

PUSHKIN, Veniamin Noyevich; ZGURSKIY, Vladimir Semenovich; IVANOV, S.M.,  
red.; RAKITIN, I.T., tekhn. red.

[Man and automatic machine; psychology and technology]Chelovek  
i avtomat; psikhologiya i tekhnika. Moskva, Izd-vo "Znanie,"  
1963. 31 p. (Novoe v zhizni, nauke, tekhnike. IV Seriya:  
Tekhnika, no.6) (MIRA 16:2)  
(Automatic control) (Human engineering)

ZAVALISHINA, D.N.; PUSHKIN, V.N.

Mechanisms of operative thinking. Vop. psikhol. 10 no.3:  
87-100 My-Je '64. (MIRA 17:9)

1. Institut psikhologii Akademii pedagogicheskikh nauk RSFSR,  
Moskva.

PUSHKIN, Veniamin Noyevich; IVANOV, S.M., red.

[Heuristic and cybernetics] Evristika i kibernetika. Moskva, Znanie, 1965. 47 p. (Novoe v zhizni, nauke, tekhnike. IV Seria: Tekhnika, no.6) (MIRA 18:4)

DELFIN, S.S.

Toward a comprehension of the heuristic activity in cybernetics  
and psychology. Vop. psikhol. 11 no. 119-20 Jan' 66. (NIS 18:1)

1. Institut psikhologii Akademii pedagogicheskikh nauk SSSR,  
Moskva.

L 37106-66 EWP(k)/EWT(d)/EWF(h)/EWP(l)/EWP(v) IJP(c) GG/BB/EG/JT/JXT(BF)/GD

ACC NR: AT6012884

SOURCE CODE: UR/0000/65/000/000/0037/0046

AUTHOR: Pushkin, V. N.

ORG: None

TITLE: Solving problems of complex object control

SOURCE: Sistema chelovek i avtomat (Man-automaton systems). Moscow, Izd-vo Nauka, 1965, 37-46

TOPIC TAGS: bionics, man machine communication, human psychology

ABSTRACT: The author studies the problems of establishing efficient connections between the outputs of machines and the inputs of man. Basic psychological problems in the man-automaton system are studied. These problems are sensation and perception. Man serves as a regulator in a large system. The interaction of man as a regulator with a large system is much more complex than the interaction of the outputs of an automaton and the inputs of man. The following hypothetical criteria are given for differentiating reaction from operative thinking. Operative thinking takes place if the operator or dispatcher has to reconstruct the elements mentally before reacting to one or another problem situation.

Card 1/2

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B+1

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ACC NR: AT6012884

Operative thinking has to be differentiated from complex reactions. In order to increase the reliability of production systems, operative thinking must be replaced by reactions. There are systems for which it is impossible to determine all possible complex situations and methods of necessary action. For such systems operative thinking is the only solution. The mechanisms of operative thinking are close to those of the psychological problem solving mechanism. Problem solving has been studied in the psychology of thought processes for the last 70 years. The trial and error theory is most prevalent. Chess problems are used by the author as experimental material. These were chosen because they represent typical operative thinking. Chess appears to be a key to the explanation of the possibility of automating man's intellectual activity. An experiment was performed in which the eye movements of the subject were recorded as he analyzed the chess board. The path of the eye movements along the chess board was established. It is understood that not all movements are directly connected with thought processes. A certain percentage of these movements are related to perception, but it is evident that in the majority of cases they are directly related to problem solving. The perception of the elements of the problem, the chessmen, can be studied as a nearly automated process. In this experiment the eye does not act as a sensory organ but as a thought organ. It was shown that trial and error is not involved in problem solving. Orig. art. has: 3 figures.

SUB CODE: 06, 09 / SUBM DATE: 02Aug65 / ORIG REF: 005

Card 2/2 *ms*

*PUSHKIN, V.P.* 314

AUTHOR: Rubanova, M.R., Candidate of Technical Sciences, and  
Pushkin, V.P., Technician.

TITLE: A new method of inspecting welded joints on steam piping  
made of austenitic steel. (Novyy metod kontrolya svarnykh  
stykov paroprovoda iz austenitnykh staley.)

PERIODICAL: "Energomashinostroenie", (Power Machinery Construction),  
1957, No. 5, pp. 22 - 25, (U.S.S.R.)

ABSTRACT: When using ultrasonic defectoscope methods the most difficult  
case is that of heavy welded joints of austenitic steel. When  
ultrasonic waves are propagated in thick welded metal, and  
particularly in the zone of thermal influence, their intensity  
is greatly weakened by dispersion on the boundaries of crystall-  
ites. This causes a reduction in the depth of penetration of  
ultrasonic waves into the metal and reduces the sensitivity of  
this method of inspecting welded joints. False signals, which  
do not really originate in a defect are also observed. They  
are caused by the reflection of the ultrasonic waves from the  
boundary of separation of the main metal and the weld which  
represents a sharp transition from fine grain to coarse grain  
structure.

This article describes work carried out by the Instrument  
Division of the Central Scientific Research Institute of Heavy  
Engineering in 1956, to develop procedures for the inspection  
in production of welded joints on steam piping of 219 x 27 mm  
diameter (made from steels EI-257 and 1Kh18H12T) by ultrasonic  
methods. The development work was carried out on lengths of

A new method of inspecting welded joints on steam <sup>314</sup>piping made of austenitic steel. (Cont.)

piping which had been welded and heat-treated at the Podolsk engineering works. Work was also done on steam piping for super-high steam conditions of the Cherepets power station. The ultrasonic method is now widely used for the inspection of welded joints during erection and major overhauls of power equipment. Ultrasonic and radiographic inspection methods were compared and it was found that thin cracks, which are typical defects of welded joints, are revealed only by the ultrasonic procedure.

The defects discovered as a result of preliminary examination of 70 welds in super-high-pressure steam piping of the Cherepets station are classified into the following groups:

- (1) groups of pits in the weld and the main metal;
- (2) transverse cracks and pits along the line of melting;
- (3) pits and cracks in the welded joints that were not heat-treated;
- (4) longitudinal cracks formed in the welded metal when unconditioned electrodes were used;
- (5) cracks in the root of the welded joint.

The ultrasonic inspection procedures were studied on standard specimens with large artificial defects in the upper and lower parts of the welded joints. In this way, the best position for the probe was determined. It is necessary not only to locate the defect within the thickness of the weld but also to determine the



A new method of inspecting welded joints on steam piping<sup>214</sup> made of austenitic steel. (Cont.)

zone in which it is formed (welded metal, main metal, or region of thermal influence) and the appropriate procedure is described. The procedure for estimating the size of defect is described. The dimensions of localised defects are estimated from dimensions of their equivalent areas on comparing the amplitude of the signal reflected from the defect with the amplitude of the signal reflected from the standard hole in the standardised specimen. The dimensions of a defect of the type of a transverse crack in a steam pipe is determined by moving the probe along the weld, an intense reflected signal is obtained at the ends of the defect. The development of a defect within the thickness of the welded joint can be evaluated approximately by moving the probe perpendicular to the welded joint. In the majority of cases longitudinal cracks are concentrated in the upper half of the welded joint and are concentrated together. A number of examples are given of the commonest type of defects observed in samples in which the welding procedure was made abnormal with the aim of artificially forming cracks and also in production specimens and welded joints of actual steam pipes.

