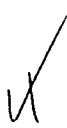84780

S/114/60/000/009/009/012/XX
E194/E484

The Compressibility of Engine Fuels

ranges from atmospheric to 800 to 1000 kg/cm^2 and more and,
accordingly, the speed of the liquid cannot be neglected without
considerable error. The experimental equipment that was used to
measure the compressibility of the liquid was designed with these
thoughts in mind, it is illustrated schematically in Fig.1. In
this equipment a falling weight applies a single stroke to a fuel
pump which delivers a pressure wave into a system in which the
pressure has already been raised to a certain value by means of a
manually operated pressure pump, the rate of propagation of the
pressure wave in this system is measured by applying the outputs
of two pressure pick-ups to an oscillograph. The propagation
time is compared with a time scale derived from a tuning fork.
The coefficient of instantaneous compressibility may then be
calculated by Eq.(11). Tests were carried out on three grades
of fuel at 20°C , diesel fuel of specific gravity 0.8355 kg/litre
and kinematic viscosity 5.3 centistokes; grade T-1 kerosene of
specific gravity 0.8143 and kinematic viscosity 1.86 centistokes;
grade Б -70 (B-70) gasoline of specific gravity 0.731 kg/litre and
kinematic viscosity 0.67 centistokes. The initial pressures
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S/114/60/000/009/009/012/XX
E194/E484

The Compressibility of Engine Fuels

ranged from 40 to 490 kg/cm^2.   Test results for the speed of
propagation of sound in these fuels at different initial pressures
are plotted in Fig.2 which also includes data for coal-tar and
gas-oil taken from published non-Russian work.   The data in Fig.2
used in conjunction with Eq.(11) may be used to determine the
coefficient of compressibility as a function of pressure, curves
of which are plotted in Fig.3.   It will be seen from these curves
that with increase in the initial pressure and specific gravity of
the fuel the coefficient of compressibility diminishes and the
greater the specific gravity of the fuel the greater the range of
change of the compressibility.   Thus the results indicate that the
compressibility of the fuel does not follow Hooke's law.
Consequently, the theory of hydraulic impact is not strictly
applicable to calculations of the injection process.   However, the
error is comparatively small in the diesel fuels that are normally
used and this is why the usual calculations of the injection
process give reasonable agreement with the experiments.   However,
for fuels of specific gravity below 0.835 kg/litre the relationship
between compressibility and pressure cannot be neglected.   An
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E194/E484

The Compressibility of Engine Fuels

approximate method of allowing for this dependence is that explained.
Fig.4 gives a curve of the relationship between the mean coefficient
of compressibility and the specific gravity for fuels of specific
gravity greater than 0.835 kg/litre, and it will be seen that the
compressibility should be selected according to the specific gravity
of the fuel. Fig.5 shows graphs of the change of the speed of
sound on increasing the specific gravity of the fuel at atmospheric
and higher pressures. Fig.6 shows graphs of the relationship
between the coefficient of compressibility and the specific gravity
of the fuel at atmospheric pressure and at 500 kg/cm^2 together with
the results of other investigators. It is shown that in general
the agreement between theory and practice is satisfactory. It is
possible that air may dissolve differently in different fuels and
that this may affect the results. Nevertheless the fuels should
be tested with air in solution because this is the condition in
which they are actually injected into an engine. The graphs of
Fig.6 show fairly convincingly that in fluids of similar chemical
composition the coefficient of compressibility depends on the
specific gravity. There are 6 figures and 8 Soviet references.
Card 5/5

ASTAHOV, K.F., inzh. (g.Lugansk)

Special types of mine communications. Ugol' 35 no.1:33-35 Ja
'60.   (MIRA 13:5)
        (Lugansk Province--Mine communications)

ASTAKHOV, K.F.; FOMIN, G.M.

Equipment for high-frequency communication with ingot-crane
operators in the roughing shop of a metallurgical plant. Avtom.i
prib. no.4:57-60 O-D '62.   (MIRA 16:1)

1. Luganskiy filial Instituta avtomatiki Luganskogo soveta
narodnogo khozyaystva.
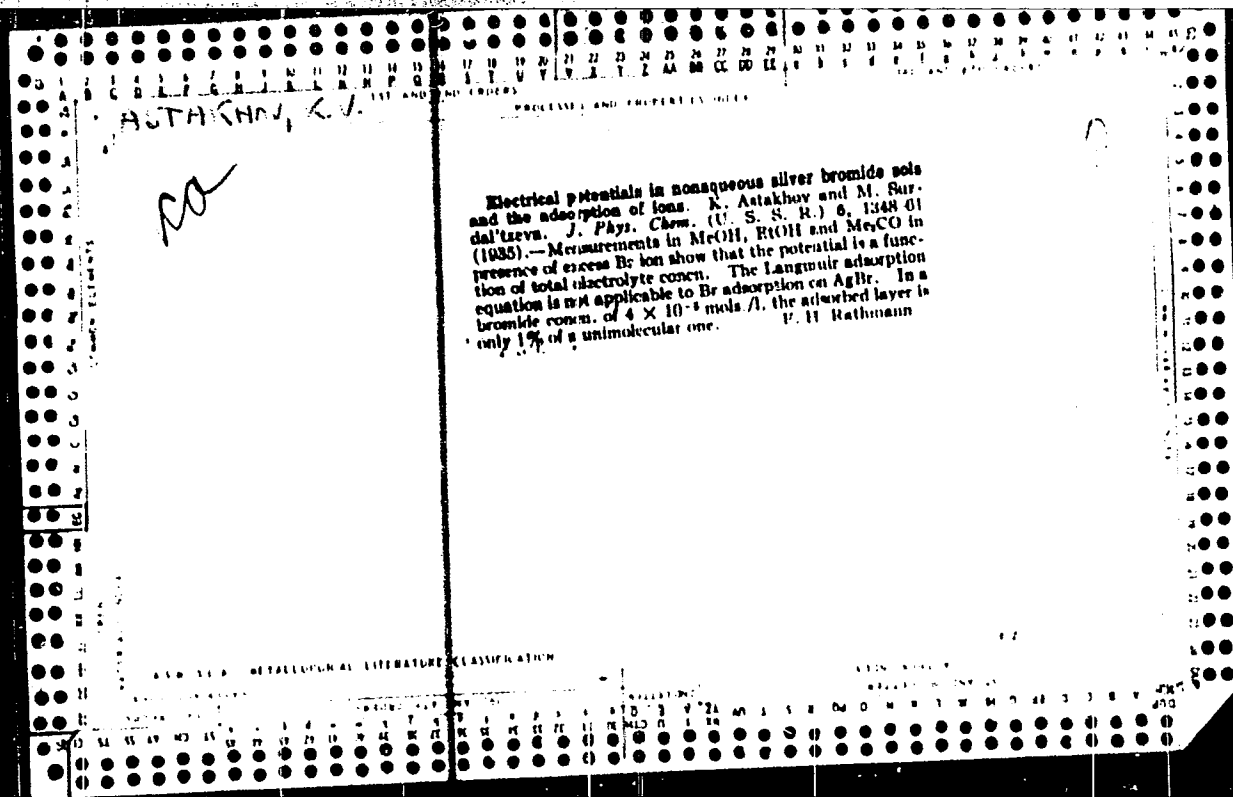   (Communication in management)

ASTAKHC / K.V.

Present status of the fundamental problems of colloid chemistry. K. V. Astaikov. *Uspekhi Khim.* 3, 856-906 (1934)—A review covering adsorption phenomena between various phase boundaries and the forces causing them, solvation, electrokinetic phenomena, structure of colloidal particles of metals and their compds. and of cellulose, rubber and albumins. Considerable space is devoted to mathematical-theoretical discussions.

F. H. Rathmann

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

ASTAKHN, K.V.

Electrical potentials in nonaqueous silver bromide sols and the adsorption of ions. K. Astakhov and M. Surdal'tseva. *J. Phys. Chem.* (U. S. S. R.) 6, 1348-61 (1935).—Measurements in MeOH, EtOH and Me₂CO in presence of excess Br ion show that the potential is a function of total electrolyte concn. The Langmuir adsorption equation is not applicable to Br adsorption on AgBr. In a bromide concn. of 4 × 10⁻⁴ mols./l. the adsorbed layer is only 1% of a unimolecular one.

V. H. Rathmann

'A

3C-179. Effect of Impurities on the
Electrical Properties of Selenium. N A
Penin and K. V. Astahov. Engineer-
ing & Chemical Digest. V. 1. July, 1949.
p. 27-30. Translated from Zhurnal
Tekhnickeskoi Fiziki (Journal of Tech-
nical Physics), v. 15, no. 2, 1945
Experimental work.

