

LATYSHEV, Yu. M.

AKSMAN, N.M.; VILENSKIY, L.I.; GORBUNOV, N.G.; GUBSKIY, V.N.; GURVICH, M.D.; LATYSHEV, Yu.M.; LEVONTIN, L.I.; LIVSHITS, T.G.; LOGINOVA, M.K.; LUR'YE, D.A.; LYANDRES, G.D.; MIROSHNICHENKO, G.K.; MOGILEVSKIY, B.Ya.; NEMKOVSKIY, M.I.; ORLEANSKIY, Ya.P.; SAVITSKIY, A.N.; SIMMA, S.F.; SURKOV, G.Z.; SHMYGUL', B.P.; SHUBIN, V.P.; DONSKOY, Ye.Ye., red.izd-va; KAL'NITSKIY, R.Ya., red.izd-va; ZAMAKHOVSKIY, L.S., tekhn.red.

[Mechanization and automation in the machinery industry] Mekhanizatsia i avtomatizatsia v stankostroenii. Khar'kov, Khar'kovskoe obl.izd-vo, 1958. 119 p. (MIRA 13:2)

1. Khar'kov. Institut "Giprostanok." 2. Direktor instituta "Giprostanok" (for Orleanskiy).  
(Machinery industry--Technological innovations)  
(Automation)

L 18519-63 EWT(d)/EWT(m)/EWP(q)/BDS AFFTC/ASD Pad JD/HW  
ACCESSION NR: AP3000679 S/0096/63/000/006/0016/0020

13  
12

AUTHORS: Borzdy\*ka, A. M. (Doctor of technical sciences); Laty\*shev, Yu. V. (Engineer)

TITLE: Search for steel and alloys to be used in stationary and portable turbine units

SOURCE: Teploenergetika, no. 6, 1963, 16-20

TOPIC TAGS: heat-resistant steel, alloy, turbine vane, sheet steel

ABSTRACT: Studies and experiments were conducted at Tsentral'ny\*ty nauchno-issledovatel'skiy institut chernoy metallurgii (Central Scientific Institute of Ferrous Metallurgy) on heat-resistant steels and alloys for turbine parts.

Chemical compositions of steels EI-726 (Kh14N18V2BRI), EP-164 (Kh15N24V4T), EI-692 (KhN35VMT), EI-612 (KhN35VT), EI-612K (KhN35VKT) and EI-725 (KhN35VTR) are tabulated. The desired standard for steel and alloys for turbine vanes was a work-life of 100 000 hours at temperatures ranging from 550-800C. Materials for fasteners were tested for operation up to 12 000 hours at temperatures between 560-800C. Sheets were tested at 700C for 50 000-100 000 hours of

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work-life. The proper heat treatments of recommended steels are described and the mechanical properties of several materials are listed. Orig. art. has: 6 figures and 6 tables.

ASSOCIATION: Institut kachestvenny\*kh staley TsNIChM (Institute of High-Grade Steels at TsNIChM)

SUBMITTED: 00

DATE ACQ: 21Jun63

ENCL: 00

SUB CODE: ML

NO REF SOV: 005

OTHER: 000

Card 2/2

L 26638-65 EWP(c)/EWP(k)/EWT(m)/EWP(h)/EWP(b)/T/EMA(d)/EWP(l)/EWP(w)/EWP(v)/EWT(g)  
 EWP(t) Pr-4/Pad IJP(c) EM/MJW/JD/HM/HW S/0125/65/000/001/0943/0049  
 ACCESSION NR: AP5005001

53  
42  
B

AUTHOR: Medevar, B. I. (Doctor of technical sciences); German, S. I. (Candidate of technical sciences); Latyshev, Yu. V. (Engineer); Chekotilo, L. V. (Engineer); Levenberg, N. Ye. (Engineer)

TITLE: Mechanized arc welding of austenitic, heat-resistant EI725(KhN35VTP) alloy

SOURCE: Avtomaticeskaya svarka, no. 1, 1965, 43-49

TOPIC TAGS: heat resistant alloy, nickel base alloy, electroslag melted alloy, alloy welding, weld metal property, EI725 alloy

ABSTRACT: Several series of experiments with submerged arc welding of EI725 austenitic, heat-resistant alloy (0.35-0.7% C, 1% max Mn, 14-16% Cr, 36-38% Ni, 4-6% W, 1.31-1.73% Ti, 0.005% B) have been conducted. Conventionally melted alloy was found to have a poor weldability because of the susceptibility of the weld and the weld adjacent zone to hot cracking. Therefore, electroslag melted alloy was used in form of large, 1340-1800 mm in diameter, rings (200 x 200 and 150 x 200 mm in cross section) and rolled plates 14 and 24 mm thick intended for the housing of a large gas turbine. Welding of electroslag melted alloy with electrode wire of base-metal composition yielded weld metal highly susceptible to hot cracking.

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Several other electrodes were tested. Satisfactory results were obtained with EP-235(Kh15N35G7V7M3T) alloy wire (0.05% C, 0.14% Si, 7.78% Mn, 14.79% Cr, 36.07% Ni, 7.62% W, 1.95% Ti, and 3.28% Mo). Arc welding with this wire under ANP-17 and ANP-22 fluxes yielded weld metal with a satisfactory heat-resistance and ductility. A new TsT-22 electrode with EP-235 alloy core has also been developed for manual welding of EI725 alloy. The developed technology was successfully used for welding the gas turbine housing at the Kharkov Turbogenerator Plant. Orig. art. has: 8 figures and 3 tables. [MS]

ASSOCIATION: Institut elektrosvariki im. Ye. O. Patona, AN UkrSSR (Electric Welding Institute, AN UkrSSR); KhTGZ im. S. M. Kirova; TsNIChM im. Bardina

SUBMITTED: 12Aug64

ENCL: 00

SUB CODE: MM, IE

NO REF SOV: 013

OTHER: 001

ATD PRESS: 3187

Card 2/2

LATYSHEVA, A.

Wings of a good initiative are getting stronger. Okhr. truda  
i sots. strakh. 6 no.10:9-10 0 '63. (MIRA 16:11)

1. Sekretar' Leningradakogo promyshlennogo oblastnogo soveta  
professional'nykh soyuzov.

LATYSHEVA, A.V.; SINYAKOV, Yu.I., red.; LEVONEVSKAYA, L.G., tekhn.  
red.

[At a new stage; from the work practice of Leningrad trade unions] Na novom etape; iz opyta raboty leningradskikh profsoyuzov. Leningrad, Lenizdat, 1960. 109 p. (MIRA 15:1)

1. Sekretar' Leningradskogo oblastnogo soveta profsoyuzov (for Latysheva).

(Leningrad--Trade unions)

LATYSHEVA, Anastasiya Vladimirovna

[Regular production conferences; from work practices of industrial enterprises in Leningrad] Postoianno deistvu-iushchie proizvodstvennye soveshchaniia; iz opyta raboty promyshlennykh predpriatii Leningrada. Leningrad, Lenizdat, 1961. 74 p. (MIRA 15:10)  
(Leningrad--Industrial management)



LATYSHEVA, Anastasiya Vladimirovna; MORSHCHIKOV, V.D., red.;  
ANDREYEVA, L.S., tekhn. red.

[Controlling the carrying out of work by the factory and  
plant local committee] Proverka ispolnenia v rabote fab-  
zavestkoma. Moskva, Profizdat, 1962. 62 p. (Bibliotechka  
profsoiuznogo aktivista, no.17(41)) (MIRA 15:9)

1. Sekretar' Leningradskogo oblastnogo soveta profsoyuzov  
(for Latysheva).  
(Trade unions) (Auditing and inspection)

S/081/63/000/004/018/051  
B166/B186

**AUTHORS:** Kalabina, A. V., Filippova, A. Kh., Akseenko, R. A.,  
Latysheva, E. S., Vinogradova, V. V., Zhidyayeva, L. M.

**TITLE:** Studies in the field of synthesis and conversions of vinylaryl  
esters. No. 22. Synthesis and certain conversions of vinyl  
esters and acetals of bromophenols

**PERIODICAL:** Referativnyy zhurnal. Khimiya, no. 4, 1963, 238 - 239, ab-  
stract 4Zh123 (Izv. Fiz.-khim. n.-i. in-ta pri Irkutskom un-te,  
v. 5, no. 1, 1961, 120 - 130)

**TEXT:** Vinylation of 2-bromophenol (I) and 4-bromophenol (II) by the Favor-  
skiy - Shostakovskiy method (initial pressure of acetylene 18 - 28 atm  
210 - 220°C, 30 - 45 min) in the presence of a large quantity of KOH or NaOH  
and with high dilution of the reaction mixture with water (sometimes with  
dioxane added) made possible the synthesis of the vinyl ester of I, yield  
40%, b.p. 93 - 94°C/8 mm Hg,  $n_{D}^{20}$  1.5676,  $d_4^{20}$  1.4339, and the vinyl ester  
of II (III), yield 12 - 52%, b.p. 215 - 216°C/728 mm Hg, 109 - 110°C/11 mm  
Hg,  $n_{D}^{20}$  1.5685,  $d_4^{20}$  1.4366. The addition of I - II to aliphatic and

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B166/B186

Studies in the field of synthesis...

aromatic vinyl esters (with thorough stirring in the presence of 2 - 4 drops concentrated HCl) gave a series of  $\text{CH}_3\text{CH}(\text{OR})\text{OR}'$  acetals (IV). Below are given: the initial vinyl ether, quantity in moles, the initial phenol, quantity in moles, reaction temp. in  $^{\circ}\text{C}$  and the reaction time in hrs, R and R' in IV, yield %, b.p. in  $^{\circ}\text{C}/\text{mm Hg}$ ,  $n_{\text{D}}^{20}$  and  $d_4^{20}$ : vinyl ethyl ether (V), 0.430, I, 0.300, 85 - 90, 1.5,  $\text{C}_2\text{H}_5$ ,  $\text{O}-\text{BrC}_6\text{H}_4$ , 40, 135/15, 1.5223, 1.3208; V, 0.120, II, 0.058, 70 - 75, 1.5,  $\text{C}_2\text{H}_5$ ,  $n-\text{BrC}_6\text{H}_4$  (IVa), 124 - 125/8, 1.5308, 1.3483; vinylbutyl ether, 0.679, II, 0.579, 75 - 86, 1,  $\text{C}_4\text{H}_9$ ,  $n-\text{BrC}_6\text{H}_4$  (IVb), 38, 155 - 156/17, 1.5051, 1.2364; vinylphenyl ether, 0.167, II, 0.167, 70 - 80, 2,  $\text{C}_6\text{H}_5$ ,  $n-\text{BrC}_6\text{H}_4$ : 47.1, 171 - 173/6, 1.5831, 1.3784; III, 0.115, II, 0.104, 70 - 80, 2,  $n-\text{BrC}_6\text{H}_4$  (IVc), 55, 216 - 217/8, m.p.  $46^{\circ}\text{C}$ , 1.6025, -.

A study was made of substitution of the Br atom in III and IV by ethyl and ethoxyl groups. Experiments to hydrolyze III and IV with dilute alkali to the respective vinyl esters of the phenols (in an autoclave, 220 -  $300^{\circ}\text{C}$ , in the presence of  $\text{Cu}_2\text{Cl}_2$  and Cu shavings) were unsuccessful. To 53 mmoles IVa in 20 ml cryoscopic  $\text{C}_6\text{H}_6$  were added 0.08 moles  $\text{C}_2\text{H}_5\text{Br}$  and 0.13 moles Na, Card 2/3

S/081/63/000/004/018/051  
B166/B186

## Studies in the field of synthesis...

which was thoroughly stirred for 2 hrs at 60 - 65°C and then left to stand for ~12 hrs, whereupon it was filtered through glass wool and distilled, to give IV (R = C<sub>2</sub>H<sub>5</sub>, R' = n-C<sub>2</sub>H<sub>5</sub>C<sub>6</sub>H<sub>4</sub>) (IVd), yield 60%, b.p. 93 - 94°C/16 mm Hg, n<sub>D</sub><sup>20</sup> 1.5008, d<sub>4</sub><sup>20</sup> 0.9851. 5 g IVd and 20 ml 20% H<sub>2</sub>SO<sub>4</sub> were heated for

3 hrs at ~100°C to give 4-ethylphenol (VI), yield 88%, b.p. 93 - 95°C/7 mm Hg, n<sub>D</sub><sup>20</sup> 1.5240. In the optimum experiment 0.054 moles IVb, 0.079 moles C<sub>2</sub>H<sub>5</sub>Br and 0.13 moles Na in 200 ml C<sub>6</sub>H<sub>6</sub> were heated for 2 hrs at 80°C and,

as stated above, IV were separated (R = C<sub>4</sub>H<sub>9</sub>, R' = C<sub>2</sub>H<sub>5</sub>C<sub>6</sub>H<sub>4</sub>), yield 8%, b.p. 140 - 142°C/17 mm Hg, n<sub>D</sub><sup>20</sup> 1.4960, d<sub>4</sub><sup>20</sup> 0.9275. Under similar conditions

(85 - 90°C, 2.5 hrs) the vinyl ester of VI was produced, yield 10%, b.p. 92 - 93°C/18 mm Hg, n<sub>D</sub><sup>20</sup> 1.5148. A mixture of 0.077 moles III, 0.117 moles dry C<sub>2</sub>H<sub>5</sub>ONa, 10 ml C<sub>6</sub>H<sub>6</sub> and 50 g Cu filings was kept at 330°C for 6 hrs; it was then washed with 10% alkali and 4-ethoxyphenol vinyl ester was separated by distillation, yield 40%, b.p. 101 - 102°C/3 mm Hg, n<sub>D</sub><sup>20</sup> 1.5232. See abstract 4Zh122. [Abstracter's note: Complete translation.]

Card 3/3

LASYSHVA, G., arkhitektor.

Plans for prefabricated demountable farm buildings. Ser'. stroi.  
12 no.2:21-22 F '58. (MIRA 11:2)  
(Farm buildings) (Buildings, Prefabricated)

LATYSHEVA, G., inzh.

Structures for housing livestock in Bulgaria. Sel. stroi. no.4:  
27-28 Ap '62. (MIRA 15:8)

(Bulgaria--Dairy barns)

SOV/137-58-9-19394

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 9, p 178 (USSR)

AUTHORS: Latysheva, K.A., Braynin, I.Ye.