The following conclusions are drawn from the work which was carried out. It is in principle possible to inspect welded joints on steam pipes of 219 x 27 mm diameter made from steels EI-257 and 1Kh-18H12T. For this purpose a special ultrasonic defectoscope was developed with a working frequency

A new method of inspecting welded joints on steam piping<sup>314</sup>  
made of austenitic steel. (Cont.)

of 1.8 Mc/s and prismatic probes operating at lower frequencies. An ultrasonic inspection procedure was also developed that passed production tests and is fully applicable for the inspection of welded joints on power station steam piping. Comparisons of the results of ultrasonic examination with cut sections of the welds and metallographic investigation of the defective zone of the welded joints confirm the effectiveness of the ultrasonic inspection procedure for welded joints of austenitic steel that have been heat-treated. It was established that it is possible reliably to reveal various defects of welding located in any part of the welded joint, such as transverse and longitudinal cracks (including internal, superficial and sub-surface). The presence of an accumulation of small longitudinal cracks 1.5 - 2 mm deep in the sub-surface layer of metal can be determined and individual non-metallic inclusions with an equivalent area not less than 20 mm<sup>2</sup> can be observed. The procedure that was developed can be used to determine the co-ordinates of the defects, their extent or approximate size, their equivalent area and probable character. In the absence of any criteria about permissible defects it is not possible to reject welds at a power station because of defects discovered by ultrasonic methods. Therefore, in order to accumulate material, careful observations should be made on

PROCESSES AND PROPERTIES UNDER

21

Flameless burning. G. N. Khudyakov and V. B. Pushkin. *Bull. acad. sci. U.R.S.S., Class. sci. tech.* 1965, 545-53 (in Russian).—The combustible gas-air mixt. is burned in a column of packed refractory of varying, but in each case homogeneous, grain size and of known porosity, 52% for fireclay (chamotte, grog) and 40% for corundum packing. For each given mean grain size, there is a limiting heating intensity  $Q$  above which the structure of the refractory packing and the flameless character of the combustion are upset; the ceiling  $Q$  detd. experimentally for air and recalc. for an exhaust gas ( $CO_2$  11.53,  $N_2$  71.8,  $H_2O$  17.13%) yielded by petroleum gas used in the expts., was 10.7 kg.-cal./cu.m., burning at about 2000°. Plotted against increasing grain size, from 1 to 7 mm.,  $Q$  in cal./hr. per (1) sq.m. of the level of the packing, (2) cu.m. of the total vol., (3) cu.m. of the pore vol., (4) sq.m. of the grain area, is represented by upward-sloping straight lines, e.g.: fireclay (chamotte) grain size 2 and 6 mm.,  $Q_1 = 2.13$  and  $4.57 \times 10^4$ ,  $Q_2 = 31.5$  and  $65.4 \times 10^4$ ,  $Q_3 = 58.5$  and  $125.5 \times 10^4$ ,  $Q_4 = 21.35$  and  $136 \times 10^4$ . The corresponding graphs for corundum lie somewhat above those for fireclay. Measurements of heat transfer were made in flowing-water-jacketed iron cylinders 340 mm. high and of diam. 105, 48, and 32 mm., the stoichiometric petroleum gas ( $CO_2$  0.02,  $C_2H_6$  0.05,  $C_3H_8$  0.10,  $CH_4$  0.50,  $C_4H_{10}$  0.10,  $H_2$  0.16,  $CO$  0.08)-air (1.2% excess) mixt. being introduced at the bottom through round-section channels in a refractory diaphragm carrying an active packing 70 mm. high. There is an initial flaming stage, varying with the grain size of the packing (from 1 to 43 min. for 5 and 1 mm., resp.), after which flameless burning becomes established. With the cylinder fully packed with corundum of the same grain size as in the 70-mm. active layer, the temp. at all corresponding points is lower than in the absence of the addnl. column, the difference being the more marked the farther from the active zone where the temp. is max. (about 1800°); this point is situated at about the 45-50-mm. level of the active mass. Its total height of 70 mm. corresponds to complete combustion of the gas. Likewise, the 32-mm. diam. is the smallest compatible with flameless burning; at that diam., the max. rate of flow permissible for this type of combustion is 21./min. With a 9-mm. corundum packing, the limiting  $Q_1 = 46.7 \times 10^4$ ,  $Q_2 = 1.6 \times 10^6$ ,  $Q_3 = 0.73 \times 10^6$ ; for a cylinder diam. of 48 mm., the corresponding figures are  $51.3 \times 10^4$ ,  $2.24 \times 10^6$ ,  $74.1 \times 10^4$ . The limiting heating load could not be reached for chambers of 105-mm. diam. owing to fusion of the corundum before attainment of the limit. Such large diams. possibly require tougher refractories, such as  $ZrO_2$ .  
N. Thon

METALLURGICAL LITERATURE CLASSIFICATION

B

The Problem of Flameless Combustion. H. N. Judyakov and V. S. Pushkin. *Engineers' Digest* (American Edition), V. 3, Aug. 1946, p. 292-301. Abstract from *Iskopa Akademi*, no. 6, 1945, p. 545-553.

Investigated maximum combustion rates in firing of naphtha gas in combustion ducts filled with granular refractory brick or corundum. First part was concerned with determination of critical velocity at which, for different fuel air ratios, the maximum permissible heating load is reached for the refractory material. In the second part the minimum rate at which combustion can be maintained was determined. Authors believe that flameless combustion will eventually prove an important factor in reducing the size of stationary as well as of marine boiler furnaces.

ASAC 524A METACRITICAL LITERATURE CLASSIFICATION

1946 82117

PUSHKIN, I. S.

Mbr., Energetics Inst. G. M. Krzhizhanovskiy, Dept. Tech. Sci., -1945-c48-.

Power Engineering.

"On the Question of Thermal Conductivity in Solid Bodies," Zhur. Tekh. Fiz.,  
16, No. 2, 1946;

"Some Problems of Combustion," *ibid.*, 18, No. 1, 1948.

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

CA 22

**Combustion of fuel oil (mazut) in a loose ceramic layer.**  
 V. S. Pushkin (G. M. Khrizhanovskii Energetics Inst.).  
*Russ. Acad. Sci. (U.R.S.S.), Classe sci. tech.* 1947, 183-8 (in Russian). - Mazut of d. 0.0, viscosity (Engler)  $F_v$  5.8°, beginning b. 185°, distillate at 200°, 25%, could be burned completely in a layer of corundum, lump size 10 mm.; fireclay (grug) suffers fusion in the zone of highest temp. and is unsuitable. In quartz tubes of 10 mm. diam., 520 mm. high, height of the ceramic layer 460 mm., the limiting charge is 2 kg. mazut/hr. Completeness of the flameless combustion (4 hrs. expts.) is shown by the compn. of the exhaust gas: CO, 14.6, O<sub>2</sub>, 0.4, CO<sub>2</sub> 0.0, remainder N<sub>2</sub>. The consumption of air corresponds very nearly to the stoichiometric ratio fuel/O<sub>2</sub>. At the limiting load of 2 kg./hr., the heat intensities, in 10<sup>6</sup> kcal./cu.m./hr., with respect to the total vol. of the tube, the total vol. of the ceramic layer, the pore vol. and the cross section of the tube, were 30.2, 34.0, 64.2, and 15.7, resp. For kerosene, under the same conditions, the limiting load was 3.0 kg./hr. and the corresponding intensities were 47.2, 58.2, 100.0, and 24.4 × 10<sup>6</sup> kcal./cu.m./hr. The mazut is fed directly under pressure to the hot corundum layer, started with the aid of illuminating gas and some kerosene. Overloading with fuel produces a Bunsen flame at the outlet of the exhaust; at const. supply of air, the flame is the longer the higher the amt. of fuel; at const. rate of fuel, it becomes shorter with increasing supply of air. The flame disappears altogether at the limiting load and below it; the corresponding limiting rate of flow, taking into account the porosity of the ceramic layer, is 50 m./sec. Both the quartz and porcelain tubes crack after prolonged combustion. N. Thon

ASS. S.L.A. METALLURGICAL LITERATURE CLASSIFICATION

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

21

CA

Problems of burning. V. S. Pushkin. *J. Tech. Phys.* (U.S.S.R.) 18, 49-60 (1948).—Three problems are considered: (1) combustion of coal particles, (2) burning-out of coal seams from the surface, and (3) combustion of coal walls in a channel. (1) is considered as a further development of Predvoditelev's work (*C.A.* 35, 3059<sup>o</sup>; 36, 4397<sup>o</sup>), which is an exact solution of given boundary conditions for a particular case: a more general solution of the differential equation is given. (2), hitherto unconsidered, can only be solved by developing (1) to its conclusion. (3) is not related to the first two as regards method and seems to be independent. However, (2) is a special case of (3), if in the latter the height of the channel is made equal to infinity. Three formulas are derived for the 3 cases, resp., in which the laws governing the distribution of concn. of O are established. The results have practical importance in the underground gasification of coal. B. A.

195

1376

1547. V. S. Pushkin, "On the question of heat conduction in solid bodies, III" in *Izvestia Akad. Nauk SSSR, Tekhn. Fiz.*, Aug. 1948, vol. 18, pp. 1011-1020.

This paper, which follows two former publications of the same author [*J. Tech. Phys. Zh. Tekh. Fiz.*, 1946, vol. 16, nos. 2 and 12], examines the problem of the heat conductivity in the case of fusion. The system considered is a semi-infinite homogeneous bar whose exterior cylindrical surface is insulated. The heat flow has the direction of the *z*-axis and is symmetric about it. The interface between the solid and liquid phase is assumed to be plane.

