

25388

S/080/61/034/002/008/025
A057/A129

Effect of ultrasonic waves ...

The present authors point out that the mechanism of the effect of ultrasonic waves on electroplating, especially of alloys, is of interest for further investigations. There are 11 figures, 3 tables and 12 references: 7 Soviet-bloc and 5 non-Soviet-bloc. The two English-language publications read as follows: Fishlock, Metal Industry, 93, 109 (1958), St. R. Rich, Plating, 42, 11 (1955).

SUBMITTED: June 18, 1960

Card 5/8

25
X
25

ACCESSION NR: AP4032501

S/0080/64/037/004/0800/0806

AUTHORS: Fel'dman, Yu. A.; Shatsova, S. A.; Gudkova, Ye. Ye.

TITLE: Nickel plating under the action of an ultrasonic field

SOURCE: Zhurnal prikladnoy khimii, v. 37, no. 4, 1964, 800-806

TOPIC TAGS: nickel plating, electroplating, ultrasonication, cathodic polarization, electrodeposit porosity, electrodeposit adhesion, current yield

ABSTRACT: The effect of ultrasonics on nickel plating from concentrated nickel sulfate solutions was examined. Experiments were run plating nickel from solutions containing 200-250 and 500 gm/l $\text{NiSO}_4 \cdot 7\text{H}_2\text{O}$ in baths up to 200 liters under the action of an ultrasonic field of a frequency of 15-16 kilocycles/sec. It was found the electrolytes containing 250 or 500 gm/l $\text{NiSO}_4 \cdot 7\text{H}_2\text{O}$ were not stable and needed constant correction of pH; their current yield was lower (75-85%), and the more concentrated electrolyte could not be sonicated when its depth was more than 10 cm. The electrolytes containing 200-250 gm/l $\text{NiSO}_4 \cdot 7\text{H}_2\text{O}$, 30 H_5BO_3 , 10 NaCl, 4NaF (and possible

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ACCESSION NR: AP4032501

formalin and naphthalene disulfonic acid) gave current yields of 96-98% under sonication. The maximum permissible current density was increased three times (at 20C) to five times (at 50C) by sonication. Cathodic polarization was also reduced somewhat. Use of ultrasonics during the electroplating does not affect the adherence of the plate to the base metal, but does reduce the porosity of the deposit. "M. V. Kurganova and A.K. Mokshantseva took part in conducting the experimental work." Orig. art. has: 3 figures and 2 tables.

ASSOCIATION: None

SUBMITTED: 30Dec62

ENCL: 00

SUB CODE: MM

NR REF SOV: 013

OTHER: 006

Card 2/2

20709

9,4130 (1138, 1141, 2801, 3201)

712/01/00 /001/030/062
E034/1114

AUTHORS:
TITLE:

Ipatkin, I. S., Stepanov, B. M., and Shatsukov, B. A. F.
Photomultiplier Detection of X-ray Pulses

PERIODICAL:
TEXT:

Pribory i tekhnika eksperimenta, 1961 No. 1 pp 165-166

A large number of papers have been published in recent years giving descriptions of various pulsed cold-emission X-ray tubes. The form of the X-ray pulse is usually recorded by a photomultiplier feeding an amplifier and a fast oscillograph. The use of an amplifier introduces a distortion into the form of the recorded X-ray pulse and complicates the measurements. The present authors report preliminary results of a study of the form of X-ray pulses obtained without the use of an amplifier. The PGM-8 (PGI-3) electron multiplier and the ЦТ-19 (OK-19M) oscillograph were employed. The form of X-ray pulses from a continuously pumped demountable X-ray tube was investigated. The tube voltage was derived from the ЦАМ-500 (GEM-500) pulsed-voltage generator. The electron multiplier PGI-8 consists of four parallel channels with ten multiplying stages in each. Cu-Be emitters and cathodes were used. They have a quantum yield of

Card 1/4

20709

S/120/61/10 7001/050/002
E032/F114

Photomultiplier Detection of X-ray Pulses

1.5×10^{-5} for slow electrons and X-ray energies between 0.2 and 1.5 MeV. The amplification coefficient is 10^7-10^8 and the applied voltage 500 volts per stage. The multiplier output is developed across a 75 ohm coaxial cable. The maximum output current per pulse is not less than 5 amps so that the signal can be applied directly to the oscillograph. The dependence of the form and duration of the X-ray pulses was investigated as a function of the material and form of the cathode, the distance between the cathode and the anode, and the pressure in the tube. The figure shows oscillograms of X-ray pulses as functions of the distance between the electrodes for cathodes in the form of aluminium (1) and molybdenum (2) needles, and a tantalum ring with a sharp rim (3). The anode of the tube was in the form of a plane molybdenum disc. The calibration trace on the photographs is a 10 Mc/s signal. The distance between the electrodes was varied between 55 mm (upper photographs) and 5 mm. As can be seen, the duration of the X-ray pulse decreases as the electrodes approach each other. The form, duration and amplitude of the
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S/120/61/000/001/050/062
E032/E114

Photomultiplier Detection of X-ray Pulses

pulses was found to be independent of the cathode material. When the tube incorporates a nitrogen trap, the form of the pulse remains stable when the pressure is increased to 10^{-3} mm Hg. When the tube is operated without the trap, the stability deteriorates. The optimum working conditions of the tube at a working voltage of 470 kV per pulse were: pressure 10^{-5} mm Hg, anode to cathode distance 25 mm. The amplitude of the pulse under these conditions does not vary by more than $\pm 3\%$ over long periods of time. The total output of X-rays is then $10^{19} - 10^{20}$ quanta/sec with a pulse duration of $(3-4) \times 10^{-7}$ sec. There are 1 figure and 5 references: 2 Soviet and 3 non-Soviet.

ASSOCIATION: Institut khimicheskoy fiziki AN SSSR
(Institute of Chemical Physics, AS USSR)

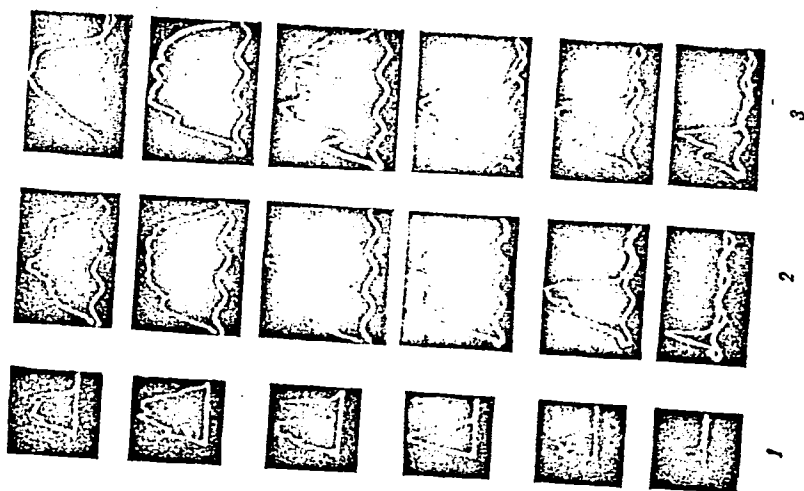
SUBMITTED: June 24 1959, and in final form December 19, 1959

Card 3/4

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20709

Photomultiplier Detection of X-ray.. S/120/61/000/001/050/062
E032/E114



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Figure

AUTHOR: Ushakov, I., Senior Engineer V/107-51-10-39/5

TITLE: Portable Combined Instrument (Portativyye Kombinirovannyy Instrument)

PERIODICAL: Radio, 1958, Nr 10, pp 43-49 (USSR)

ABSTRACT: At the 1st All-Union Exhibition of the Creative Work of Amateur Radio Engineers of the PDSMP in Riga, the author showed a combined multimeter for measuring the frequency of a circuit; it can also be used as an ohmmeter and voltmeter, a generator and a generator of signals for tuning receivers. The design of the multimeter is a combination of a CIR covering a frequency band of 40 kc - 50 mc, a voltmeter for dc and ac, capable of measuring currents from 0 to 15 μ a, 0 to 150 μ a and 0 to 500 μ a, and an ohmmeter for measuring resistances from 10 ohms to 2 megohms. A full description is given. There are 2 figures and 1 circuit diagram.

ALL ORIGIN: Stalinskiy Obshchestvo Radio (Stalin's Club Radio Club)

Card 1/1

SHATUKH, V.G.

Role of association in the process of memorizing a vocabulary of
foreign words. Nauk. zap. Nauk.-dosl. inst. psikhol. 11:115-119 '59.
(MIRA 13:11)

1. Gosudarstvennyy universitet im.I.I.Mechnikova, Odessa.
(Association of ideas)
(English language--Study and teaching)

DIKSHTEYN, Ye.I., MAGILSON, M.A., SHATUKHOV, A.I., GAZHUR, V.F.

Improving the luminance and organizing the natural gas fuel
spray. Stal' 24 no.10:890-892 O '64. (MIRA 17.12)

1. Magnitogorskiy metallurgicheskiy kombinat i Chelyabinskiy
nauchno-issledovatel'skiy institut metallurgii.

USSR/Inorganic Chemistry. Complex Compounds. C

Abs Jour : Ref Zhur - Khimiya, No. 8, 1957, 26441.

Author : Vol'nov, I.I.; Shatunina, A.N.

Inst : Academy of Sciences of USSR.

Title : Possibility of Preparing Ba(O₂)₂.

Orig Pub : Dokl. AN SSSR, 1956, 110, No. 1, 87 - 88.

