR: Soovik, Kh. A.

24  
22  
B

TITLE: Resonance energy migration in polyactivated ionic crystals / Report, 18th  
Conference on Luminescence held in L'vov, 30 Jan-Feb 1984/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 29, no. 3, 1985, 383-386

TOPIC TAGS: luminescence, luminescent crystal, energy migration, luminescence center

ABSTRACT: The author has undertaken to investigate the dipole-dipole, dipole-quadrupole, and exchange mechanisms of resonance migration of energy in doubly activated crystal phosphors. Excitation and emission spectra were measured for at least some of the following phosphors and the corresponding singly activated phosphors: KCl:Tl:Pb, NaCl:Eu:Mn, KCl:Eu:Mn, NaCl:Sn:Mn, KCl:Sn:Mn, and NaCl:In:Mn. Data for KCl:Tl, KCl:Pb, KCl:Tl:Pb, NaCl:In, and NaCl:In:Mn are presented graphically. These data and others are discussed. Energy migration by reabsorption of the luminescence was estimated and eliminated by investigating crystals that were activated only in a thin layer near the surface. Intercenter and intracenter

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L 43938-65

ACCESSION NR: AP8009809

2

migration were distinguished by comparing the spectra of the doubly activated phosphor with those of the corresponding singly activated phosphors: if the energy levels of the sensitizing ion are not perturbed by the presence of the activator ion, it is assumed that the activator and sensitizing centers are spatially separated. It is concluded that energy transfer from  $Tl^+$  centers to  $Pb^{2+}$  centers in  $KCl:Tl:Pb$  is due both to fluorescence reabsorption and to resonance energy migration, and that these mechanisms can be experimentally distinguished. It is also concluded that it is "very probable, if not proved: that radiation by manganese ions in all the manganese activated phosphors listed above, as well as in  $KCl:Pb:Mn$  and  $Ca_3(PO_4)_2:In:Mn$ , is due to migration of energy between two spatially separated centers. The author expresses his deep gratitude to Ch.B. Lushchik for his guidance and discussion of the results." Orig. art. has: 3 figures.

ASSOCIATION: Institut fiziki i astronomii Akademii nauk EstSSR (Institute of Physics and Astronomy, Academy of Sciences, EstSSR)

SUBMITTED: 00 1965

ENCL: 00

SUB CODE: OP, 88

NR REF SOV: 012

OTHER: 003

Card 2/3 mb



31118

S/613/61/000/014/015/019  
D207/D303

9,4175(1114, 1163)

AUTHOR: Soovik, T. A.

TITLE: The relationships between X-ray and  $\gamma$ -ray luminescence yields and charge localization in KI:Tl

SOURCE: Akademiya nauk Estonskoy SSR. Institut fiziki i astronomii. Trudy. No. 14, 1961. Issledovaniya po lyuminestsentsii, 281-282

TEXT: The author reports a study of the effect of temperature (100 - 270°K) and of infrared illumination on the yield of X-ray and  $\gamma$ -ray luminescence of KI:Tl. KI monocrystals, containing 0.3 Mol.% Tl, were grown by the Kyropoulos method. They were excited with X-rays from  $\gamma$ PC-55(URS-55) apparatus or with  $Co^{60}$   $\gamma$ -rays of 10 mg-equiv. Ra activity. Experiments were carried out in a vacuum cryostat cooled with liquid air, and the Tl band (410 m $\mu$ ) was recorded photoelectrically. The  $\gamma$ -luminescence yield decreased strongly at 190 - 160°K. In the same temperature range a strong

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The relationships between X-ray ...

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thermoluminescence peak was found in X-ray irradiated crystals. Illumination with infrared light ( $\lambda > 640 \text{ m}\mu$ ) during  $\gamma$ -ray excitation at  $\approx 130^\circ\text{K}$  (the region of low  $\gamma$ -luminescence yield) produced the usual flash as well as an increase of the steady-state luminescence. Similar results were obtained for the X-luminescence. This behavior contrasts with the case of optical excitation in Tl absorption bands, where cooling and infrared illumination do not affect the steady-state luminescence. Since increase of crystal temperature and infrared illumination liberate electrons or holes from trapping levels, it follows that the X-ray and  $\gamma$ -ray luminescence yields of KI:Tl depend on the number of localized carriers trapped in the lattice. There is 1 figure.