TITLE: On the Graphitization of 55S2 Steel (O grafitizatsii stali 55S2)

PERIODICAL: Sb. nauchn. rabot stud. Donetsk. industr. in-t, 1957, Nr 2,  
pp 109-114

ABSTRACT: To investigate the conditions of graphitization (G) of 55S2 steel, a steel of the following composition (in %) was used: C 0.54, Mn 0.78, Si 1.54, Cr 0.03, Ni 0.03, P 0.025, and S 0.018. The rolled metal had the microstructure of sorbitic pearlite with a fine ferrite lattice. The critical points  $Ac_1$   $780^{\circ}C$  and  $Ac_3$   $840^{\circ}$  were established by the method of incremental quenching. To accelerate the process of G and to obtain finer and more uniform graphite formations, the specimens (S) before annealing were quenched in water after being heated to 900, 1000, and  $1100^{\circ}$ . The structure obtained was that of martensite with  $R_C$  63. S differing only in their tempering temperature were separated in batches (B) and then underwent joint heat treatment. The first B was annealed at  $680^{\circ}$  for 44 hours and had the structure of granular pearlite without

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SOV/137-0-9-19394

On the Graphitization of 55S2 Steel

formations of graphite. The first and second B underwent graphitizing annealing at 740° for 120 hours followed by cooling in water; the structure was martensite, ferrite, and separate formations of graphite with R<sub>C</sub> 20. S quenched from 1000° was annealed for 10 hours at 760° and had a structure of granular pearlite. Then, together with the third B it underwent the graphitizing annealing at 740° for 12 hours. The structure of all these S was granular pearlite. As the result of various conditions of heat treatment of S it is established that the use of 55S2 spring steel for G is not expedient, because the process of G of the given steel progresses very slowly; the elevation of the quench temperature to  $\geq 900^\circ$  does not accelerate the G process of the structure.

1. Steel--Processing effects      2. Steel--Structural analysis      3. Graphite--Metallurgical effects

G.Z.

Card 2/2



KONSTANTINOV, Ye.A., inzhener-kapitan-leytenant; LATYSHEVA, K.V., mladshiy  
nauchnyy sotrudnik

Deactivation of the internal surface of circuits in nuclear power  
plants. Mor. sbor. 47 no.11:74-76 N '63. (MIRA 16:11)

S/200/61/000/007/005/006  
D238/D302

AUTHORS: Popova, N.I., Mil'man, F.A., and Latysheva, L.E.

TITLE: The oxidation of isobutylene to methylacrolein in the presence of copper catalysts

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Sibirskoye otdeleniye, no. 7, 1961, 77 - 82

TEXT: The object of this work was the more detailed investigation of the formation of methylacrolein by the catalytic oxidation of isobutylene, using copper catalysts and its identification and analysis. Difficulties were the highly exothermic nature of the reaction and the great polymerizability of methylacrolein which at room temperature polymerizes completely in two hours. Methylacrolein is of great value in the plastics industry as a source of many products. Two basic methods of preparation are outlined - that already mentioned and the croton condensation of formaldehyde and propionic aldehyde. Detailed results of the oxidation of isobutylene are

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The oxidation of isobutylene ...

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shown, revealing a high yield of carbonyl compounds and selectivity of the reaction. The catalyst undergoes partial reduction to cuprous oxide reaching a steady state composition of about 70 % monovalent copper and 30 % divalent copper. Comparative results are given for the oxidation of isobutylene and propylene. In both cases the carbonyl compounds have a high unsaturated aldehyde content and as the carbon monoxide content in the gases at the end of the reaction is zero there appears to be no aldehyde dissociation on the catalyst. The yield of isobutylene at a volume speed of 6000 reaches 413 gr. from a liter of catalyst per hour. Methylacrolein was synthesized by the croton condensation of formaldehyde and propionic aldehyde in the presence of a boron fluoride and water complex working to data taken from Wm.F. Gresham (Ref. 6: Patent SShA(USA Patent) 2549457, 1951) but elaborated and made more accurate during the course of the work. An increase in the formaldehyde-propionic aldehyde ratio to ascertain the level increases the yield of methylacrolein, of which 53 gr. were obtained, after fractional distillation, with physical constants in accord with those given in the literature.

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The oxidation of isobutylene ...

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re. The possibility of polarographic analysis of aqueous solutions of methylacrolein was shown; calibration curves plotted its dissociation potential worked out for the first time. To identify the unsaturated aldehydes their physical properties were studied. Aqueous solutions of methylacrolein obtained by each method gave identical curves with similar potential. Similarly, aqueous solutions of these aldehydes and alcoholic solutions of their 2:4 dinitrophenylhydrazones have the same absorption maxima in the ultraviolet spectrum. After distillation a group of aldehydes was obtained containing 82.5 % methylacrolein and since part of the latter is polymerized the content is in fact higher. After describing the experiments on oxidation of isobutylene -- relatively pure isobutylene was obtained by the dehydration of isobutyl alcohol, the authors conclude that: isobutylene oxidizes selectively to methylacrolein in the presence of copper catalysts; carbonyl groups formed during the reduction contain 82.5 % of methylacrolein: The syntheses of methylacrolein by the croton condensation of formaldehyde and propionic aldehyde was investigated; certain physical constants of methylacrolein were

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The oxidation of isobutylene ...

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determined for the first time, in particular the half wave dissociation potential and the absorption spectra in ultraviolet light of aqueous solutions of the methylacrolein. There are 5 tables, 4 figures and 10 references: 2 Soviet-bloc and 8 non-Soviet-bloc. The references to the 4 most recent English-language publications read as follows: I. Ballard, H. Finch, E.A. Peterson, USA Patent 2767221, 1950; H. Finch, A.D. Benedictis, USA Patent 2779801, 1957; Smit, Holms, USA Patent 2774928, 1950; W.F. Forbes, R. Shilton, J. Am. Chem. Soc., 81, 787, 1959.

ASSOCIATION: Institut khimii vostochno-sibirskogo filiala SO AN SSSR, Irkutsk (Chemical Institute of the East Siberian Section, Siberian Branch AS USSR, Irkutsk)

SUBMITTED: July 26, 1960

Card 4/4

DAKHOV, V.N.; KOBRANOVA, V.N.; PECHERNIKOV, V.F.; BENDEL'SHTEYN; B.Yu.;  
KHOLIN, A.I.; POZIN, L.Z., D'YAKONOV, D.I.; LATYSHEVA, M.G.;  
DOBRYNIN, V.M.; LARIONOV, V.V.; NEYMAN, Ye.A.; LEBEDEV, A.P.

Terminology and symbols used in applied geophysics. Prikl. geofiz.  
no.27:223-235 '60. (MIRA 13:12)  
(Prospecting--Geophysical methods)

DAKHOV, V.N., doktor geol.-miner. nauk; KHOLIN, A.I., kand. geol.-  
miner.nauk; PESTRIKOV, A.S.; GALUZO, Yu.V.; AFRIKYAN, AN.;  
YUDKEVICH, R.V.; POPOV, V.K.; POZIN, L.Z.; LARIONOV, V.V.;  
VENDEL'SHTEYN, B.Yu.; GORBUNOVA, V.I.; DZYURAK, M.D.; YEVDOKIMOVA,  
V.A.; ZHOKHOVA, R.G.; LATYSHEVA, M.G.; MAREN'KO, N.N.; MANCHEVA,  
N.V.; MOROZOVICH, Ye.R.; OREKHOVSKAYA, Ye.P.; POKLONOV, M.S.;  
ROMANOVA, T.F.; SEVOST'YANOV, M.M.; TANASEVICH, N.I.; FARMANOVA,  
N.V.; FEDOROVICH, G.P.; SHCHERBININ, V.A.; ELLANSKIY, M.M.;  
YANUSH, Ye.F.; YUNGANS, S.M., ved. red.; YAKOVIEVA, Z.I., tekhn.  
red.

[Using methods of field geophysics in studying gas-bearing re-  
servoirs]Primenenie metodov promyslovoi geofiziki pri izuchenii ga-  
zonosnykh kollektorov. Moskva, Gostoptekhizdat, 1962. 279 p.

(MIRA 16:2)

(Gas, Natural--Geology)  
(Prospecting--Geophysical methods)

LATYSHEVA, N.I.

Method of phagocytic experiments. Zhur. mikrobiol. epid. i immun.  
no.1:76-81 Ja '55. (MLRA 8:2)

1. Iz kafedry mikrobiologii imeni N.F.Gamelei (zav. prof. V.D.  
Timakov) II Moskovskogo meditsinskogo instituta imeni I.V.Stalina.  
(PHAGOCYTOSIS,  
exper. technic)

Trans. M-1067, 13 Apr 56



LATYSHEVA, N. I.

USSR/Medicine - Immunology

FD-2611

Card 1/1            Pub. 148 - 22/25

Author            : Latysheva, N. I.

Title             : The opsonizing capacity of child and adult blood serum

Periodical        : Zhur. mikro. epid. i immun. 4, 97-100, Apr 1955

Abstract          : The opsonizing capacity of the blood serum of children up to six months old was significantly lower than that of adults. The speed of absorption of typhoid and whooping-cough microorganisms during phagocytosis in children up to six months old and adults was found to be determined by the functional activity of their leukocytes and not by the characteristics of the blood serum. The phagocytic activity of the leukocytes of children during their first six months of life was found to be less than that of adults. By the time the children are two years old, they acquire the capacity to opsonify microorganisms effectively. The results of the experiments are presented on two charts. No references are cited.

Institution       : Chair of Microbiology imeni N. F. Gamaleya (Head - Prof. V. D. Timakov). 2d Moscow Medical Institute imeni I. V. Stalin (Dir. - Dotsent S. I. Milovidov)

Submitted        : October 30, 1954

USSR/General Problems of Pathology. Immunity

U-1

Libs Jour : Ref Zhur - Biol., No 14, 1958, No 65900

Author : Latyshova N.I.

Inst : Second Moscow Medical Institute

Title : Opsonizing Properties of Normal Sera

Orig Pub : Uch.zap. 2-y Mosk. med. in-ta, 1957, 7, 157-165

Abstract : No abstract

Card : 1/1

LATYSHEVA, N.I.

Extent and rate of phagocytic reactions in children and adults.  
Pediatriia 36 no.10:76 0 '58 (MIRA 11:11)

1. Iz kafedry mikrobiologii imeni N.F. Gamalei II Moskovskogo  
meditsinskogo instituta imeni N.I. Pirogova.  
(PHAGOCYTOSIS)

MONINA, P.V., kand.tekhn.nauk; GLAZOVA, R.A., starshiy nauchnyy sotrudnik;  
LATYSHEVA, N.P.; POLUMIYENKO, Ye.A., inzh.

Results of tests on Kovo hydraulic looms. Tekst.prom. 20  
no.2:36-39 F '60. (MIRA 13:6)

1. Tsentral'nyy nauchno-issledovatel'skiy institut shelkovoy  
promyshlennosti (for Glazova). 2. Glavnyy inzhener shelkotkatskoy  
fabriki imeni Sverdlova (for Latysheva).  
(Looms) (Synthetic fabrics)

LATYSHEVA, O.G., assistant

Caries in the teeth of children following meningitis and birth injuries. Teor. i prak.stom. no. 5:94-97 '63.

(MIRA 18:3)

1. Iz kafedry terapevticheskoy stomatologii (zav. - prof. Ye.Ye. Platonov) Moskovskogo meditsinskogo stomatologicheskogo instituta.

9,7100

3902  
S/105/62/000/007/002/004  
E200/E135

AUTHORS: Gorushkin, V.I., Doctor of Technical Sciences;  
Krumina, A.A., Engineer; and  
Latysheva, T.S., Engineer

TITLE: On extending the range of problems solvable by means  
of small digital computers

PERIODICAL: Elektrichestvo, no.7, 1962, 28-29

TEXT: The difficulties connected with the strict limitation  
of the range of numbers in small computers may be avoided to a  
great extent by resorting to operations over numbers represented  
in "normal form". Any number in normal form is represented as

$$x = q_x \cdot 2^{P_x}$$

(1)

where  $1/2 \leq q_x < 1$ ;  $q_x$  is the mantissa,  $P_x$  is the order of  
magnitude. The number represented in such form is recorded in  
two adjacent memory storage cells of the computer: in one cell  
one records the mantissa  $q_x$  and the other  $P_x \cdot 2^{-30}$ .

Card (1/4)

39028

On extending the range of problems... S/105/62/000/007/002/004  
E200/E135

All arithmetic operations may be carried out over numbers represented in normal form. However, in most machines there are no commands for such operations. The arithmetic operations with such numbers are carried out by means of special programs. The rules for carrying out arithmetic operations over numbers represented in normal form are given below. Addition is carried out as follows: say the numbers  $A = q_A \cdot 2^{p_A}$  and  $B = q_B \cdot 2^{p_B}$

are to be added. First one equates the orders and the difference  $p_A - p_B$  is found. Then if  $p_A - p_B < 0$ , then  $q_A$  is multiplied by  $2^{(p_A - p_B)}$  and added to  $q_B$ :

$$\begin{aligned}
C &= A + B = q_A \cdot 2^{p_A} + q_B \cdot 2^{p_B} = \\
&= (q_A \cdot 2^{p_A - p_B}) \cdot 2^{p_A - (p_A - p_B)} + q_B \cdot 2^{p_B} = \quad (2) \\
&= (q_A \cdot 2^{p_A - p_B} + q_B) \cdot 2^{p_B} = q_C \cdot 2^{p_C}.
\end{aligned}$$

Card 2/4

On extending the range of problems...

39028  
S/105/62/000/007/002/004  
E200/E135

If  $p_A - p_B > 0$  then  $q_B$  is multiplied by  $2^{p_B - p_A}$  and is added to  $q_A$ :

$$\begin{aligned} C = A + B &= q_A 2^{p_A} + q_B 2^{p_B} = q_A 2^{p_A} + \\ &+ (q_B 2^{p_B - p_A}) 2^{p_B - (p_B - p_A)} = \\ &= (q_A + q_B 2^{p_B - p_A}) 2^{p_A} = q_C 2^{p_C}. \end{aligned} \tag{3}$$

For multiplication the mantissas are multiplied together and the orders are added:

$$A \cdot B = (q_A 2^{p_A})(q_B 2^{p_B}) = (q_A q_B) 2^{p_A + p_B}. \tag{4}$$

Division is carried out thus:

$$\frac{A}{B} = \frac{q_A 2^{p_A}}{q_B 2^{p_B}} = \frac{q_A}{q_B} 2^{p_A - p_B} = q_C 2^{p_C} \tag{5}$$

Card 3/4



On extending the range of problems...