Abstract : Assuming that the structure of Ba(O₂)₂ was similar to the structure of superperoxides of alkali metals, the authors estimated the value of the equilibrium constant of the reaction BaO₂ (solid) + O₂ (gas) ⇌ Ba(O₂)₂ (solid) (1). Using the approximately determined values of ΔH₂₉₈⁰ = -14.2 kcal and of ΔS₂₉₈⁰ = -45.4 entr. units, the equilibrium pressures of O₂ were computed for the reaction (1) at 25, 100, 200, 210, 220, 230, 250 and 302°⁰, which were 32, 75, 2300, 3150,

Card 1/2

USSR/Inorganic Chemistry. Complex Compounds.

C

Abs Jour : Ref Zhur - Khimiya, No. 8, 1957, 26441.

4230, 7278, 9760 and 33600 atm. This allows to expect that the reaction (1) is possible at superhigh pressures and a high temperature. It is shown that up to 10.4 % by weight of $Ba(O_2)_2$ are forming in BaO_2 exposed to the pressure of O_2 at 3300 atm at 210° for the duration of 19 hours. As it seems, the reaction takes place on the boundary between the solid and the gaseous phases.

Card 2/2

Shatunina, A.N.

11
The possibility of obtaining $Ba(O_2)$. I. I. Vol'noy and
A. N. Shatunina. *Proc. Acad. Sci. U.S.S.R., Sect. Chem.*,
110, 635-6 (1950) (English translation).—See C.A. 51,
12720e. B. M. R.

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4E4j

VOL'NOV, I.I.; SHATUNINA, A.N.

Reactivity of superoxides of alkaline earth metals with H_2O and CO_2 . Zhur.neorg.khim. 2 no.7:1474-1478 J1 '57. (MIRA 10:11)

1. Institut obshchey i neorganicheskoy khimii im. N.S.Kurnakova
AN SSSR.

(Alkaline earths) (Water) (Carbon dioxide)

Литий оксиды
VOL'NOV, I.I.; SHATUNINA, A.N.

Formation of LiO_2 from $\text{Li}_2\text{O}_2 \cdot 2\text{H}_2\text{O}_2$. Izv. AN SSSR Otd. khim. nauk
no.6:762-763 Je 1957. (MIRA 10:11)

1. Institut obshchey i neorganicheskoy khimii im. N.S. Kurnakova AN
SSSR.

(Lithium oxides)

AUTHORS:

Volkov, I. I., Shumova, V. N.
Shatalova, N. N.

78-3-5-6/39

TITLE:

V. The Formation of $\text{Ca}(\text{O}_2)_2$ by Irradiation of $\text{CaO}_2 \cdot 2\text{H}_2\text{O}_2$
With Ultra-Violet Rays (V. Obrazovaniye $\text{Ca}(\text{O}_2)_2$
oblucheniym $\text{CaO}_2 \cdot 2\text{H}_2\text{O}_2$ ultrafioletovymi luchami)

PERIODICAL:

Zhurnal Neorganicheskoy Khimii, 1958, Vol 3, Nr 5,
pp 1095-1097 (USSR)

ABSTRACT:

By irradiation of $\text{CaO}_2 \cdot 2\text{H}_2\text{O}_2$ with ultra-violet light, $\text{Ca}(\text{O}_2)_2$ is obtained. The presence of which can only be verified by chemical analysis. The obtained preparation is lemon-coloured, similar to NaO_2 . The final product is not uniform. The manufacturing process is difficult to reproduce. In some cases the final product contains from 7-8% $\text{Ca}(\text{O}_2)_2$, and in others it has a higher content of from 10-14%. $\text{Ca}(\text{O}_2)_2$ was also obtained by irradiation of $\text{CaO}_2 \cdot 2\text{H}_2\text{O}_2$ in a Fischer pistol consisting of quartz-glass, at a temperature of 25-45°C.

Card 1/2

The Formation of $\text{Ca}(\text{O}_2)_2$ by Irradiation of $\text{CaO}_2 \cdot 2\text{H}_2\text{O}$
With Ultra-Violet Rays

78-3-5-5/39

$\text{Ca}(\text{O}_2)_2$ is very unstable.
There are 1 table and 8 references, 5 of which are
Soviet.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N. S.
Kurnakova Akademii nauk SSSR (Institute of General
and Inorganic Chemistry imeni N. S. Kurnakov, AS USSR)

SUBMITTED: May '0. 1957

AVAILABLE: Library of Congress

1. Calcium oxides--Production; 2. Calcium oxides--Properties
3. Ultraviolet rays--Applications

Card 2/2

SOV/78-4-2-3/40

5(2)

AUTHORS:

Vol'nov, I. I., Shatunina, A. N.

TITLE:

The Formation of Lithium Superperoxide From $\text{Li}_2\text{O}_2 \cdot 2\text{H}_2\text{O}_2$
(Obrazovaniye nadperekisi litiya iz $\text{Li}_2\text{O}_2 \cdot 2\text{H}_2\text{O}_2$)

PERIODICAL:

Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 2,
pp 257-259 (USSR)

ABSTRACT:

Lithium peroxide is formed on drying $\text{Li}_2\text{O}_2 \cdot 2\text{H}_2\text{O}_2$ in vacuo at 100-120° and 10 Hg. A thin layer of the $\text{Li}_2\text{O}_2 \cdot 2\text{H}_2\text{O}_2$ sample was laid on the crystallizer surface and was dried. The change of the percentage of the LiO_2 content of the preparation in dependence on temperatures of 100°, 120°, and 70°C and time, was investigated. The results are shown in figure 1. There is 1 figure, 1 table, and 12 references, 8 of which are Soviet.

ASSOCIATION:

Institut obshchey i neorganicheskoy khimii im. N. S. Kurnakova Akademii nauk SSSR (Institute of General and Inorganic Chemistry imeni N. S. Kurnakov of the Academy of Sciences, USSR)

Card 1/2

SOV/78-4-7-5/44

5(2)

AUTHORS:

Vol'nov, I. I., Shatunina, A. N.

TITLE:

The Forming of NaO_2 From $\text{Na}_2\text{O}_2 \cdot 2\text{H}_2\text{O}_2$ (Obrazovaniye NaO_2 iz $\text{Na}_2\text{O}_2 \cdot 2\text{H}_2\text{O}_2$)

PERIODICAL:

Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 7,
pp 1491-1493 (USSR)

ABSTRACT:

The compound $\text{Na}_2\text{O}_2 \cdot 2\text{H}_2\text{O}_2$ was produced according to the slightly altered method by F. D'Ans (Ref 3) by the action of 98-99% hydrogen peroxide upon solid $\text{CH}_3\text{Na} \cdot 0.5 \cdot \text{CH}_3$. After the decay temperature of the crystalline compound had been determined as amounting to 152° by plotting a heating curve of this compound (Fig 1), the compound was dried in a vacuum at 70, 100 and 120° , i.e. below decay temperature. The peroxide-oxygen was determined gasometrically according to E. Seyb (Ref 4). The experimental results are given by table 1 and figure 2. Preparations with a content of about 30 weight % NaO_2 were obtained, which is considerably more than has hitherto been known in publications. There are 2 figures, 1 table, and 4 references.

Card 1/2

SOV/78-4-7-5/44

The Forming of NaO_2 From $\text{Na}_2\text{O}_2 \cdot 2\text{H}_2\text{O}_2$

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N. S. Kurnakova
Akademii nauk SSSR (Institute for General and Inorganic
Chemistry imeni N. S. Kurnakov of the Academy of Sciences,
USSR)

SUBMITTED: April 4, 1958

Card 2/2

S/062/E3/000/002/001/020
B144/B186

AUTHORS: Vol'nov, I. I., and Shatunina, A. E.

TITLE: Hydrates of sodium metasilicate hydroperoxidates

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh nauk, no. 2, 1963, 201 - 205

TEXT: Phase diagrams were plotted for the $\text{Na}_2\text{SiO}_3\text{-H}_2\text{O}_2\text{-H}_2\text{O}$ system at 0 and 15°C to determine the exact composition of the hydrates of sodium metasilicate hydroperoxidates. The initial substances were $\text{Na}_2\text{SiO}_3 \cdot 9\text{H}_2\text{O}$ dehydrated to $\text{Na}_2\text{SiO}_3 \cdot 6\text{H}_2\text{O}$ and dilute H_2O_2 . To avoid vigorous H_2O_2 reactions, the "residues" obtained with weak H_2O_2 solutions at 0°C were used for the high H_2O_2 concentration ranges. Equilibrium was obtained at 6 - 10 hrs. The liquid and solid phases were analyzed quantitatively for active O_2 , Na_2O , and SiO_2 . The solubility isotherms at 0°C proved the existence of 3 solid phases: $\text{Na}_2\text{SiO}_3 \cdot 9\text{H}_2\text{O}$ with 0 - 4 % by weight H_2O_2 , $\text{Na}_2\text{SiO}_3 \cdot 2.5\text{H}_2\text{O}$, and Na_2SiO_3 .

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Hydrates of sodium metasilicate...