SUBMITTED: January 19, 1961

Card 2/2

24 1100 .

S/058/62/000/008/043/134  
AC61/A101

AUTHORS: Lushchik, Ch. B., Liyd'ya, G. G., Soovik, T. A.; Yaek, I. V.

TITLE: The mechanism of the luminescence of alkali halide crystals under excitation by ultraviolet and hard radiations

PERIODICAL: Referativnyy zhurnal, Fizika, no. 8, 1962, 42, abstract 8V294 ("Tr. In-ta fiz. i astron. AN EstSSR", 1961, no. 15, 103 - 126; summary in English)

TEXT: The physical processes taking place in ionic crystals under the action of UV and hard radiations are examined. Attention is chiefly devoted to the interaction of different elementary excitations of the basic substance with luminescence centers. An attempt is made to appraise the relative role of exciton and electron-hole processes in gamma and R luminescence. There are 76 references.

✓B

[Abstracter's note: Complete translation]

Card 1/1

ACCESSION NR: AT4016315

S/0000/62/000/000/0335/0337

AUTHOR: Soovik, T. A.

TITLE: The peculiarities of KI - T1 luminescence during excitation by X- or gamma rays

SOURCE: Vses. soveshch. po fiz. shchelochnogaloidn. kristallov. 2d, Riga, 1961. Trudy\*. Fiz. shchelochnogaloidn. kristallov (Physics of alkali halide crystals). Riga, 1962, 335-337

TOPIC TAGS: luminescence, phosphor, alkali halide, alkali halide crystal, potassium iodide, radioluminescence, energy migration

ABSTRACT: To provide more information on the mechanism of energy migration from the substance to the activator, the effect of temperature (150-290K) and red illumination on the luminescence intensity were studied in x- and  $\gamma$  ray-excited KI-monocrystals activated with  $5 \cdot 10^{-2}$  mol % T1. In the tests, conducted in a liquid-air-cooled vacuum cryostatic chamber, filters or a SF-4 monochromator were used to single out the T1 spectral band, an N-373 recorded with an FEU-18 photoelectron multiplier recorded the luminescence intensity and red illumination was produced by an incandescent lamp with filters passing light of  $640 \mu$  and above. The luminescence intensity was found to

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ACCESSION NR: AT4016315

increase with increases in the red illumination intensity and temperature. Orig. art.  
has: 1 graph.

ASSOCIATION: Tartuskiy gosudarstvennyy universitet (Tartu State University)

SUBMITTED: 00

DATE ACQ: 06Mar64

ENCL: 00

SUB CODE: *OP, IC*

NO REF SOV: 004

OTHER: 001

2/2

Card

ACCESSION NR: AT4020798

S/2613 / 63/000/023/0097/0108

AUTHOR: Soovik, T. A.; Realo, E. Kh.

TITLE: Photoscintillations in crystals activated with mercury-like ions

SOURCE: An EstSSR. Institut fiziki i astronomii. Trudy\*, no. 23, 1963.  
Issledovaniya po lyuminestsentsii (Research in luminescence), 97-108

TOPIC TAGS: luminescence, photoluminescence, photoscintillation, phosphor crystalline phosphor, alkali halide luminescence, mercury-like activator, scintillation mechanism, alkali phosphate luminescence

ABSTRACT: Despite the fact that alkali halide crystals, activated with mercury-like ions, are among the most studied phosphors, data on the duration of intercenter luminescence is available only for certain of them; however, this information is necessary both for a correct explanation of the processes in the luminescence centers and for an understanding of the mechanism (of great practical importance) of the scintillation and ionic crystals under the effect of high-energy particles and quanta. In this article, a study was made of the decay time of photoscintillations (luminescence excited by short ( $10^{-7}$  sec) spark-light pulses) of certain alkali halide and phosphate phosphors, activated with mercury-like ions. A table is given which indicates that the decay times of the photoscintillation of these