39028  
S/105/62/000/007/002/004  
E200/E135

Programs for multiplication and division are written directly in the base program. The program for addition and subtraction is used as an independent routine. The method described above makes it possible to use fixed point computers of type M-3 (M-3) to carry out operations over numbers lying between the limits of

$2^{-2^{30}}$  and  $2^{2^{30}}$  or approximately between  $10^{-300\ 000\ 000}$  and

$10^{300\ 000\ 000}$  (the machines "Strela" and "Ural-2" operate with numbers in the range from  $10^{-19}$  to  $10^{19}$ ). Thus it is possible to "transform" a fixed point computer into a floating point one.

ASSOCIATION: Energeticheskiy institut im. Krzhizhanovskogo  
(Power Engineering Institute imeni Krzhizhanovskiy)

SUBMITTED: September 25, 1961

Card 4/4

LATYSHEVA, T.S.

Linear variation - the length of a curve. Izv. AN SSSR. Ser. mat.  
27 no.1:61-66 Ja-F '63. (MIRA 16:2)  
(Calculus of variations) (Curves)

LATYSHEVA, T.S.

Measure of a set of values assumed by a function in points where the gradient vanishes. Izv. AN SSSR. Ser. met. 27 no.2:273-278 Mr-Apr '63.  
(MIRA 16:4)

(Functions of several variables)

AM4016098

BOOK EXPLOITATION

S/

Laty\*sheva, Tamara Sergeyevna

Programming and solution of problems on two-address machines (Programmirovaniye i resheniye zadach na dvukhadresny\*kh mashinakh) Moscow, Izd-vo AN SSSR, 63. 0182 p. illus., biblio. Errata printed on the inside of back cover. 4600 copies printed. At head of title: Akademiya nauk SSSR. Gosudarstvenny\*y proizvodstvenny\*y komitet po energetike i elektrifikatsii SSSR. Energeticheskiy institut im. G. M. Krzhizhanovskogo.

TOPIC TAGS: computer, computer programming, two-address computer, fixed radix, floating radix, M-3 computer, Minsk-1 computer, command, operating code, scale factor, branched program

PURPOSE AND COVERAGE: The book contains detailed programming procedures for two-address computers with illustrative examples for the Soviet M-3 and Minsk-1 computers. It is based on programming lec-

Card 1/2

AM4016098

tures delivered by the author at the Krzhyzhanovskiy Power Institute, and contains general information on programming, differences in computation systems, operation codes, programming procedures with fixed radix and methods for going over to a floating radix, the construction of logical circuits, and solution of problems with the computer. The book is intended for scientific workers, engineers, and students engaged in programming, and can serve as a textbook for the training of programmers.

TABLE OF CONTENTS [abridged]:

Foreward - - 3

Ch. I. Schematic diagram of M-3 and Minsk-1 electronic digital computers. Introduction to programming - - 5

Ch. II. Positional computation systems - - 12

Ch. III. Conversion of numbers from one positional system to

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- another. Binary-decimal notation - - 21
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- Ch. VIII. Transformation of commands. Cycles - - 88
- Ch. IX. Cycle with recovery - - 104.
- Ch. X. Standard programs and their use - - 120
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- Ch. XV. Solution of problem in the computer - - 176
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Card 3/3

LATYSHEVA, V.A.; GORYANINA, L.R.

Heats of reaction of oxides and hydroxides of the zinc subgroup  
elements with solutions of perchloric and hydrohalide acids.  
Zhur.neorg.khim. 7 no.4:732-738 Ap '62. (MIRA 15:4)  
(Hydrogen halides) (Metallic oxides) (Heat of reaction)

LATYSHEVA, V.A.

3

The heats of reaction of hydrates of oxides of zinc, copper, (II), and barium with hydrochloric and nitric acids and hydrogen halide acids. S. A. Shchukarev, L. S. Lilich, and V. A. Latysheva. *Doklady Akad. Nauk S.S.S.R.* 91, 273-6 (1953).—It is known that ions of Zn and Cu(II) in water soln. can form unstable complex ions with halogen ions. Therefore it was reasonable to expect that for Zn and Cu the effects of neutralization by acids differing by nature of anions would not be equal. Heat effects of reaction of Zn(OH)<sub>2</sub>, Cu(OH)<sub>2</sub>, and Ba(OH)<sub>2</sub> with 2N HCl, HBr, HI, HClO<sub>4</sub>, and HNO<sub>3</sub> were detd. by direct method with acid always in large excess. HCl and HNO<sub>3</sub> were used for comparison as anions which develop min. tendency toward complex formation. Heat effects for Ba(OH)<sub>2</sub> were approx. equal for all acids used, corresponding to Thomsen's results. ZnO in 2N HCl coincided with Pepler's results. Heat effects for Zn(OH)<sub>2</sub>, ZnO, and Cu(OH)<sub>2</sub> in the indicated acids are not equal and increase with transition from Cl<sup>-</sup> to I<sup>-</sup>, ClO<sub>4</sub><sup>-</sup>, and NO<sub>3</sub><sup>-</sup>, which affirms the reaction of Zn<sup>++</sup> and Cu<sup>++</sup> with anions in soln. The differences between ZnO and Zn(OH)<sub>2</sub> in all acids are almost equal and correspond to the literature const. for hydration of ZnO with formation of Zn(OH)<sub>2</sub>. Heat effects may attest to detn. of thermal stability and compn. of complex ions formed.

V. N. Bednarski

10-13-54 ME



LATYSHEVA, V.A. --

"The State of Some Ions in Aqueous Solutions." Cand Chem Sci,  
Leningrad, 1954. (RZhKhim, No 20, Oct 54)

Survey of Scientific and Technical Dissertations Defended at USSR  
Higher Educational Institutions (10)

SO: Sum. No. 481, 5 May 55

LATYSHEVA, V.A.

CH The effect of the concentration of acids on the heat effect of their reaction with the hydrates of zinc and barium oxide. S. A. Shchukarev, L. S. Lishch, and V. A. Latysheva (*Soviet State Univ. Jour. Obshch. Khim.* 25, 1444-8 (1953); *C.A.* 48, 8019c.—The heat effect of the reaction of HCl, in large excess, with Ba(OH)<sub>2</sub> was independent of the acid concn. The heat effect for the reaction of Zn(OH)<sub>2</sub> with the following acids was studied: HCl, HBr, HI, and HClO<sub>4</sub>. The acid concn. in these cases had a significant effect. For HCl, HBr, and HI the curve of calpy vs. concn. passed through a min. For HClO<sub>4</sub>, an increase in concn. produced a progressive decrease in the enthalpy. The heats of hydration of Ba<sup>++</sup> and Zn<sup>++</sup> were calcd. to be 813 and 499 kcal., resp. J. Rovtar Leach

② AH

LATYSHEVA, V.A.

6

<sup>1</sup> <sup>1</sup> <sup>1</sup> <sup>3</sup>  
 The halogen complexes of zinc, cadmium, and mercury  
 in aqueous solutions. S. A. Shebukarev, L. S. Likh, and  
 V. A. Latysheva. *Zhur. Neorg. Khim.* 1, 225-31(1956);  
 Cf. C.A. 50, 486. The effect of thermodynamic quantities  
*Cloned*  $\Delta F$ ,  $\Delta S$ , and  $\Delta H$  on the stabilities of the halogen complexes  
 of Zn, Cd, and Hg as well as the relation between these and  
 the ionization potentials of the halogens are discussed.  
 These quantities are tabulated for the stepwise formations of  
 $ZnCl_4^{2-}$ ,  $ZnBr_4^{2-}$ , and  $ZnI_4^{2-}$ . In going from the iodides  
 to the chlorides,  $\Delta H$  becomes more exothermic, but the  
 stability of the complexes increases. Also  $\Delta H$  values of the  
 hydration for the ions  $Zn^{2+}$ ,  $ZnBr_4^{2-}$ ,  $ZnI_4^{2-}$ ,  $Cd^{2+}$ ,  $CdBr_4^{2-}$ ,  
 and  $CdI_4^{2-}$  are calcd. to be, resp., -42.1, -51.2, -36.6,  
 -44.7, -44.4, and -26 kcal. A. I. Popov

mm mk

L. A. Latsheva, V. H.

Thermodynamic characteristics of the formation of halide complexes of cadmium in aqueous solutions. S. A. Shchuray, L. S. Litch, and V. A. Latsheva. *Uchenye Zapiski, Leningrad. Gosudarst. Univ. im. A. A. Zhdanov* No. 211, Ser. Khim. Nauk No. 13, 17-25 (1967). -- The dependence of the variations of the oxidation-reduction potential of the system Cd (Hg)/Cd<sup>++</sup> on the concn. of Cl<sup>-</sup>, Br<sup>-</sup>, and I<sup>-</sup> at 25, 35, and 45° is given. The values of ΔF°, ΔH, ΔS, and standard molar entropy at 25° and ionic strength μ = 4.5 are the following: (species, ΔF° cal./g. ion; ΔH cal./g. ion; ΔS cal./g. ion degree, S° cal./g. ion degree, resp.) CdCl<sup>+</sup>, -1500, 0, 8.1, 4.6; CdCl<sub>2</sub>, -1230, -300, 3.1, 20.8; CdCl<sub>3</sub>, 120, 2300, 9.2, 43.3; CdCl<sub>4</sub><sup>2-</sup>, 820, 2900, 7.7, 64.2; CdBr<sup>+</sup>, -2300, 2300, 16.4, 20.2; CdBr<sub>2</sub>, -1000, -4300, -11.1, 27.1; CdBr<sub>3</sub><sup>-</sup>, -1100, 2000, 10.4, 63.0; CdI<sub>2</sub>, -700, 2000, 11.1, 88.3; CdI<sup>+</sup>, -2700, --, --, 21.4; CdI<sub>2</sub>, -1100, --, --, 80.7; CdI<sub>3</sub><sup>-</sup>, -3000, --, --, 86.8; and CdI<sub>4</sub><sup>2-</sup>, -2000, --, --, 120.0. The stability consts; are also listed. A. Libackyj

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**AUTHORS:**

SOV/54-59-2-9/24  
Shchukarev, S. A., Lilich, L. S., Latysheva, V. A.,  
Chuburkova, I. I.

**TITLE:**

On the Heats of Reaction of CdO and Cd(OH)<sub>2</sub> With Hydrogen  
Halides and Perchloric Acids (O teplotakh vzaimodeystviya CdO  
i Cd(OH)<sub>2</sub> s galogenovodorodnymi i khlornoy kislotami)

**PERIODICAL:**

Vestnik Leningradskogo universiteta. Seriya fiziki i khimii,  
1959, Nr 2, pp 66-71 (USSR)

**ABSTRACT:**

From the measurements of the heats of reaction of metal oxides and their hydrates, information is obtained on the state of the ions in solutions. The method of this investigation consists in determining the heat effects of individual processes in the reaction of metal hydroxides and oxides with the acids. (Destruction of the oxide lattice, dissociation of the acid, formation of H<sub>2</sub>O molecules from the H<sup>+</sup> and OH<sup>-</sup> ions, and formation of complexes between the ions of the metal, of the water and the anions of the acids.) As in the investigations of the present paper only one metal was used, the difference in the heat effects lies only in the complex formation and is dependent on

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SOV/54-59-2-9/24  
On the Heats of Reaction of CdO and Cd(OH)<sub>2</sub> With Hydrogen Halides and Perchloric Acids

the various acids used. The perchloric acid which shows no tendency to form a complex was assumed as a zero solvent. The Cd-hydroxides and oxides were synthesized in a crystalline form, and checked for purity by means of X-rays and chemically. The measurements of the heats of reaction of the mentioned crystals with the solvents HCl, HBr, HJ, and HClO<sub>4</sub> were carried out at 25° with various concentrations of the latter. The results are compiled in a table and represented in a figure. The values of J. Thomsen (Ref 5) are also indicated for comparison. The table and the figure show that at low concentrations of HCl and HBr the reaction proceeds endothermically, at an increase in concentration, however, it becomes exothermal. The minimum shifts from HCl to HBr to lower concentrations. In case of HJ, there is nearly no minimum at all. The HClO<sub>4</sub> solution produces a straight line which becomes thermally more and more negative with an increase in concentration. There is a good agreement of the values obtained for the two former solutions with the values of Thomsen, but a

Card 2/4

SOV/54-59-2-9/24

On the Heats of Reaction of CdO and Cd(OH)<sub>2</sub> With Hydrogen Halides and Perchloric Acids

noticeable deviation in case of HJ. Thomsen used solutions in the stoichiometric ratio  $G^- : Cd^{++}$ , whereas in this paper this ratio was varied between 20 and 400 with an excess in  $G^-$  ( $G^-$  = halogen ion). The values obtained were also compared with values of other authors who determined the formation heats by other methods (Refs 9-15). As in previous papers (Ref 2), the hydration heat of  $Cd^{++}$  was computed by the formula:  $h_{Cd^{++}} = -\Delta H + U_o - 2h_{OH^-} + 2H$ . In this formula,  $\Delta H$  = heat effect of the reaction:  $Cd(OH)_2 + HClO_4$ ,  $U_o$  = lattice energy of the hydroxide,  $h_{OH^-}$  = hydration heats of the  $OH^-$ -ions,  $H$  = heat effect of the formation of  $H_2O$  from the hydrated ions. The value 437.5 kcal/g-ion is obtained. This value is in good agreement with the values known from publications. Yatsimirskiy (Ref 18):  $h_{Cd^{++}} = 436$  kcal/mol, and Mishchenko and Podgornaya (Ref 20): 445 kcal/mol. There are 1 figure, 1 table, and 20 references, 8 of which are Soviet.

Card 3/4

On the Heats of Reaction of CdO and Cd(OH)<sub>2</sub> With Hydrogen Halides and Per-  
chloric Acids

SOV/54-59-2-9/24

SUBMITTED: January 18, 1958

Card 4/4



5(2)

AUTHORS:

SOV/78-4-10-5/40  
Shchukarev, S.A., Lilich, L. S., Latysheva, V. A.,  
Andreyeva, D. K.