METALLURGICAL LITERATURE CLASSIFICATION
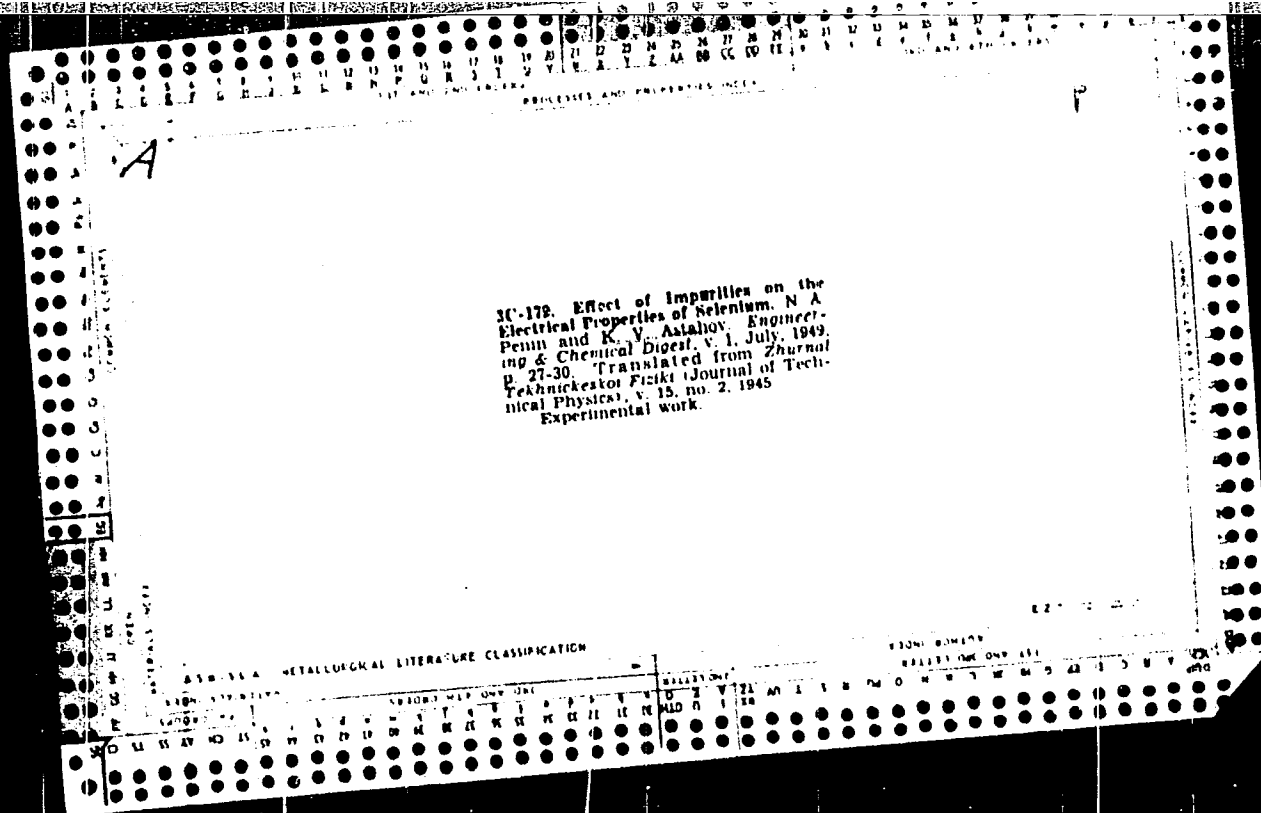
LORENTZ, Hendrik Antoon, 1853-1928: ASTAKHOV, K.V., professor, redaktor.

[Lectures on thermodynamics; translated from the English] Lektsii po termodinamike. Perevod s angl. M.E.Gintsburga. Pod red. Prof. K.V.Asta-khova. Moskva, Leningrad, Gos. izd-vo tekhniko-teoreticheskoi lit-ry, 1946. 154 p.   (MLRA 7:4)
        (Thermodynamics)

РОТНКНОЛ, К.У.

Effect of Admixtures to Selenium on the Electrical Properties of Selenium Rectifiers. N. A. Penin and K. V. Astakhov (Zhur. Tekhn. Fiziki, 1946, 16, 199-206; C. Abs., 1946, 40, 7014).—[In Russian]. Careful purification through combustion to selenium dioxide, reduction in aqueous solution with sulphur dioxide, and repeated vacuum distillation, yield the purest selenium, free in particular from chlorine, which is always present in the commercial product (0·02%). Extraneous elements, copper, zinc, cadmium, mercury, tin, lead, arsenic, antimony, bismuth, iron, nickel, and silver, in amounts of 0·01 and 0·1 at.-% were introduced as selenides and fused with the selenium. Rectifiers were prepared by spreading the selenium on hot (240°–260° C.) nickel-plated discs, pressing, and crystallizing at 120°–125° C., heating at 214°–216° C. for 4 hr., and application of the bismuth-cadmium-tin alloy electrode. Blocking voltage U_s and transmitting voltage U_r were measured with a blocking c.d. $I_s = 4$ m.amp./cm.^{2}, transmitting c.d. $I_f = 50$ m.amp./cm.^{2}, before and after forming with $I_f = 50$–100 m.amp./cm.^{2} for 10 min. The rectifying coeff. $a = I_f/I_s$ at 2 V. in each direction. Alloyed samples show higher U_r and lower U_s than pure selenium, except alloys with arsenic and bismuth, which lower both U_r and U_s. Additions of copper and nickel have the strongest effect, 0·1 at.-% nickel lowering U_r to ½th its value for pure selenium. Values of a are substantially lowered throughout, e.g. with 0·01 at.-% lead from 280 to 160, 0·01 at.-% mercury from 280 to 120, 0·01 at.-% copper from 280 to 2·3. Measurements after 65 days show a strong increase of U_r, indicative of ageing; this is particularly marked with antimony, copper, and nickel; with copper and nickel also an "unforming" effect is observed, i.e. a decrease in U_s. All foreign elements cause weakening of the forming effect, indicated by a smaller increase in U_r with respect to the initial (pre-forming) value; nickel has the most pronounced effect in this direction. An addition of 0·01 at.-% nickel has only a slightly weaker effect than one of 0·1 at.-% nickel. As little as 0·01 at.-% copper, nickel, or silver in the selenium is enough to render the alloy entirely unsuitable for use as a rectifier. Forming is completely prevented by 0·1 at.-% nickel. Halogens depress both U_r and U_s, but raise a. Qualitatively, the phenomena are in accord with the theory of Davydov and of Schottky.

ASTAKHOV, K.V.

Surface tension of liquid selenium and its temperature coefficient. K. V. Astakhov, N. A. Penin, and E. Polikina. J. Phys. Chem. (U.S.S.R.) 20, 403-8 (1946). For purification, (99.95) Se was repeatedly distd. in a stream of O, contg. N oxides, the SeO₂ obtained was reduced with H₂S, and the Se produced washed with H₂O, dried, and twice sublimed in a vacuum. The surface tension γ was detd. in a drop-wt. apparatus adapted for high temp. The d. of Se is 4.00 at 230°, 4.03 at 280°, 4.08 at 280°, and 4.01 at 310°, γ is 105.5, 101.5, 98.0, and 95.2 dynes/cm. at 230°, 260°, 280°, and 310°, respectively. These results were confirmed also by the max. bubble-pressure method. HgSe, CdSe, FeS, and NiSe alter γ of Se.   J. J. B.

ASTAKHOV, K. V.

UESR/Nuclear Physics - Chain Reactions   Mar 1947
        Uranium - Isotopes
        Plutonium

    "Atomic Energy," K V Astakhov, 12 pp

"Nauka I Zhizn" No 3

    Discusses uranium isotopes, plutonium, chain reactions.

    General discussion

                                                        1T31

ASTAKHO, K.V.

2.

Density of liquid selenium. K. V. Astakhov, N. A.
Puzin, and E. I. Dolkina. J. Gen. Chem. (U.S.S.R.)
17, 879-81(1947)(in Russian).—Pure Se was prepd. by
combustion of crude Se with O mixed with N oxides, re-
peated vacuum distn. of the SeO₂ obtained, soln. in
water, and ppts. with SO₂. The d. was detd. between 218
and 405° by the hydrostatic method with a Westphal
balance with a float of Pb sealed in a quartz tube suspended
on a Pt wire of a vol. negligible in comparison with that of
the float (3.10 cc.). This method is free from the sources
of error involved in the pycnometric method of Campbell
and Epstein (C.A. 37, 19⁴). Selected data: temp. 218,
255, 257, 350, 405°; d = 4.06, 4.05 4.02, 3.96, 3.91 g./
cc., resp. Near the m.p. between 218 and 250, the d. is
practically const.; between 370 and 405°, the decrease in
d. is practically linear, d = 4.05 − 0.001 (t − 270). The
values are higher by 0.06 than those of Campbell and
Epstein and are considered more reliable.   N. Thon

METALLURGICAL LITERATURE CLASSIFICATION

ASTAKHOV, K.V.

CA

Some relationships in the field of metal organic compounds. K. V. Astakhov and A. M. Kabakehi (Uspekhi Khim. 17, 578 84(1948). -Review; 81 references.
N. Thon

ASTAKHOV, K.V.

CA

In memory of G. I. Arbusov. K. V. Astakhov, A. N. Iordanskii, I. I. Levkoev, and N. N. Sveshnikov. *Usprkhi Khim.* 19, 655-6(1950).—Obituary, with list of publications and portrait.   N. Thon

1951

C A   KOTAKOLEV, C.A.

Some inner complex compounds of elements of group II and their solubilities. K. V. Astakhov and E. D. Kiseleva. Zhur. Obshchei Khim. (J. Gen. Chem.) 20, 1780-5 (1950). Several salts of ethylenediaminetetraacetic acid (I) were prepd., all have the structure I. The conc. Na salt in water with enough 0.02 N NaOH to give a clear soln. was treated

$$
\begin{array}{c}
O\ C \qquad O \qquad O\ C\ O \\
CH_2 \qquad \diagdown M \diagdown \qquad CH_2 \\
CH_2 \diagup \qquad \diagdown CH_2 \\
\quad \mid \quad CH_2-CH_2 \\
COOH \qquad\qquad COOH \\
(I)
\end{array}
$$
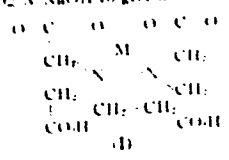
with the proper carbonate of the metal also the Zn salt (xx) was used, boiled 30-50 min., filtered hot, and cooled, crystn. was effected by addn. of MeOH with cooling. The following were prepd.: $Na_2CaN_2C_{10}H_{12}O_8\cdot 4H_2O$, soly. in H_2O at 30° 0.1 M; $Na_2N_2C_{10}H_{12}O_8\cdot 5H_2O$, soly. at 30° 0.008 M; $Na_2Ba N_2C_{10}H_{12}O_8\cdot 5H_2O$, soly. at 30° 0.17 M. The formation of colored salts with heavier metals is suggested for study in analytical chemistry.