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ACCESSION NR: AT4020798

phosphors are in good agreement with the view that there is a correspondence of the main emission band with  $3p_1 \rightarrow 1s_0$  electron transitions in free activator ions. With the energy of the exciting quanta ranging from 4.1 to 5.7 electron volts, the photoscintillation decay time in KI-T1 is constant and equal to the mean life of the T1 center in state  $3p$  ( $\tau = 2.5 \cdot 10^{-7}$  sec at  $T = 295K$ ). Comparison of the spectra of the quantum yield of photoscintillations and stationary luminescence in KI-T1 indicates that the fundamental component of  $T1^+$  center luminescence, excited in the longwave absorption band of the base substance, is low-inertial in character ( $\tau < 10^{-6}$  sec). The photoscintillation quantum yield, excited in the longwave fundamental absorption band, is large enough to enable the energy transport, exciton mechanism to account for the mechanism of scintillation caused by the ionizing particles. "The authors wish to express their deep gratitude to Ch. B. Lushchik for suggesting the subject and for helpful discussion of the results and also to N. Ye. Lushchik, I. A. Muuga and S. G. Zazubovich for making available the phosphors." Orig. art. has: 2 figures and 1 table.

ASSOCIATION: Institut fiziki i astronomii AN EstSSR (Institute of Physics and Astronomy, AN EstSSR)

SUBMITTED: 19Jan63

DATE ACQ: 07Apr64

ENCL: 00

SUB CODE: PH

NO REF SOV: 017

OTHER: 008

Card 2/2

ACCESSION NR: AR4043997

S/0058/64/000/006/D074/D074

SOURCE: Ref. zh. Fizika, Abs. 6D557

AUTHOR: Lushchik, Ch. B.; Liyd'ya, G. G.; Soovik, T. A.

TITLE: The mechanism of luminescence of alkali-halide crystals on excitation by UV and hard radiation

CITED SOURCE: Sb. Stsintillyatory\* i stsintillyats. materialy\*. Khar'kov, Khar'kovsk. un-t, 1963, 110-113

TOPIC TAGS: luminescence, luminescence mechanism, alkali halide, alkali halide crystal, ultraviolet radiation, x ray radiation, gamma radiation, hard radiation

TRANSLATION: Using KI-Tl as an example, discusses the mechanism of luminescence of alkali-halide crystals during excitation by UV-,  $\gamma$ , and x-ray radiation. From a comparison of the kinetics of the build-up of luminescence, the effect on it of preliminary irradiation in the F-band, and thermal quenching of luminescence during various forms of excitation, the conclusion is drawn that in the luminescence of KI-Tl during excitation by hard radiation an essential role is played by the

Card 1/2



L 60906-65 EWT(1)/EPF(n)-2/ENG(m)/EPA(w)-2/T/EEC(b)-2 LJP(c) 00/AT  
ACCESSION NR: AT5013541 UR/2613/64/000/026/0167/0181

24  
20  
B41

AUTHORS: Soovik, T. A.; Eksina, T. I.

TITLE: Kinetics of cathode luminescence of alkali halide crystals

SOURCE: AN EstSSR. Institut fiziki i astronomii. Trudy, no. 26, 1964. Issledovaniya po lyuminestsentsii (Research on luminescence), 167-181

TOPIC TAGS: alkali halide crystal, activated luminor, cathode luminescence, crystal phosphor, luminescence center

ABSTRACT: The main objects of the investigation were alkali iodides activated with thallium, for the most part KI-Tl, for which the related photoluminescence processes had already been thoroughly investigated. Studies were made also of the luminors KCl-Tl, KBr-In, ZnS-Ag, and ZnS-Ag,Ni, either in the form of crystals grown by the Kiropoulos or by the Stockbarger method, or in the form of screens precipitated on glass. The luminescence kinetics were investigated with the phosphors excited with square-wave cathode-ray pulses