1/000/03/000/002/001/020
B144/B186

with 4 - 20 % by weight H_2O_2 , and $Na_2SiO_3 \cdot 3H_2O_2 \cdot H_2O$ with 20 - 34 % by weight H_2O_2 . For the investigation at $15^\circ C$, $Na_2SiO_3 \cdot 3H_2O_2 \cdot H_2O$ was taken as initial substance. Equilibrium was obtained after 4 - 5 hrs. The phase diagram shows 2 solid phases: $Na_2SiO_3 \cdot 9H_2O_2 \cdot H_2O$ with 0 - 5 % by weight H_2O_2 and $Na_2SiO_3 \cdot 3H_2O_2$ with 5 - 48 % by weight H_2O_2 . The heating curve plotted for $Na_2SiO_3 \cdot 3H_2O_2 \cdot H_2O$ using a Kurnakov differential pyrometer showed an exothermic effect at $-60^\circ C$ indicating the decomposition of the crystallized H_2O_2 , and an endothermic effect due to dehydration at $\sim 120^\circ C$. The general formula established for these compounds is $Na_2SiO_3 \cdot xH_2O_2 \cdot yH_2O$, where $x = 2.5 - 3$, and $y = 0 - 1$. There are 4 figures and 2 tables.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N. S. Kurnakova
Akademii nauk SSSR (Institute of General and Inorganic
Chemistry named N. S. Kurnakov of the Academy of Sciences USSR)

SUBMITTED: May 19, 1962

Card 2/2

ACC NR: AP7000813

SOURCE CODE: UR/0062/66/000/011/2032/2033

AUTHOR: Vol'nov, I. I.; Shatunina, A. N.

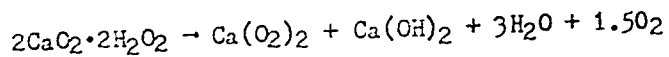
ORG: Institute of General and Inorganic Chemistry im. N. S. Kurnakov, Academy of Sciences, SSSR (Institut obshchey i neorganicheskoy khimii Akademii nauk SSSR)

TITLE: New data on the formation of $\text{Ca}(\text{O}_2)_2$ via $\text{CaO}_2 \cdot 2\text{H}_2\text{O}_2$

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 11, 1966, 2032-2033

TOPIC TAGS: calcium compound, superoxide

ABSTRACT: The reaction



was carried out at reduced pressures, a constant temperature of 40°C , a constant time of 60 min, and with a distribution of $\text{CaO}_2 \cdot 2\text{H}_2\text{O}_2$ of 1 g over 100 cm^2 of surface. It was found that the maximum content of $\text{Ca}(\text{O}_2)_2$ in the end product, equal to 55.4 wt. %, is reached at a pressure of $6 \times 10^{-3} \text{ mm}$. The dependence of the $\text{Ca}(\text{O}_2)_2$ content on the surface over which 1 g of $\text{CaO}_2 \cdot 2\text{H}_2\text{O}_2$ was spread at a residual pressure of $6 \times 10^{-3} \text{ mm}$ was determined. The value obtained, 55.4 wt. % $\text{Ca}(\text{O}_2)_2$ at 100 cm^2 of surface, is close to the limiting value, since according to the reaction given above, 1 mole of $\text{Ca}(\text{O}_2)_2$ and 1 mole of $\text{Ca}(\text{OH})_2$ are formed, which corresponds to 58.4 wt. %

UDC: 661.842.24:542.91

Card 1/2

ACC NR: AP7000813

Ca(O₂)₂. Orig. art. has: 2 figures and 1 formula.

SUB CODE: 07/ SUBM DATE: 09Apr66/ ORIG REF: 007/ OTH REF: 002

Card 2/2

1. CHEYUNOV, A.
2. USSR (60)
4. Construction Industry
7. In 1953 we will work better. Sel'. stroi. 8, no. 1, 1953.

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

SHATUNOV, A., inzhener.

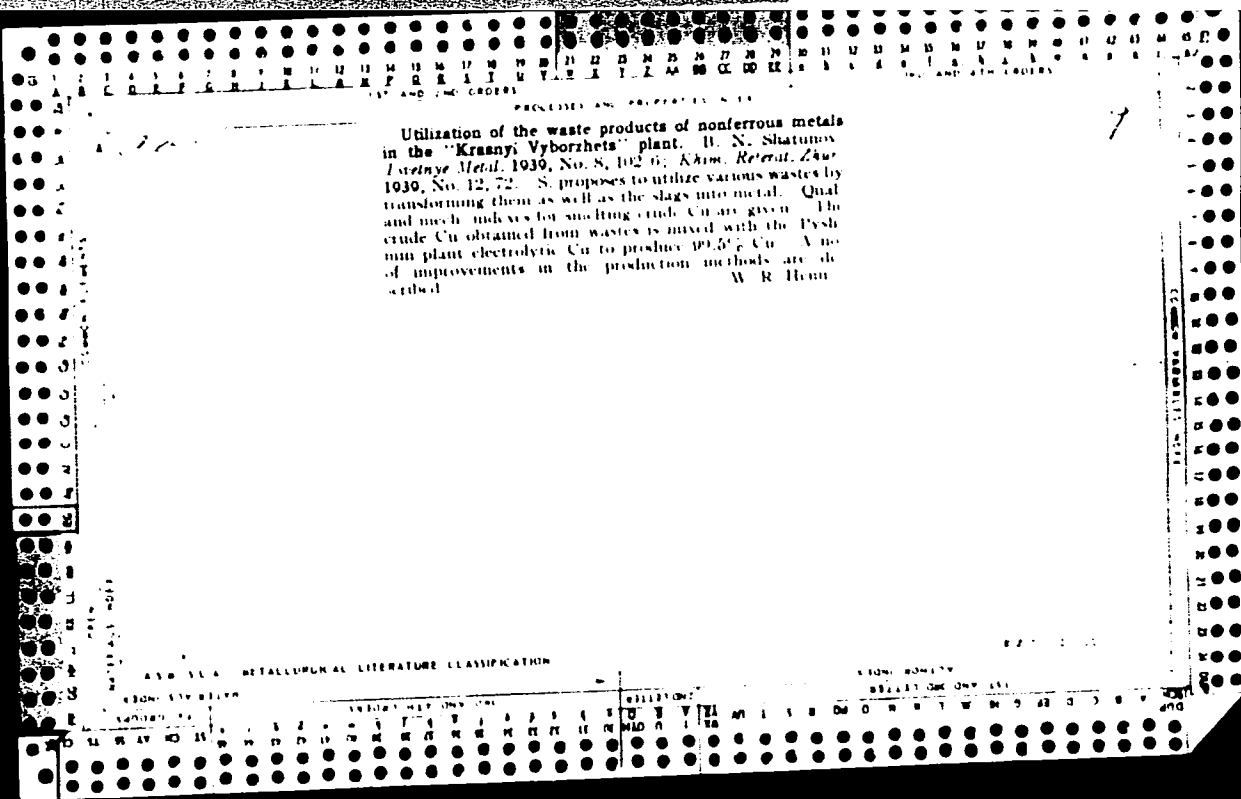
Cast frames. Steoitel' 2 no.10:18 0 '56.
(Windows)

(MIRA 10:1)

SHATUNOV, B.

Contribution of Leningrad metallurgy to exports. Vnesh. torg.
41 no.8:33 '61. (MIRA 14:8)

1. Zamestitel' nachal'nika otдела upravleniya metallurgicheskoy
promyshlennosti Lensovnarkhoza.
(Russia--Commerce)
(Leningrad--Metal industries)



PROCESSES AND PROPERTIES INDEX

Ways of economizing nonferrous metals. B. N. Shatunov. *Isvesty Metal.* 1940, No. 3, 5-14; cf. C. A. 35, 415. - S. discusses the ways and means of saving nonferrous metals in general and particularly under the conditions existing at the "Krasnyi Vyborgetz" Works, which is the largest user of nonferrous metals in Russia: (1) Means of decreasing the losses in melting; (2) installation of new and more efficient equipment in melting shops; (3) saving of waste in the fabricating shops; (4) more systematic utilization of scrap; (5) substitution of cheaper or more available materials (Sn bronzes have in many cases been replaced by Al and Si bronzes); (6) simplification and standardization of many items, and manuf. in larger lots; and (7) substitution of cast iron for bronze.