G. M. Kosolapoff

ASTAKHOV, K. V.

Chemical Abst.
Vol. 48 No. 4
Feb. 25, 1954
Inorganic Chemistry

Study of hydrates by the hydride method. K. V. Astakhov, A. G. Entelis, and K. M. Nikolaev. Zhur. Obshchet Khim. 21, 1753-63(1951).—In the hydride method, water is detd. by removing water from the hydrate with pyridine, treating the pyridine hydrate, thus formed, with CaH_2 or other alk. earth hydride, and measuring the vol. of H_2 evolved. The method does not measure hydroxyl groups, only water bound as such. $Cu(OH)_2$, $Cd(OH)_2$, and Ni-$(OH)_2$ did not show any water by the hydride method. $Au(OH)_3$ and $Ga(OH)_3$ gave up 1 mole H_2O per mole hydroxide; hence their structures are $HAuO_2.H_2O$ and $HGaO_2.-H_2O$. $Al(OH)_3$ gave up 1 mole H_2O per 2 moles hydroxide, to form $Al_2O(OH)_4$. $Cr(OH)_3$ exists in the form $Cr_2O_3.xH_2O$, where x varies with the drying history of the material. $Cr_2O_3.4H_2O$ was the stable hydrate formed at 105°. More intense heating resulted in the formation of $Cr_2O_3.3H_2O$, and finally $Cr_2O_3.H_2O$, the latter at 220°. For Fe oxide no definite hydrate was found. With boric acid, dehydration below 16° gave 1 mole H_2O per mole acid, indicating the existence of $HBO_3.H_2O$. In the range 16-20°, dehydration resulted in the formation of $H_4B_4O_7$. Periodic acid hydrate gave up 2 moles H_2O per mole acid, indicating the structure $HIO_4.2H_2O$. Chloral hydrate contains 1 mole H_2O per mole of chloral, which corresponds to the accepted structure $CCl_3CHO.H_2O$; the nature of the bond holding the H_2O was not detd.   Arild J. Miller

ASTAKHOV, K. V.

USSR/Chemistry - Oxidants   Nov 51

"Hyperperoxide of Hydrogen HO_2 as an Intermediate Compound," K. V. Astakhov, A. G. Getsov

"Dok Ak Nauk SSSR," Vol LXXXI, No 1, pp 43-45

Reviews German work on Ca tetroxide (CaO_4). Points out that no investigator has yet succeeded in isolating CaO_4 in a pure state: The max content of CaO_4 obtained was 5-9%. Assumes that HO_2 forms as an intermediate product resulting from the interaction of CaO_4 or NaO_2 with acids: Direct formation of H_2O_2 and O_2 is unlikely. Refers to authors work on NaO_2.

198T3

GOL'DANSKIY, V.I.; ASTAKHOV, K.V., redaktor; DUKOV, V.M., redaktor.

[New elements in the periodic system of D.I.Mendeleev] Novye ele-
menty v periodicheskoi sisteme D.I.Mendeleeva. Moskva, Izd-vo
Akademii nauk SSSR, 1953. 164 p.   (MLRA 7:8)
        (Chemical elements)

Astakhov, K. V.

Some inner complex compounds of nickel and cobalt, and their properties. K. V. Astakhov and V. B. Yeremkin. Sbornik Stat. po Obshchei Khim. Akad. Nauk S.S.S.R. 2, 1140-57(1953); cf. C.A. 46, 10001h.—NiCO$_3$ and Na ethylenediaminetetraacetate (I) heated on the H$_2$O bath give a complex, which is isolated by evapn. at 40-50° as Na$_2$(NiC$_{10}$H$_{12}$O$_8$N$_2$).2H$_2$O (II). It loses H$_2$O at higher temp. Na$_2$S slowly decomps. II. H$_2$O$_2$ does not oxidize II; acids decomp. it. Its soly. at 17° is 34.4 g./100 g. H$_2$O. Heating II with HCl frees the org. acid; this on heating with NiCl$_2$ gives Ni(NiC$_{10}$H$_{12}$O$_8$N$_2$), obtained as the glassy pentahydrate by evapn., soly. at 17° 33 g./100 g. H$_2$O. A similar reaction with CoCO$_3$ gives Na$_2$(CoC$_{10}$H$_{12}$O$_8$N$_2$).2H$_2$O (III), which does not lose H$_2$O even at 80-90°. It is stable to NaOH, but is decompd. by Na$_2$S and acids. At 17° the soly. of III is 45 g./100 g. H$_2$O. Ni replaces Co in the complex when III is treated with Ni ion. III is oxidized by H$_2$O$_2$ and the product pptd. with EtOH. It contains trivalent Co, but is probably a mixt. since analyses do not agree with any one compd. III is converted to glassy Co(CoC$_{10}$H$_{12}$O$_8$N$_2$).3H$_2$O by heating the acid with CoCO$_3$. These compds. can be used for sepn. and detn. of Ni and Co mixts. A mixt. of the nitrates is treated with portions of I until all the Ni has entered the complex, as shown by failure of a drop of the soln. to give a color on paper impregnated with dimethylglyoxime. The soln. is then treated with NaOH to ppt. Co(OH)$_2$ which contains no Ni. H. M. L.

LATIMER, Wendell Mitchell; LOSEV,V.V., translator; TRET'YAKOV, I.I.,
      translator; ASTAKHOV,K.V., professor, redaktor; OGANDZHANOVA, N.A.,
      redaktor; SHAPOVALOV, V.I., tekhnicheskiy redaktor

      [The oxidation states of the elements and their potentials in
      aqueous solutions. Translation from the English] Okislitel'nye
      sostoianiia elementov i ikh potentsialy v vodnykh rastvorakh. Perevod
      s angliiskogo V.V.Loseva, I.I.Tret'iakova. Pod red. K.V.Astakhova.
      Moskva, Izd-vo inostrannoi lit-ry, 1954. 400 p.   (MLRA 8:3)
            (Electrolysis) (Oxidation) (Chemical elements)

HЬГHKHoV, K. V.

ACHERKAN, N.S., doktor tekhnicheskikh nauk, professor, glavnyy redaktor;
ANTSYFEROV, M.S., kandidat fiziko-matematicheskikh nauk; ASTAKHOV, K.V.,
professor; VUKALOVICH, M.P., professor, doktor tekhnicheskikh nauk;
KORELIN, A.I., kandidat tekhnicheskikh nauk; KRIPETS, E.S., inzhener;
LAZAREV, L.P., kandidat tekhnicheskikh nauk; MAZYRIN, I.V., inzhener;
MATYUKHIN, V.M., kandidat tekhnicheskikh nauk; NIKITIN, N.N., kandidat
fiziko-matematicheskikh nauk; PANIOHKIN, I.A., kandidat tekhnicheskikh
nauk; PETUKHOV, B.S., kandidat tekhnicheskikh nauk; PODVIDZ, L.G.,
kandidat tekhnicheskikh nauk; SIMONOV, A.F., inzhener; SMIRYAGIN, A.P.,
kandidat tekhnicheskikh nauk; FAYNZIL'BER, E.M., professor, doktor
tekhnicheskikh nauk; KHALIZEV, G.P., kandidat tekhnicheskikh nauk;
YAN'SHIN, B.I., kandidat tekhnicheskikh nauk; MARKUS, M.Ye., inzhener,
redaktor; KARGANOV, V.G., redaktor graficheskikh materialov, inzhener;
SOKOLOVA, T.F., tekhnicheskiy redaktor.

[A machinebuilder's manual in six volumes] Spravochnik mashinostroitelia
v shesti tomakh. Izd. 2-e, ispr. i dop. Moskva, Gos. nauchno-tekhn.
izd-vo mashinostroit. lit-ry, Vol. 2. 1954. 559 p.   (MIRA 8:1)
      (Machinery--Construction) (Mechanical engineering)

LAPP, R.E.; ANDREWS, N.L.; ASTAKHOV, K.V., professor, redaktor; KUDRYAVTSEV, B.B., professor, redaktor; KUSTOVA, A.V., kanditat fiziko-matematicheskikh nauk, redaktor.

[Nuclear radiation physics. Translated from the English] Fizika iadernogo izlucheniia. Perevod s angliiskogo. Pod red. K.V. Astakhova, B.B.Kudriav-tseva i A.V.Kustovoi. Moskva, Voen.izd-vo Ministerstva obor. SSSR, 1956. 435 p.   (MLRA 9:4)
          (Nuclear physics) (Radiation)

ASTAKHOV, K.V.; VERENIKHIN, V.B.; ZIMIN, V.I.

"Radioactive indicator techniques." V.I. Spitsyn and others.
Reviewed by K.V. Astakhov, V.B. Verenichin, V.I. Zimin. Zhur.
fiz.khim. 30 no.4:957-958 Apr. '56.   (MLRA 9:9)

(Radioisotopes) (Spitsyn, V.I.)

ASTAKHOV, K.V.; VERENIKIN, V.B.

Review of A.N. Nesmeianov's and others book "A practical guide to radiochemistry". Reviewed by K.V. Astakhov, Verenikin. Zhur. fiz. khim. 30 no.10:2368-2370 O '56.   (MLRA 10:4)
   (Radiochemistry)   (Nesmeyanov, A.N. and others)

$Astakhov, K. V.$

NUCLEAR TECHNOLOGY AND APPLICATIONS: POPULAR SURVEYS

Atomic Energy and its Practical Use, by Prof. K. V. Astakhov, Engineer-Colonel. Moscow: Military Publishing House of the Ministry of Defense USSR, 1957. 280 pages, 4 1/2 x 7 inches.