The process of conduction is expressed by two similar temperature (*u*, *v*) equations, one for each phase. If an interface (of arbitrary *z*) is present it is necessary to add the equation of the kinetics of the process. These equations are  $\nabla_{\tau}^2 u = C_m$ , latent heat of fusion (*u*, *v*, time).

$$\frac{\partial u}{\partial t} = a_1 \left( \frac{\partial^2 u}{\partial x^2} + \frac{\partial^2 u}{\partial y^2} + \frac{\partial^2 u}{\partial z^2} \right), \quad i = 1, 2.$$

$$\frac{\partial u}{\partial t} = \lambda_1 \text{grad } \theta_1 = \lambda_2 \text{grad } \theta_2 / \gamma \rho_m.$$

The subscripts 1, 2 correspond to the solid and liquid phases. The boundary conditions are:

$$\theta_1 = \theta_2 = \theta \quad \text{for } z = 0,$$

$$\theta_1 = \theta_2 = \theta \quad \text{for } z \geq 0, z = 0,$$

$$\lambda_1 \text{grad } \theta_1 = \lambda_2 \text{grad } \theta_2,$$

$$\theta_1 = \theta_2 = \theta_{\text{crystal}} \quad \text{for } z = \xi.$$

Since the equations must be invariant with respect to the change of certain relations between the scale factors *r* and *z* (for instance  $z/r = z'/r'$ ), there are six equilibrium conditions that eight of these factors are determined by geometrical characteristics and physical properties of the material, and the remaining six are covered by the six relations in general.

Six criteria of similarity are thus obtained (the two of course for each phase) for the boundary conditions. For the kinetics, one for the initial distribution of the temperature and one for the heat flow. The last two include functions dependent on the boundary conditions. (L. J. Zeldi, Belgium.)

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Rushkin

PLANS I BOOK REPRODUCTION 807/3407

Abstracts from USSR. Biographical Institute in G.M. Khrushchevskogo  
Publishing enterprise; *Biograficheskiy Institut im. G.M. Khrushchevskogo*  
(*Problems of Power Engineering*) Collection of Articles Dedicated to Ac-  
ademician G.M. Khrushchevskiy Moscow, 1999. 691 p. Khrushchevsky Institute,  
2,500 copies printed.

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B.M. Kozhushkiy. Tech. Sci. G.M. Khrushchevskiy, Academician of USSR,  
Academician (Moscow), V.I. Popov (Moscow, Ed.) Corresponding Member,  
Academy of Sciences USSR. V.I. Popov, Corresponding Member, USSR  
Academy of Sciences, Ed. G.M. Khrushchevskiy, Academician of USSR,  
Ed. G.M. Khrushchevskiy, Academician of USSR, Ed. G.M. Khrushchevskiy,  
Candidate of Technical Sciences, M.K. Kheifets, Candidate of Technical Sciences,  
and I.L. Smolnikov.

Abstracts. This collection of articles is intended as a tribute to the memory  
of Academician G.M. Khrushchevskiy.

CONTENTS: The collection contains sixty articles by former students and  
colleagues of the deceased Academician. The articles deal with problems  
of a wide range of subjects in the field of power engineering,  
of the regional development of electrical and thermal power engineering,  
power engineering technology and the physics of combustion. No personal titles  
are mentioned. References are given for most articles.

Babur, P.I., G.M. Khrushchevskiy, Investigation of Heat Exchange in  
Fallicular Condensation of Pure Vapors 411

Babur, P.I., G.M. Khrushchevskiy, Investigation of Heat Exchange in  
Fallicular Condensation of Pure Vapors 411

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S/124/61/000/011/020/046  
D237/D305

AUTHOR: Pushkin, V.S.

TITLE: On some properties of supersonic flows

PERIODICAL: Referativnyy zhurnal, Mekhanika, no. 11, 1961, 84,  
abstract 11B567. (Sb. Gazodinamika i fiz. goreniya.  
M., AN SSSR, 1959, 69 - 78)

TEXT: Experiments were performed in order to investigate the interaction of a supersonic jet with a boundary layer in an aerodynamic tunnel with nozzles at right angles, whose orifice angles are  $20^\circ$  and  $40^\circ$ . It was shown that when the jet of air enters the region of increased pressure, then the flow separates. Separated air jet in large angle diverging nozzle is unstable at low Mach numbers and deflects towards one of the walls. For some conditions the photographs given in the paper show two jets emerging from the nozzle. It is incorrectly indicated that a supersonic jet splits, as such a flow is not possible. Similar photographs may be obtained also in case of an unstable jet oscillating between the walls

Card 1/2

On some properties of supersonic flow

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D207/DJ05

with a frequency higher than the speed of the cine film (5000 frames per sec.). The work also describes purely visual changes in the character of the flow in a supersonic jet emerging into the region of elevated pressure, when a rigid thin wedge is introduced into the jet. [Abstractor's note: Complete translation]. ✓/1

S/170/60/003/03/05/034  
B014/B007

AUTHOR: Pushkin, V. S.

TITLE: The Determination of the Thickness of a Steady Shock Wave<sup>1</sup>

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, 1960, Vol. 3, No. 3,  
pp. 36-40

TEXT: In the introduction drawbacks of the formulas given by Taylor (Ref. 1) and Becker (Ref. 2) for the thickness of shock waves are discussed. The derivation of the formulas given by Taylor and Becker is briefly outlined, and it is found that the main drawbacks consist in different degrees of approximation being given for the thicknesses of shock waves of different intensities. The author avoids the aforementioned drawbacks by expressing the region of observable changes in the state of the shock wave in the direction of motion by the formulas  $u_1 - u = +au_1$  and  $u_2 - u = -au_2$ , where  $u$  denotes the wave velocity, and  $u_1$  and  $u_2$  the velocities of flow before and behind the shock wave, and

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Card 1/3

The Determination of the Thickness of a  
Steady Shock Wave

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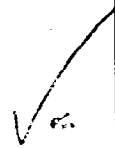
are a proportionality factor. In this way he obtains formula (10), which is analogous to the Taylor formula (4), and formula (11), which is analogous to the Becker formula (6) for the thickness of the shock wave. These formulas are compared with one another and discussed in detail. In Table 1 the relative velocities are given for various Mach numbers of the leading flow. From the comparisons between the author's formulas and those obtained by Becker and Taylor (which are shown in Table 2) it may be seen that in the Mach number range of from 2 to  $\infty$  the deviation according to the Becker formula increases to sevenfold its amount, and that according to the Taylor formula to tenfold its amount. If, in calculation, an error of 10% is assumed, the deviation in the Mach number system mentioned increases to threefold (Becker) and 1.5-fold (Taylor) its amount. There are 2 tables and 2 references: 1 English and 1 German. Vc

Card 2/3

The Determination of the Thickness of a  
Steady Shock Wave

S/170/60/003/03/05/034  
B014/B007

ASSOCIATION: Energeticheskiy institut im. G. M. Krzhizhanovskogo  
AN SSSR, g. Moskva  
(Institute of Power Engineering imeni G. M. Krzhizhanovskiy  
of the AS USSR, City of Moscow)



Card 3/3

PUSHKIN, V.S.

Some new data on the structure of shock waves. Trudy MTIPP  
15:226-238 '60. (MIRA 16:2)

(Shock waves)

S/124/62/000/006/014/023  
D234/D308

28 4110  
AUTHORS: Yeroshenko, V. M., Morozov, M. G., Motulevich, V. P.,  
Petrov Yu. N. and Pushkin, V. S.

TITLE: A gas dynamic installation with an IT-14 (IT-14)  
interferometer

PERIODICAL: Referativnyy zhurnal, Mekhanika, no. 6, 1962, 44-45.  
abstract 6B283 (V. sb. Fiz. gazodinamika i teploob-  
men. M., AN SSSR, 1961, 51-59)

TEXT: A short description of a wind tunnel constructed at the la-  
boratory of combustion physics. The tunnel is fed either from an  
air bottle battery with a capacity of 17.6 m<sup>3</sup> at a pressure of  
200 kg/cm<sup>2</sup>, or the air is sucked into the tunnel from the atmo-  
sphere. The working part of the installation is placed in an Eif-  
fel chamber in which a rarefaction up to 5 - 10 mm Hg is produced  
by a vacuum installation consisting of five pre-vacuum pumps of  
RMK-4 (RMK-4) type and 12 vacuum pumps of BH-6 (VN-6) and BH-6P  
(VN-6G) types. The tunnel is provided with an electric heater se-  
Card 1/2



A gas dynamic ...