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ACCESSION NR: AT5013541

(1 -- 5 kV energy and 40 -- 400  $\mu$ sec duration) from a standard pulse generator. The phosphor glow was recorded with a photomultiplier, the output of which was in turn recorded by a slaved oscilloscope triggered by a synchronization pulse from the pulse generator. The oscillograms of the build up of the cathode luminescence showed that there are two glow components, one building up practically instantaneously and the other more slowly. The slow component can be attributed to the electron-hole mechanism of energy transfer with intermediate capture at trapping levels. The mechanism of the instantaneous component is not as clear cut and cannot be deduced from the experimental data. Several hypotheses concerning the role played by the anionic excitons in cathode luminescence are discussed. The relative fractions of the fast ( $< 10^{-6}$  sec) and time-delayed emission components in the build up of the cathode luminescence pulses are tabulated for all substances. The possible mechanisms of energy migration from the host lattice to the luminescence centers are discussed. An initial flash is observed in the build up of cathode luminescence pulses in KCl-Tl, KBr-In, and Rb-I-In under the influence of repeated excitation pulses. This can be attributed to redistrib-

Card 2/3

L 60906-65

ACCESSION NR: AT5013541

4  
bution of the electrons (holes) over the trapping levels during the pause between pulses and subsequent de-excitation action of the cathode rays. 'We thank Ch. B. Lushchik for suggesting the topic and guidance, E. B. Gross for growing the crystals and A. A. Maaros for determining the activator concentrations.' Orig. art. has: 6 figures and 1 table.

ASSOCIATION: Institut fiziki i astronomii AN EstSSR (Institute of Physics and Astronomy, AN EstSSR)

SUBMITTED: 04Jun63

ENCL: 00

SUB CODE: OP

NR REF SOV: 024

OTHER: 009

Card

311  
3/3

L 60908-65 EWT(1)/EWT(m)/EWP(t)/EWP(b) LJP(c) JD

ACCESSION NR: AT5013546

UR/2613/64/000/026/0216/0219

AUTHORS: Kink, R. A.; Liyd'ya, G. G.; Maaros, A. A.; Soovik, T.A.

TITLE: Concentration dependence of the photoluminescence and radioluminescence yields of KI-Tl 21

SOURCE: AN EstSSR. Institut fiziki i astronomii. Trudy, no. 26, 1964. Issledovaniya po lyuminesentsii (Research on luminescence), 216-219

TOPIC TAGS: photoluminescence, radioluminescence, potassium iodide phosphor, concentration dependence 21

ABSTRACT: The authors measured the dependence of the luminescence yield on the concentration of thallium in KI-Tl in which the excitons or electron-hole pairs were produced optically or by  $\alpha$ -particle bombardment. The crystals were grown by the Kirooulos method. The luminescence quantum yield was measured with a vacuum monochromator by a method described elsewhere (Opt. i spektr. v. 18, 1965). Plots are presented of the concentration dependences of the energy yield of

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L 60908-65

ACCESSION NR: AT5013546

the stationary luminescence when excited in the maximum of the exciton absorption band (5.65 eV) and when excited in the region where electron-hole pairs are produced (8.6 eV). In the former case the plot is nearly a straight line with less than unity slope, showing saturation when the concentration of the activator exceeds  $10^{-1}$  molar per cent. The difference in the concentration dependence of the exciton and the electron-hole luminescence can be attributed to the fact that the ratio of the effective cross sections for capture by the luminescence center and by the competing defects is much smaller for excitons than for electrons and holes. In the case of  $\alpha$ -particles excitation, the dependence of the scintillation yield on the concentration does not coincide with the dependence of the photoluminescence for either interband excitation or excitation in the exciton band, but is closer to the latter. Although this can be interpreted as being due to the appreciable role of exciton processes in  $\alpha$  scintillations produced in KI-Tl, it is emphasized that the conditions for optical and  $\alpha$  excitations differ greatly. Orig. art. has 1 figure

Card 2/3

L 60908-65  
ACCESSION NR: AT5013546

ASSOCIATION: Institut fiziki i astronomii AN EstSSR (Institute of  
Physics and Astronomy, AN EstSSR)