This booklet is the somewhat expanded text of lectures delivered by the author in various places. The table of contents follows: "Introduction;" "Matter and energy;" "Fundamental laws of nature; unit of measurement and mechanical energy - the erg; unit of measurement of energy used in atomic physics - the Mev (million electron volts); unit of measurement of energy used for the measurement of energy of bodies - the calorie;" "Quantity of energy in various bodies, and the concept of atomic energy;" "Matter and its molecular nature;" "Atomic structure of matter; chemical elements;" "The planetary structure of the atom;" "The atomic nucleus and its properties;" "The composition of atomic nuclei;" "Isotopes;" "The nature of forces in the atomic nucleus;" "The binding energy in atomic nuclei; the physical

Card: 1/2

NUCLEAR TECHNOLOGY AND APPLICATIONS: POPULAR SURVEYS

nature of the concept of liberation of energy, and ways of practical utilization of atomic energy;" "Stable and unstable atomic nuclei;" "Types of radioactive transformations:" "The chain fission reaction as a way of practical utilization of atomic energy;" "The critical mass;" "The basic scheme of the atomic bomb;" "Effect of the explosion of an atomic bomb;" "The atomic reactor as a source of production of plutonium 239;" "The breeder reactor and the atomic power reactor;" "Thermal nuclear reactions and the hydrogen bomb;" "Atomic energy for the service of humanity;" and "List of books to acquaint the reader with the science of nuclear energy and its peaceful utilization."

Card: 2/2

ASTAKHOV, K.V., FOMENKO, M.G. (Moskva)

The use of the Ca^{45} isotope in the determination of the instability
constant of intracomplex compounds formed by alkaline earth metals
with ethylenediaminotetraacetic acid [with summary in English].
Zhur.fiz.khim. 31 no.9:2110-2120 S '57.   (MIRA 11:I)
    (Calcium--Isotopes) (Alkakine earth metals) (Acetic acid)

ASTAKHOV, K., professor.

Inexhasustible source ("A sun on earth" by E. Balabanov. Reviewed
by K. Astakhov). Znan. sila 32 no.3:46 Mr '57.   (MIRA 10:6)
                    (Atomic power)   (Balabanov, E.)

5(0)
AUTHORS: Astakhov, K. V., Dubinin, M. M.,
Chmutov, K. V., Nekrasov, B. V.

SOV/76-33-1-43/45

TITLE: Sergey Aleksandrovich Voznesenskiy (1892-1958) - Obituary
(Sergey Aleksandrovich Voznesenskiy (1892-1958))

PERIODICAL: Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 1, pp 234-237
(USSR)

ABSTRACT: S. A. Voznesenskiy - doctor of chemical sciences and
commercial engineer of the first degree, died on August 6,
1958. As a student, Voznesenskiy worked in the laboratory of
Professor N. A. Shilov and was occupied with active carbon for
gas masks for the elaboration of the method by N. D. Zelinskiy.
Later on, Shilov sent him to the kafedra fizicheskoy khimii
Moskovskogo vysshego tekhnicheskogo uchilishcha (Department of
Physical Chemistry of the Moscow School of Technology)
for preliminary study for his professorship.
At the same time he worked at the Moskovskaya sanitarnaya
stantsiya (Moscow Sanitary Station). In 1919 he became
lecturer for chemistry at the Penzenskiy institut Narodnogo
obrazovaniya (Penza Institute of National Education) but
remained in contact with Shilov's laboratory and, together

Card 1/3

Sergey Aleksandrovich Voznesenskiy (1892-1958) -
Obituary   SOV/76-33-1-43/45

with Shilov, he published papers in Trudy Rossiyskogo nauchno-issledovatel'skogo khimicheskogo instituta (Reports of the Russian Scientific Research Institute of Chemistry) in 1921. In the same year he became lecturer at the Department of Physical Chemistry of the Moscow School of Technology and in 1923 he went to Berlin and worked with Professor **Freundlich.** In 1927 he was sent to Ruhr-Westfalen in order to investigate sewage purification plants and in 1926 he participated in the Bunsen Congress of Chemists. In 1927 Voznesenskiy became lecturer at the kafedra kolloidnoy khimii (Chair **of** Colloidal Chemistry) and in 1929 professor and chairman of the kafedra analiticheskoy khimii MVTU (Chair of Analytical Chemistry of the MVTU). After the death of E. A. Shilov in 1930, he also became the chairman of the kafedra neorganicheskoy khimii (**Chair** of Inorganic Chemistry). In 1932 the khimicheskiy fakultet MVTU **(Department of Chemistry)** was converted into the Voyennaya akademiya khimicheskoy zashchity (Military Academy of Chemical Defense) and Voznesenskiy kept his post.

Card 2/3

Sergey Aleksandrovich Voznesenskiy (1892-1958)-
Obituary

SOV/76-33-1-43/45

From 1921 - 1941 Voznesenskiy directed the Laboratory of
Water Purification at the Institute "Vodgeo". In 1955 he
became professor and head of a chair at the Ural'skiy
politekhnicheskiy institut   (Urals
Polytechnical Institute). He was one of the first to point out
the fluoro-organic compounds and wrote a monograph on
"The Chemistry of Fluorine". In conclusion, an enumeration of
the works by S. A. Voznesenskiy is given, divided into
inorganic chemistry, physical and colloidal chemistry and
water-technology. There are 1 figure and 65 references, 56 of
which are Soviet.

Card 3/3

ASTAKHOV, K.V., prof., otv.red.; POLENOVA, T.P., tekhn.red.

[Structure of matter and spectroscopy] Stroenie veshchestva i
spektroskopiia. Moskva, 1960. 113 p.
                                                    (MIRA 13:3)

1. Akademiya nauk SSSR.
        (Matter--Constitution)   (Spectrum analysis)

GERASIMOV, Yakov Ivanovich; KRESTOVNIKOV, Aleksandr Nikolayevich;
SHAKHOV, Aleksey Sergeyevich. Prinimal uchastiye VENDRIKH,
M.S., kand.tekhn.nauk. ASTAKHOV, K.V., prof., doktor khim.
nauk, retsenzent; GUDIMA, N.V., dotsent, retsenzent;
KAMAYEVA, O.M., red.; MIKHAYLOVA, V.V., tekhn.red.

[Chemical thermodynamics in nonferrous metallurgy] Khimi-
cheskaia termodinamika v tsvetnoi metallurgii. Moskva, Gos.
nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii.
Vol.1. [Theoretical introduction. Thermodynamic properties of
the more important gases. Thermodynamics of zinc and its more
important compounds; a handbook] Teoreticheskoe vvedenie.
Termodinamicheskie svoistva vazhneishikh gazov. Termodinamika
tsinka i ego vazhneishikh soedinenii; spravochnoe rukovodstvo.
1960. 230 p.
     (Thermodynamics)   (Zinc)   (MIRA 13:3)

ASTAKHOV, K.V.

"Color development of three-layer materials" by V.S.Chel'tsov, S.A.Bongard. Reviewed by K.V.Astakhov. Zhur.nauch.i prikl. fot.i kin. 5 no.1:77-78 Ja-F '60. (MIRA 13:5)
(Color photography)
(Chel'tsov, V.S.)
(Bongard, S.A.)

ASTAKHOV, K.V.

"Physical nuclear chemistry" by U. Schindewolf. Reviewed by K.V.
Astakhov. Zhur. fiz. khim. 34 no.2:480-481 F '60.   (MIRA 14:7)
(Chemistry, Physican and theoretical)
(Nuclei, Atomic)
(Schindewolf, U.)

ASTAKHOV, K.V.; VERENIKIN, V.B.; ZIMIN, V.I.; ZVER'KOVA, A.D.

Spectrophotometric study of the complexing of some rear earths
with nitriloacetic acid. Zhur.neorg.khim. 6 no.9:2069-2076
S '61.
(MIRA 14:9)
(Rare earth compounds) (Acetic acid)

ASTAKHOV, K.V.; VERENIKIN, V.B.; ZIMIN, V.I.

Spectrophotometric study of the complexing of neodymium with bis-acetylacetoneethylenediamine. Zhur.neorg.khim. 6 no.9:2077-2081
S '61.   (MIRA 14:9)

(Neodymium compounds)

BUKOLOV, I.Ye.; ASTAKHOV, K.V.; ZIMIN, V.L.; TAIROV, V.S.

Complex compounds of strontium with some dicarboxylic organic acids.
Zhur.neorg.khim. 7 no.7:1577-1582 Jl '62.   (MIRA 16:3)
    (Strontium compounds)   (Acids, Organic)

ASTAKHOVA, Ye.K.; ASTAKHOV, K.V.

Nature of ammonia solutions. Zhur. fiz. khim. 36 no.11:
2570-2571 N'62.
(MIRA 17:5)

S/078/63/008/004/006/013
A059/A126

AUTHORS: Galaktionov, Yu.P., Astakhov, K.V.