S/124/62/000/006/014/023  
D234/D308

uring an air temperature up to 400°C. A set of exchangeable plane profiled nozzles makes it possible to change the Mach's number from infrasonic values to  $M = 3.1$  during vacuum work. The dimension of the working part is 30 - 40 mm (exact dimensions are not given in the paper). There are optical viewing glasses in the side walls of the nozzle and in the cylindrical Biffel chamber 1200 mm in diameter. The tunnel is provided with a coordinate device and with apparatus for measuring and recording the pressures and temperatures (thermocouples, manometers, vacuum meter, automatic recorders, oscillographs). Optical observation of flow can be made with the aid of the interference-shadow device IT-14 which is a combination of a Mach-Zender type interferometer with Tepler's device. Special measures are taken for isolating the optical device from vibrations (an isolated support with damping rubber cushions). The IT-14 device is provided with photographic accessories and illuminating devices of various types, among them a spark installation with an exposure less than  $10^{-6}$  sec. The paper is illustrated by interferograms. [Abstracter's note: Complete translation.]

PUSHKIN, V.S., inzh.

Chemical methods for copying drawings. Vest.mashinostr. 45  
no.11:83-84 N '65. (MIRA 18:12)

L-14117-66 EWA(h)/EWT(1)

ACC NR: AR6001443

UR/0196/65/000/009/N006/N006  
UDK 621.365.5.621.373.4

18  
B

SOURCE: Ref. zh. Elektrotehnika i energetika, Abs. 9N46

AUTHOR: Slukhotskiy, A.Ye.; Pushkin, V.Ya.

TITLE: A 60kw 70kc electronic inverter 25

CITED SOURCE: Tr. Vses. n.-i. in-ta tokov vysokoy chastoty, vyp. 5, 1964, 105-116

TOPIC TAGS: rotary inventor, electronic transformer, triode tube

TRANSLATION: A diagram and the comparative results of research on inverters with one and two anode plate inductors are given. The inverters are designed on the basis of an LPZ-67 generator substituting GU-22A tubes with GU-4A triodes, which permit higher dissipation of power on the screen and having a higher stability at 10 to 11 kv. The technical data and design of the new elements (systems of anode circuit, grid and anode choke, grid auto-transformer). The effect of the circuit coil capacitances on its efficiency is considered, and a theory on the processes in the grid circuit is given. For a network with chokes, connected between anodes of the tubes and with divided ac dc circuit, an 80% efficiency for the tubes at the anode has been obtained. 3 references. B. Zhukhovitskiy.

SUB CODE: 09

Card 1/1 *so*

SLUKHOTSVIY, A.Ye., doktor tekhn. nauk (Leningrad); PUSHKIN, V.Ya., inzh.  
(Leningrad)

Analysis of the operation of an electronic converter with increased  
frequency and parallel anode circuit with active load. Elektrichestvo  
no.2:49-54 F '65. (MIRA 18:3)

PUSIKIN, V.Z. (Petrozavodsk); TSYRLINA, L.S. (Petrozavodsk).

Prothrombin index of the blood in chronic tonsillitis. Zhur.  
ush., nos. i gorl. bol. 23 no.5:29-31 S-0'63 (MIRA 17:3)

PUSHKIN, V.Z.; LEBEDEV, V.N.; MOS'PANOV, L.S. (Petrozavodsk)

Interrelations between chronic tonsillitis and rheumatic fever  
(content of sialic acid in the blood serum of patients suffering  
from chronic tonsillitis and rheumatic fever). Vop.revm. 3  
no.1:85-88 Ja-Mr '63. (MIRA 1634)  
(SIALIC ACIDS) (TONSILS---DISEASES) (RHEUMATIC FEVER)

PUSHKIN, V.Z.; MULLER, A.A. (Kandalaksha Murmanskoy oblasti)

The course of chronic tonsillitis, its surgery and late results of  
tonsillectomy in Arctic regions. Vest. oto-rin. 16 no.6:58-59  
N-D '54. (MLRA 8:1)

(TONSILLITIS

pathol., surgery & late results of tonsillectomy in  
polar region)

(CLIMATE

polar region, eff. on course & surg. of tonsillitis)

PUSHKIN, V.Z. (Kandalaksha, Murmanskoy oblasti)

Cases of injuries of the ear caused by electricity. Vest. oto-rin.  
18 no.5:99-100 S-0 '56. (MLRA 9:11)

(~~EAR~~--WOUNDS AND INJURIES)

(~~ELECTRICITY~~--PHYSIOLOGICAL EFFECT)



PUSHKIN, V.Z.; LEBEDEV, V.N. (Petrozavodsk)

Isolation of 17-ketosteroids from the daily urine in chronic  
tonsillitis. Vest.otorin. no.5:27-30 '62. (MIRA 15:9)  
(STEROIDS) (TONSILS--DISEASES)  
(URINE--ANALYSIS AND PATHOLOGY)

PUSHKINA, G.Ya.; KOMISSAROVA, L.N.

Solubility of  $\text{Sc}(\text{NO}_3)_3 \cdot 4\text{H}_2\text{O}$  and  $\text{ScOH}(\text{NO}_3)_2 \cdot 3\text{H}_2\text{O}$  in water,  
in solutions of nitric acid, and in organic solvents. Zhur.  
neorg. khim. 8 no.6:1498-1504 Je '63. (MIRA 16:6)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova,  
kafedra neorganicheskoy khimii.  
(Scandium compounds) (Nitric acid)  
(Solubility)

SPITSYN, Vikt.I.; KOMISSAROVA, L.N.; SHATSKIY, V.M.; PUSHKINA, G.Ya.

Study of a complex ammonium scandium carbonate. Zhur. neorg. khim.  
5 no.10:2223-2228 O '60. (MIRA 13:10)

1. Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova,  
Kafedra neorganicheskoy khimii.  
(Ammonium scandium carbonate)

SMIRNOV, M.I.; PETROVA, Ye.V.; PUSHKINA, L.A.; YERMILOVA, L.I.

Effect of cortisole on the concentration of vitamins B<sub>1</sub>, B<sub>2</sub>  
and C in the tissues of rats. Probl. endok. i gorm. 11 no.1:  
78-81 Ja-F '65. (MIPA 18:5)

1. Laboratoriya biokhimii vitaminov Nauchno-issledovatel'skogo  
instituta vitaminologii Minsiterstva zdravookhraneniya SSSR,  
Moskva.

POSTOVSKIY, I.Ya.; PUSHKINA, L.N.; MAZALOV, S.A.

Benzazole series. Part 1: Syntheses of benzoxazoles with the purpose of studying their scintillation properties. Zhur.ob.khim. 32 no.8:2617-2624 Ag '62. (MIRA 15:9)

1. Ural'skiy politekhnicheskii institut imeni S.M. Kirova.  
(Benzoxazole) (Scintillation (Physics))

L 47045-65 EWT(1)/EWT(m)/EPF(c)/EWP(j)/EWA(c) P-4/Pr-4/Pi-4 IJP(c) RM  
S/0368/65/002/001/0063/0068

ACCESSION NR: AP5007545

AUTHOR: Tkachev, V. V.; Pushkina, L. N.

TITLE: Luminescence and scintillation properties of some 1,2-disubstitutes of benzimidazole

SOURCE: Zhurnal prikladnoy spektroskopii, v. 2, no. 1, 1965, 63-68

TOPIC TAGS: luminescence spectrum, scintillation spectrum, organic scintillator, scintillation yield

ABSTRACT: This is a continuation of earlier work on the spectral characteristics and scintillation properties of a series of benzenes, where data were obtained for benzoxazoles and naphthoxazoles (ZhOKh v. 32, 2599, 1962; DAN SSSR v. 149, 135, 1963; ZhFS v. 1, 275, 1964; ZhOKH v. 34, 424, 1964). In the present article the authors report results of the measurements of the absorption of luminescence spectra and of the scintillation properties in solutions of benzimidazole, whose aryl derivatives were not previously investigated from the point of view of their scintillating properties. The absorption and luminescence spectra of 71 benzimidazole derivatives were measured, using a procedure and apparatus described in the earlier

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28  
27  
B

L 47045-65

ACCESSION NR: AP5007545

papers. The relationship between the chemical structure and the luminescence yield in solution is discussed. The scintillation efficiency of the compounds in toluol solution was measured. It was discovered that a number of very soluble compounds of 2-aryl-benzimidazole have the same scintillation efficiency as p-terphenyl (5 g/l). "The authors thank Professor Ya. Postovskiy for interest in the work and for discussion of the results." Orig. art. has: 3 tables and 4 formulas.