TITLE:

On the Heats of Interaction of HgO With Aqueous Solutions of  
HCl, HBr, HJ, and HClO<sub>4</sub>

PERIODICAL:

Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 10,  
pp 2198-2203 (USSR)

ABSTRACT:

This paper is a continuation of the papers of references 1-3 on the heats of interaction of oxides and hydroxides of the metals of the 2<sup>nd</sup> group of the periodic system with halogen hydracids and chloric acid. The authors try to evaluate the total variation ( $\Delta H$ ) of enthalpy on formation of halogen complexes by comparison of the heat of interaction of the metal oxide with complex-forming acids (HCl, HBr, HJ) and with HClO<sub>4</sub> which is not complex-forming. So far Ba, Cu<sup>II</sup>, Zn and Cd have<sup>4</sup> been investigated. The investigation of the interaction of HgO now presented permits a comprehensive survey regarding the behavior of the zinc-subgroup. The dependence of  $\Delta H_{298}$  on the acid concentration (1-4 mole/l) is presented in table 1 and

Card 1/3

SOV/78-4-10-5/40

On the Heats of Interaction of HgO With Aqueous Solutions of HCl, HBr, HJ,  
and HClO<sub>4</sub>

figure 1. The dependence on kind and concentration of the anions is determined by complex formation. The formation of mercury-halogen complexes is exothermic in the concentration range investigated. The heat of hydration of the Hg<sup>2+</sup>-ion calculated to be 441 kcal/mole is in good agreement with the data in publications (Table 2). With increasing atomic number of the cation of the zinc-subgroup and of the anion of the chlorine-subgroup the endothermic nature of the complex formation decreases and the exothermic nature increases (Table 3). With increasing atomic number of the cation also the difference between the formation enthalpies of the Cl-, Br-, and J-complexes increases (Fig 2). A secondary periodic dependence between the atomic numbers of the metal and the influence of the acidity upon the enthalpy of the interaction between the oxides (hydroxides) of Zn, Cd, Hg and chloric acid was found to exist (Fig 3). This dependence is explained by a different weakening of the interaction of the cations with the water, similar to that observed by O. Ya. Samoylov (Ref 16) in the system alkaline earth chloride - hydrochloric acid. The concentration of the hydracids affects the nature of the dependence of the enthalpy of the complex compounds on the atomic number of the

Card 2/3

On the Heats of Interaction of HgO With Aqueous Solutions of HCl, HBr, HJ,  
and HClO<sub>4</sub>

SOV/78-4-10-5/40

cation. There are 3 figures, 3 tables, and 18 references,  
12 of which are Soviet.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet im. A. A. Zhdanova  
Kafedra neorganicheskoy khimii (Leningrad State University  
imeni A. A. Zhdanov, Chair of Inorganic Chemistry)

SUBMITTED: July 20, 1958

Card 3/3

SHCHUKAREV, S.A.; LILICH, L.S.; LATYSHEVA, V.A.; CHUBURKOVA, I.I.

Heat of reaction of  $\text{CdO}$  and  $\text{Cd}(\text{OH})_2$  with hydrogen halides and perchloric acid. Vest.LGU 14 no.10:66-71 '59.

(Cadmium oxide) (Cadmium hydroxide) (Heat of reaction)  
(MIRA 12:6)

LATYSHEVA, V.A.; LILICH, L.S.; SIRENKO, A.S.

Effect of certain salts and acids on the rate of oxidation of  
I<sup>-</sup> ions by Fe<sup>3+</sup> ions. Vest.LGU 15 no.10:121-130 '60.

(Iodides) (Iron)

(MIRA 13:5)

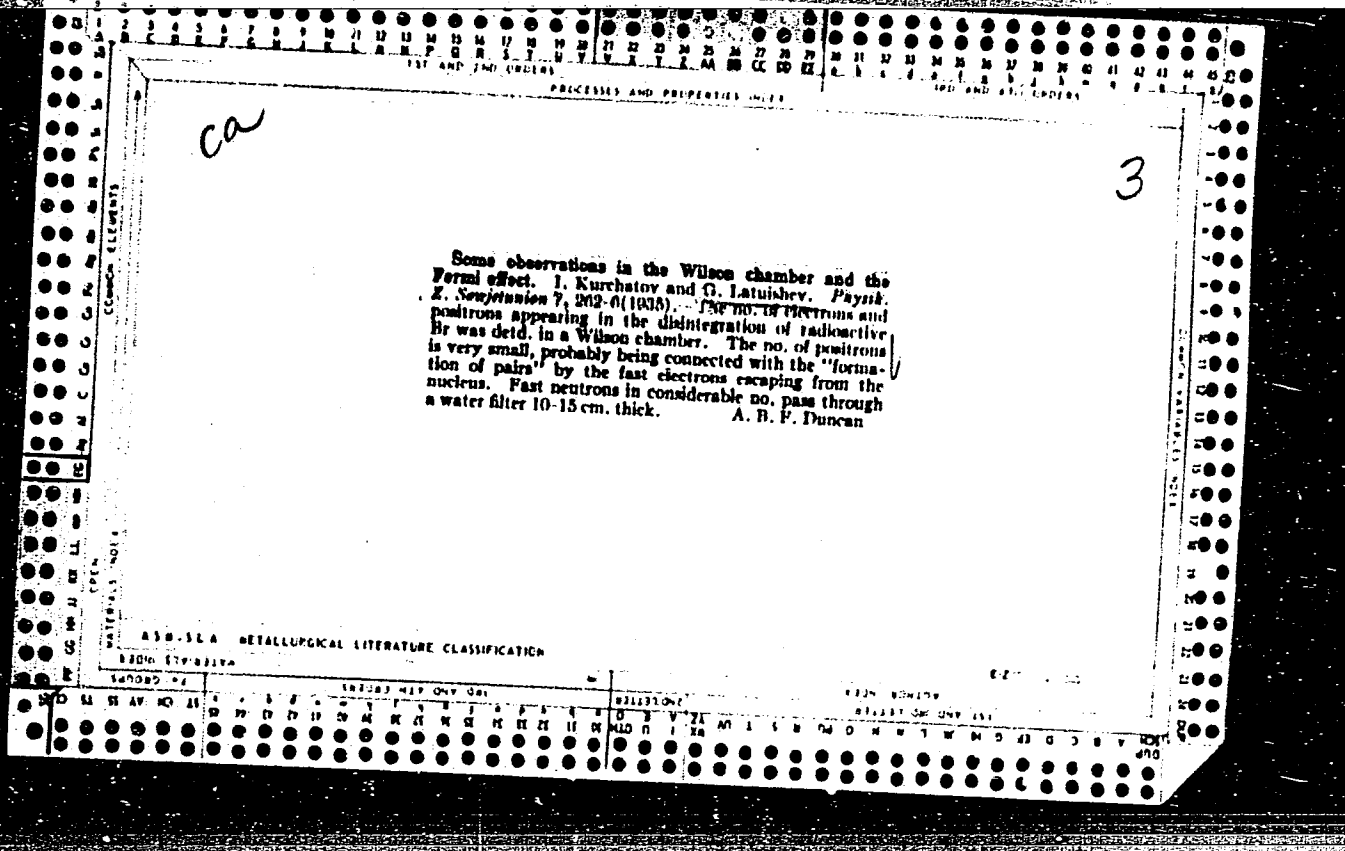
LATYSHEVA, V.A.; KOZACHENKO, N.I.

Heats of interaction of lanthanum perchlorate solutions  
with perchloric and halogen acids. Vest. LGU 18 no.22:  
135-139 '63. (MIRA 17:1)

LATYSHEVA, V.A.; KOZHEVNIKOV, O.A.

Double adiabatic calorimeter for measuring the heat capacity  
of liquids. Vest.LGU 20 no.22:109-114 '65.

(MIRA 18:12)





SA

3714. Artificial Radioactivity Produced by Irradiation of Gold with Neutrons. I. Kartachow and G. Latyschew. *Phys. Zeits. d. Sowjetunion*, 7, 3-3, pp. 653-655, 1935.—A gold foil  $10 \times 2 \times 0.01$  cm. was irradiated for 17 h. with neutrons from a Ra-Be source immersed in water. On presenting the foil to an expansion chamber, 2000 expansions gave tracks of only 5 heavy particles. About 10 electron tracks, however, were observed on each expansion and it is therefore concluded that there is little evidence for disintegration with the emission of heavy particles. The  $\beta$ - and  $\gamma$ -ray activity were also examined with a Geiger counter and the half-value period estimated at 3 days compared with 3.5 days found by previous workers. No evidence was obtained of a  $\gamma$ -radiation due to a nuclear disintegration of half-period 5 hr. as reported by Sosnowski and Preiswerk (see Abstracts 1219 and 1895 (1935)). The observed  $\gamma$ -radiation had a half-period of 3 days and measurements with Pb absorbers gave a mean energy of  $3 \times 10^5$  eV. It is possible that the discrepancy is due to the use of different neutron sources and this point is undergoing further examination.

F. C. C.

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COMMON ELEMENT

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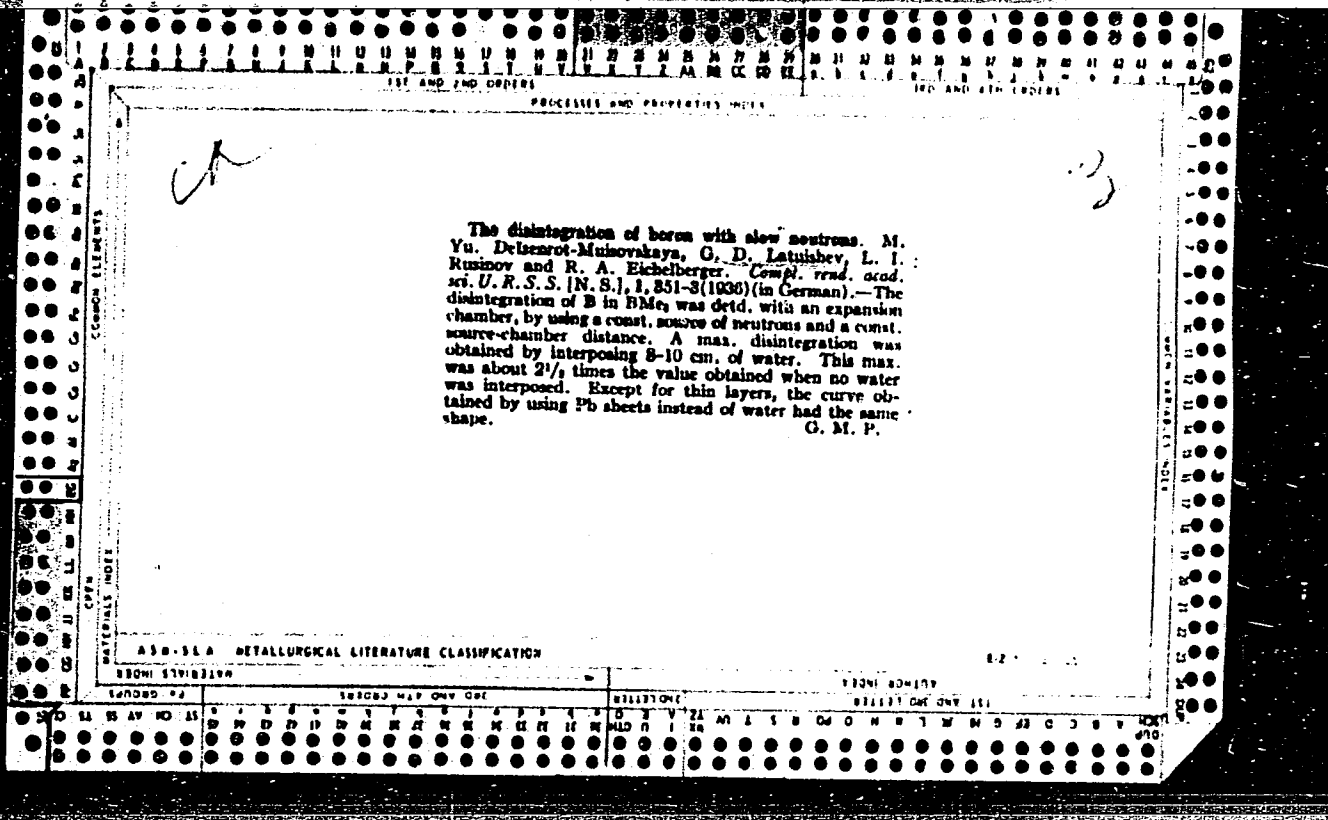
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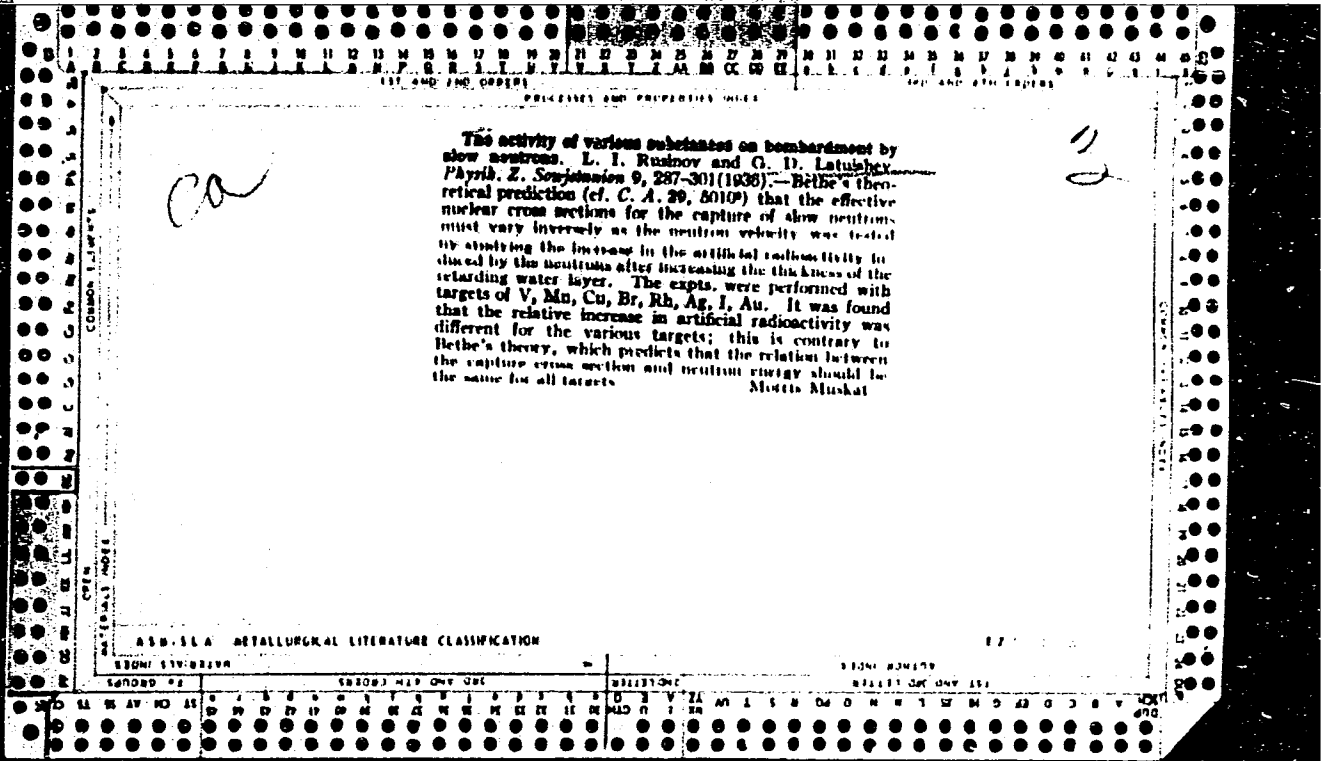
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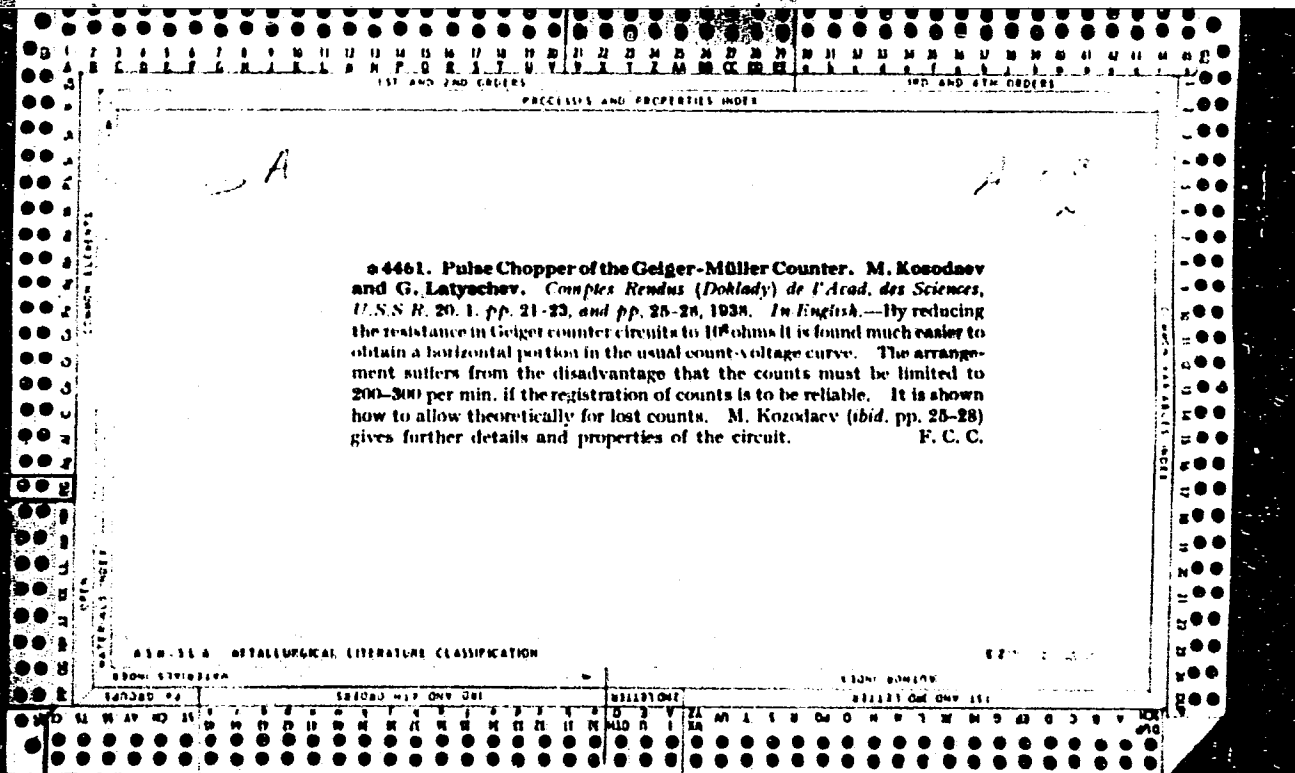
Artificial radioactivity induced by neutrons. I. V. Kurchatov, G. D. Latubey, L. M. Nemenov and I. P. Selimov. *Physik. Z. Sowjetunion* 8, 198-201 (1935); cf. *C. A.* 29, 5736, 1934. - A study with a Geiger counter of the radioactivity induced by slow neutrons in Pd, Re and Os gave the following results. Pd: 4 periods, two of half lives 3 min. and 60 hrs. in addition to those found by Fermi; Re: 2 periods, one of 85 hrs. in addition to that found by Fermi; Os: a weak activity of a 40-hr. half life.  
Morris Muskat