TITLE: Complex formation of the rare-earth elements with ethylenediamine-
tetraacetic acid

PERIODICAL: Zhurnal neorganicheskoy khimii, v. 8, no. 4, 1963, 896 - 904

TEXT: The formation of complexes between Sm^{3+} and Eu^{3+}, on the one hand,
and ethylenediaminetetraacetic acid (EDTA) on the other, leading to a splitting
of the respective absorption spectra has been studied. The presence of EDTA in
the solutions of these rare-earth elements (REE) together with a simultaneous
increase in the pH of these solutions was found to result in a shift of the ab-
sorption maxima towards greater wavelengths and in a similar increase of their
values. The spectra of Sm^{3+} between 402 and 406 mμ and of Eu^{3+} between 394 and
400 mμ were measured. In order to establish the composition of the complexes
obtained at pH 1 to 6, the methods of isomolar series and of a series of solu-
tions with constant concentration of the complex-forming ion and variable con-
centration of the complex-forming substance are used, which both show a ratio of

Card 1/3

Complex formation of the rare-earth elements S/078/63/008/004/006/013
                                                           A059/A126

REE : EDTA = 1 : 1 in the complex. Maximum optical density was found at the ratio MeY^- : H_4Y = 5 : 5 corresponding to the 1 : 2 complex at pH 6 - 10. The equations

$$K_{ac} = \frac{(D_x - d_0)\ (D_0 - d_0)\ [H^+]^n}{(D_0 - D_x)^2 \cdot c_{total} \cdot a/100} \ ,$$ (G)

where K_{ac} is the acidolytic constant, D_x the current value of optical density, d_0 the initial optical density due to the specific absorption of the REE ions (d_0 = constant), D_0 the final optical density due to the absorption of the complex at sufficiently high pH (D_0 = constant), a the percentual content of any form of the acid, and c_{total} the total concentration of the REE ion (c_{total} = = constant), and

$$\log \frac{D_x - d_0}{(D_0 - D_x)^2} = K + n\ pH$$ (D)

are derived, and it is shown that the instability constant K_i can be calculated

Card 2/3

Complex formation of the rare-earth elements ....

from the ratio $K_1 = \dfrac{K_n}{K_{ac}}$, where K_n is the dissociation constant of the acid of any degree in dependence on the pH of the medium. By calculations according to equation (D), it has been shown that, at pH between 0.8 and 2.6, the complexes MeH_4Y^{3+}, MeH_3Y^{2+}, $MeHY$, and MeY^- are formed, i.e., n is 1, 2, 3 (for Sm^{3+}), and 2.1, 2.3 (for Eu^{3+}). Further, in the case of Sm^{3+}, MeH_4Y^{3+} and MeH_3Y^{2+} form at pH 0.8 - 2, $MeHY$ at pH 2 - 2.4, MeY^- at pH 2.4 - 2.6, $MeHY_2^{4-}$ at pH 5 - 6.2, and MeY_2^{5-} at pH 6.2 - 6.6. With Eu^{3+}, the complex MeH_3Y^{2+} forms at pH 0.8 - 1.2, the same at pH 1.2 - 2, $MeHY$ and MeY^- at pH 2.0 - 2.4, and MeY_2OH^{-6} at pH 7.8 - 8.2. The acidolytic and instability constants calculated are shown in tables. G.S. Teryoshin is mentioned. There are 15 figures and 3 tables.

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M.V. Lomo-
               nosova (Moscow Institute of Fine Chemical Technology imeni M.V.
               Lomonosov))

SUBMITTED: February 22, 1962

Card 3/3

L 10654-63.
EWT(m)/BDS--ESD-3--RM

ACCESSION NR: AP3001217   S/0078/63/008/006/1395/1399

AUTHOR: Galakticnov, Yu. P.; Astakhov, K. V.   54

TITLE: Spectrophotometric study of samarium (III) and europium (III) complexing
with diethylenetriaminepentaacetic acid

SOURCE: Zhurnal neorganicheskoy khimii, v. 8, no. 6, 1963, 1395-1399

TOPIC TAGS: trivalent Sm, Eu, spectrophotometry, acidulation constant instability
constant

ABSTRACT: The complexing of trivalent Sm and Eu in aqueous solutions with diethy-
lenetriamine pentaacetic acid was studied: the following complexes are formed:
Me sub 2 X sup + (pH 0.9-1.3); Me H X sup 1 (only for Sm); and Me X sup 2- (pH
1.3-1.9). Acidulation and instability constants were determined for the complexes.
Orig. art. has: 10 figures, 1 table, 6 equations.

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M. V. Lomono-
sova (Moscow Institute of Fine Chemical Technology)

SUBMITTED: 30Oct62   DATE ACQD: 01Jul63   ENCL: 00

Card 1/2

GALAKTIONOV, Yu.P.; ASTAKHOV, K.V.

Spectrophotometry of the complexes of rare-earth elements
with diethylenetriaminepentaacetic acid. Zhur. neorg. khim.
8 no.11:2493-2497 N '63.

Spectrophotometry of the complexes in the system neodymium
(111) - hexamethylenediaminetetraacetic acid - acetic acid -
water. Ibid. :2498-2506   (MIRA 17:1)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii
imeni Lomonosova.

L 15922-63   EWT(m)/BDS ESD-3   RM

S/076/63/037/004/012/029

AUTHOR: Galaktionov, Yu. P., Lidin, R. A., Astakhov, K. V.

TITLE: Polarographic investigation of complex formation between europium
             and ethylenediaminetetraacetic acid

PERIODICAL: Zhurnal fizicheskoy khimii, V. 37, No. 4, 1963, 829-834

TEXT: The reaction of the complex formation of europium (III) and europium
(II) with ethylenediaminetetraacetic acid in an acid medium (pH 4.0) is studied
polarographically. The half-wave reduction potential of the complex Eu (III) Y^-
is found to be -0.975 volts (sat. cal. el.). The non-stability constant of the
complex Eu (III) Y^- ($pK_{Eu(III)Y^-}^H = 17.03$) which is obtained polarographically with
the help of Schwarzenbach's method is valid for 20 degrees and an ionic strength
of $\mu = 0.1$ (Li_2SO_4). The polarographic diffusion constants of hydrated europium
(III) and europium (II) ions are equal respectively to $6.05 \cdot 10^{-6}$ and $8.9 \cdot 10^{-6}$
$cm^2 \cdot sec^{-1}$. The instability constant of the complex of divalent europium with
ethylenediaminetetraacetic acid is determined for the first time. Its value at
20 degrees and an ionic strength of $\mu = 0.1$ (Li_2SO_4) is found to be $1.32 \cdot 10^{-12}$,
and $pK_{Eu(II)Y^{2-}} = 11.88$. There are 4 tables and 1 graph. The most important
English-language reference reads as follows: E. J. Wheelwright, F. H. Spedding,

Card 1/2

L 16922-63

S/076/63/037/004/012/029

Polarographic investigation of complex ...

G. Schwarzenbach, J. Amer. Chem. Soc., 75, 4196, 1953.

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni M. V.
               Lomonosova (Moscow Institute of Fine Chemical Technology imeni
               M. V. Lomonosov)

SUBMITTED: April 14, 1962

Card 2/2

GALAKTIONOV, Yu.F.; LABIN, R.A.; _____, F.V. 'M_____'

Polarographic study of the complex formation of europium with ethylenediaminotetraacetic acid. Zhur. fiz. khim. 37 no.4: 829-834 Ap '63.   (MIRA 17:7)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni M.V. Lomonosova.

ZHIRNOVA, N.M.; ASTAKHOV, K.V.; BARKOV, S.A.

Spectrophotometric study of the complexing of indium (III) with ethylenediaminetetracetic and nitrilotriacetic acids. Zhur. fiz. khim. 39 no.5:1224-1228 My '65.   (MIRA 18:8)

1. Moskovskiy gosudarstvennyy pedagogicheskiy institut imeni V.I. Lenina.

ZHIRNOVA, N.M.; ASTAKHOV, K.V.; BARKOV, S.A.

Spectrophotometric study of iron (III) and indium (III) complex
formation with hexamethylenediaminetetraacetic acid. Zhur.fiz.khim.
39 no.7:1787-1791 Jl '65.   (MIRA 18:8)

1. Moskovskiy gosudarstvennyy pedagogicheskiy institut imeni V.I.
Lenina.

L 8145-66   EWT(m)/EWP(j)/T/EWP(t)/EWP(b)   IJP(c)   JD/JG/RM

ACC NR: AP 5027207   SOURCE CODE: UR/0078/65/010/011/2471/2476

AUTHOR: Verenikin, V. B., Astakhov, K. V., Malanichev, F. G.   30

ORG: None

TITLE: Complex formation of rare earth elements with ethylene diamine tetraacetic acid

SOURCE: Zhurnal neorganicheskoy khimii, v. 10, no.11, 1965, 2471-2476

TOPIC TAGS: complex molecule, praseodymium compound, neodymium compound, samarium compound, erbium compound, acetic acid

ABSTRACT: The article presents the results of a spectrophotometric study of the complex formation of praseodymium, neodymium, samarium, and erbium with ethylene diamine tetraacetic acid, and demonstrates the possibility of determining spectrophotometrically the stability of complexes formed by colorless ions of the rare earth elements with colorless additions. The optical density was measured with an SF-4 quartz spectrophotometer in cylindrical cuvettes 100 mm long, with quartz covers. The pH of the solutions was measured with a glass electrode and an LP-5 lamp potentiometer. The experimental temperatures were 18-20°C. The ionic strength of the solutions was determined

Card 1/2   UDC: 546.65:541.49

L 8145-66

ACC NR: AP5027207

by salts of the rare earth elements and the complex forming material. Complex formation was studied at pH values of 4.0 and 6.0. In the first case, the dominating form of the complex forming material was the H_2X^{2-}, and in the second case, the solutions contained 50% each of the H_2X^{2-}, and HX^{3-} ions. The wave lengths were chosen to give the greatest difference in the optical densities of solutions of the chlorides of the rare earth elements and of the same solutions with addition of ethylene diamine tetraacetic acid. It was determined that at pH values of 4 and 6, Pr^{3+}, Nd^{3+}, Sm^{3+}, and Er^{3+}, form complexes with a 1:1 ratio between the rare earth elements and the ethylene diamine tetraacetic acid. In a series of solutions with a constant amount of additive and a varying central ion (Nd^{3+}), at a pH of 4, only a complex with a 1:1 ratio was formed. Polynuclear complexes were not observed. The article proposes a method of calculating the instability constant of complexes formed by ions of the rare earth elements which do not have light absorption properties of their own; the calculation is made on the basis of spectrophotometric data. It gives a calculation of the acidolysis and instability constants of an yttrium complex of ethylene diamine tetraacetic acid. Orig. art. has: 17 formulas, 5 figures, and 3 tables.