ASSOCIATION: None

SUBMITTED: 16 Jun 64

ENCL: 00

SUB CODE: OP, OC

NR REF SOV: 006

OTHER: 000

*bjs*  
Card 2/2

PUSHKINA, L.N.; MAZALOV, S.A.; POSTOVSKIY, I.Ya.

Benzazole series. Part 2: Syntheses of benzimidazoles with the purpose of studying their scintillation properties. Zhur.ob.khim. 32 no.8:2624-2633 Ag '62. (MIRA 15:9)

1. Ural'skiy politekhnicheskiy institut.  
(Benzimidazole) (Scintillation (Physics))



DEZIDER'YEV, G.P.; KURENEV, V.Ya.; PUSHKINA, N.N.; SHAPOSHNIKOVA, N.A.

Visual aids for studying chemistry in institutions of higher learning. Trudy KKRTI no.13:118-125 '48. (MIRA 12:12)

1. Kazanskiy khimiko-tekhnologicheskii institut im. S.M. Kirova, kafedra neorganicheskoy khimii.

(Chemistry--Study and teaching) (Audio-visual aids)

ZHIGAREVICH, I.A.; PUSHKARSKIY, S., red.; PAVLOVA, M.M., tekhn.red.

[Growing olives] Kul'tura masliny. Moskva, Gos.izd-vo sel'khoz.  
lit-ry, 1955. 245 p. (MIRA 10:12)

(Olive)

PUSHKARSKIY, S.

~~Work achievements of machinist Tertychnyi. Prom.koop. no.5:11.~~  
My '57. (MLRA 10:8)

1.Sotrudnik Konstruktorsko-tehnologicheskogo byuro Oblpromsoвета,  
g. Rovno.

(Tertychnyi, A.G.)

PUSHKIN, V.Z., starshiy leytenant med.sluzhby., MULLER, A.A., podpolkovnik  
med.sluzhby.

Course of chronic tonsillitis and late results of tonsillectomy  
in the North. Voen.-med.zhur. no.12:78 D '55 (MIRA 12:1)  
(TONSILS--DISEASES)

LIST AND INDEX PROCESSES AND PROPERTIES INDEX

*PUSHKIN YA M*

Preliminary investigation of the possibility of concentrating the manganese ore of the northern Ural. *V. A. M. Pushkin. Inst. Mekhanicheskoi Obrabotki Poleznuikh Iskopaemnikh Mekhanobr (Inst. Mech. Treatment Ores). Repts. on Concn. of Ores 1929, No. 2, 81-85.*—The Mn ore is found in the Bogoslovsk and southern Ural districts. It is found as pyrolusite and psilomelane, in the grainy as well as in the powd. state. Concn. the ore in log-washers yielded an ore with 41% of Mn, constituting a 71.3% extrn. of the Mn present. Difficulties are experienced in recovering the Mn from the breeze, which carries off about 30% of it. A. A. B.

METALLURGICAL LITERATURE CLASSIFICATION

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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AVAKYAN, R.O.; BAYATYAN, G.L.; VISHNEVSKIY, M.Ye.; PUSHKIN, Ye.V.

Measurement of longitudinal electron polarization in the  $\beta$ -decay  
of Au<sup>198</sup>. Zhur.eksp.i teor.fiz. 41 no.3:681-683 S '61.  
(MIRA 14:10)

(Electrons--Scattering) (Gold--Decay)

GRIGORYEV, V.K., NIKITIN, S.Ya., PUSKIN, Ye.V., TRUBNICHENKO, Ye. V.,  
VILNENSKIY, M.Ye., YERGAKOV, V.A.

(Acad. Sci. USSR)

"Polarization of Electrons in the  $\beta^-$ -Decay."

paper submitted at the A-U Conf. on Nuclear Reactions in Medium and Low  
Energy Physics, Moscow, 19-27 Nov. 57.

1. PUSHKIN, Z. Ing.
2. USSR (600)
4. Machinery in Industry
7. Life periods of equipment. Az ekon.mat. no. 4, 1952

9. Monthly List of Russian Accessions, Library of Congress, February 1953, Unclassified.



PUSHKIN, Z.M.

BUKIRKOV, A.I.; PUSHKIN, Z.M.

Deformities in fishes. Vop. ikht. no.9:147-151 '57. (MIRA 11:1)

1. Molotovskiy universitet.  
(Kama River--Fishes) (Abnormalities (Animals))

1. PUSKINA, A.
1. USSR (600)
4. Libraries, Workingmen's
7. Compiling an annual plan of work for trade union libraries. Klub No. 12, 1952.

9. Monthly List of Russian Accessions, Library of Congress, May 1953, Unclassified.

MURILSON, A. , PUSHKINA, A.

Libraries

Making the libraries of professional organizations more complete (with the help of beginning librarian). Klub no. 5, 1952.

Monthly List of Russian Accessions, Library of Congress, August 1952. Unclassified.

Gogol', Nikolay Vasil'yevich, 1809-1852

A century since the death of N.V. Gogol. V pom.profaktivu, No. 3, 1952.

Monthly List of Russian Accessions, Library of Congress, March 1952. Unclassified.

LAVSKIY, G.K., prof.; PUSHKINA, D.I.

Therapeutic significance of vitamni B<sub>12</sub> in atherosclerosis.  
Terap.arkh. 34 no.3:52-54 '62. (MIRA 15:3)

1. Iz bol'nitsy IV glavnogo upravleniya (nach. -- prof. A.M.  
Markov) Ministerstva zdravookhraneniya SSSR.  
(ARTERIOSCLEROSIS) (CYANOCOBALAMINE)

PUSHKINA, E.N.; YAKOVLEVA, G.Ya.

Thermometric study of inclusions in zonary quartz crystals from  
the Pamirs. Trudy VNIIP 1 no.2:169-170 '57. (MIRA 12:3)  
(Pamirs--Quartz crystals)

PUSHKINA, G.A.; GRIGOR'YEV, V.I.

Rapid method for the determination of the ash content of peat.  
Gaz. prom. no.3:22-24 Mr '58. (MIRA 11:3)  
(Peat--Analysis)

KOMISSAROVA, L.N.; PUSHKINA, G.Ya.; SPITSYN, Vikt. I.

Preparation and some properties of scandium nitrates. Zhur.  
neorg. khim. 8 no.6:1384-1394 Je '63. (MIRA 16:6)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova,  
kafedra neorganicheskoy khimii.  
(Scandium nitrate)



S/078/60/005/010/024/030/XX  
B017/B067

AUTHORS: Spitsyn, Vikt. I., Komissarova, L. N., Shatskiy, V. M., and  
Pushkina, G. Ya.

TITLE: Study of the Complex Ammonium Scandium Carbonate

PERIODICAL: Zhurnal neorganicheskoy khimii, 1960, Vol. 5, No. 10,  
pp. 2223-2228

TEXT: The authors determined the optimum conditions for producing ammonium scandium carbonates, and described the properties of these compounds. The compound  $\text{NH}_4\text{Sc}(\text{CO}_3)_2 \cdot 1.5\text{H}_2\text{O}$  was produced by dissolving freshly produced scandium hydroxide in a concentrated solution of ammonium carbonate, and subsequent crystallization at room temperature. This compound is stable at room temperature, and decomposes only at  $95^\circ\text{C}$  under formation of difficultly soluble basic scandium carbonate whose composition is not constant. The thermal decomposition of ammonium scandium carbonate was thermographically studied by means of a Kurnakov pyrometer. It was observed that the ammonium scandium carbonate decomposes gradually. At  $140-190^\circ\text{C}$ ,

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Study of the Complex Ammonium Scandium  
Carbonate