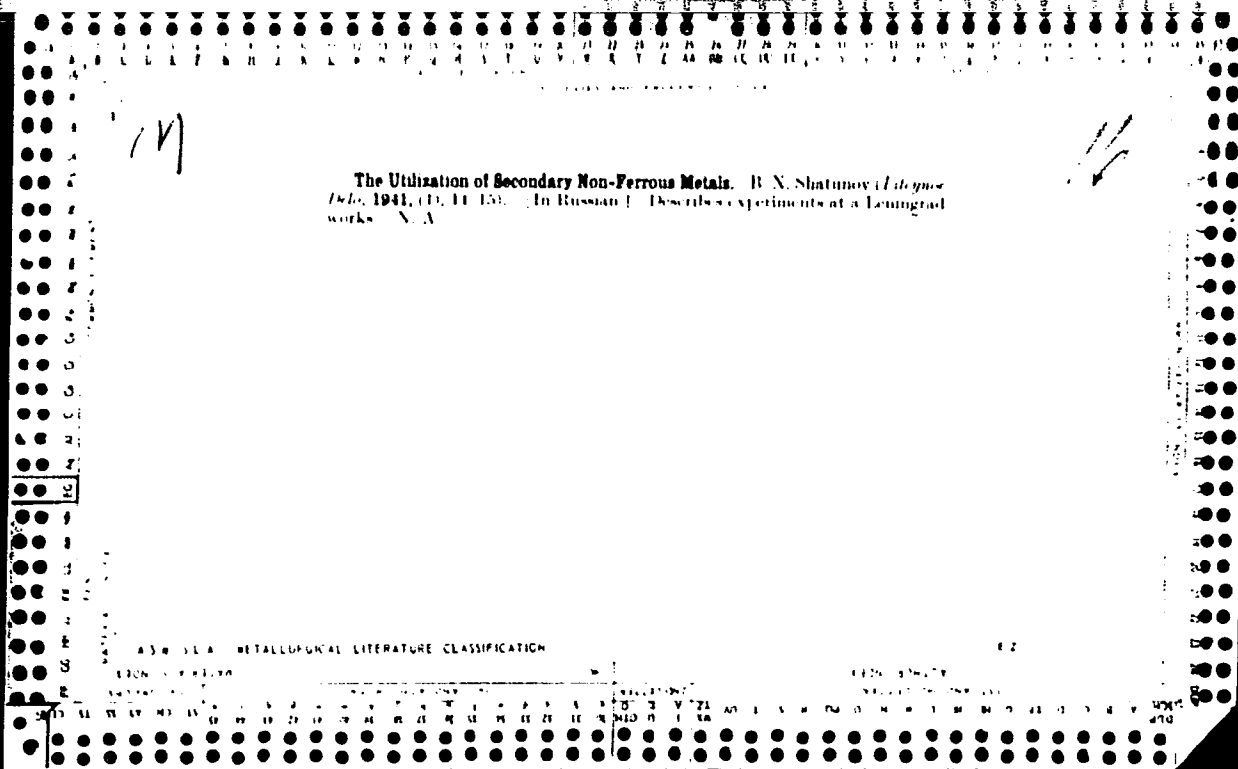
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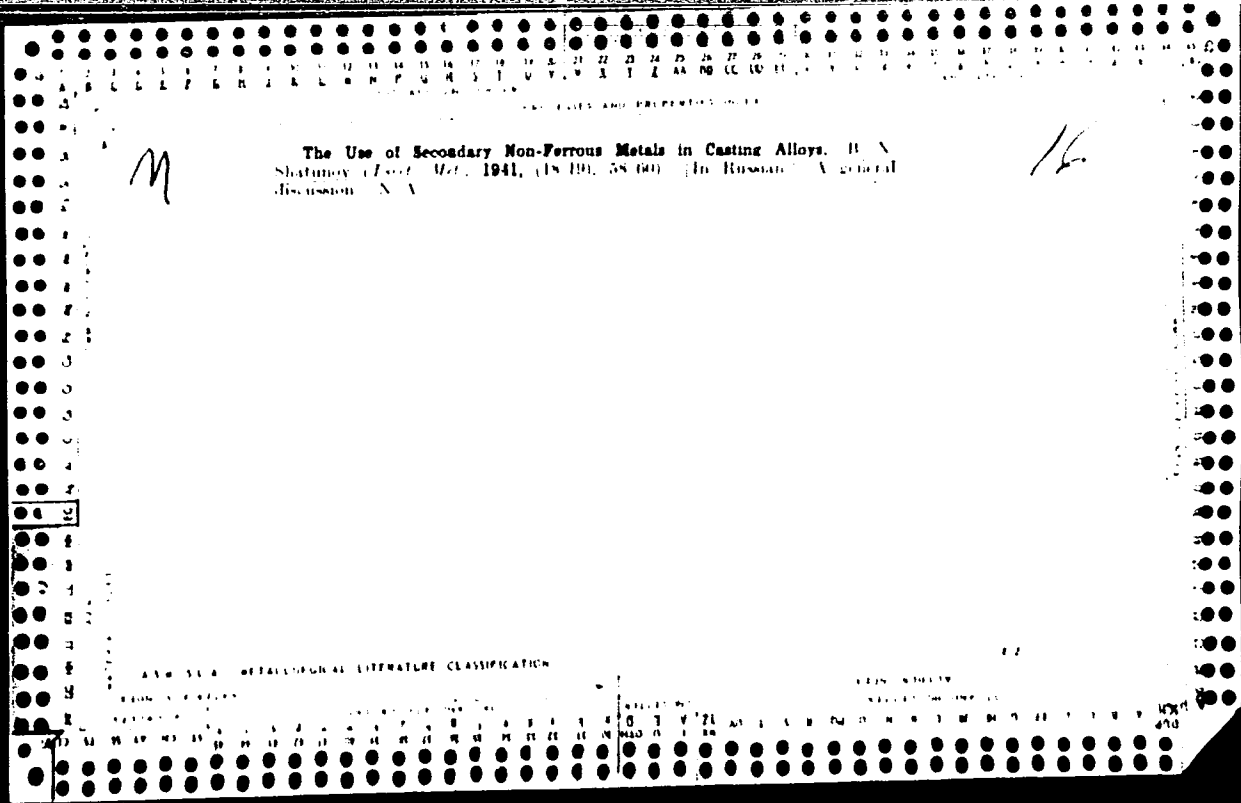
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9

A S M - S L A METALLURGICAL LITERATURE CLASSIFICATION

MATERIALS INDEX													PROCESSES AND PROPERTIES INDEX												
1ST AND 2ND ORDERS													1ST AND 2ND ORDERS												
3RD AND 4TH ORDERS													3RD AND 4TH ORDERS												
5TH AND 6TH ORDERS													5TH AND 6TH ORDERS												
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SHATUNOV, Boris Nikolayevich; KORNUSHIN, M.Ya., inzhener, retsenzent;
SHAPOSHNIKOV, V.A., inzhener, retsenzent; EL'DIND, L.M., redaktor
izdatel'stva; EVENSON, I.M., tekhnicheskij redaktor

[The manufacture of aluminum ware] Proizvodstvo aluminievoi posudy.
Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoj i tsvetnoj
metallurgii, 1956. 176 p. (MLRA 9:9)
(Kitchen utensils) (Aluminum)

S/135/60/000/009/014/015
A006/A002

AUTHOR: Shatunov, B. N. Engineer

TITLE: Butt Welding of 5p.0Φ 6.5-0.15 (Br. OF 6.5-0.15) Bronze Strips for Cold Rolling

PERIODICAL: Svarchnoye proizvodstvo, 1960, No. 9, pp. 40-41

TEXT: During the past years the rolling shops have been equipped with fully mechanized high-speed cold rolling mills. Rolling of light-weight blanks on such mills proved to be economically disadvantageous. In this connection welding of the blanks prior to cold rolling is highly important. Butt welding of several 3 mm thick 3 m long strips into one blank was employed at the "Krasnyy Vyborzhets" Plant to extend the continuity of the high-speed cold rolling process. Presently, 7 to 8 strips are welded into a blank of 20 - 25 m total length. The amount of welded strips may be raised. Continuous welding is performed as follows: the strips are prepared at the etching department, cleaned and cut with guillotine shears. Welding is performed on a movable table where the strip butts are joined and clamped. After welding the blank is turned into a drum with the aid of a reducer from which the blank is removed

Card 1/2

S/135/66/000/009/014/015
A006/A002

Butt Welding of $\text{Br. } 0\phi 6.5-0.15$ (Br. OF 6.5-0.15) Bronze Strips for Cold Rolling

by a pneumatic device. Operation of the shears, switching on the welding machine, the reductor and the remover is controlled from a desk placed besides the welding operator. Butt welding is carried out by argon-arc process with tungsten electrode. The arc is fed by d-c of reversed polarity. The welding head is water-cooled. The welding conditions are: 180 - 200 amps, 18 v arc voltage, 8 l/min argon consumption, 3.8 mm electrode diameter and 36 m/hr welding speed. The method yielded a raise in the production from 50 to 66.9% and yearly savings of 112,700 rubles.

Card 2/2

SHATUNOV, B.N., inzh.

Mechanization of clay-mining operations. Mekh.i avtom.proizv.
14 no.8:39-40 Ag '60. (MIRA 13:8)
(Clay) (Mining machinery)

SPATNO', G.

Train the loyal sons of the fatherland. Kryl. rod. 16
no.11:6-7 N '65. (MIRA 18:12)

1. Chlen Prezidiuma Tsentral'nogo komiteta Vsesoyuznogo
dobrovol'nogo obshchestva sodeystviya armii, aviatsii i
flotu SSSR.

11.11.1957

1. Kandidate v chleny byuro Central'nogo komiteta Vsesoyuznogo
Leningradskogo Kommunisticheskogo partii (1957) (MIRA 18'5)

2. Kandidat v chleny byuro Central'nogo komiteta Vsesoyuznogo
Leningradskogo Kommunisticheskogo partii (1957) (MIRA 18'5)

SHATUNOV, G.

Constant attention to the military and patriotic education of
our youth. Voen.snar.59 no.10:3-5 0 '63. (MIRA 16:11)

1. Ochen prezhitiuma tsentral'nogo komiteta laborovoi'nogo oobshchestva
va sodeystviya armii, aviatsii i flotu.

SHATUNOV, G., general-mayor

Jointly with the people and the army. Radio no.4:8-9 Ap '65.
(MIRA 18:5)

SHATUNOV, G.

The Spartakiada calls for new frontiers. Kryn. rod. 16 no.1:
1-3 Ja '65. (MIRA 18:3)

1. Chlen Prezidiuma Tsentral'nogo komiteta Vsesoyuznogo
dobrovol'nogo obshchestva sodeystviya armii, aviatsii i flotu.

SHATUNOV, G.