SUB CODE: GC, IC, OC/ SUBM DATE: 28 Apr 64/ ORIG REF: 003/ OTH REF: 002

Card 2/2

L 11864-66   EWT(m)/EWP(j)/T/EWP(t)/EWP(b)   IJP(c)   JD/JG/RM

ACC NR: AP6000761   UR/0078/65/010/012/2760/2763

AUTHOR: Verenikin, V.B.; Astakhov, K.V.; Malanichev, F.G.

ORG: None

TITLE: Neodymium citrates

SOURCE: Zhurnal neorganicheskoy khimii, v. 10, no. 12, 1965, 2760-2763

TOPIC TAGS: chemical reaction, neodymium compound, coordination chemistry, citrate

ABSTRACT: The experimental investigations were carried out by several methods: a series of solutions with a constant content of the central ion and a varying additive; a series of solutions with a constant content of the additive and a varying content of the central ion; and a series with a constant ratio of the concentrations of the central ion and the additive at varying pH values. All the experiments were made at a temperature of 20-22°C. The ionic strength of the solution was determined in almost all cases by the ions and the complex-forming substance. Buffer solutions were not used to eliminate side processes of complex formation. pH values used were 1.0, 3.0, 4.0 and 5.5. Study of complex formation between neodymium ions and citric acid made it possible to establish by the methods of spectrophotometry the composition of the

Card   1/2   UDC: 546.657:541.49+547.477.1

L 11864-66

ACC NR: AP6000761

complexes formed by the ions of the rare earth elements in complex systems. By the use of isomolar solutions, solutions with a constant content of the central ion, and solutions with a constant content of the additive, it was established that neodymium ions form a number of complexes, including polynuclear complexes. Orig. art. has: 5 figures and 1 table.

SUB CODE: 07/   SUBM DATE: 28Apr64/   ORIG. REF: 005/   OTH REF: 002

HW

Card 2/2

L 11213-66   EWT(m)/EWP(j)/T/EWP(b)/EWP(t) IJP(c) RM/JD/JG

ACC NR: AP6003643   SOURCE CODE: UR/0078/65/010/010/2386/2388

AUTHOR: Galaktionov, Yu. P.; Astakhov, K. V.; Zhirnova, N. M.   33
                                                                    B

ORG: Moscow Institute of Fine Chemical Technology im. M. V. Lomonosov
(Moskovskiy institut tonkoy khimicheskoy tekhnologii)

TITLE: Complexing of neodymium (III) with ethylenediaminetetraacetic
acid in aqueous solutions

SOURCE: Zhurnal neorganicheskoy khimii, v. 10, no. 10, 1965, 2386-2388

TOPIC TAGS: complex molecule, neodymium compound, spectrophotometric
analysis

ABSTRACT: Complexing between Nd^{3+} and EDTA was studied with an SF-5
spectrophotometer, and the pH was measured with an LP-58 potentiometer
with glass and calomel electrodes. From the absorption spectra of neo-
dymium perchlorate in the presence and absence of EDTA, and also from
a study of the absorption spectra of a series of solutions with a con-
stant ratio of Nd^{3+} to EDTA but changing pH values, it is concluded that
Nd^{3+} forms a complex of a single composition with EDTA. The formation
of this complex starts at pH 1.2 and ends at pH 2.4. Between pH 2.4
and pH 10, no change was observed in the optical density in the series

Card 1/2   UDC: 546.657 : 541.49

L 14213-66

ACC NR: AP6003643

of solutions (pH values above 10 were not used). The maximum on the
diagram of the isomolar series (at pH 3.5) shows that a complex of 1:1
composition is formed. On the basis of these data, the reaction of com-
plex formation at pH 1.2-2.4 is represented by the general equation

$$Me^{3+} + H_{6-m}Y^{2-m} \rightleftharpoons MeH_{6-m-n}Y^{1-(m+n)} + nH^+. \quad (1)$$
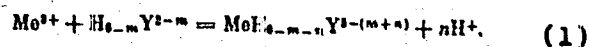
where n was found to have two values: $n = 2$ (pH 1.2-1.8) and $n = 3$
(pH 1.8-2.4). Considering the predominant forms of dissociation of
EDTA in those pH intervals, the complex formation is represented as
follows:

$$Me^{3+} + H_4Y \rightleftharpoons MeH_2Y^+ + 2H^+$$
(pH 1.2-1.8) and
$$Mo^{3+} + H_3Y^- \rightleftharpoons MoY^- + 3H^+$$
(pH 1.8-2.4). \quad (1b)

(1a)
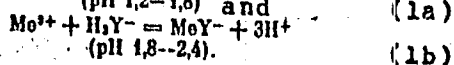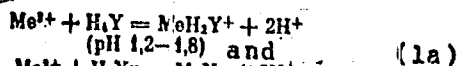
Acidolysis constants were calculated for reactions (1a) and (1b) and
dissociation constants were determined for the complexes formed by these
reactions. Orig. art. has: 4 figures, 1 table.

SUB CODE: 07/   SUBM DATE: 23Jan65/   ORIG REF: 004/   OTH REF: 003

Card 2/2

VERENIKIN, V.B.; ASTAKHOV, K.V.; MALANICHEV, F.G.

Complex formation of rare-earth elements with ethylenedi-
aminetetraacetic acid. Zhur.neorg.khim. 10 no.11:2471-2476
N '65.   (MIRA 18:12)

1. Submitted April 28, 1964.

VERENIKIN,V.B.; ASTAKHOV, K.V.

Cerium nitrolotriacetates. Zhur.neorg.khim. 10
no.12:2753-2759 D '65.   (MIRA 19:1)

VERENIKIN, V.B.; ASTAKHOV, K.V.; MALANICHEV, F.G.

Neodymium citrates. Zhur.neorg.khim. 10 no.12:2760.2763
D '65.   (MIRA 19:1)

TH TENCVA, D.M.; ASTAKHOV, E.V.; BARKOV, S.A.

Spectrophotometric study of the complex formation of iron (III), neodymium (III), and indium (III) with N,N,N'-tetraacetic acid of 2,2'-diaminodiethyl ester. Zhur.fiz.khim. 39 no.11:2791-2795 N '65. (MIRA 18:12)

1. Moskovskiy gosudarstvennyy pedagogicheskiy institut imeni V.I.Lenina.

L 31514-66   EWT(m)/EWP(j)   RM

ACC NR: AP6008093

SOURCE CODE: UR/0076/66/040/002/0417/0421

AUTHOR: Zhirnova, N. M.; Astakhov, K. V./Barkov, S. A.

ORG: Moscow State Pedagogical Institute im. V. I. Lenin (Moskovskiy gosurdarstvennyy pedagogicheskiy institut)

TITLE: Spectrophotometric study of complexing between indium (III) and diethylenetriaminepentaacetic acid

39

B

SOURCE: Zhurnal fizicheskoy khimii, v. 40, no. 2, 1966, 417–421

TOPIC TAGS: acetic acid, complex molecule, indium compound, equilibrium constant, dissociation constant

ABSTRACT: Complexing between indium and the complexon diethylenetriaminepentaacetic acid in acid media (up to pH 3) was studied by using a series of solutions with a constant concentration of complex-forming ions (neodymium and indium perchlorates) and a variable concentration of the complexon. Also employed was a series of solutions with a constant concentration of the colored complex-forming ion Fe(III) and complexon, and a variable concentration of the colorless complex-forming ion In(III). The equilibrium and dissociation constants of the complex formed by indium with the complexon were determined spectrophotometrically on these solutions. The indium-diethylenetriaminepentaacetic acid complex was found to have a 1:1 composition. The average value of the equilibrium constant was

Card 1/2

UDC: 541.49

L 31514-66

ACC NR: AP6008093

found to be 8.1, and the value of the dissociation constant, 3.8×10^{-29} ($pK_H = 28.42$).
Orig. art. has: 3 figures, 1 table, and 4 formulas.

SUB CODE: 07 / SUBM DATE: 26Nov64 / ORIG REF: 003 / OTH REF: 008

Card 2/2 mc

L 45576-66   EWT(m)/EWP(j)/EWP(t)/ETI   IJP(c)   JD/JG/RM

ACC NR: AP6027189   (N)   SOURCE CODE: UR/0078/66/011/008/1813/1816

AUTHOR: Galaktionov, Yu. P.; Astakhov, K. V.

ORG: Moscow Institute of Fine Chemical Technology im. M. V. Lomonosov (Moskovskiy institut tonkoy khimicheskoy tekhnologii)

TITLE: Complexing of samarium (III) and europium (III) with acetic acid in aqueous solution

SOURCE: Zhurnal neorganicheskoy khimii, v. 11, no. 8, 1966, 1813-1816

TOPIC TAGS: samarium compound, europium compound, acetic acid

ABSTRACT: The complexing of Sm^{3+} and Eu^{3+} ions with acetic acid (HAc) in aqueous solution was studied spectrophotometrically in order to determine the composition of the acetate complexes formed at a constant Me/HAc ratio as a function of the pH. It was found that at an HAc concentration of 0.1 mole/l ($c_{Me}/c_{HAc} = 1:33$), at least three complexes are formed in the solution: $MeAc^{2+}$, $MeAc_2^{+}$, and $MeAc_3$ (for both samarium and europium). The limits of pH values at which the complexes predominate were found: $MeAc^{2+}$ predominates in the pH range of 3.5-3.8 (for Sm) and 3-3.7 (for Eu); $MeAc_2^{+}$, at 3.8-4.3 (Sm) and 3.7-3.9 (Eu); $MeAc_3$, at pH > 4.3 (for Sm) and > 3.9 (for Eu). The acidolysis and dissociation constants of these complexes were determined. Orig. art. has: 3 figures and 2 tables.