A.S.D.S.L.A. METALLURGICAL LITERATURE CLASSIFICATION

E-2







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PROCESSES AND PROPERTIES INDEX

*11*

3

The spectrum of radium C positrons. A. I. Alikhanov and G. Latyshev. *Compt. rend. acad. sci. U. R. S. S.* 20, 429-30(1938)(in English).--With improved counters the positron spectrum of Ra C was detd. with a magnetic spectrograph. Eleven abrupt drops in the curve were found; they correspond to 11  $\gamma$ -lines with the energies: 1210, 1290, 1390, 1520, 1620, 1690, 1750, 1820, 2080, 2200 and 2420 e. kv. Intensities of the lines are calcd. from the theoretical curve of Jaeger and Hulme (*C. A.* 29, 3229<sup>4</sup>). Study of the spectrum of positrons emitted by radioactive substances is the most suitable method for obtaining the spectrum of  $\gamma$ -rays with energies higher than 2mc<sup>2</sup>.

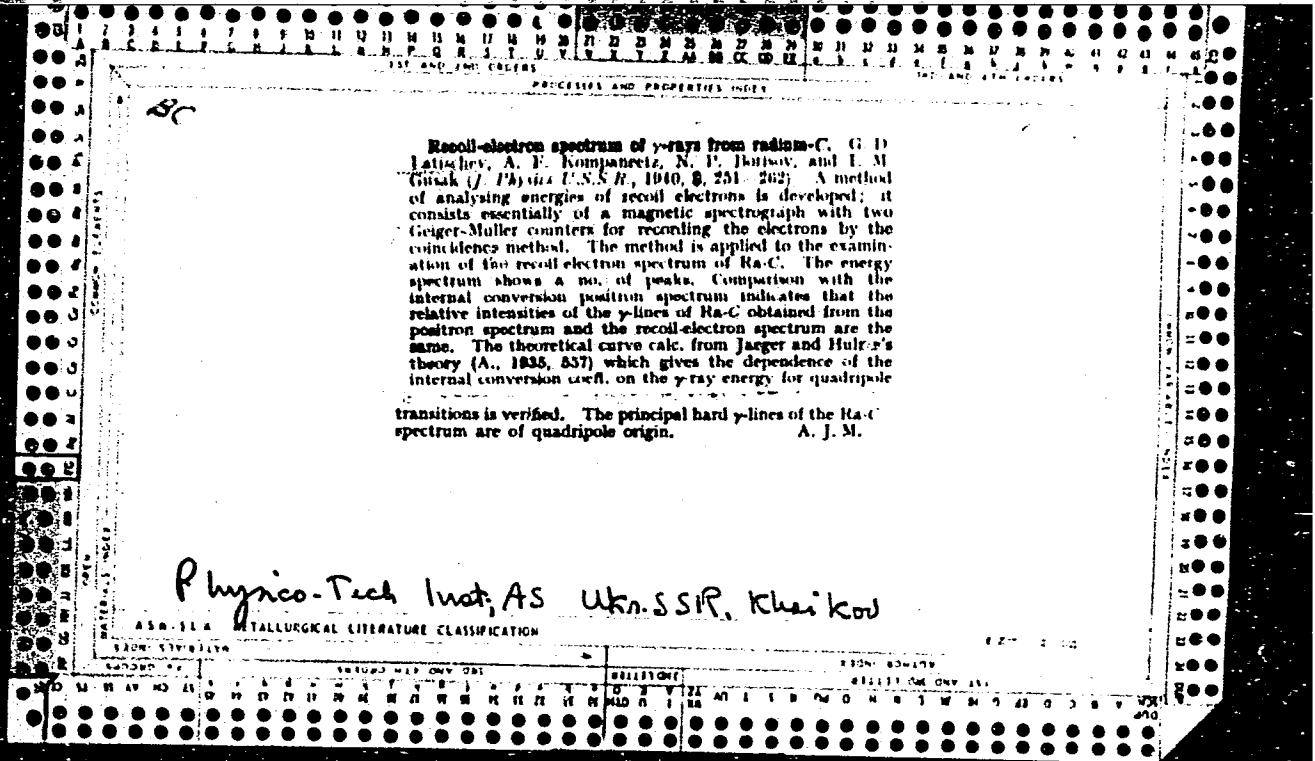
L. E. Steiner

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PROCESS AND PROPERTIES INDEX

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2ND AND 4TH CAPERS

BC

11

Positron spectrum of radium-C. A. I. Alichanov and G. D. Latichev. (*J. Physica U.S.S.R.*, 1940, 8, 263-274).—The positron spectrum of Ra-C has been investigated with improved apparatus. The curve of energy against no. of positrons shows 11 sharp drops, each corresponding with a  $\gamma$ -line of which the energy can be calc. All the positrons from Ra-C arise from internal conversion of  $\gamma$ -rays. It is shown that the total intensity of a large no. of  $\gamma$ -lines of Ra-C is comparable with the intensity of the strongest  $\gamma$ -line of Ra-C. The theory of Jaeger and Hulme (A., 1935, 557) is verified. No drop corresponding with energy of 1414 ke.v. of a nucleus level in Ra-C has been observed, in agreement with the fact that a transition from this level with emission of a  $\gamma$ -ray is forbidden. A. J. M.