SUBMITTED: 10Jun64

ENCL: 00

SUB CODE: OP

NR REF SOV: 004

OTHER: 001

Card

282  
3/3

L 011456-46 EWT(1)/T IJP(c GG/JXT(cz)

ACCESSION NR: AT5013694  
4455

UR/2613/64/000/030/0090/0092

AUTHOR: Scovik, T. A.; Realo, E. Kh. 44.55

TITLE: Photoscintillations in KI-In crystals 21.47.55

SOURCE: AN EstSSR. Institut fiziki i astronomii. Trudy, no. 30, 1964. Issledovaniya po lyuminestsentsii (Research on luminescence), 90-92 44.55 25 13+1

TOPIC TAGS: potassium compound, iodide, scintillation, photoluminescence, radioluminescence

ABSTRACT: This is a continuation of an earlier investigation (Trudy IFA AN ESSR No. 23, 97, 1963) of the exciton and of the electron-hole mechanism of photoluminescence and radioluminescence of KI-Tl crystals. The present research was prompted by the thought that KI-In crystals can yield more information on the energy transfer from the host substance to the luminescence centers, since the absorption bands connected with the indium centers are more clearly separated from the basic absorption, and the kinetics of the intra-center processes is practically independent of the temperature. The experiments were made on single crystals grown by the Stockbarger method (0.4 mol.% In in the melt), using a procedure close to that described in the earlier paper. A comparison of the excitation spectra of the stationary luminescence, photoscintillations and the damping time shows that the luminescence

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ACCESSION NR: AT5013694

excited in the exciton band of absorption is almost equally short in duration as the luminescence occurring in direct excitation of the activator glow centers. Some discrepancies observed at low temperatures are briefly explained. At short wavelengths the photoscintillation yield in the region corresponding to interband transitions is practically zero, in spite of the growth in the yield of the stationary luminescence in this region. It is concluded that in the fundamental absorption band (up to 6 eV) the excitation of the photoscintillations is produced by exciton transfer of energy from the host substance to the indium glow centers, at least at the excitation intensities used (approximately  $10^{12}$  quanta/cm<sup>2</sup>-sec). The electron-hole mechanisms causes more prolonged glow processes. Orig. art. has: 1 figure.

ASSOCIATION: none

SUBMITTED: 13Oct64

ENCL: 00

SUB CODE: OP

NR REF SOV: 005

OTHER: 000

Card 2/2



L 5441-66 EWT(1)/EPA(s)-2/EWT(m)/EPF(c)/EPF(n)-2/EWP(t)/EWP(b)  
ACC NR: AP5025096 IJP(c) JD/JG SOURCE CODE: UR/0368/65/003/003/0279/0282

AUTHOR: Soovik, T. A. 44,55

48  
45  
B

ORG: none

TITLE: On the mechanism of radioluminescence of alkaline halide crystallophosphors  
/Presented at the 12th Conference on Luminescence in January 1964 in L'voy/ 44,55

SOURCE: Zhurnal prikladnoy spektroskopii, v. 3, no. 3, 1965, 279-282

TOPIC TAGS: radioluminescence, luminescence research, luminescence, luminescence  
crystal, luminescence spectrum, potassium chloride, potassium bromide, potassium  
iodide 27 21

ABSTRACT: To determine the causes for the great difference in the scintillation  
efficiency of various potassium halide crystals activated with thallium, the yield  
of stationary luminescence excited in the zone-to-zone transition region and in the  
long-wave exciton absorption band region of  $KCl(Tl)$ ,  $KBr(Tl)$ , and  $KI(Tl)$  was  
determined and compared with relative scintillation efficiency of the same crys-  
tals. The scintillation was produced by means of  $\alpha$ -particles from a

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$\text{Pu}^{239}$  source. The experimental results are presented in tables and graphs (see Fig. 1).