SUB CODE: 07/ SUBM DATE: 1 Oct64/ ORIG REF: 005/ OTH REF: 005

Card 1/1 /C   UDC: 547.292'165.9-386+547.292'166.1-386

Astakhov, L. G.

"Distribution of Pressure Over the Contact Area in Rolling", Moskova Institut
Stali im. I. V. Stalin, Sbornik Nr 30 on Structure and Properties of Steel, 1951,
pp 147-180.

ASTAKHOV, M.   N/5
                                                                   764
                                                                   .A8

        Organizatsionno-massovaya robota FZMK (Mass-organization work of the
FZMK) (Iz opyta profsoyuznykh organizatsiy tul'skoy Oblasti) Moskva,
Profizdat, 1954.
        60 p. diagrs.
        At head of title: V pomoshch'profsoyuznomu aktivu.

ASTAKHOV, M., gornyy master.

Let's get into the habit of using cutter-loaders for coal extraction.
Mast. ugl. 4 no.11:11-12 N '55.   (MLRA 9:2)
                              (Coal mining machinery)

ASTAKHOV, M.

Ways for strengthening the payment discipline of organizations
operating on a business accounting basis. Den. i kred. 20
no.2:62-64 F '62.   (MIRA 15:2)

1. Nachal'nik gorodskogo upravleniya Khabarovskoy kontory
Gosbanka.
                    (Khabarovsk--Payment)

ASTRAKHAN, L.; MIKHALKEVICH, N.

Pay constant attention to the setting of production norms.
Mest.prom. i khud.promys. 2 no.9:22-23 S '61. (MIRA 14:11)
                    (Wage payment systems)
                    (Production standards)

ASTAKHOV, M.

Eliminate shortcomings. Den. i kred. 21 no.5:64-68 My '63.
                                                    (MIRA 16:5)

1. Nachal'nik Gorodskogo upravleniya Khabarovskoy krayevoy kontory
Gosbanka.
            (Khabarovsk—Banks and banking)

ASTAKHOV, M. E.

PHASE I   TREASURE ISLAND BIBLIOGRAPHICAL REPORT   AID 510 - I

BOOK   Call No.: AF641131
Authors: ASTAKHOV, M. E., KARAVAYEV, A. V., MAKAROV, S. YA., and
          SUZDAL'TSEV, YA. YA.
Full Title: HANDBOOK OF AIRCRAFT STRENGTH CALCULATIONS
Transliterated Title: Spravochnaya kniga po raschetu samoleta na
                       prochnost'
PUBLISHING DATA
  Originating Agency: None
  Publishing House: State Publishing House of the Defense Industry
    (Oborongiz)
  Date: 1954   No. pp.: 708   No. of copies: Not given
  Editorial Staff: The authors express thanks for help to the following:
    Shishkin, S. N., Doc. of Tech. Sci., Cheremuzhin, A. M., Prof., Doc.
    of Tech. Sci., Dubrovin, A. A., Kand. of Tech. Sci., Kurguzov, D. N.,
    Eng., and Belous, A. A.
TEXT DATA
  Coverage: This book is concerned exclusively with statics and does not
    contain problems not yet thoroughly verified in practice. The general
    character of the composition is entirely subordinated to the needs of
    engineers who start working in the field of aircraft strength calcula-
    tions. Wherever it was possible, formulae were reduced through trans-
    formations or graphical interpretations to their practical form.
                              1/8

3/8

Spravochnaya kniga po raschetu samoleta na prochnost'   AID 510 - I

                            5/8

Spravochnaya kniga po raschetu samoleta na prochnost'   AID 510 - I

ASTAK OV, N.D., Cand Tech Sci -- (diss) "Methods of design and study of magnetic networks of impulsive polarized relays of railroad automatic system." Len, 1958, 11 pp (Min of Railways USSR. Len Order of Lenin Inst of Engineers of Railroad Transport im Academician. V.N. Obraztsov) 100 copies (KL, 27-58, 107)

- 79 -

ASTAKHOV, N.D., inzh.

Calculating magnetic circuits of electromagnetic instruments of automatic machinery in connection with linear interpretation problems. Sbor. LIIZHT no.158:302-315 '58.   (MIRA 11:6)
     (Railroads--Electric equipment) (Electromagnets)

ASTAKHOV, N.D., inzh.

Selecting optimum parameters for permanent magnets of polarized
instruments used in railroad automatic systems. Sbor. LIIZHT no.158:
325-335 '58.   (MIRA 11:6)
    (Railroads--Electric equipment) (Magnets)

ASTAKHOV, N. P. Eng.; MASHINSKIY, V. N., Eng.

Protecting wooden supports of an electric transmission line from rotting. Rab.,energ.
2 No. 6, 1952.

SO: MLRA. December 1952.

ASTAKHOV, N. P.

Electrical Engineering Abstracts
June 1954
Electrical Engineering

⨀   621.315.65
2.38.   Replacement under voltage of Π-shaped inter-
mediate supports on a 110 kV transmission line. N. P.
ASTAKHOV AND B. I. KOMISSAROV, *Energetik*, 1953,
No. 7, 8–10. *In Russian.*
    Of these poles 160 had to be replaced in a short
time on a single-circuit dead-end line without inter-
ruption of service. The new supports were erected
at 0·5–1·5 m from the old ones and the transfer of
the conductors had to be done gradually without
increasing the load on the old poles. Three specialized
teams were employed of which the first erected the
new supports, the second transferred the conductors
to the new supports, the third dismantled the old
supports. Photographs show details of the work.
                                            E. BUSEMANN

ASTAKHOV, N.P., inzhener; KOMISSAROV, B.I., inzhener.

Replacement of crossarms of intermediate ∏ shaped supports carrying a voltage by the method of successive turning. Energetik 2 no.5:6-8 My '54.
(MLRA 7:6)

(Electric lines--Overhead)

HSTAKHOV, N. P.

Subject   : USSR/Electricity

AID P - 1629

Card 1/1   Pub. 29 - 11/23

Authors   : Astakhov, N. P., Eng. and Komissarov, B. I., Eng.

Title   : Suspension of wires and cables of the second circuit of
              a 154 kv electric power line without cutting-off the
              first circuit

Periodical : Energetik, 1, 18-20, Ja 1955

Abstract   : The authors describe the technique of mounting cables and
              wires of an additional circuit along the existing power
              line without cutting off the circuit in those lines.
              Two pictures and 1 diagram illustrate the article.

Institution: ORGRES(Office for Organization and Improvement of
              Regional Electric Power Plants and Networks)

Submitted : No date

Hstakhov, N. P.

AID P - 2529

Subject   : USSR/Electricity

Card 1/1   Pub. 26 - 13/32

Authors   : Astakhov, N. P. and Komissarov, B. I., Engs.

Title   : Mechanized repair work on transmission lines

Periodical   : Elek sta, 6, 38-40, Je 1955

Abstract   : The authors report on a special machine designed in
                1954 which performs various heavy-duty repair jobs on
                35 and 110 kv transmission lines strung on wood poles.
                The unit consists of a movable jib, a 25 kva a-c
                generator, cranes, and a BT-8 electric vibrator. A
                diagram and 3 photos.

Institution : None

Submitted   : No date

Subject   : USSR/Electricity   AID P - 3089

Card 1/1   Pub. 29 - 23/29

Authors   : Astakhov, N. P., and Khavin, N. Z., Engs.

Title   : Shielding clearance gages to work on live electric transmission
                 lines

Periodical   : Energetik, 7, 30-32, Jl 1955

Abstract   : The so-called shielding clearance gages have been developed by the
                 Orgres (Office for the Organization and Industrial Efficiency of
                 Regional Electric Power Plants and Networks) and serves to protect
                 workers repairing lines up to 110-kv under load. The authors give
                 a detailed description of the shield and of its use. Six drawings.

Institution   : None

Submitted   : No date

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ASTAKHOV, N.P., inzhener; KHAVIN, N.Z.; BRONSHTEYN, I.I., redaktor; VORONIN, K.P., tekhnicheskiy redaktor

[Instructions for the repair of line electric transmission lines of 35--220 kv.] Instruktsii po remontu linii elektroperedachi 35-220 kv. nakhodiashchikhsia pod napriazheniem. Moskva, Gos. energ. izd-vo. Pt.3. [Installation and removal of tubular dischargers on 35 and 110 kv. lines] Ustanovka i sniatie trubchatykh razriadnikov na liniiakh 35 i 110 kv. 1956. 22 p.   (MIRA 9:12)

1. Russia (1923-   U.S.S.R.) Ministerstvo elektrostantsii. Tekhnicheskoye upravleniye.
          (Electric lines--Maintenance and repair)

ASTAKHOV, N.P., inzhener; KHAVIN, N.Z., inzhener.

Apparatus for repairing wooden supports of 35 and 110 kv
transmission lines without interruption of power. Energetik
4 no.4:5-7 Ap '56.   (MIRA 9:7)
(Electric lines—Maintenance and repair)

8(6)   SOV/112-59-5-8831

Translation from: Referativnyy zhurnal. Elektrotekhnika, 1959, Nr 5, p 60 (USSR)

AUTHOR: Astakhov, N. P.

TITLE: Achievements of ORGRES in the Development of the Mechanical Part of
    400-500-kv Transmission Lines

PERIODICAL: Naladochnyye i eksperim. raboty ORGRES, Nr 15, 1958, pp 43-61

ABSTRACT: Results of laboratory tests of new types of towers, foundations and
    line hardware are reported. Schemes of fastening the split-phase conductors
    to flexible towers are considered from the standpoint of steel requirements per
    one km of transmission line. The tests lead to important conclusions and
    recommendations, such as abandoning anchor towers, reducing the tower safety
    factor, tower mounting in soil, etc.