Combat missions of the All-Union Volunteer Society for rural areas.
Assistance to the Army, Navy, and Air Force in rural areas. Voen.
znan. 41 no.8:3-4 Ag '65. (MIRA 18:7)

1. Chlen prezidiuma Tsentral'nogo komiteta Vsesoyuznogo dobrovol'nogo
obshchestva sodeystviya armii, aviatsii i flotu.

SHATURCV, G. P.

Komsomol'skie organizatsii sovetskoi Armii - peredovoi otriad armeiskoi molodezhi
[Communist Youth League organizations of the Soviet Army are the advance detail
of the army youth]. Moskva, Voennoe Izd-vo, 1953. 132.

SC: Monthly List of Russian Accessions, Vol. 6, No. 5, August 1953.

Shatunov, G.

AUTHOR: Shatunov, G., Vice-President of TsK-DOSAAF 107-8-2/62

TITLE: General Development of Socialist Competition among Radio Amateurs (Vsemerno razvivat' sotsialisticheskoye sorevnovaniye sredi radiolyubiteley)

PERIODICAL: Radio, 1957, #8, pp 1-2 (USSR)

ABSTRACT: The radio amateurs play an important role in the DOSAAF. They encourage the growth and activity of the competitive radio amateur organizations and the number of radio clubs in enterprises, collective farms and schools is growing. Hundreds of thousands young men participate in this attractive and useful activity and acquire the necessary minimum knowledge of radio engineering.

For example, the members of the Omsk radio club decided to prepare during 1957 50% more radio specialists than previously projected; to establish in Omsk and other regional centers 20 ultra-short-wave and 3 short-wave radio stations etc.

The experience of the best radio clubs and individual radio amateurs acquired during the competitions should be spread

Card 1/2

107-8-2/62

TITLE: General Development of Socialist Competition among Radio Amateurs (Vsemerno razvivat' sotsialisticheskoye sorevnovaniye sredi radiolyubiteley)

among all organizations. The magazine "Radio" and the newspaper "Sovetskiy Patriot" play a large role in this activity.

A recent resolution of the VIIth Plenum of the "TsKDOSA AF" says that in numerous organizations, the collaboration of active members is still unsatisfactory and requires that all the committees, clubs and organizations improve their cooperation with active members, which is decisive for the further expansion of military science and the development of the educational and competitive activity.

In the near future, it is indispensable to increase the number of active radio amateur members as well as the number of public instructors.

One Russian reference is cited.

INSTITUTION: DOSAAF

PRESENTED BY:

SUBMITTED:

AVAILABLE: At the Library of Congress

Card 2/2

5447 7-1, 2

85-9-3/33

AUTHOR: Shatunov G., Deputy Chairman, Central Committee of the DOSAAF, USSR

TITLE: The Instruction Given to the Active Members of the DOSAAF Organizations must be Radically Improved (Radikal'no Uluchshit' Rabotu s Aktivom)

PERIODICAL: Kryl'ya Rodiny, 1957, Nr 9, pp. 2-3 (USSR)

ABSTRACT: The author interprets the purport of the resolutions passed at the June 1957 Seventh Plenary Session of the Central Committee of the DOSAAF, which states that "the work of the DOSAAF organizations in the military field and in the field of sports has not yet reached the broad masses of the population to a degree required by the interests of our State, nor is the quality of that work high enough", and which requires that "measures be taken in order to improve the instruction given to the active members of the DOSAAF organizations". The author points

Card 1/3

85-9-3/33

The Instruction Given to the Active Members of the DOSAAF Organizations must be Radically Improved (Cont.)

out that the discussions which took place at this session have shown the necessity of supplementing the work of the staff members of the organizations and the work of the selected sportsmen-aviators by putting more stress upon the work of voluntary instructors - members of the DOSAAF recruited among the masses of the population. He asserts that it is therefore very important that "in conformity with the request of the Seventh Plenary Session the number of voluntary instructors be increased, and brought, in all branches of sports, up to the level of the needs of the DOSAAF organizations", and recommends that "DOSAAF Committees organize a systematic training of voluntary instructors, aimed at improving their special skills and at widening their knowledge in the field of methodology." He also advises that the training and education of these instructors be directed towards developing their initiative. The article discloses that it is planned to double, within the next three years, the number of the active members of the DOSAAF, and that these new members will be called to participate in the strengthening of the defenses of the

Card 2/3 .

85-9-3/33

The Instruction Given to the Active Members of the DOSAAF Organizations
must be Radically Improved (Cont.)

country. The article contains no information of
scientific value.

AVAILABLE: Library of Congress

Card 3/3

1. KIKOV, G., polkovnik.

Party leadership is the basis for success in our defense work,
Voen.znan. 13 no.6:12-13 Feb 1972. (NDA 10:6)

1. Karestitel' predsedatelya Tsentral'nogo Komiteta Dobrovol'nogo
obshchestva sodeystviya armii, aviatsii i flotu SSSR.
(military education)

85-58-3-4/26

AUTHOR: Shatunov, G., Acting Chairman of the Central Committee
of DOSAAF, USSR

TITLE: The 40th Anniversary of Lenin's Komsomol (K 40-letiyu
Leninskogo komsomola); Strengthen and Develop Friendship
Between the Komsomol and DOSAAF Organizations (Krepit' i
razvivat' sodruzhestvo komsomola i DOSAAF)

PERIODICAL: Kryl'ya rodin¹y, 1958, Nr 3, pp 2-3 (USSR)

ABSTRACT: The author reviews the history of the Komsomol
organization, established in 1922, and the role its membership has
played in every phase of Soviet life and activity. He cites the
record established by members of the VLKSM in various parts of
the country and refers to Moscow, Irkutsk, and Gor'kiy oblasts
and the Ukraine as areas where Komsomol members have participated
most actively in DOSAAF. The author refers to the Spartacus
games to be held between May and September [1958] to celebrate the
40th anniversary of the VLKSM. Several million young sportsmen
are expected to take part in these games, which will include

Card 1/2

The 40th Anniversary of Lenin's Komsomol

85-58-3-4/26

competitions in marksmanship, automobile and motorcycle racing, parachute jumping, and in building airplanes, auto and ship models. The author states that the XIII VLKSM Convention will be held on 15 April 1958 and that its decisions will stress the need for greater cooperation between Komsomol and DOSAAF organizations. Photo shows Komsomol member Nadezhda Borisova, glider pilot of the second Moscow Municipal Aeroclub.

AVAILABLE: Library of Congress

Card 2/2

SHATUNOV, G.

Consolidate and develop the results of the Spartakiada. Za rul.
16 no.10:2-3 0 '58. (MIRA 12:1)

1. Zamestitel' predsedatelya Tsentral'nogo komiteta Dobrovol'nogo
obshchestva sodeystviya armii, aviatsii i flotu.
(Communist Youth League--Sports)

SHATUNOV, G., kand. v chleny byuro Tsentral'nogo komiteta Vsesoyuznogo
Leninskogo Kommunisticheskogo soyuza molodezhi.

The Communist Youth League and the defense of the country.
Voen. znan. 34 no.9:1-4 S '58. (MIRA 11:10)

1. Zamestitel' predsedatelya Tsentral'nogo Komiteta Vsesoyuznogo
Dobrovol'nogo obshchestva sodevstviya armii, aviatsii i flotu SSSR.
(Communist Youth League)

SHATUNOV, Georgiy Pavlovich; USPENSKIY, N.M., red.; FAYNSHMIDT, F.Ya.,
tekhn.red.

[All-Union Volunteer Society for Assistance to the Army, Air
Force, and Navy of the U.S.S.R.] DOSAAF SSSR. Moskva, Izd-vo
DOSAAF, 1959. 127 p. (MIRA 13:2)
(Military education)

SCV/107-59-4-6/45

AUTHOR: Shatunov, G., Deputy Chairman

TITLE: Expanding the Ranks of DOSAAF (Shirit' ryady DOSAAF)

PERIODICAL: Radio, 1959, Nr 4, p 7 - 8 (USSR)

ABSTRACT: The security of the USSR and the entire Soviet bloc demands that each Soviet citizen be constantly concerned with a further strengthening of the Soviet Armed Forces. Millions of Soviet citizens comply with this duty by participating in the activities of DOSAAF. The training of drivers and radio operators, conducted by DOSAAF, not only helps to increase the military preparedness of the USSR, but it simultaneously furnishes specialists for the national economy. However, DOSAAF is still far from its goal set at the 4th DOSAAF Congress, which calls for the participation of the majority of the adult population in this organization. The author points out that the Bryansk Oblast' DOSAAF Organization, headed by Chairman V. Nesmeyanov, is very

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SCV/107-59-4-6/45

Expanding the Ranks of DOSAAF

inactive in acquiring new members, since not even one new member joined this organization during a period of six months. Therefore the author demands that all members of the DOSAAF organizations intensify their efforts for increasing the number of DOSAAF members, whereby radio exhibitions and radio competitions may be used for attracting new people. There is 1 photograph. .

ASSOCIATION: Tsentral'nyy komitet DOSAAF SSSR (Central Committee of DOSAAF USSR)

Card 2/2

SHATUNOV, G.

Radio engineering information should be introduced on a large scale to our youth. Radio no.2:3-4 F '60.

(MIRA 13:5)

1. Kandidat v chleny byuro TSentral'nogo Komiteta Vsesoyuznogo Leninskogo kommunisticheskogo soyuza molodezhi.

(Radio)

SHATUNOV, G.

Spartakiada means mass participation and skill! Kryl.rod. 11
no.9:2-3 S '60. (MIRA 13:9)

1. 4amestitel' predsedatelya Orgkomiteta Vsesoyuznoy
spartakiady po tekhnicheskim vidam sporta.
(Sports)

SHATUNOV, G.