458-51A METALLURGICAL LITERATURE CLASSIFICATION

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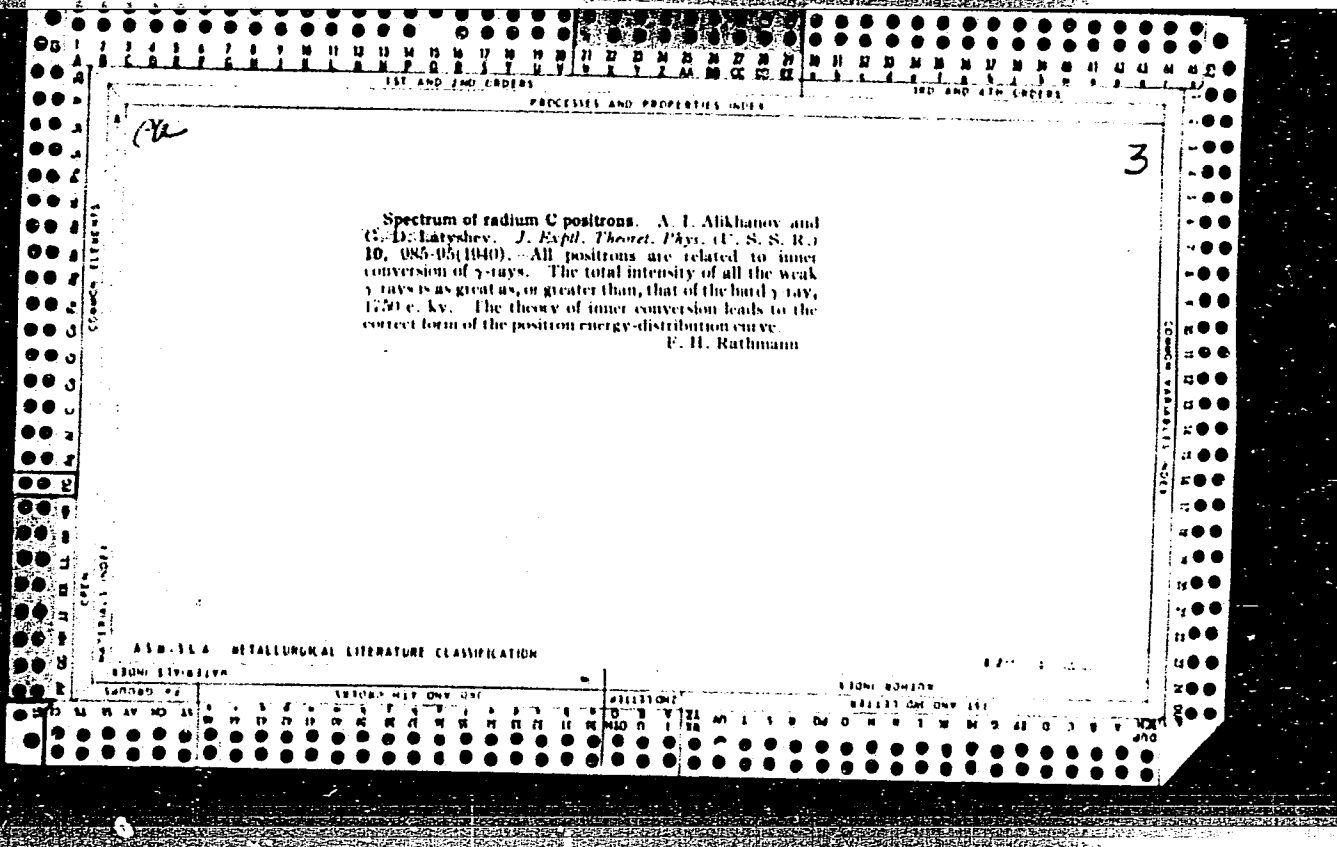
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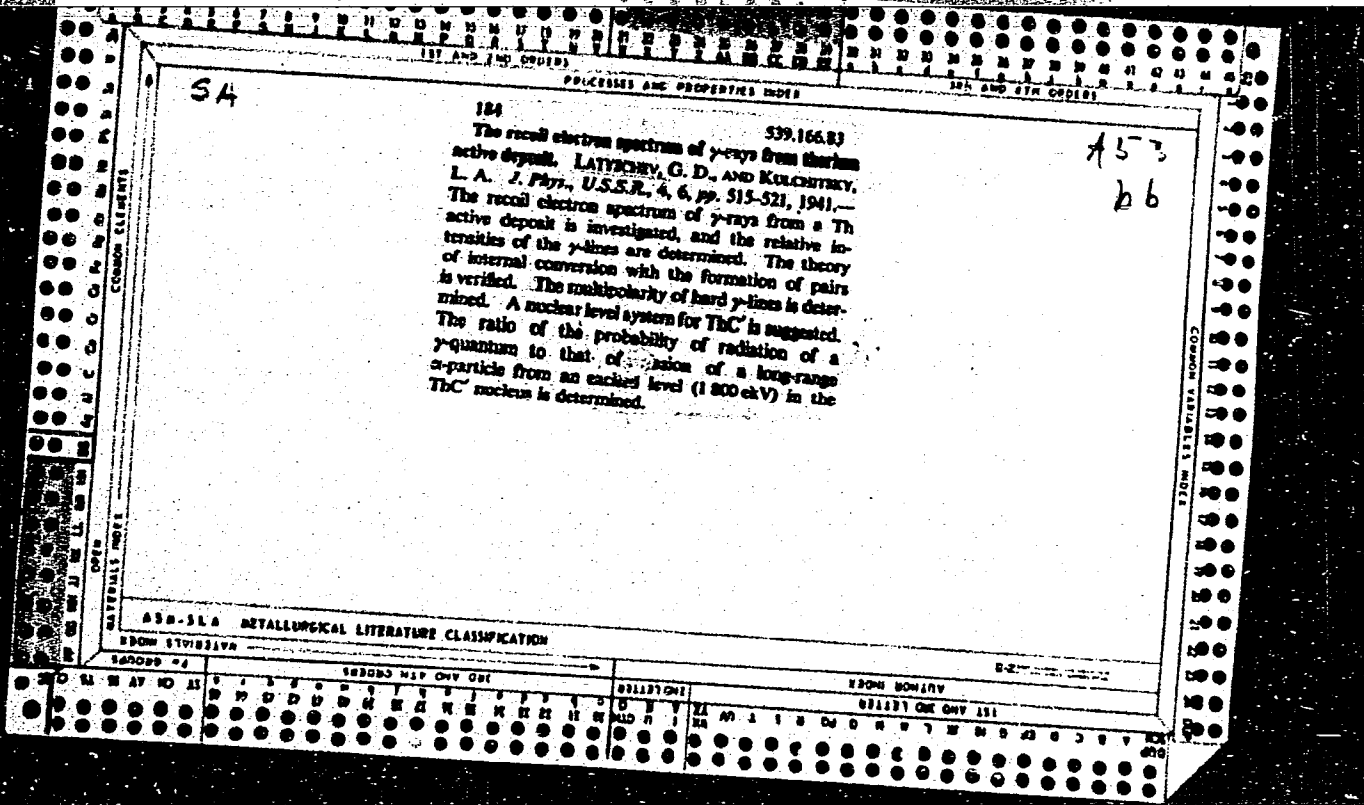
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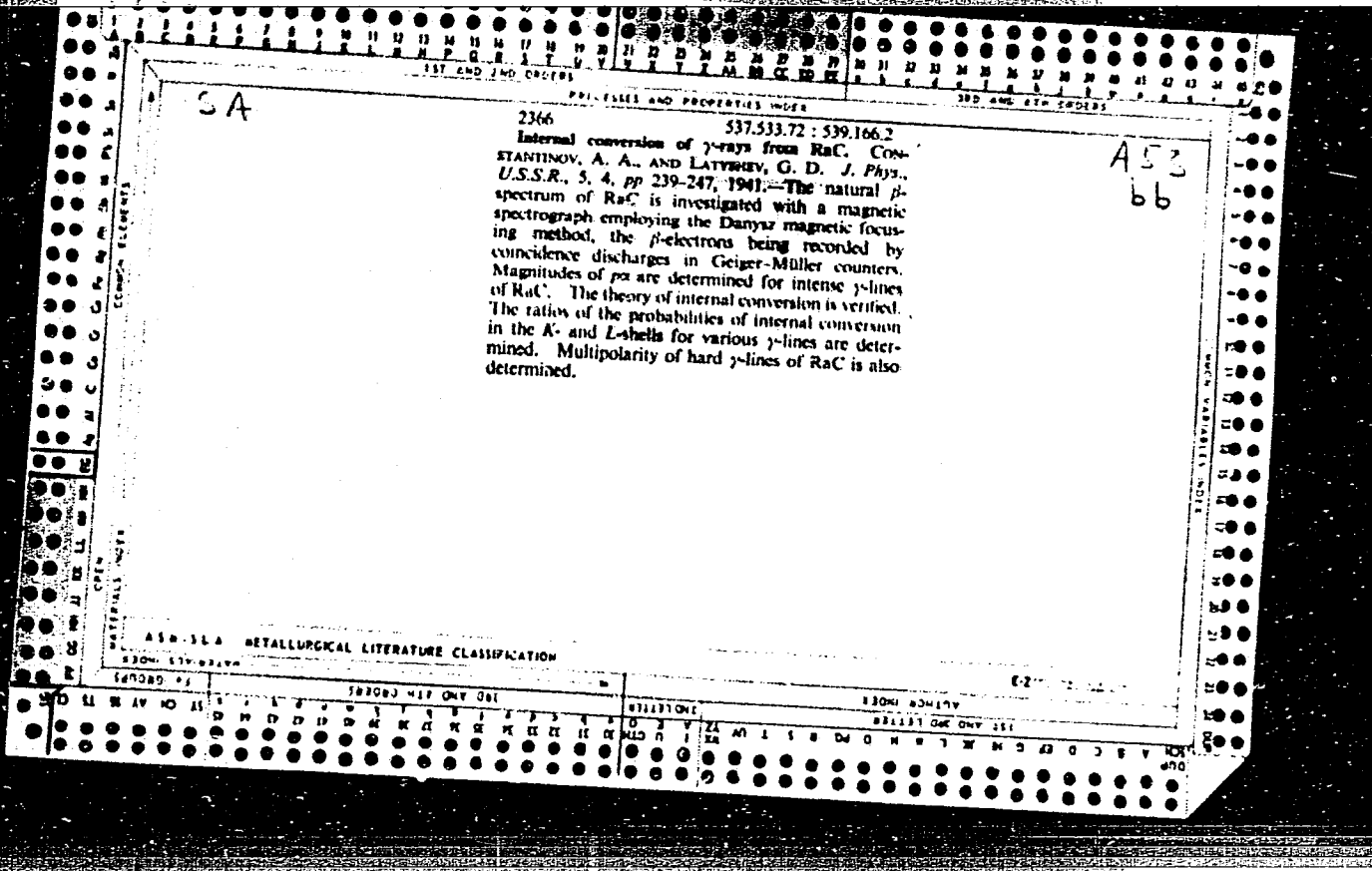
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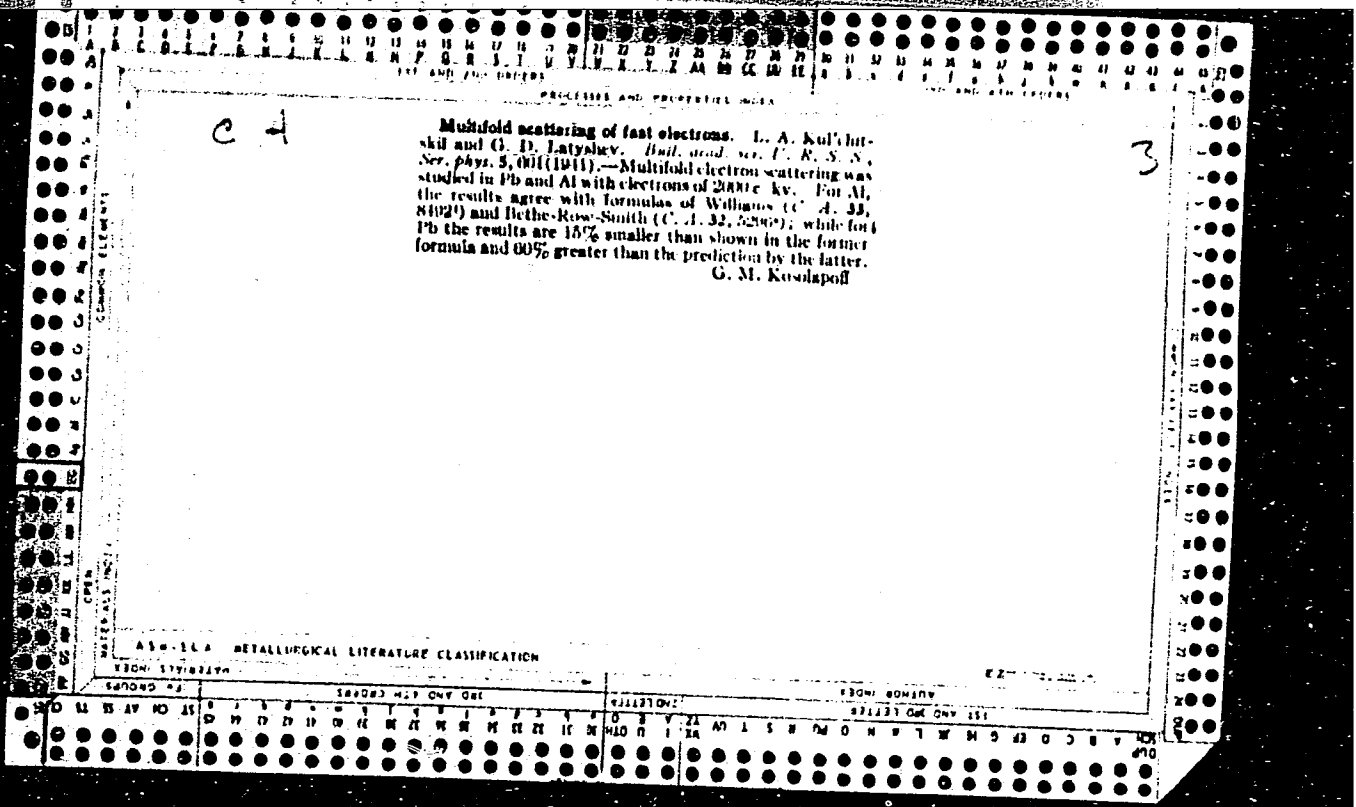
2ND AND 4TH CAPERS











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CA

3

Spectrum of recoil electrons from the  $\gamma$ -rays of an active thorium deposit. G. D. Latsaby and L. A. Kul'chitskii. *J. Exptl. Theoret. Phys.* (U. S. S. R.) 11, 200-0(1911).— The recoil-electron spectrum was measured by detg. the velocity of the charged particles in a magnetic field by means of a Geiger-Müller counter. The spectrum consists of the energy groups ( $\gamma$ -line) 1350, 1500, 1000, 1800, 2200 and 2620 e. kv. with the relative intensities 3.0, 3.7, 10.0, 6.2, 5.05 and 100 and a weak max. at 1540 e. kv. Comparison with the inner-conversion positron spectrum measured by Alikhanov and Dzheleпов (C. A. 33, 1580<sup>1</sup>) shows that the ratios of the relative intensities are not unity but 2.77, 1.7, 1.1, 1.05, 2.0 and 1.0, resp. Assuming that the lines 1350, 1500 and 2200 are of dipolar rather than of quadrupolar origin, these data are in good agreement with the theory of Jäger and Hulme (C. A. 32, 8914<sup>1</sup>). The 1600, 1800 and 2620 lines are quadrupolar. The 2620 line arises from the reaction  $\text{Th C}^{\alpha} \rightarrow \text{Th D}$ ; the others from the  $\text{Th C} \rightarrow \text{Th C}'$  reaction. An energy-level scheme is given. For the 1800 line the ratio of the probabilities of  $\alpha$ -particle to  $\gamma$ -quantum radiation is  $5.7 \times 10^4$ .

F. H. Rathmann

Ukr. Physics-Tech Inst, Kharkov

COMMON ELEMENTS      COMMON VARIABLES INDEX

ASB-55A METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND COPIES      3RD AND 4TH COPIES

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

LATYSHEV, G. D.

SA:

1169 539,166.75  
The photo-effect from hard  $\gamma$ -rays. DAVIDSON,  
Z. S., AND LATYSHEV, G. D. *J. Phys., U.S.S.R.*, 6,  
1-2, pp. 15-25, 1942.—The photo-effect from the  
 $\gamma$ -line 2 620 ekV was investigated by a magnetic  
spectrograph with electron focusing and registration  
of electrons by 2 counters in coincidence. The abs.  
value of the effective cross-section for the photo-effect

in Pb was measured. A relation was found betw.  
the probability of photo-electric absorption in the *k*-  
and *L*-shells of the atom. An estimate is made of the  
value of the angle of spreading of the electrons in the  
photo-effect.

A53

J

10

SA:

A53

3

*CA*

A magnetic spectrograph. V. V. Gay and G. D. L. Myshchey (Phys. Tech. Inst. Acad. Sci.). *Bull. Acad. Sci. U.S.S.R., ser. phys.* 10, 439-495 (1940).—G. and L. calc. the size, form, and intensity of  $\gamma$ -spectral lines from the geometric parameter of the magnetic spectrograph. The calcns. are made for linear and nonlinear mono- and polychromatic sources. S. Faksver

*Phys. Tech. Inst. AS USSR*

450-55 A METALLURGICAL LITERATURE CLASSIFICATION

GROUP	SECTION	SUBSECTION	SECTION	SUBSECTION
1	1	1	1	1

137 AND 138 (PDF) PROCESSES AND PROPERTIES INDEX 139 AND 140 (PDF)

COMMON ELEMENTS

OPEN MATERIALS INDEX

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

117 AND 118 LETTERS

119 AND 120 (PDF)

*Handwritten:* 107

*Handwritten:* 13

The interaction of  $\gamma$ -rays with matter and the spectroscopy of  $\gamma$ -radiation. G. D. Latsyhev (Ukrainian Physico-Tech. Inst., Kharkov, U.S.S.R.). *Rev. Modern Phys.* 19, 132-45(1947).—A discussion of the work by the author, *et al.*, with the magnetic spectrograph. The relative  $\gamma$ -line intensities for Ra C obtained from a study of its recoil electron spectra and internal conversion positron spectra are as follows: 0.50, 1.00, 0.37, 0.41, 2.42, 0.40, 0.54, 0.71, 1.19, 0.44, 0.56, 2.41, for the lines 2420, 2200, 2000, 1820, 1761, 1690, 1620, 1520, 1370, 1290, 1234, and 1120 k.e.v. The relative  $\gamma$ -line intensities for Th (C + C') obtained from a study of its natural  $\beta$ -ray spectra and recoil electron spectra are as follows: 10.0, 6.5, 11.0, 0.5, 10.0, 100 for the lines 1350, 1500, 1600, 1800, 2200, and 2620 k.e.v. The effective cross sections of the photoeffect per atom in Cu, Ag, Ta, and Pb, obtained from a study of their photoelectron spectra, detd. with an improved spectrograph, were found to be in the ratio (1 = 0.2):(9.5 = 1.1):(74 = 8):(120 = 11). This cross section,  $\sigma_0$ , varies with  $Z$  in the interval from  $Z = 29$  to  $Z = 82$  in the manner  $\sigma_0 = k.Z^n$ ;  $n = 4.6 \pm 0.25$ . The abs. value of  $\sigma_0$  for Pb was found to be  $(1.3 \pm 0.41) \times 10^{-24}$ , in agreement with the theoretical value. The conclusions of the Dirac relativistic quantum mechanics in the region of several m.e.v. energies are adequately verified by expt. 21 references. C. P. Powell

117 AND 118 LETTERS

119 AND 120 (PDF)



LATYSHEV, G. D.