                                                            F.F.V.

Card 1/1

ASTAKHOV, N.P., inzh.; USACHEV, K.V., inzh.

Repair work on operating electric power transmission lines. Elek.
sta. 32 no.11:65-68 N '61.   (MIRA 14:11)
        (Electric power distribution) (Electric lines--Repairing)

ASTAKHOV, N.P., inzh.; GRIGOR'YEV, Yu.Ye., inzh.; SKOBELEV, S.A., inzh.

Letter to the editor. Elek. sta. 33 no.4:89 Ap '62.
(MIRA 15:7)
(Electric lines—Overhead)

ASTAKHOV, N.P., inzh.; GRIGOR'YEV, Yu.Ye., inzh.; SKOBELEV, S.A., inzh.

Concerning a certain method for repairing operating electric
power transmission lines. Elektrichestvo no.7:86 Jl '62.

(MIRA 15:7)

(Electric lines—Overhead)

ASTAKHOV, N. V.

"Investigation of Noises in Single Phase Miniature Commutator Motors." Cand Tech Sci, Moscow Order of-Lenin-Power Engineering Inst imeni V. M. Molotov, Min Higher Education USSR, Moscow, 1955. (KL, No 15, Apr 55)

SO: Sum. No. 704, 2 Nov 55 - Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (16).

ASTININOV, M. K.

Call Nr: AF 1154201

AUTHORS: Voronetskiy, B. B., Kucher, E. R.

TITLE: Magnetic Noise of Three-Phase Squirrel-Cage Induction
                Motors (Magnitnyy shum trekhfaznykh asinkhronnykh
                korotkozamknutykh elektrodvigateley)

PUB.DATA: Gosudarstvennoye energeticheskoye izdatel'stvo,
                Moscow-Leningrad, 1957, 56 pp, 8,500 copies

ORIG.AGENCY: None given.

EDITORS: Astakhov, N. V.; Tech.Ed.: Fridkin, A. M.

PURPOSE: The book is intended for engineer designers at
                electrical engineering plants, and also as a textbook
                for students of power engineering institutes.

Card 1/4

Call Nr: AF 1154201
Magnetic Noise of Three-Phase Squirrel-Cage Induction Motors (Cont.)

COVERAGE: The book deals with the method of calculating the
             parameters on which depends the magnetic noise of three-
             phase squirrel-cage induction motors, and with the
             methods of investigating the magnetic noise of a.c.
             motors. The Scientific Research Institute of the
             Ministry of Electrical Industry conducted a series
             of investigations of magnetic noise on an experimental
             basis. Squirrel-cage induction motors of an All-Union
             nationwide series were tested. On the basis of in-
             vestigations of electromagnetic, mechanical and
             accustical properties of these motors, formulae were
             derived for the calculation of parameters on which the
             magnetic noise depends. Experimental factors were
             obtained making possible calculations of the intensity
             of noise in these motors. Some of the formulae were
             suggested in 1950 by Sinel'nikov, Ye.M., Doctor of
             Technical Sciences, Prof., (p.13). Works of Urusov, N.D.,
             (p.18) and Timoshenko, S.P., (p.19) are mentioned and
             the AO31-2 type motor characteristic is presented (p.37).
             There are 29 references, 18 of which are USSR, 11 French,
             German, and English, and translations into Russian.

Card 2/4

Call Nr: AF 1154201
Magnetic Noise of Three-Phase Squirrel-Cage Induction Motors (Cont.)

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Magnetic Noise of Three-Phase Squirrel-Cage Induction Motors (Cont.)

Call Nr: AF 1154201

AVAILABLE: Library of Congress

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8(0)

SOV/112-59-1-877

Translation from: Referativnyy zhurnal. Elektrotekhnika, 1959, Nr 1, p 117 (USSR)

AUTHOR: Chechet, Yu. S., Astakhov, N. V., Zavriyev, A. S., Somikhina, G. S., and Yuferov, F. M.

TITLE: Electric Motors for Medical-Equipment Drives

PERIODICAL: Materialy po obmenu opytom i nauchn. dostizh. v med. prom-sti, 1957, Nr 5 (24), pp 58-62

ABSTRACT: Specific requirements of medical-type electric motors are considered: noiselessness, absence of vibration, normal operation at wide supply-voltage fluctuations, simple and reliable starting, and various other requirements of regulating and starting characteristics. Small motors of the normal NII MEP series are considered unsuitable for medical purposes. A nomenclature and characteristics of special medical-type motors manufactured by the Ministry of Health, USSR, are reported.

L. Ya. L.

Card 1/1

. . .

AUTHOR: Astakhov, Nikolay Vladimirovich,   SOV/ 161-58-1-14/33
              Candidate of Technical Sciences,
              Assistant at the Chair of Electrical Machines at the Moscow
              Institute of Power Engineering.

TITLE: Experimental Investigation of the Noise of Electrical
              Micromachines (Eksperimental'noye issledovaniye shumov
              elektricheskikh mikromashin)

PERIODICAL: Nauchnyye doklady vysshey shkoly, Elektromekhanika i
              avtomatika, 1958, Nr 1, pp. 113-121 (USSR)

ABSTRACT: Methods of an experimental investigation of the noise of
              micromachines are described and a short description of the
              employed apparatus is given. Subjective and objective methods
              of measuring noise are exposed. Although the objective method
              does not exhibit the shortcomings of the subjective method
              and is widely applied at present, the equipment required for
              it is too complicated and too costly. Therefore at present
              audio-noise meters are used which have a correction of the
              frequency characteristic not for every given intensity of the
              noise, but only for an intensity varying within certain
Card 1/4   limits. Noise analysers or spectrographs are used for the

Experimental Investigation of the Noise of   SOV/ 161-58-1-14/33
Electrical Micromachines

Frequency analysis of the noise. A spectrograph of a type
developed in the Moscow Electrotechnical Institute of
Telecommunications (MEIS) is described. It operates with a
superposition (heterodyne) circuit and a double frequency
transformation. A cathode ray tube serves as indicator.
The voltage from the scanning unit is simultaneously applied
to the deflecting plates of the cathode ray tube and to the
frequency-modulated heterodyne. Owing to this the heterodyne
frequency also changes with the motion of the spot along the
horizontal axis. The frequency modulated voltage from the
heterodyne and the voltage of the investigated signal are
both fed into the frequency transducer, the latter across an
amplifier. In the transducer the modified heterodyne frequency
with each of the components of the investigated spectrum
successively gives an intermediate frequency, to which the
narrow-bar amplifier is tuned. The spectral components
separated by the narrow-band amplifier are applied to the
vertical deflecting plates of the cathode ray oscillograph,
Card 2/4   after being detected by an amplifier. All ranges of the

Experimental Investigation of the Noise   SOV/ 161-58-1-14/33
of Electrical Micromachines

spectrum can be investigated simultaneously. The scale is
chosen in such a way as to show all in any respect remarkable
components of a complicated noise on the screen. The
experimental equipment is described. Two main problems occur
in the design of an equipment for the investigation of noises
of electrical machines:
1) The apparatus must be isolated from the noises and
vibrations coming from the surroundings.
2) The influences of the vibrations of the test machines must
be abolished in order to avoid resonance vibrations of the
apparatus. Such an equipment is shown. It complies with the
above requirements, and this is confirmed by the spectrograms
taken at equal amplification coefficients. In the last section
a method for the investigation of noises in electrical
machines is exposed. Different causes for the noise are
removed one after the other, until only one remains. The
resonance frequencies can be detected on the screen by
varying the speed of the machine at idling. This method
Card 3/4   was used with success by the author in the investigation of

Experimental Investigation of the Noise of   SOV/ 161-58-1-14/33
Electrical Micromachines

         the noise of one-phase commutator micromotors. There are
         10 figures and 1 reference,   which is Soviet.

ASSOCIATION: Kafedra elektricheskikh mashin Moskovskogo
        energeticheskogo instituta   (The   Chair of
        Electrical Machines at the Moscow Institute of Power
        Engineering)

SUBMITTED: December 30, 1957

Card 4/4

YUFEROV, Fedor Mikhaylovich; ASTAKHOV, N.V., kand.tekhn.nauk, red.;
BORUNOV, N.I., tekhn.red.

[Electric motors of automatically controlled devices]
Elektricheskie dvigateli avtomaticheskikh ustroistv. Moskva,
Gos.energ.izd-vo, 1959. 223 p. (Biblioteka po avtomatike,
no.8)
                                              (MIRA 13:1)
    (Automatic control)   (Electric motors)

8(5)

AUTHOR: Astakhov, N. V., Candidate of   SOV/105-59-1-10/29
            Technical Sciences

TITLE: Magnetic Noise in Universal Commutator Micromotors
            (Magnitnyy shum universal'nykh kollektornykh mikrodvigateley)

PERIODICAL: Elektrichestvo, 1959, Nr 1, pp 41-45 (USSR)

ABSTRACT: The principal causes for the magnetic noise in an electric
            machine are the elastic deformations of machine parts under
            the influence of the forces caused by the magnetic field.
            These forces, and methods to reduce this noise in universal
            commutator micromotors, are analyzed here. The theoretical
            analysis of the change of dynamic factors in dependence on
            the change of armature teeth and the length of the pole arc
            refers to the first harmonic oscillations of these factors.
            In reality, however, the highest harmonic oscillations of
            forces and moments also become effective in the calculations
            of motors (particularly where a reduction of magnetic induction
            in the air gap to reduce the noise is not provided for). The
            theoretical analysis of their influence can be carried out in
            analogy to that for the first harmonic oscillations. - The
Card 1/2   following summary is given: 1) A substantial reduction of