Prepare to welcome the congress of the beloved party with suitable achievements. Za rul. 19 no.7:l-2 J1 '61. (MIRA 14:8)

1. Chlen prezidiuma Tsentral'nogo komiteta Dobrovol'nogo obshchestva sodeystviya armii, aviatsii i flotu SSSR.
(Transportation, Automotive--Societies, etc.)

SHATUNOV, G.

Train young people in the spirit of preparedness for great deeds.
Voen.znan. 37 no.6:3-4 Je '61. (MIRA 14:6)

1. Kandidat v chleny Byuro Tsentral'nogo Komiteta Vsesoyuznogo
Leninskogo Kommunisticheskogo soyuza molodezhi.
(Military education)

SHATUNOV, G., general-mayor

We are the staunch followers of Lenin. Komm.Vooruzh.Sil 2
no.18:29-34 S '62. (MIRA 15:8)

1. Chlen prezidiuma Tsentral'nogo komiteta Dobrovol'nogo obshchestva
sodeystviya armii, aviatsii i flotu.
(Military education)

SHATUNOV, G.

Put the propaganda's work on a high level. **Voen. znan.**
38 no.2-4-6 F 162. (MIRA 15:2)
(Russia -Armed forces--Political activity)

SHATUNOV, G., general-mayor

Celebrated patron. Voen. znan. 38 no.10:2-3 0 '62. (MIRA 15:10)
(Communist Youth League) (Russia, ~~Navy~~)

SHATUNOV, G. *R.*

The main direction. Kryl. rod. 14 no.2:7-9 F '63.
(MIRA 16:4)

1. Chlen prezidiuma Tsentral'nogo komiteta Dobrovol'nogo
obshchestva sodeystviya armii, aviatsii i flotu.

(Aeronautics—Societies, etc.)

SHATUNOV, G.

Mass participation and skill form the motto of the "Spartakiada."
Kryl.rod. 14 no.9:1-4 S '63. (MIRA 16:9)

1. Chlen Prezidiuma Tsentral'nogo komiteta Dobrovol'nogo obshchestva
sodeystviya armii, aviatsii i flotu.
(Aerial sports)

ON 10/11/71, 10/11/71, 10/11/71

transmission of information, Study No. 154149-49, 10/11/71.
(MIE 11/71)

SHEPHERD
 SUBJECT USSR/MATHEMATICS/Functional analysis CARD 1/2 PG - 41
 AUTHOR SATUNOV M.P.
 TITLE On the resolvent of an elliptic operator.
 PERIODICAL Mat. Sbornik, n. Ser. 37, 459-470 (1955)
 reviewed 5/1956

By separation of the variables the operators

$$Lu + ku \stackrel{\text{def}}{=} [r_1^2(x_2) + r_2^2(x_2)]^{-1} \sum_{i=1}^2 \frac{1}{p_i(x_i)} \frac{\partial}{\partial x_i} (p_i(x_i) \frac{\partial u}{\partial x_i}) + ku,$$

$\Gamma u \stackrel{\text{def}}{=} \frac{\partial u}{\partial n} + h u|_{\partial \Omega_2}$, where $\Omega_2 = \{x: a_i < x_i < b_i\}$ (a_i, b_i may also be infinite; $x = (x_1, x_2)$) decompose into the operators:

$$L_i = [p_i(x_i)]^{-1} d/dx_i (p_i(x_i) d/dx_i) + kr_i^2(x_i)$$

$$\Gamma_i u = \begin{cases} -\partial u / \partial x_i + h u|_{x_i=a_i} & i = 1, 2. \\ \partial u / \partial x_i + h'_i u|_{x_i=b_i} \end{cases}$$

The resolvent R_λ of the operator L (with the boundary condition $\Gamma u = 0$) is

Mat. Sbornik, n. Ser. 37, 459-470 (1955)

CARD 2/2

PG - 41

represented by means of the resolvents $R_{-2,i}$ of the operators L_i (with the boundary conditions $\Gamma_i u = 0$). The following theorem is proved: Let be $F = (r_1^2 + r_2^2)f$; $r_i(x_i) > 0$. If $(r_1^2 + r_2^2)^{1/2} f \in L^2(\Omega_2)$, $F(-, x_i) \in D(L_{s-i})$, $i=1,2$ ($D(B)$ denotes the domain of definition of B), then the function

$$u(-, k) \stackrel{\text{def}}{=} -(2\pi i)^{-1} \int_C R_{\lambda,1} R_{-\lambda,2} F d\lambda$$

is the solution of the boundary value problem: $Lu + ku = f$, $\Gamma u = 0$ (C is the straight line: $\arg z = \theta > 0$).

If besides r_1, r_2 are monotonely increasing, then we have

$$R_k f = -(2\pi i)^{-1} \int_{-\infty}^{\infty} R_{\lambda,1} R_{-\lambda,2} F d\lambda \quad (\exists m k > 0);$$

$$\exists m R_k f = \pi^{-1} \int_{-\infty}^{\infty} \exists m R_{\lambda,1} R_{-\lambda,2} F d\lambda.$$

INSTITUTION: Kuibyšev

SHATUNOV, M.P.

Shatunov, M. P. Solution of a mixed problem for the wave equation. Leningrad. Gos. Univ. Uč. Zap. 144. Ser. Mat. Nauk 23 (1952), 270-273. (Russian)

13

m. P.

Define $U(X, t)$ by

$$\Delta U - U_{tt} = F(X, t), \quad U|_{t=0} = U_t|_{t=0} = 0, \quad \text{for } X \in D, \quad U|_S = 0,$$

where $X = (x, y)$, and S is the boundary of the region D in the x, y plane. The author proves existence of U under suitable hypotheses, notably that

$$(*) \quad \left| \frac{\partial F}{\partial x} \right| + \left| \frac{\partial F}{\partial y} \right| + |F| + \left| \frac{\partial F}{\partial t} \right| + \dots + \left| \frac{\partial^q F}{\partial t^q} \right| < A e^{\alpha_0 t}$$

for some A, α_0 , and also, when $t=0$,

$$(**) \quad F = \frac{\partial F}{\partial t} = \frac{\partial^2 F}{\partial t^2} = \dots = \frac{\partial^q F}{\partial t^q} = 0.$$

The method involves taking the Laplace transform

$$v(X, \lambda) = \int_0^\infty e^{-\lambda t} U(X, t) dt$$

and noticing that, by integrating by parts and applying conditions (*) and (**), one gets (***) $\Delta v = \lambda^2 v + g, v|_S = 0$ with $|g(X, \lambda)| < B/|\lambda|^q$ for $\text{Re}(\lambda) > \alpha_0$. Problem (***) can be reduced by a standard method (using Green's function G for the Dirichlet problem for D) to a Fredholm integral

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Šatanov, M. P.

equation, to which Hilbert-Schmidt theory can be applied, yielding the result that $v = \sum C_k v_k(X)$, where $v_k(X)$ are the eigenfunctions of $v_k = -\lambda_k^2 / D G v_k dX$. The coefficients C_k can be determined essentially by substitution in (***) . It remains to study the dependence of v on λ (which is easily done by considering separately each of several possible cases, such as $[\text{Re}(\lambda)]^2 > [\text{Im}(\lambda)]^2$, etc.), and to invert the Laplace transform by means of the Bromwich integral.

R. B. Davis (Syracuse, N.Y.)

3

2/2

*Sm
amg*

SOVKIN, V.F., dotsent, kand.tekhn.nauk; SHATUNOV, M.P., dotsent, kand.
fiziko-matem.nauk

Calculating temperatures due to grinding. Izv.vys.ucheb.
zav.; mashinostr. no.1:131-135 '59. (MIRA 13:3)

1. Kuybyshevskiy industrial'nyy institut.
(Grinding and polishing)

SHATUNOV, M.P., kand.fiz.-mat.nauk; SOVKIN, V.F., kand.tekhn.nauk

Analytic investigation of the temperature field during grinding
based on the general laws of heat conductivity. Izv.vys.ucheb.zav.;
mashinostr. no.2:212-223 '62. (MIRA 15:5)

1. Kuybyshevskiy industrial'nyy institut.
(Grinding and polishing) (Heat--Conduction)

SHAFAROV, A.I. kandi.fiziko-matematicheskikh nauk, dotsent, SGT IN, V.F.,
kandi.tekhn.nauk, dotsent

Investigating contact temperature during grinding basing on
natural boundary conditions. Vest.mashinestr. 42 no.6:63-67
Ja 1962. (MIRA 15:6)

(Grinding and polishing)

1977, [redacted]; [redacted], [redacted] [redacted] with [redacted];
[redacted], [redacted]; [redacted], [redacted] Viktorovich;
[redacted], [redacted]; [redacted], [redacted], red.

[in regard to the productivity and improving the quality of
work on subjected to training] [redacted] proizvoditel'-
[redacted] [redacted] [redacted] [redacted] [redacted].
[redacted], [redacted] [redacted] [redacted], 1975. 109 p.
([redacted] 17:7)

DIFFERENTIAL SCANNING CALORIMETRY (DSC) OF POLYMER FILLS. MARK
INTEGRATION CURVES FOR DETERMINATION OF TEMPERATURES AND THERMAL
EFFECTS. ANAL. CHEM. 52(12):173-177 (1980)
(NINA 18:5)

SVISTUNOV, A.M. [deceased]; BEYTEL'MAN, A.N.; IVASHCHENKO, I.Ya.;
SHATUNOV, S.F.