PA 25/49T81

USSR/Nuclear Physics -- Gamma Rays Nov/Dec 48  
Nuclear Physics -- Magnetic Spectrograph

"Inner Conversion of Gamma-Radiation of RaC':  
I, Positron Spectrum," V. V. Gey, G. D.  
Latyshev, M. V. Pasechnik, E. V. Tal'vik,  
Physicotech Inst, Acad Sci USSR, 5 pp

"Iz Ak Nauk SSSR, Ser Fiz" Vol XIII, No 6

Continuation of Alikhanov and Latyshev's  
studies on the subject, using a perfected  
magnetic spectrograph. Presents table of this  
positron spectrum, contrasting results with  
those of Ellis, and those of Alikhanov and  
Latyshev.

25/49T81

LATYSHEV, G. D.

PA 25/49T82

USSR/Nuclear Physics -- Gamma Rays Nov/Dec 48  
Nuclear Physics -- Electrons

"Inner Conversion of Gamma-Radiation of RaC':  
II, Determining the Multipolarity of Lines,"  
V. V. Gey, G. D. Latyshev, M. N. Rumsh, Phys-  
icotech Inst, Acad Sci USSR, 2 pp

"Iz Ak Nauk SSSR, Ser Fiz" Vol XIII, No 6

Determines multipolarity of gamma-lines as  
a function of the ratio of the coefficient  
of conversion with pair-production to the  
coefficient of conversion in K-electrons.

25/49T82



LATYSHEV, G. D.

PA 25/49T84

USSR/Nuclear Physics -- Gamma Rays    Nov/Dec 48  
Nuclear Physics -- Electrons

"Fine Structure of Gamma-Lines of RaC," V. V. Gey, G. D. Latyshev, M. V. Pasechnik, Physico-  
tech Inst, Acad Sci USSR, 8 pp

"Iz Ak Nauk SSSR, Ser Fiz" Vol XII, No 6

Measures the lines of inner conversion of K-  
electrons for lines for 1,414, 1,760, and  
2,198 KeV.

25/49T84

PROCESS AND PROPERTIES INDEX

1029. The fine structure of  $\gamma$ -lines of RaC. V. V. Gei, G. D. Latyshev, and M. V. Pashchuk. Doklady Akad. Nauk S.S.S.R. 63, 239-43(1948) Nov. 21 (in Russian).

A detailed study was made of the principal lines of the  $\gamma$ -spectrum of RaC, by measuring the electron spectra of the K-level internal conversion for the lines 1414, 1760, and 2198 kev. The total widths of the last two lines and the positions of their respective components agree with the details of the corresponding positron spectra. The components are 6.2 kev apart. In the line 1414 kev each component is split into two lines 2.4 kev apart. This fine structure of the three lines studied is best interpreted by a rotating model of the nucleus, in which the lines corresponding to a rotating structure are superimposed upon a spectrum of fundamental lines corresponding to some internal nuclear changes which may be of a vibrational character. Assuming this interpretation, the author calculates the nuclear radius of RaC,  $R = (8.68 \pm 0.3) 10^{-13}$  cm. Substituting this into the formula  $R = r_0 A^{1/3}$ , we obtain  $r_0 = 1.49 \times 10^{-13}$  cm. Amaldi (Phys. Rev. 71, 739(1947)), studying the scattering of rapid neutrons, found for the coefficient  $r_0$  the value  $1.52 \times 10^{-13}$  cm, while Preston

A 33-114 METALLURGICAL LITERATURE CLASSIFICATION

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EDSON DOMINY

X

(Feyn, Rev. 71, 865 (1947)), from his measurements of the  $\alpha$ -decay energies, obtained an average  $r_0 = 1.51 \times 10^{-13}$  cm.

PA 25/49T85

LATYSHEV, G. D.

USSR/Nuclear Physics -- Gamma Rays Nov/Dec 48  
Nuclear Physics -- Radioactivity

"Radioactivity of Be<sup>7</sup>" V. V. Gey, G. D.  
Latyshev, S. I. Tsypkin, A. A. Yuzefovich, 3 pp

"Iz Ak Nauk SSSR, Ser Fiz" Vol XII, No 6

After measuring the gamma-radiation resulting from annihilation of matter, concludes that if there is a supplementary component in the composition of the gamma-radiation of Be<sup>7</sup>, it does not result from annihilation of matter.

25/49T85

PA 55/49T75

USSR/Nuclear Physics - Positrons  
Nuclear Physics - Internal Conversion Dec 48

"Monochromatic Positrons in the Spectrum of Internal Conversion," G. D. Letyushov, V. V. Gay, A. A. Bashilov, I. F. Barchenk, Leningrad Physicotech Inst, Acad Sci USSR, 3 pp

"Dok Ak Nauk SSSR" Vol LXIII, No 5

Sharp peaks observed in a spectrum of positrons of  $RaC'$  internal conversion are shown to correspond to monochromatic positrons. Their presence is assumed to depend on a special type of internal conversion where the electron component of a pair is captured

USSR/Nuclear Physics - Positrons  
(Cont'd) Dec 48 55/49T75

by a free level in the electronic envelope. On the basis of a list of gamma rays of the  $RaC'$  impurities, part of the gamma rays must be attributed to monochromatic positrons. Submitted by Acad A. F. Toffe 24 Sep 48.

55/49T75



PA 52/119794

USSR/Nuclear Physics - Alpha Particles      May/Jun 49  
Nuclear Physics - Gamma Rays

"Angular Correlation of Short-Flight Alpha-Particles and Gamma-Quanta," L. A. Kul'-chitskiy, G. D. Latsyhev, D. G. Bul'ginakiy, Leningrad Physicotech Inst, Acad Sci USSR, 8 pp

"Tr Ak Nauk SSSR, Ser Fiz" Vol XIII, No 3

Studied correlation between direction of flight of alpha-particles and gamma-quanta in a mixture of RaTh and ThC (in approximately equal proportions). Presents results in tables showing number of actual coincidences in directions of flight of alpha-particles and gamma-quanta, a graph showing total number

52/119794

(Cont'd)

of coincidences as a function of the angle established between counters (Geiger and proportional) during measurements, etc. Concludes that a transition occurs when the moment of the nucleus before emission of the alpha-particle and after emission of the gamma-quanta is equal to 0, and in the intermediate state, equal to 2. Submitted 14 Sep 48.

52/119794

LATYSHEV, G.D.

LATYSHEV, G.D.

PA 52/49197

USSR/Physics  
Atomic Spectra  
Conversion Electrons

May/June 49

"Fine Structure of the 1414-keV Line and the Problem of the Multiplet Nature of Its Components," G. D. Latyshev, I. A. Sil'y, I. F. Baranuk, A. A. Vashilov, Leningrad Physicotech Inst, Acad Sci USSR, 6 pp

"Iz Ak Nauk SSSR, Ser Fiz" Vol XIII, No 3

Ratio of conversion probabilities for K, L, and M+N electrons is equal to  $W_K:W_L:W_{M+N} = 5.4 : 1 : 0.33$ , which corresponds to theoretical values for the 0 - 0 transition. Ratio of conversion probability for the K-shell to probability of pair production

52/49197

USSR/Physics (Contd)

May/June 49

is  $440$ , which is also close to the theoretical for 0 - 0 transition. Conversion electrons, corresponding to the 1414 transition, are divided into 18 lines forming two series of nine lines each. Lines of one series are displaced from the other by 2.5 keV. Within the series, lines are displaced by 670.3 keV. Submitted 16 Feb 1949.

52/49197

PA 152194

USSR/Physics - Spectrograph, Magnetic  
Nuclear Physics - Conversion Elec-  
trons

Jul/Aug 49

"Resolving Capacity of the Magnetic Spectrograph,"  
G. D. Latyshev, V. A. Malev, M. V. Pasechnik, Lenin-  
grad Physicotech Inst, Acad Sci USSR, 7 pp

"Iz Ak Nauk SSSR, Ser Fiz" Vol XIII, No 4

Analysis of experimental data shows that in resolu-  
tion of two lines (peaks of conversion electrons)  
lying close together the basic role is played not  
by the average width of the lines (peaks), accord-  
ing to the usual formula for resolving capacity of

152194

USSR/Physics - Spectrograph, Magnetic Jul/Aug 49  
(Contd)

a magnetic spectrograph, but by steepness of the  
right boundary of the lines (peaks). For the case  
of great steepness of the right boundary of the  
lines (peaks), the main role in measurements of the  
played by the accuracy of measurements of the  
magnetic field and its stability. It is necessary  
to make the right boundary of the lines as steep  
as possible during operation of the magnetic  
spectrograph. Graphs show experimental form of  
line of definite energy E, with x-axis expressing  
electron energy and y-axis, number of electrons;  
resolution averages 8 kev. Submitted 16 Jun 49.

152194

LATYSHEV, G. D.

LATYSHEV, G. D.

USSR/Physics - Magnetism  
Instrument

Jul/Aug 49

"Measuring the Strength of a Magnetic Field by the Induction Method," Yu. Ya. Konakhovich,  
G. D. Latyshev, V. V. Tsimbalin, Leningrad Physicotech Inst, Acad Sci USSR, 10 pp

"Iz Ak Nauk SSSR, Ser Fiz" Vol XIII, No 4

Describes apparatus for measuring the strength  $H$  of a magnetic field, which is distinguished from ordinary instruments by its high accuracy and by the possibility of continuous operation and convenience. Discusses block-diagram representing the apparatus, generator I giving field strength of stable frequency, generator II having direct current with a synchronous "motorchik," potentiometer having constant current and galvanometer, and results of experiments with the line of internal-conversion electrons from the K-shell (240 keV) of RaC. Conclusion: Accuracy of the method is limited by the stability of frequency of the quartz oscillator, equal to  $10^{-5}$ . Relative error for 500-oersted field is  $4 \cdot 10^{-5}$  and decreases with increase in field  $H$ , since absolute error is 0.02 oersted. Method is free of necessity of introducing tangential corrections on rectilinear scale, and on nonlinear galvanometer. Submitted 15 Jul 49.

PA 152T92

CA

3A

The spectrum of electrons of inner conversion from an ampul filled with radium emanation. I. G. D. Latyshev, I. F. Barchuk, V. A. Sergienko, Yu. K. Ioffe, and V. A. Malev. (Leningrad Phys.-Tech. Inst.). *Izvest. Akad. Nauk, Ser. Fiz.* 13, 628-31 (1940).—A table listing 50 lines of  $\gamma$ -rays between 584 and 1127 e.kv. is given. Whether the lines come from the K, M, N or L shell and the products  $P_{\alpha}$  ( $P$  = probability of formation of a  $\gamma$  line,  $\alpha$  = coeff. of conversion) are also indicated. II. G. D. Latyshev, I. F. Barchuk, V. A. Sergienko, Yu. K. Ioffe, A. A. Bashilov, K. V. Inosemtsev, and V. A. Malev. *Ibid.* 432-3.—For the interval  $h\nu = 1150$ -1438 e.kv. 36 lines are listed. The multipolarity is indicated. S. Pakswar

CA

3A

The spectrum of positrons of internal conversion corresponding to the 1414-e.kv. transition in radium C'. G. D. Latsyabev, A. A. Bashilov, I. P. Barchuk, V. A. Sergienko, Yu. K. Ioffe, V. A. Malev, and V. K. Inosemtsev (Leningrad Phys.-Tech. Inst.). *Izvest. Akad. Nauk S.S.S.R., Ser. Fiz.* 13, 434-7(1949).—The positron spectrum is compared to the spectrum of conversion electrons; lines 1428 and 1438 e.kv. are independent  $\gamma$ -lines having a dipolar origin. The fine-structure lines have all the same multipolarity corresponding to 0-0 (forbidden) transitions. S. Paksver

GA

3A

The spectrum of positrons of internal conversion corresponding to the 1761-e.kv. transition in radium C. G. D. Latshey and B. A. Shakhbasyan (Leningrad Phys.-Tech. Inst.), *Izvest. Akad. Nauk S.S.S.R., Ser. Fiz.* 13, 438-9 (1949). The spectrum of fine-structure components has been measured with an improved precision. However, material is still lacking for a complete analysis of this line. S. Pakswet

CA

**Multipolarity of  $\gamma$ -lines of radium C'. G. D. Iatshchik, I. P. Datchuk, V. A. Sergienko, Yu. K. Ioffe, A. A. Hashilov, V. A. Malev, and K. V. Inosentsev (Leningrad Phys.-Tech. Inst.). *Izvest. Akad. Nauk S.S.S.R., Ser. Fiz.* 13, 449-2(1949).—The ratio  $a_1/a_2$  ( $a_1$  is coeff. of conversion with formation of a pair;  $a_2$  is coeff. of conversion with formation of a K electron) is compared to theoretical curves for a dipole and a quadrupole. Only weak  $\gamma$ -lines are dipolar, strong lines being quadrupolar or having higher polarity. Line 1414 e.kv. corresponds to a 0-0 transition. S. Paksver**