S/078/60/005/010/024/030/XX  
B017/B067

partial dehydration occurs, and  $\text{CO}_2$  is completely liberated. In the temperature range of  $280\text{--}305^\circ\text{C}$ , crystalline  $\text{ScO}(\text{OH})$  is formed which passes into  $\text{Sc}_2\text{O}_3$  at  $480^\circ\text{C}$ . At  $400^\circ\text{C}$ ,  $\text{NH}_3$  and  $\text{CO}_2$  are completely liberated. The solubility of scandium hydroxide at 0, 25, and  $50^\circ\text{C}$  in solutions of  $(\text{NH}_4)_2\text{CO}_3$  of different concentrations was studied. It was observed that the solubility of scandium hydroxide at higher ammonium carbonate concentrations and lower temperatures is higher. In a 17.8% solution of  $(\text{NH}_4)_2\text{CO}_3 \cdot \text{H}_2\text{O}$ , scandium hydroxide is soluble at  $0^\circ\text{C}$  up to a concentration of 1.24% by weight of  $\text{Sc}_2\text{O}_3$ . Amorphous ammonium scandium carbonate  $\text{NH}_4\text{Sc}(\text{CO}_3)_2 \cdot 2\text{H}_2\text{O}$  is formed by dissolution of scandium hydroxide in ammonium carbonate solutions with a concentration higher than 1% by weight in a temperature range of  $0\text{--}25^\circ\text{C}$ . The amorphous ammonium scandium carbonate passes into the crystalline state above  $50^\circ\text{C}$ . The thermogram of amorphous ammonium scandium carbonate shows an endothermic effect at  $65\text{--}110^\circ\text{C}$  caused by the cleavage of water, which is characteristic only of the amorphous compound. There are 5 figures, 2 tables, and 4 non-Soviet

Card 2/3

Study of the Complex Ammonium Scandium  
Carbonate

S/078/60/005/010/024/030/XX  
B017/B067

references.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova,  
Kafedra neorganicheskoy khimii (Moscow State University imeni  
M. V. Lomonosov, Chair of Inorganic Chemistry)

SUBMITTED: July 8, 1959

Card 3/3

MALIKOV, K.V.; KANOVA, R.A.; KARASIK, G.S.; LINETSKIY, N.S.;  
PASTUKHOV, G.M.; PUSHKINA, G.A.

Simultaneous gasification of peat and peat tar. Gaz. prom. 8  
no.2:15-17 '63. (MIRA 17:8)

PUSHKINA, I.K., aspirant

Data for a hygienic characteristics of mica dust. Gig.1 san. 25  
no.8:18-23 Ag '60. (MICA 13:11)

1. Iz kafedry gigiyeny truda I Moskovskogo ordena Lenina meditsin-  
skogo instituta imeni I.M.Sechenova.  
(MICA) (LUNGS...DUST DISEASES)

1968, V.I. (Moscow), KAPLAN, Ye.Ye. (M.F.), P. (M.F.), Ye.Ye. (Moscow);  
SHEKINA, I.I. (Moscow)

Experiment in collective hypnosis. Voprosy psichologii. 1968, No. 2, 111-113-  
148. In-F 165. (MIRA 1874)

VARTANYAN, A.B.; PUSHKINA, I.P.; MAGNITSKIY, A.A., retsenzent;  
ORLOVA, L.A., red.; KNAKNIN, M.T., tekhn.red.

[Organizing the labor of workers operating sliver lapping  
machines in cotton spinning] Organizatsiia truda rabotnits,  
obsluzhivaiushchikh lentsoedinitel'nye mashiny khlopko-  
priadil'nogo proizvodstva. Moskva, Gos.nauchno-tekhn.izd-vo  
lit-ry po legkoi promyshl., 1959. 26 p. (MIRA 12:6)  
(Cotton spinning)

PUSHKINA, I.P.

Psychological selection of students for flying schools.  
Voen.-med. zhur. no.3:95-96 '65. (MIRA 18:11)



LEBEDEV, Konstantin Borisovich; TARANENKO, B.I., otv. red.; PUSHKINA,  
L.I., red.; ZHUKOVA, N.D., red; ALFEROVA, P.F., tekh. red.

[Production of calcium molybdate] Proizvodstvo molibdata kal'-  
tsiia. Alma-Ata, Izd-vo Akad. nauk Kazakhskoi SSR, 1962. 119 p.  
(MIRA 15:5)

(Calcium molybdate)

SOKOLOV, S.V.; YUMINOV, V.S.; PUSHKINA, L.N.

Reaction of fluoroolefins with butyl hypochlorite and chlorine  
oxide. Zhur.ob.khim. 35 no.12:2150-2155 D '65.

(MIRA 19 1)

1. Ural'skiy politekhnicheskiy institut imeni S.M.Kirova.  
Submitted December 4, 1964.

PUSHKINA, L.N.; TKACHEV, V.V.; POSTOVSKIY, I.Ya.

Spectral characteristics and scintillation properties of some  
2-aryl derivatives of benzoxazole and benzimidazole. Dokl. AN  
SSSR 149 no.1:135-138 Mr '63. (MIRA 16:2)

1. Ural'skiy politekhnicheskiy institut im. S.M.Kirova.  
Predstavleno akademikom A.N.Tereninym.  
(Benzoxazole-Spectra) (Benzimidazole-Spectra)

PUSHKINA, L.N.; POSTOVSKIY, I.Ya.

Synthesis and properties of isomeric naphthoxazoles substituted in position 2. Zhur.ob.khim. 34 no.2:424-431 F '64. (MIRA 17:3)

1. Ural'skiy politekhnicheskiy institut.

S/079/62/032/008/002/006  
D204/D307

AUTHORS: Postovskiy, I. Ya., Pushkina, L.N. and Mazalov, S. A.

TITLE: Investigations of benzazoles. I. Synthesis of benzoxazoles in order to study their scintillating properties

PERIODICAL: Zhurnal obshchey khimii, v.32, no. 8, 1962  
2617 - 2624

TEXT: Synthesis of 2-arylbenzoxazoles (I), 1 - (2'-benzoxazolyl) - 2 arylethylenes (II) and 1 - phenyl - 1 - (2'-benzoxazolyl) - 2-arylethylenes (III) are described. 25 of the compounds prepared are new. Series I was produced by the oxidation of o-aminophenol azomethynes with  $KMnO_4$  in acetone, at room temperature, in 60 - 80 % yields. 2-(9' - Acridyl)-benzoxazole was made by the oxidation of its azomethyne with boiling  $PhNO_2$  and 2-benzoxazolyl - 1'- naphthyl-methane by the condensation of o-aminophenol with 1-naphthylacetic acid, by heating to 180 - 190°C

Card 1/3

Investigations of benzazoles.I...

S/079/62/032/008/002/006  
D204/D307

for 5 hours. Compounds II were obtained, in 7 - 70 % yields, by the condensation of equimolar mixtures of the corresponding aromatic aldehydes and 2-methyl-benzoxazole, in the presence of  $H_2BO_3$ , at 195 - 200°C, over 5 hours. Reactivity of the above aldehydes depended strongly on the nature of the para- substituent, decreasing in the transition from halogen and alkyl groups to methoxy- and dialkylamino- substituents. Series III was synthesized (in 20 - 60 % yields) by a method analogous to II, replacing the 2-methyl- by 2-benzyl- benzoxazole. Uv absorption spectra, measured on C $\Phi$ -4 (SF-4) spectrophotometer, showed that extension of the conjugated chain in the presence of electron-donating constituents displaced the maximum absorption peaks towards longer wavelengths. It was also shown that the structures of 1-(2'-benzoxazolyl)-1-phenyl-2-aryl-ethylene and of compounds III are not coplanar. More detailed spectral and luminescence studies, and certain scintillating characteristics will be published in a later paper. There are 4 figures and 3 tables. ✓

ASSOCIATION: Ural'skiy politekhnicheskiy institut imeni S.M. Kirova  
(The Urals Polytechnical Institute imeni S.M. Kirov)

Card 2/3

Investigations of benzazoles. I. ...

S/079/62/032/008/002/006  
D204/D307

SUBMITTED: August 7, 1961

Card 3/3

ACCESSION NR: AP4018056

S/0079/64/034/002/0424/0431

AUTHOR: Pushkina, L. N.; Postovskiy, I. Ya.

TITLE: Synthesis and properties of isometric naphthoxazoles substituted in the 2-position

SOURCE: Zhurnal obshchey khimii, v. 34, no. 2, 1964, 424-431

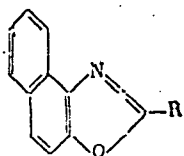
TOPIC TAGS: luminescent property, benzazole, aryl naphthoxazole, ultraviolet absorption spectrum, luminescent spectrum, naphthoxazole

ABSTRACT: Interest in the relationship between the structure and luminescent properties of benzazoles led to the synthesis of naphth[1,2d]-, naphth[2,1d]- and naphth[2,3d] oxazoles substituted in the 2-position. Compounds I-III

Card 1/4

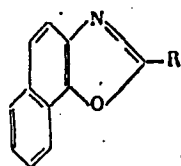


ACCESSION NR: AP 4018056



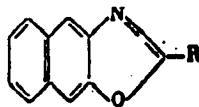
(I)

R = CH<sub>3</sub>, C<sub>6</sub>H<sub>5</sub>,  
 n-C<sub>4</sub>H<sub>9</sub>, X (X = Cl, F),  
 n-C<sub>4</sub>H<sub>9</sub>CH<sub>2</sub>,  
 n-C<sub>4</sub>H<sub>9</sub>N(CH<sub>3</sub>)<sub>2</sub>,  
 n-C<sub>4</sub>H<sub>9</sub>C<sub>2</sub>H<sub>5</sub>,  
 1-C<sub>10</sub>H<sub>7</sub>,  
 n-CH = CHC<sub>2</sub>H<sub>5</sub>, Cl.