Improving certain elements of an open-hearth furnace. Metallurg
8 no.7:17-19 J1 '63. (MIRA 16:8)

1. Izhevskiy metallurgicheskiy zavod.
(Open-hearth furnaces--Design and construction)

VOINOV, S.G.; KOSOV, L.F.; MOROZHENSKIY, A.I.; SAVEL'YEV, D.F.; SHALIMOV, A.G.;
KALINNIKOV, Ye.S.; SHATUNOV, S.F.; KIREYEV, B.A.; OKHAPKIN, S.I.;
DAVIDOVA, L.N.; IZMANOVA, T.A.

Refining a 100-ton open-hearth heat with a liquid synthetic slag
in the ladle. Stal' 24 no.7:599-604 J1 '64.

(MIRA 18:1)

MARUSOV, A.Ya., inzhener-podpolkovnik, glavnyy red.; KUDRYAVTSEV, M.K., general-leytenant tekhnicheskikh voyesk, otvetstvennyy red.; DEMIN, L.A., inzhener-kontr-admiral, red.; SHCHERBAKOV, A.N., general-mayor, red.; NIKOLAYEV, A.S., polkovnik, red.; KOLOMIYETS, A.D., polkovnik, red.; NAZAROV, P.V., polkovnik, red.; PAROT'KIN, I.V., polkovnik, red.; PUDIKOV, M.P., polkovnik, red.; SISELIN, S.V., polkovnik, red.; BARANOV, M.Kh., inzhener-polkovnik, red.; KOMKOV, A.M., inzhener-polkovnik, red.; SHATUNOV, S.G., inzhener-polkovnik, red.; KOROLEV, V.G., polkovnik, tekhn.red.; LUK'YANOV, B.I., polkovnik, tekhn.red.; ROMANOV, M.K., podpolkovnik, tekhn.red.; IVANOV, V.V., inzhener-podpolkovnik, tekhn.red.; LYUBKOV, A.N., inzhener-podpolkovnik, tekhn.red.; KNYSH, P.N., podpolkovnik tekhnicheskoy sluzhby, tekhn.red.; VASMUT, A.S., kapitan, tekhn.red.; KOSTIN, A.G., tekhn.red.; MAKUKHINA, G.P., tekhn.red.

[World atlas] Atlas mira. Moskva, Voen.izd-vo M-va obor. SSSR, 1958. 459 p. (MIRA 11:5)

1. Russia (1923- U.S.S.R.) Armiya. General'nyy shtab. Voenno-topograficheskoye upravleniye. 2. Tekhnicheskaya redaktsiya Voenno-topograficheskogo upravleniya General'nogo Shtaba (for Korolev, Luk'yanov, Romanov, Ivanov, Lyubkov, Knysh, Vasmut) (Atlases)

SHATUNOV, T.

Let's count the seconds. Prom.koop. 13 no.3:7 Mr '59.

(MIRA 12:4)

1. Starshiy inzhener-normirovshchik normativno-issledovatel'skoy
stantsii po trudu Kazpromsoвета, Alma-Ata.
(Aktyubinsk--Labor productivity)

MCROZOV, I.I.; CHESTAKOV, A.I., inzh., retsenzent; SHATUNOV, V.G.,
inzh., red.; KHITROVA, N.A., tekhn. red.

[Organization of train traffic on lenthened haul distances]
Organizatsiia dvizheniia poezdov na udlinennykh tiagovykh
plechakh. Moskva, Transzheldorizdat, 1963. 84 p.
(MIRA 16:10)

(Railroads--Traffic)

ZEMBLINOV, S.V.; STRAKOVSKIY, I.I.; KARLOVSKIY, S.A., inzh.,
retsenzent; SHATUNOV, V.G., inzh., red.; USENKO, L.A.,
tekhn. red.

[Stations and junctions] Stantsii i uzly. Moskva, Trans-
zheldorizdat, 1963. 347 p. (MIRA 17:2)

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1372, 2203, 2403

27508

S/079/51/031/009/009/012
D215/D306

AUTHORS: Petrov, K.A., Gavrilova, A.I., Shatunov, V.K., and Korotkova, V.P.

TITLE: Diethyleneimides of β -aminoethylphosphinic and thiophosphinic acids. II

PERIODICAL: Zhurnal obshchey khimii, v. 31, no. 9, 1961, 3076 - 3081

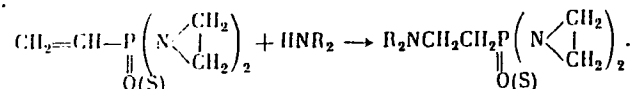
TEXT: The present work is a continuation of an earlier work, in which the authors showed that diethyleneimidovinylphosphonates and vinylthiophosphonates as well as esters of vinylphosphinic acid form addition compounds with mercaptans and alcohols to form corresponding ethyleneimides of alkylphosphinic and alkylthiophosphinic acids. In continuing the investigations, the authors studied the addition of secondary and primary amines to diethyleneimides of vinylphosphinic and vinylthiophosphinic acids. The amines used were diethylamine, ethyleneimine, piperidine, morpholine, dibenzy-

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D215/D306

amine and allylamine; they were found to add to imides of vinylphosphinic and vinylthiophosphinic acids to form imides of β -aminoethylphosphonates and thiophosphonates, according to the following reaction:



Diethylamine, piperidine and ethyleneimine readily combine at room temperature over a period of 1.5-2 days or at 40-50°C. for 4-5 hrs. Dibenzylamine and allylamine react in the presence of catalytic quantities of sodium alcoholate. In all cases it is advisable to use equimolecular quantities without a solvent. Addition of amines to the imides of the acids is more difficult than in the case of the addition of amines to neutral esters of the acids. The addition products of piperidine, morpholine and diethylamine with the imides of the acids were purified by vacuum distillation (10⁻⁴ mm); the products of the other amines decomposed on distilling. All di-

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ethylene-imides of aminophosphonates and aminothiophosphonates were viscous, colorless liquids, soluble in benzene, chloroform, ether and alcohol and are stable at temperatures below 0°C. Prolonged storing at room temperature results in gradual polymerization which is due to the opening of the ethyleneimide rings and results in the production of linear polymers either without a phosphorus residue or with the phosphorus residue binding the main chains of the macromolecule. The compounds which were prepared and their properties are summarized in tabulated form. Preparation of compounds 1-7 and 9 was conducted at room temperature and of compounds 8, 10, and 11 at 80°C in the presence of sodium ethoxide. There are 2 tables and 3 Soviet-bloc references.

SUBMITTED: September 5, 1960

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AUTHORS: Petrov, K.A., Gavrilova, A.I., Shatunov, V.K., and Korotkova, V.P.

TITLE: Diethyleneimides of alkyl- and alkenylthiophosphinic and phosphinic acids. I

PERIODICAL: Zhurnal obshchey khimii, v. 31, no. 9, 1961, 3081 - 3085

TEXT: The authors studied the properties of diethyleneimides of alkyl- and alkenylthiophosphinic and allylphosphinic acids, and investigated the addition of mercaptans and alcohols to diethyleneimides of vinylphosphinic and vinylthiophosphinic acids. Their aim was to prepare imidophosponates and thiophosponates containing ether and thioether groups in a radical bonded with phosphorus through carbon. Diethyleneimides of alkyl- and alkenylthiophosphinic and allylphosphinic acids were prepared by reacting the corresponding acid chlorides with ethyleneimine in dry benzene or ether

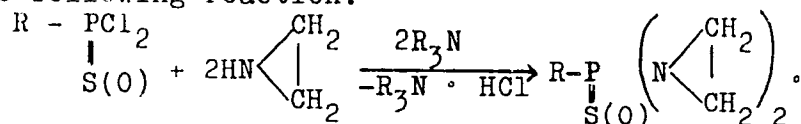
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Diethyleneimides of alkyl- ...

in the presence of a tertiary base (HCl acceptor) at 5-10°C according to the following reaction:



The products were colorless liquids, readily soluble in water and organic solvents; some of them crystallized on prolonged standing. Almost all the compounds distilled in vacuum, the one exception being the diethyleneimide of β-chloroethylthiophosphinic acid which polymerizes at 100-102°C and 10⁻⁴mm pressure probably due to HCl splitting off which initiates spontaneous polymerization. The properties and yields of some of the prepared phosphinates and thiophosphinates are given in tabulated form. Diethyleneimides of vinylphosphinic and thiophosphinic acids form addition products with mercaptans and alcohols. With mercaptans the reaction occurs at 60°C and is complete in 14-15 hrs. or less if catalytic quantities of sodium alcoholate is present. Ethylmercaptan adds more

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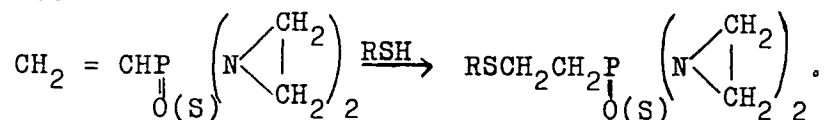
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Diethyleneimides of alkyl- ...

easily than butyl mercaptan and in general the reaction proceeds as follows:



The yields are in the region of 50-60 %. Alcohols unlike mercaptans add less readily and it was possible to obtain only small yields of ethyl and butyl alcohol addition products, only after prolonged heating in the presence of alcoholates. Better yields were obtained by reacting alcoholates with diethyleneimides of β -chloroethylphosphinic acid. There are 2 tables and 3 references: 2 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: U.S. Pat. 2,654,738, 1953; U.S. Pat 2,672,459, 1952. X

SUBMITTED: September 5, 1961

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L 6857-65 EWT(a)/EEC(k)-2/EEB-4 Pg-4/Pk-4/Pl-4/Po-4/Pq-4 SSD/ASD(a)-5/
AFWL/ESD(t)/RAEM(t) S/0272/64/000/066/0064/0064 74
ACCESSION NR: AR4044266

SOURCE: Ref. zh. Metrologiya i izmeritel'naya tekhnika. Otdel'nyy vy*pusk,
Abs. 6.32.443

AUTHOR: Vyaselev, M. R.; Shatunov, V. S.