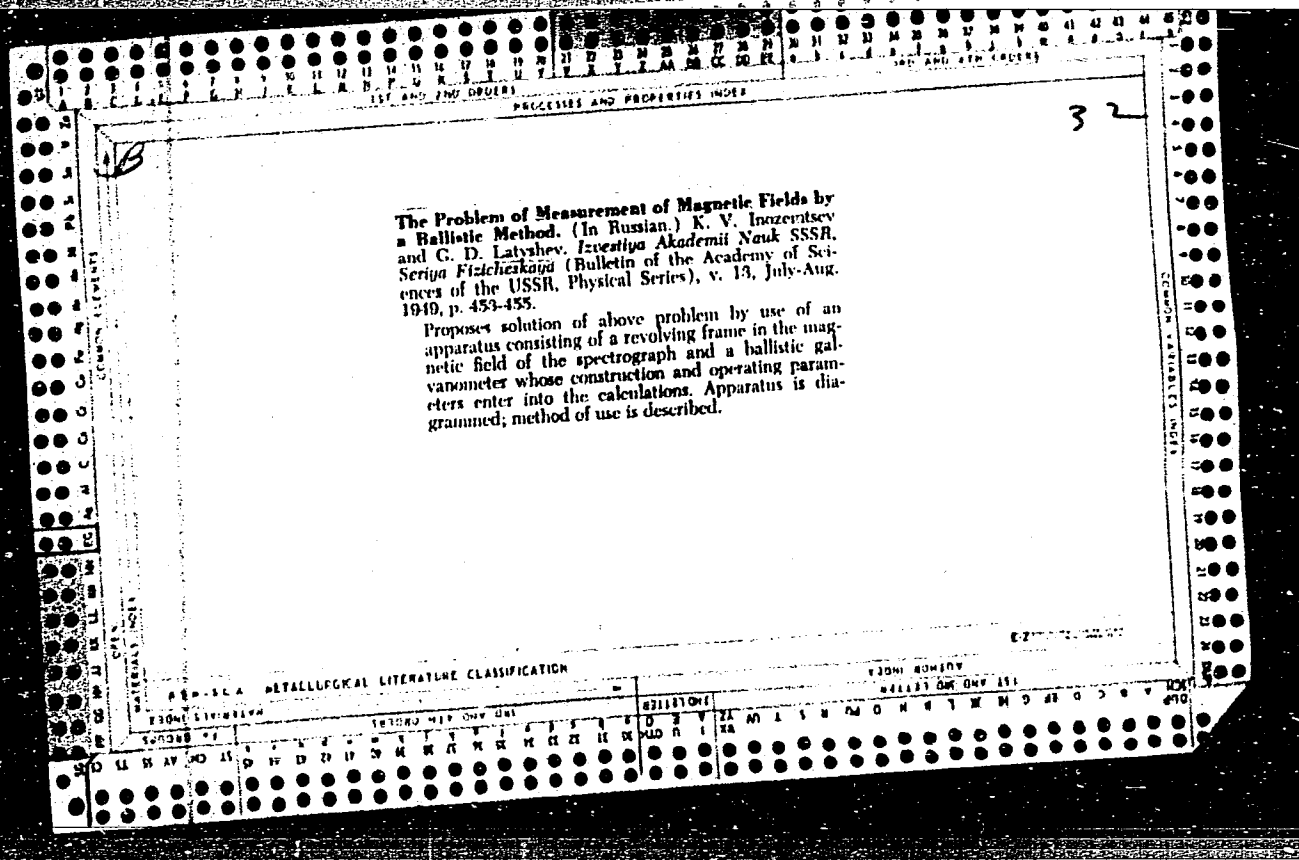
C.A

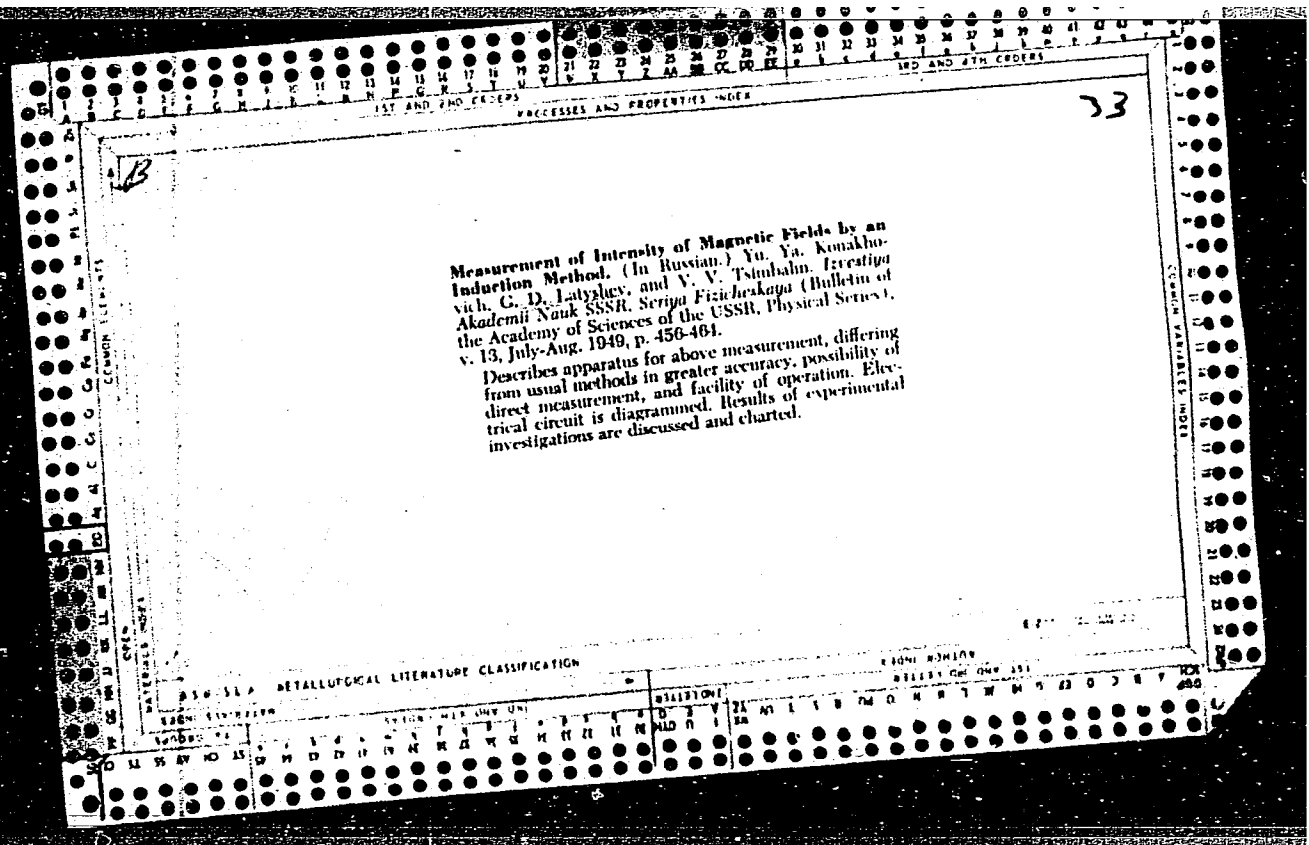
Fine structure of  $\gamma$ -lines of radium C'. H. G. D.  
Latsyshev, I. P. Barchuk, V. A. Serghenko, Yu. K. Indle,  
V. K. Malev, A. A. Bashilov, and K. V. Iusimtsev  
(Central Phys. Tech. Inst., Acad. Sci. USSR)  
S.S.S.R., *Sov. J. Phys.* 13, 441 (1949), following about  
lines 600, 1120, and 1218 e.kv. are complex and have a fine  
structure characterized by a const. sep. of 6 e.kv. be-  
tween the fine-structure components of each series and a  
fast drop of line intensities on the side of lower energies.  
S. Pakswar

CA

Intensity of fine-structure components of  $\gamma$ -lines of radium C. G. D. Lalyshov, V. A. Malev, and I. F. Barchuk (Leningrad Phys.-Tech. Inst.). *Izvest. Akad. Nauk S.S.S.R., Ser. Fiz.* 13, 447-52(1949); cf. C.A. 43, 7811c.—The fine structure of line 1414 e.kv. is composed of 2 series sepd. by 3 e.kv., the individual lines being sepd. by 0 e.kv. The line intensities decrease according to the formula  $I_n = I_0/(2n + 1)$  ( $n = 0, 1, 2, \dots$ ). In the fine structure of line 1120 e.kv. 4 series of lines are sepd. by 2.5, 2.2, and 2 e.kv. The components of each series are sepd. by 0 e.kv. and their intensity follows the above

C.A. 43, 3287g.—For 100 disintegrations of Ra, 11 L radiations and 3  $\gamma$ -radiations of 68, 140, and 240 e.kv. in ratios of 0.85, 0.33, and 0.05 were observed. Mass absorption coeffs. in Al for  $L_{\alpha 1}$ ,  $L_{\alpha 2}$  and  $L_{\beta 1}$ ,  $L_{\beta 2}$ , and 68 e.kv.  $\gamma$ -radiations were calcd. to be 15, 8.1, 4.8, and 0.21, resp. M. A. Kinchart





PA 26/49T82

LATYSHEV, G. D.

USSR/Nuclear Physics - Alpha Particles Jan 49  
Nuclear Physics - Gamma Rays

"The Angular Correlation of Short-Range Alpha Particles and Gamma quanta," L. A. Kul'chitskiy, G. D. Latyshev, D. G. Bulginskiy, Leningrad Physicotech Inst, Acad Sci USSR, 4 pp

"Dok Ak Nauk SSSR" Vol LXIV, No 1

Investigates correlation between direction of flight of alpha-particles and gamma-quanta in equal mixture of radothorium and thorium C. Concludes that transition occurs when the

26/49T82

USSR/Nuclear Physics - Alpha Particles (Contd) Jan 49

moment of the nucleus, before alpha-particles fly out and after departure of the gamma-quantum, is equal to zero, and in the intermediate state equal to 2. Submitted 22 Nov 48.

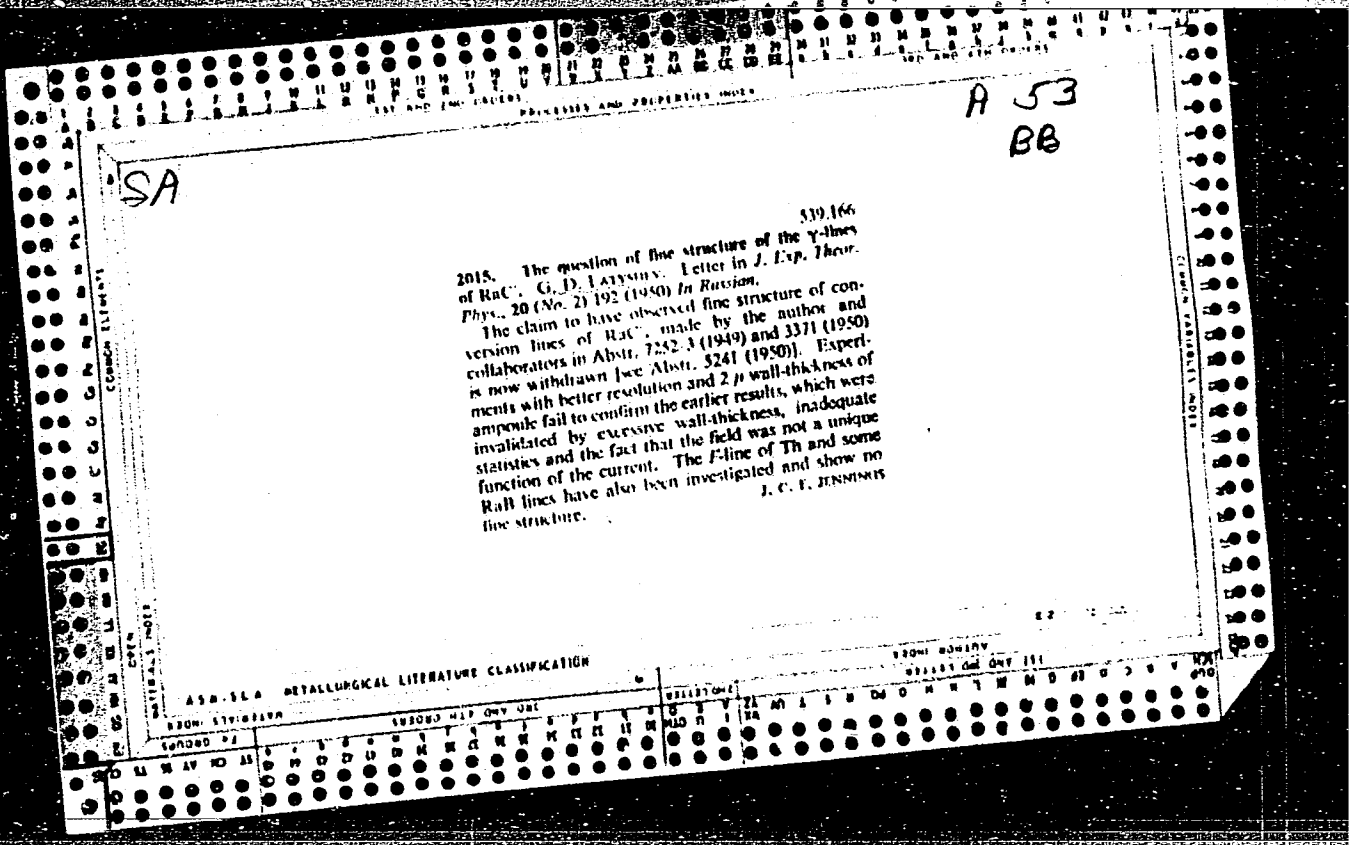
26/49T82



3 a.

C. a.  
1951

Angular correlation of short-path  $\alpha$ -particles and  $\gamma$ -  
quanta. I. A. Kul'chitskii, G. D. Lityshov, and D. G.  
Bulygin'skii (Leningrad Phys.-Tech. Inst., Guide Russ.  
Sci. Periodical Lit., Brookhaven Natl. Lab. 3, 219-27  
(1959)(English translation).—See C.I. 43, 7810g  
E. J. C.





LATYSHEV, G.D.

OSTRETSOV, L.A.; LATYSHEV, G.D.; LEONOV, V.D.; SHIRSHOV, N.M.

High-speed scaling circuits. Prib. i tekhn. eksp. no. 2:72-75 S-0 '56.  
(MLRA 10:2)

1. Leningradskiy institut inzhenerov zheleznodorozhnogo transporta.  
(Electron-tube circuits) (Nuclear counters)

, LATYSHEV, G.D.

YEGOROV, Yu.S.; LATYSHEV, G.D.

Stabilization of magnetic fields based on nuclear resonance. Prib.  
i tekhn. eksp. no. 2: 80-85 S-O '56. (MLRA 10:2)

1. Leningradskiy Institut inzhenerov zheleznodorozhnogo transporta.  
(Nuclear magnetic resonance) (Magnetic fields--Measurement)

Letter conversion on the  $L_1$ ,  $L_2$ ,  $L_{III}$ , and  $M_1$  and  $M_{II}$  subshells of thorium ( $^{232}\text{Th}$ ) atom. E. M. Kravak, G. D. ~~Latyshev, M. A. Listengarten, L. A. Chirsov, and H. G. Sergeev~~, *Russ. Acad. Sci. U.S.S.R. Phys. Ser.* 20, 332-4 (1958) (English translation).—See C.A. 50, 14397d.

B. M. R.

pmf  
mtt

6  
1-pmf  
1-gum

L. A. Tyshchenko, G. D.

Investigation of the A line of the active regions in isobut-  
horium. E. M. Krisyuk, G. D. Latyshev, and A. G. Sergeev. *Bull. Acad. Sci. U.S.S.R., Phys. Ser.* 20, 335-6  
(1956) (English translation).—See C.A. 50, 14396e.  
R. M. R.