(II)

R = CH<sub>3</sub>, C<sub>6</sub>H<sub>5</sub>,  
 n-C<sub>4</sub>H<sub>9</sub>Cl,  
 n-C<sub>4</sub>H<sub>9</sub>N(CH<sub>3</sub>)<sub>2</sub>,  
 n-C<sub>4</sub>H<sub>9</sub>C<sub>2</sub>H<sub>5</sub>,  
 1-C<sub>10</sub>H<sub>7</sub>.



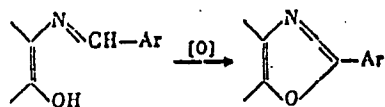
(III)

R = C<sub>6</sub>H<sub>5</sub>,  
 n-C<sub>4</sub>H<sub>9</sub>N(CH<sub>3</sub>)<sub>2</sub>,  
 n-C<sub>4</sub>H<sub>9</sub>C<sub>2</sub>H<sub>5</sub>,  
 1-C<sub>10</sub>H<sub>7</sub>.

were obtained by oxidation of azomethynes with potassium permanganate in acetone solution or nitrobenzene:

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ACCESSION NR: AP4018056



Initial azomethynes were obtained by condensation of corresponding isomeric *o*-aminonaphthols and aromatic aldehydes. The naphthoxazoles I-III are the best achromatic or slightly yellowish substances. They strongly fluoresce the blue or blue color in the near-ultraviolet. In accordance with its anthracenoid structure the linear isomers (III) have a higher melting point and are less soluble in non-polar solvents than the angular (phenanthrenoid) isomers. In the phenanthrenoid structure of the angular compounds (I) and (II) a more favorable localization of the  $\pi$ -electronic cloud guarantees the aromatic characteristics of both the naphthalene and oxazole portion of the molecule. In the anthracenoid structure of the linear compounds (III) a break in uniformity in the direction of structure A or B is conceivable. The luminescent properties of 2-arylnaphthoxazoles in

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ACCESSION NR: AP4018056

solutions are determined to a significant degree by the 2-arylbenzoxazole system of the molecule included in them. Measurement of the scintillation effectiveness in the toluene solutions indicated that the angular 2-arylnaphthoxazoles provide the same order of luminescence efficiency as the standard solution of  $\eta$ -terphenyl. Study of the ultraviolet absorption spectra and the luminescence spectra permit the assumption that there is an oxazole type of structure in the angular 2-arylnaphthoxazoles and an oxazoline type of structure of the hetero-ring in the linear 2-arylnaphthoxazoles. "S. A. Mazalov participated in the syntheses." "The authors are grateful to V. V. Tkacheva for participating in the measurements of luminescence spectra and determination of scintillation effectiveness." Orig. art. has: 2 tables.

ASSOCIATION: Ural'skiy politekhnicheskiy institut (Ural Polytechnical Institute)

SUBMITTED: 07Dec62

DATE ACQ: 19Mar64

ENCL: 00

SUB CODE: CH

NO REF SOV: 007

OTHER: 012

Card 4/4

S/079/62/032/008/003/006

Investigations of benzazoles. II. ... D204/D307

by the reaction of *o*-phenylene diamine with aldehydes. II and III were synthesized, in 40 - 90 % yields, by the 1:1 condensation of aromatic aldehydes with *N*-phenyl- and *N*-methyl-*o*-phenylenediamines and oxidation of the resultant Schiff's bases with  $\text{PhNO}_2$ . IV were obtained by the interaction of *o*-phenylene diamine (1 mole) and aldehydes (2 moles), in acetic acid, at room temperature, in 30 - 80% yields. V, VI and VII were prepared by the 1:1 condensation of aldehydes with (a) 2-methyl-, (b) 1,2-dimethyl-, and (c) 2-benzylbenzimidazoles, in the presence of  $\text{H}_3\text{BO}_3$ , at 195 - 200°C, over 2.5 hours, in 70 - 80 (V), 35 - 65 (VI) and 70 - 80 (VII) percent yields respectively. The reactivity of the H-atoms in the methyl group of 2-methyl-benzimidazole (A) was greater than that of 2-methyl-benzoxazole (B), owing to their higher mobility. Uv absorption spectra of phenyl-, *p*-halogenophenyl-, *p*-tolyl-, and *p*-methoxy-phenyl- benzimidazoles exhibited maxima at 300 - 310  $\text{m}\mu$ . Diphenyl- and 1-naphthyl- derivatives showed peaks at 315 and 337  $\text{m}\mu$ , and those of *p*-dimethyl- and *p*-diethylaminophenyl- at 330 and 337  $\text{m}\mu$ . Spectra of 1-substituted 2-aryl-benzimidazoles showed the absence of conjugation between the *N*-substituents and the remainder of the molecule. The structures VII

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Investigations of benzazoles. II. ... S/079/62/032/008/003/006  
D204/D307

are not coplanar. There are 1 figure and 3 tables.

ASSOCIATION: Ural'skiy politekhnicheskiy institut (Urals  
Polytechnical Institute)

SUBMITTED: August 1, 1961

Card 3/3

✓

SLUTSKIY, M.Ye.; ZARKHIN, B.I.; PUSHKINA, M.A.

Small-size broad-band electrometric amplifier. Kosm. issl. 1  
no.2:296-302 S-0 '63. (MIRA 17:4)

ZARKHIN, B.I.; PUSHKINA, M.A.; SLUTSKIY, M.Ye.

Electrometric amplifier. Prib. i tekhn. eksp. 8 no.4:90-94  
Jl-Ag '63. (MIRA 16:12)

1. Spetsial'noye konstruktorskoye byuro analiticheskogo  
priborostroyeniya AN SSSR.

ACCESSION NR: AP4003738

S/0293/63/001/002/0296/0302

AUTHOR: Slutskiy, M. Ye.; Zarkhin, B. I.; Pushkina, M. A.

TITLE: Miniaturized broadband electrometer amplifier

SOURCE: Kosmicheskiye issledovaniya, v. 1, no. 2, 1963, 296-302

TOPIC TAGS: dc amplifier, transistorized amplifier, mass spectrometer, spaceborne miniaturized amplifier, broadband measuring amplifier, miniaturized measuring amplifier

ABSTRACT: An improved high-sensitivity transistorized d-c amplifier, specially designed for use in mass spectrometers, is described. Its basic specifications are as follows: 1) range of measured positive-polarity currents,  $10^{-11}$  to  $10^{-14}$  amp; 2) relative error,  $\pm 3\%$ ; 3) time constant of the input circuit, 0.01 sec; 4) input impedance,  $10^{12}$  ohm; 5) voltage fluctuation at the output, 7-8 mv; 6) range of operating temperatures, -40 to +60C; 7) d-c power supply, 14  $\pm 2$  v; 8) power consumption, 0.5 w; 9) weight, 300 g; and 10) overall size, 100 x 50 x 50 mm. The amplifier uses one vacuum tube, an I-1-type electrometric pentode with a high voltage gain at a low level of grid

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ACCESSION NR: AP4003738

current. The power supply of the amplifier circuits is effected by a transistorized inverter operating at 8—10 kc. The high converter efficiency (up to 85%) ensures voltage stability within 0.1% in the feedback transformer windings of the inverter, with primary voltage stabilization by means of a three-stage transistorized amplifier. The d-c amplifier is placed in a thin-walled steel housing which protects it from the interference of electric and magnetic fields. The described amplifier is recommended for use in rockets and artificial earth satellites. Orig. art. has: 7 figures.