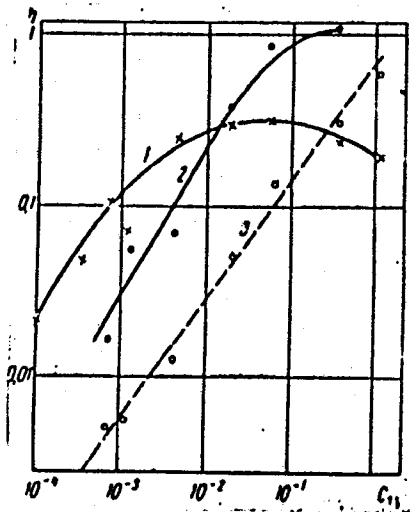


Fig. 1.

Dependence on the concentration of Tl (mole %) in KI(Tl)  
 1- yield for zone-to-zone excitation ( $E_{\text{ex}} = 8.6 \text{ ev}$ ); 2- relative scintillation efficiency; 3- yield for long-wave exciton excitation (data 1 and 3 from E. R. Il'mas, G. G. Liyd'ya, and Ch. B. Lushchik (Opt. i spektr., 18, 453, 1965; 18, 631, 1965)

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The dependence of stationary luminescence and also scintillating efficiency on the activator concentration and the nature of the kinetics of photo- and cathode-luminescence were determined. It is suggested that the comparatively small scintillating efficiency of  $KCl(Tl)$  as compared with  $KI(Tl)$  is due to the lower effectiveness of the exciton energy transfer mechanism in this phosphor. The author thanks Ch. B. Lushchik for his guidance in the present work. Orig. art. has: 1 table and 4 graphs.<sup>44, 55</sup>

SUB CODE: OP, 55    SUBM DATE: 05Jan65/    ORIG REF: 009/    OTH REF: 002

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L 32822-65 EEC(b)-2/EXT(1)/T IJP(c)

ACCESSION NR: AP5004516

S/0048/65/029/001/0036/0039

AUTHOR: Zolotarev, G.K.; Lushchik, Ch.B.; Soovik, T.A.; Yaek, I.V.; Elango, M.A.

TITLE: Self-trapping of holes and optical phenomena in ionic crystals <sup>21</sup>/Report, 12th Conference on Luminescence held in L'vov 30 Jan-5 Feb 1964

SOURCE: AN SSSR. Izvestiya, Seriya fizicheskaya, v.29, no.1, 1965, 36-39

TOPIC TAGS: luminescence, ionic crystal, recombination luminescence, thermoluminescence, radiation effect, self trapping

ABSTRACT: The authors briefly review recent work in their laboratory concerning the role of hole self-trapping in optical phenomena, and specifically in recombination luminescence, roentgenoluminescence and radiation coloring. The effect of self-trapping in each case is to suppress the phenomenon at low temperatures, where self-trapping occurs. Recombination luminescence is discussed less briefly than the other phenomena and illustrative absorption curves and glow curves are presented. Photoluminescence of KCl:Ag after x-ray radiation at 100°K was found to be very small until the material was heated to above 200°K; thereafter the photoluminescence was large even after subsequent cooling to 100°K. This behavior is explained by the

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ACCESSION NR: AP5004516

thermal release of self-trapped holes which, after migrating to  $Ag^+$  centers, make it possible for recombination luminescence to occur even at low temperatures. An intense thermoluminescence peak was observed for  $KCl:AgI$  at  $220^{\circ}K$ , the radiation of which is characteristic of  $Ag^+I$  centers. This radiation is ascribed to recombination of holes with electrons trapped in  $Ag^+I$  centers and is regarded as the first convincing case of hole recombination luminescence at activator centers in ionic crystals. Further investigation is desirable to determine whether anion excitons may also become self-trapped in ionic crystals at low temperatures. Orig. art. has: 2 figures.

ASSOCIATION: Institut fiziki i astronomii Akademii nauk EstSSR (Institute of Physics and Astronomy of the Academy of Sciences, Estonian SSR)

SUBMITTED: 00/--Jan65

ENCL: 00

SUB CODE:SS,OP

NR REF SOV: 006

OTHER: 003

Card 2/2

ACC NR: AT1000110

SOURCE CODE: UR/3119/66/000/004/0071/0083

AUTHOR: Il'ins, E. N.; Lidy'ya, G. G.; Lushchik, Ch. B.; Soovik, T. A.