TITLE: The dipole moment meter IDM-2

CITED SOURCE: Nauchn. tr. vuzov Povolzh'ya, vy*p. 1, 1963, 250-252

TOPIC TAGS: dipole moment, molecular dipole moment, capacitance, capacitor,
dipole moment meter, zero beat, measuring instrument/IDM-2 dipole moment
meter, IDM-2 meter

TRANSLATION: Determination of the dipole moments of molecules involves
measurement of the permittivity of liquids and the solutions. Such measurements
can be made with the help of the instrument IDM-2. The investigated substance
is poured between the plates of a special capacitor of the cell, and from the
change of its capacitance is determined the permittivity of the substance. For
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ACCESSION NR: AR4044266

determination of the change of capacitance of the cell the "zero beat" method is used. A sweep generator generates a sinusoidal voltage, which is fed to a mixer. A measuring capacitor of variable capacitance and a cell are connected in parallel in the generator circuit. The measuring capacitor has a reductor with large delay and a scale graduated in conventional units of capacitance. A fixed-frequency generator feeds the stabilized sinusoidal voltage to the mixer. The instrument is tuned to zero beat (the difference of frequencies is equal to zero) by alternately filling the cell with known and control solutions. The permittivity is determined from the difference of the readings of the measuring capacitor. Two illustrations.

SUB CODE: EM

ENCL: 00

Card 2/2

ACCESSION NR: AP4033621

S/0032/64/030/004/0500/0501

AUTHORS: Nigmatullin, R. Sh.; Vyaselev, M. R.; Shatunov, V. S.

TITLE: A device for dipole moment measurements IDM-2

SOURCE: Zavodskaya laboratoriya, v. 30, no. 4, 1964, 500-501

TOPIC TAGS: dipole moment, dielectric constant, measuring device IDM 2, beat frequency method, dimethylformamide, chlorobenzene, phenylhydrazone acetaldehyde

ABSTRACT: An IDM-2 device for determining the dipole moment of molecules is described. The dielectric constant of a dilute solution in a nonpolar solvent is measured in a specially constructed capacitor which consists of two concentric glass cylinders between which the investigated solution is poured. The capacitor plates are ordinary foil wrapped around the outside of the larger cylinder and the inside of the smaller. Hence the special capacitor C_s is a series combination of two capacitors: one formed by the glass cylinders C_c and the other by the filled gap $C_p = \epsilon C_0$, where C_0 is the capacitance of the empty gap. The special capacitor is placed in parallel with a precision variable capacitor. The resultant capaci-

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tance controls the output frequency f_1 of a signal generator. The frequency f_1 is mixed with a constant frequency f_0 , stabilized by a quartz resonator, which produces a beat frequency $f_1 - f_0$. The variable capacitor is adjusted until the beat frequency is zero. If the capacitance of the special capacitor C_{s1} with a known control solution and C_{sx} with the investigated solution, the difference of the two is the same as the difference ΔC required in the variable capacitor to produce zero beat frequency for the two cases. Then the dielectric constant of the investigated solution is given by

$$\epsilon_x = \frac{C_v (C_{s1} + \Delta C)}{C_v [C_v - (C_{s1} + \Delta C)]}$$

The temperature of the special capacitor is thermostatically controlled. Thus the temperature dependence of the dielectric constant can be determined, an example of which is given for dimethylformamide. The dielectric constant can be measured to 0.05% accuracy for $\epsilon = 1 - 3$ and 0.5% for ϵ up to 100. The dipole moment can be computed by the Debye formula for dilute solutions or by the Onsager formula for pure liquids. As an example, the dipole moments of chlorobenzene and phenylhydra-

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zone acetaldehyde (measured in benzene solutions at 25C) were found to be 1.59 and 2.52 respectively. Orig. art. has: 2 equations, 1 diagram, and 2 tables.

ASSOCIATION: Kazanskiy aviatsionnyy institut (Kazan Aviation Institute)

SUBMITTED: 00

DATE ACQ: 28Apr64

ENCL: 00

SUB CODE: NP

NO REF SOV: 004

OTHER: 002

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27229

S/081/61/000/003/006/019
A166/A129

188310

AUTHORS: Yefimova, A. K., Shatunova, A. M., Vol'f, M. B.

TITLE: Selecting hydrogen chloride and hydrogen sulfide corrosion inhibitors

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 3, 1961, 300, abstract 31176.
(Tr. Bashkirsk. n.-i. in-ta po pererabotke nefti, 1960, no. 3, 181 - 203)

TEXT: A study of the effects of various organic corrosion inhibitors on the corrosion of grade CT3 (St 3) steel samples at a temperature of 80°C in hydrogen chloride and hydrogen sulfide media showed that nitrogenous bases from heavy petroleum products of coal-tar pitch distillates, high-molecular amines (C₁₅-C₁₈) and hydroxyethyl heptadecenyglyoxalidine are effective corrosion inhibitors in weak HCl and H₂S solutions at 80°C.

Summary by M. Platkov

[Abstracter's note: Complete translation]

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S/081/62/000/001/037/067
B102/B101

11-7700

AUTHORS: Yefimova, A. K., Vol'f, M. B., Shatunova, W. M.^A

TITLE: Nitric bases of petroleum and their use as corrosion inhibitors

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 1, 1962, 313, abstract 11243 (Sb. "Khimiya seraorgan. soyedineniy, soderzhashchikhsya v neft'yakh i nefteproduktakh. v. 4". M., Gostoptekhizdat, 1961, 265-268)

TEXT: Use of nitric bases extracted from vacuum gas oil as anticorrosive agents has shown that, when they are added in amounts of 0.1%, the corrosion rate of mild steel in the gasoline-condensation water of the AB7(AVT) is reduced by 80-90%. [Abstracter's note: AVT stands for atmospheric-vacuum pipe still.] If both nitric bases and ammonia are added, a 90% corrosion protection can be reached when each of the additives amounts to 0.005%. [Abstracter's note: Complete translation.]

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S/081/62/000/022/035/088
B158/B101

AUTHORS: Yefimova, A. K., Shatunova, A. M., Sapozhnikova, Ye. A.
TITLE: Experience in industrial tests for corrosion inhibitors
PERIODICAL: Referativnyy zhurnal. Khimiya, no. 22, 1962, 307, abstract
22I200 (Novosti neft. i gaz. tekhn. Neftepererabotka i nefte-
khimiya, no. 2, 1962, 46 - 47)

TEXT: A number of corrosion inhibitors (CI) have been selected for pro-
tecting equipment in the petroleum industry from corrosion. These CI
reduce the rate of corrosion of ferrous metals by 70 - 95 % and of tin
brass by 50-60%. At present sulfosodium salts of shale tar and
nitrogenous petroleum compounds are the most available CI. Introducing
ammonia up to pH 7 - 9 reduces the CI consumption to 1/10 - 1/20. Data
are given on the rate of corrosion of various metals in the condensation
system of an atmospheric-vacuum pipe still during the processing of
Tuymazino oil and on the efficiency achieved as a result of CI introduc-
tion. A particularly sharp fall in corrosion was found for Al, for which
99 % protection was obtained. [Abstracter's note: Complete translation.]

Card 1/1

YEFIMOVA, A.K.; SHATUNOVA, A.M.; SAPOZHNIKOVA, Ye.A.

Corrosion inhibitors for protecting the condensation-cooling apparatus
of atmospheric and vacuum distillation units. Trudy Bash. NIIIP no.5:
165-175 '62. (MIRA 17:10)

SHATUNOVA, G.N.

New technology for growing fodder yeasts. *Gidroliz. i lesokhim.*
prom. 14 no.8:21-23 '61. (MIRA 16:11)

1. Tvdinskiy gidroliznyy zavod.

SHATUNOVA, N.F.

Intracellular localization of gamma-aminobutyric and glutamic acids. Biokhimiia 29 no.4:647-652 JI-Ag '64.

(MIRA 18:6)

1. Laboratoriya khimii belka Leningradskogo ordena Lenina gosudarstvennogo universiteta imeni Zhdanova.

CHAPUNOVA, H.F.; SYTINSKIY, I.S.

The effect of semicarbazide poisoning on the content of
 γ -aminobutyric acid in brain tissues. Nerv. sist (Leningrad)
2 no.3:12-16 '62. (MIRA 17:7)

1. Laboratoriya khimii belka Fiziolovitskogo instituta imeni
Ukhtomskogo Leningradskogo gosudarstvennogo universiteta.

SHATUNOVA, N.F.

Intracellular localization of glutamic decarboxylase. Vop.med.
khim. 10 no.3:322-323 My-Je '64. (MIRA 18:2)

1. Laboratoriya khimii belka Leningradskogo gosudarstvennogo
universiteta.