ASSOCIATION: none

SUBMITTED: 07Jan63

DATE ACQ: 26Dec63

ENCL: 00

SUB CODE: GE

NO REF SOV: 006

OTHER: 001

Card 2/2

Author: M. M.  
 Title: Nutritional Control of Growth of Cereals.  
 Journal: Soviet Plant-Biology, Vol. 1, 1959, No. 1880  
 Editor: Gerasimov, M.A.; Larochkin, Ye.P.;  
 Title: Alley Agric. Syst.  
 Title: The Effect of Joint Application of Ammonium  
 and Phosphates on Corn Growth.  
 Orig. Pub: Sov. stud. Agron. robot. albayk. n.-kn. in-t,  
 1967, Vol. 6, 33-42  
 ABSTRACT: No abstract

\* Pushkina, N/K.

CLASS: 1/1

PUSHKIN, N. S.: Master Med Sci (diss) -- "Acute mesenteric lymphadenitis".  
Leningrad, 1959. 18 pp (Second Surgical Clinic of the State Order of Lenin  
Inst for the Advanced Training of Physicians in S. M. Kirov and Surgical Dept  
of the Hospital in Lenin in Leningrad), 200 copies (KI, No 12, 1959, 133)

*PUSHKINA, M.S.*

PUSHKINA, M.S. (Leningrad)

Penetration of the intestine into Braun's anastomosis following  
anterior gastrointestinal anastomosis. Vest.khir. Ja-F '55.

(MIRA 8:4)

1. Iz 2-y khirurgicheskoy kafedry (zav. prof. N.N.Samarin [deceased])

GIDUV im. S.M.Kirova.

(STOMACH, surgery,

gastroenterostomy, postop. invagination into Braun's  
anastomosis)

PUSHKINA, N.M.

Natural regeneration of vegetation in forest fire areas. Trudy  
Lap.gos.zap. no.4:5-125 '60. (MIRA 15:3)  
(Lapland State Preserve--Reforestation)(Forest fires)

PUSHKINA, N.M.

Lichens and mosses in the Lapland Preserve. Trudy Lap.gos.zap.no.4:  
189-248 '60. (MIRA 15:3)  
(Lapland State Preserve--Lichens)(Lapland State Preserve--Mosses)

VYALOV, A.M.; BAGNOVA, M.D.; KUBLANOVA, P.S.; PUSHKINA, N.N.; BULYCHEV, G.V.:  
BYLOV, I.S.; GENKIN, A.G.; KOTEL'NIKOVA, M.P.; SKLYANSKAYA, V.S.

Changes in the health of workers engaged in the production of  
synthetic fatty acids. Uch.zap. Mosk.nauch.-issl. inst. san.  
i gig. no.9:50-54 '61 (MIRA 16:11)

\*

VYALOV, A.M.; BAGNOVA, M.D.; VASIL'YEV, A.S.; PUSHKINA, N.N.; YUSHKEVICH,  
L.B.; BULYCHEV, G.V.; BYLOV, I.S.; GENKIN, A.G.; ZHIDKOVA, L.V.;  
ZHIGULINA, L.A.

Early changes in the state of health of workers in the cumene  
process of phenol and acetone production. Uch. zap. Mosk. nauch.-  
issl. inst. san. i gig. no.9:13-16 '61 (MIRA 16:11)

\*



MEL'KUMOVA, A.S.; BYLOV, I.S.; PUSHKINA, N.N.

Clinical aspects of occupational poisoning of thio rubber  
workers. Uch. zap. Mosk. nauch.-issl. inst. san. i gig. no.9:  
90-94'61 (MIRA 16:11)

\*

PUSHKINA, N. N.

"Graphic aids in the study of chemistry in an institution of higher learning,"  
Authors G. P. Dezider'yev, V Ya. Kurenev, N. N. Pushkina, and N. A. Shaposhnikova,  
Trudy Kazansk. Khim.-tekhnol. in-ta im. Kirova, Issue 13, 1948, p. 118-25

SO: U-3264, 10 April 1953, (Letopis 'Zhurnal 'nykh Statey, no. 3, 1949)

PODOLINA, N. N., Physician

"Testing Foodstuffs for Determination of Nicotinic Acid." Thesis for degree of Cand  
Medical Sci. Sub 13 Feb 50, Second Moscow State Medical Inst. imeni I.V. Stalin.

Summary 71, 4 Sep 52. Dissertations Presented for Degrees in Sciences and Engineering  
in Moscow in 1950. From Vechernyaya Moskva, Jan-Dec 1950.

PUSHKINA, N.N. (Moskva)

Ascorbic acid content in separate groups of industrial workers.  
Gig.truda i prof.zab. 3 no.4:44-46 J1-Ag '59. (MIRA 12:11)

1. Klinicheskiy otdel Nauchno-issledovatel'skogo instituta  
sanitarii i gigiyeny imeni F.F.Erismana.  
(ASCORBIC ACID)

PUSHKINA, N.N.

Studies on the thromboplastic activity of the blood and the prothrombi in content in persons subjected to ionizing radiations. Probl. gemat. i perel. krovi 4 no. 10:44-46 0 '59. (MIRA 13:8)

1. Iz klinicheskogo otdela (rukovoditel' - prof. I.Ya. Sosnovik) Moskovskogo nauchno-issledovatel'skogo instituta sanitarii i gigiyeny imeni F.F. Erismana.  
(RADIATION--PHYSIOLOGICAL EFFECT) (THROMBOPLASTIN)  
(PROTHROMBIN)

SOSHOVİK, I.Ya.; BAGHOVA, M.D.; PUSHKINA, N.N.; UPOROV, D.V.

Clinical aspects of chronic poisoning by petroleum products.  
Kaz.med.zhur. 40 no.1:29-33 Ja-F '59. (MIRA 12:10)

1. Iz Moskovskogo nauchno-issledovatel'skogo instituta sanitarii  
i gijieny im. F.F.Erismana (direktor - A.Z.Belousov).  
(NOVOKUIBYSHEV--PETROLEUM WORKERS--DISEASES AND HYGIENE)

PUSHKINA, M.N.

Nature of sugar curves in vibration sickness. Uch. zap. Mosk, nauch.-  
issl. inst. san. i gig. no. 7:63-65 '60. (MIRA 15:2)  
(BLOOD SUGAR) (VIBRATION\_PHYSIOLOGICAL EFFECT)

PUSHKINA, Natal'ye Nikolayevna; BONDAREV, G.I., red.; ZAKHAROVA, A.I.,  
tekhn. red.

[Vitamins in the Far North] Vitaminy na Severe. Moskva, Medgiz,  
1961. 127 p. (MIRA 15:2)  
(RUSSIA, NORTHERN--VITAMIN METABOLISM)



YEGOROV, Yu.L.; KASPAROV, A.A.; PUSHKINA, N.N. (Moskva)

Some disorders in metabolic and functional processes of the liver among workers in the production of synthetic fatty acids. Gig. truda i prof.zab. no.11:19-22 '61. (MIRA 14:11)

1. Moskovskiy nauchno-issledovatel'skiy institut gigiyeny imeni F.F. Erismana.  
(LIVER---DISEASES) (ACIDS, FATTY---TOXICOLOGY)

PUSHKINA, H.N., kand.biologicheskikh nauk (Moskva)

Prevention of hypovitaminosis C in the Far North. Med. sestra 20  
no.10:53-56 0 '61. (MIRA 14:12)  
(RUSSIA, NORTHERN--DEFICIENCY DISEASES)  
(ASCORBIC ACID)

VYALOV, A.M.; BAGNOVA, M.D.; BULYCHEV, G.V.; BYLOV, I.S.; GENKIN, A.G.;  
KUBLANOVA, P.S.; PUSHKINA, N.N.; YUSHKEVICH, L.B.

Comparative evaluation of health conditions in workers employed in  
producing synthetic fatty acids and higher fatty alcohols. Gig. i  
san. 26 no.4:15-21 Ap '61. (MIRA 15:5)

1. Iz klinicheskogo otdela Moskovskogo nauchno-issledovatel'skogo  
instituta gigiyeny imeni F.F.Erismana Ministerstva zdravookhraneniya  
RSFSR.

(CHEMICAL INDUSTRIES--HYGIENIC ASPECTS)

(ACIDS, FATTY--PHYSIOLOGICAL EFFECT) (ALCOHOLS--PHYSIOLOGICAL EFFECT)

LUK'YANOV, V.S.; PUSHKINA, N.N.

Hypovitaminoses among the newcomers and the native population  
of some regions beyond the Arctic Circle. Probl. Sev. no.6:  
115-119 '62. (MIRA 16:8)

1. Moskovskiy institut gigiyeny imeni F.F. Erismana.  
(ARCTIC REGIONS--DEFICIENCY DISEASES)