ORG: Institute of Physics and Astronomy, AN EstSSR (Institut fiziki i astronomii AN EstSSR)

TITLE: Photon multiplication in crystals and the phenomenon of radioluminescence

SOURCE: AN EstSSR. Institut fiziki. Radiatsionnaya fizika, no. 4, 1966. Ionnyye kristally (Ionic crystals), 71-83

TOPIC TAGS: photon, radioluminescence, x ray effect, quantum yield, ionic crystal, absorption band, light excitation

ABSTRACT: In connection with their earlier experiments (Opt. i spektr. v. 18, 631, 1965 and elsewhere) dealing with observation and investigation of photon multiplication by crystals in the optical band (rather than x-ray or gamma region), the authors discuss in the present article the connection between this effect and the phenomena of x-ray luminescence and radioluminescence. Particular attention is paid to the role of different electronic excitations of the crystal lattice and to luminescence excited in ionic crystals by hard radiation. Photon multiplication in the optical range was investigated with a special set-up including a vacuum monochromator and a diffraction grating, a high power discharge lamp, a monochromator, a vacuum chamber

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For the samples, and a comparison standard (sodium salicylate) described in the earlier investigation. A number of optical phenomena were investigated in the photon energy range from 5 to 21 eV, particularly the spectra of the quantum yield of stationary photoluminescence of several dozen activated ion crystals. The results show convincingly that photon multiplication in the optical region of the spectrum does exist and arises when a single photon produces two electronic excitations in the crystal lattice. The two possible mechanisms for this phenomenon (exciton and electron-hole) are described there and characteristic features are compared with earlier experiments by the authors and by others. It is shown that these two mechanisms operate also in the case of radioluminescence of ionic crystals. A formula is derived for the energy yield of activator luminescence excited in the main absorption bands of a crystal. The possibility of decreasing the time lag of the electron-hole radioluminescence mechanism in scintillating crystals is discussed. As a rule, in stationary radioluminescence the electron-hole mechanism predominates, while in scintillations the two mechanisms are in general on par. In NaI-Tl crystals the electron-hole mechanism apparently predominates. It is shown that a possible reason for the deviation of the real scintillation yield from the estimates presented in the article is the inertia of the electron-hole mechanism. Orig. art. has: 4 figures, 4 formulas, and 1 table.

SUB CODE: 20/ SUBM DATE: 00/ ORIG REF: 022/ OTH REF: 006

Card 2/2

PONOMARENKO, I.S.; SOPACH, E.D.; ISTOSHINA, M.A.

Modification of the argentometric method of determining the  
salinity of sea water on the basis of chlorine. Meteor. i  
Meteor. i gidrol. no. 10:54-55. N-D '53. (MLRA 8:9)  
(Sea water) (Argentometry)



SOPACH, B.D.; BLINOV, L.K., red.; PERLOVSKAYA, A.D., red.; SADOVSKIY, V.M.,  
red.; ZARKH, I.M., tekhn. red.

[Electric conductivity as a means of measuring the salinity of sea  
water] Elektroprovodnost' kak metod opredelenia solenosti morskikh  
vod. Pod red. L.K. Blinova. Moskva, Gidrometeor. izd-vo, 1958.  
138 p. (MIRA 11:8)

(Sea water)

BLINOV, L.K., nauchnyy sotrudnik; TSURIKOVA, L.K., nauchnyy sotrudnik;  
PAKHOMOVA, A.S., nauchnyy sotrudnik; SOPACH, E.D., nauchnyy  
sotrudnik. Primali uchastiye: PONSOV, A.G.; KALASHNIKOVA,  
V.V.; KIRILLOVA, Ye.P.; LOS', B.M.; LEBEDEVA, G.V.; KORNILENKO,  
V.S., red.; ZEMTSOVA, T.Ye., tekhn.red.

[Manual of marine hydrochemical investigations for hydro-  
meteorological observatories and marine hydrometeorological  
stations] Rukovodstvo po morskim gidrokhimicheskim issledo-  
vaniyam; dlia gidrometeorologicheskikh observatorii i morskikh  
gidrometeorologicheskikh stantsii. Pod red. L.K.Blinova. Moskva,  
Gidrometeor.izd-vo (otd-nie), 1959. 255 p.

(MIRA 14:6)

1. Moscow. Gosudarstvennyy okeanograficheskiy institut. 2. Labo-  
ratoriya khimii morya Gosudarstvennogo okeanograficheskogo  
instituta (for Blinov, TSurikova, Pakhomova, Sopach).  
(Water--Analysis)



SOPATA, Anirzej, inż.

Testing station for BR/BR-22 aircraft engines. Biul techn Legislski  
6 Special issue 31-34 '62.

SOPAUSKAS, J., prof.

A survey of nutrition in Lithuania during XVI-XIX centuries. Sveik.  
apsaug. no.12:27-34 '62.

(NUTRITION SURVEYS)

SOPEL, Jerzy

Prolapse of the duodenal mucosa into a diverticulum. Polski przeł.  
radiol. 24 no.4:249-252 '60.

1. Z Zakładu Radiologii Śl. A.M. w Zabrzu Kierownik: prof. dr  
S. Januszkiewicz  
(DUODENUM dis)

SOPEL, Kazimierz

Blastings in walls in gaseous deposits and deposits ender-  
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357-358 N°63.

СОПЕЛ'ЧЕНКО, И

Category: USSR/ Farm Animal Diseases Caused by Helminths.

V-3

Abs Jour: Refer. Zhur-Biologiya, No 16, 1957, 72314

Author : Sopel'chenko I.

Inst : Not given

Title : Dung and Sheep Fur as the Sources of Dictyocaulosis Dissemination

Orig Pub: Karakulevodstvo I Zverovodstvo, 1956, No 5, 46

Abstract: 30 samples of dung were collected from heaps of 0.5-20 cm in depth, and 65 washings were taken from the wool covering, during the maximum level of dictyocaulotic invasion. No larvae of the invasive stage were found. The author comes to the conclusion that the dung and the wool of the sheep have no significance in the epizootology of dictyocaulosis.

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-3-



NEMLICHKOVA, N. I.

Sheep - Diseases

Dictyocaulus infestation of sheep in semi-desert steppes of Uzbekistan. Kar. i zver., 5, No. 4, 1952.

9. MONTHLY LIST OF RUSSIAN ACQUISITIONS, Library of Congress, December 1952. Uncl.



SOPEL'CHENKO, M. I.

4732. SOPEL'CHENKO, M. I. Glistnye zabolevaniya sel'skokhozyaystvennykh zhivotnykh i mery bor'by s nimi. smolensk, kn. izd., 1954, 40 s. s  
111 22sm. 3.000 ekz. 60k. - (55-807)P 619:616.962

SO: Letopis' Zhdnal' nykh Statey, Vol. 7, 1949

SOPELEV, N. G.

86-5-3/24

AUTHOR: Sopolev, N. G., Lt. Col., Candidate of Military Sciences

TITLE: Control of Fighter Flight in Aerial Combat (Upravleniye zvenom istrebiteley v vozdushnom boyu)

PERIODICAL: Vestnik Vozdushnogo Flota, Nr 5, 1957, pp. 17-20 (USSR)

ABSTRACT: During aerial combat at high speeds, the flight commander and the leading pilot of a two-ship element may give their wing pilots brief orders which determine only the direction and method of attack, because the increased space of aerial combat does not permit keeping constant visual contact between pilots. Therefore, each fighter pilot must be able to display initiative during aerial combat. The prepared combat plan on the ground is a great help to the flight commander in operational control of fighter flight during an aerial combat. For this purpose, the flight commander, after a study of the air situation, ascertains the area for meeting the aerial enemy, his flight altitude and tactical methods of operation, and on the basis of this data determines the possible situation in which the fighter flight will carry out the aerial combat. For example, the aerial enemy operates by small groups of bombers in the

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arrive to take a