5402

41123
S/056/62/043/004/006/061
B102/B180

AUTHOR: Agishev, A. Sh.

TITLE: Nuclear magnetic resonance investigation of the rotational motion of molecules of a liquid

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43, no. 4(10), 1962, 1154 - 1157

TEXT: To describe the random rotation of molecules K. A. Valiyev and M. M. Zaripov (ZhTF, 42, 502, 1962) introduced a rotational diffusion tensor. Some of their formulas are used to test the hydrodynamic model. T_1 the magnetic relaxation time of protons in organic liquids is related with T_{1r} the characteristic time of the rotational and T_{1a} of the alternating, random motion of the molecule by $T_1^{-1} = T_{1r}^{-1} + T_{1a}^{-1}$. T_1 was measured at 24°C by the spin echo method (16.365 Mc) for different concentrations of benzene, naphthalene and anthracene in CCl_4 and extrapolated to zero concentration. For these three compounds the T_{1r} values obtained were: 54.0 sec, 24.8 sec

Card 1/2

Nuclear magnetic resonance ...

and 12.5 sec. The rotation times, τ, were then calculated for three models, rotating sphere and ellipsoid, and the one described in J. Chem. Phys. 33, 86, 1960 by Mitchell and Eisner. Comparison of these τ-values with the one calculated from the measured T_{1r} value, shows that the Mitchel-Eisner model, which takes account of the form of the molecule, yields by far the best agreement. The ellipsoidal model is somewhat better than the spherical but both yield exaggerated values. This is attributed to the fact that the hydrodynamic models give an understatement of the effective molecular dimensions. There is 1 table.

Card 2/2

L 16712-65 RAEM(c)/ESD(t)/RAEM(i)/SSD/AFWL/AS(mp)-2/AFTC(p)
ACCESSION NR: AR5000779 S/0058/64/000/010/D037/D037

SOURCE: Ref. zh. Fizika, Abs. 10D287

AUTHORS: Samigullin, F. M.; Arnshev, a. Sb.

TITLE: Installation for degassing of liquids and solutions

CITED SOURCE: Sb. Materialy Nauchn. konferentsii. Kazansk. gos. ped. in-t, 1962. Kazan', 1963, 389-392

TOPIC TAGS: spin lattice relaxation, nuclear magnetic resonance, paramagnetic impurity, degassing, vacuum equipment

TRANSLATION: A setup is described for removing paramagnetic impurities from samples for nuclear magnetic resonance research (for example, pure diamagnetic liquids are rid of oxygen). The installation is based on the method of freezing--pumping--melting" the samples. The vacuum section is made of molybdenum glass and is connected to a

Card 1/2

L 16712-65
ACCESSION NR: AR5000779

TsVL-100 diffusion pump by a kovar junction. The preliminary vacuum is produced by a RVN 200 forevacuum pump. The pumped-out gas is [illegible] test to the installation through a collector with three valves and conical ground glass junctions which make it possible to connect different sorts of glass. A test tube with a [illegible] junction, sealed to the support of the conical ground joint, is heated [illegible] vacuum. The solution to be degassed is poured into the test tube and the sample is then frozen. The cycles are repeated until the pumping out of the sample takes place at the established maximum vacuum of ~ 2×10^{-5} mm Hg. The finished specimen is sealed off in the frozen state under vacuum. The efficiency of degassing is demonstrated with an example of measuring the spin-lattice relaxation time of water, benzene, cyclohexane etc. V Gromov.

SUB CODE: [illegible]

Card 2/2

S/120/63/000/001/016/072
E039/E420

AUTHORS: Agishev, A.Sh., Zinyatov, M.Z., Kashayev, S.-X.G., Kucheryavenko, N.S., Samigullin, F.M.

TITLE: A spin-echo spectrometer

PERIODICAL: Pribory i tekhnika eksperimenta, no.1, 1963, 78-83

TEXT: The spin echo spectrometer permits absolute values of important kinetic parameters to be obtained, for example parameters connected with the structure and motion of particles of material, such as the transverse (T_2) and longitudinal (T_1) times of relaxation of nuclear magnetization and also the coefficient of self-diffusion D for particles of liquid or gas. When using this spin-echo method the material is located in a nonuniform constant magnetic field H_0 and exposed to a high frequency field satisfying the magnetic resonance condition. The deviation of the direction of magnetization of the sample from the direction of H_0 depends on the duration of the pulse. For a deviation of 90° the HF pulse must satisfy the condition $\gamma H_1 t_1 = \pi/2$ where γ - gyromagnetic ratio of the resonating nuclei, H_1 - amplitude of HF pulse and t_1 - duration of the pulse.

Card 1/2

S/120/63/000/001/016/072
E039/E420

A spin-echo spectrometer

In order to obtain a deviation of 180°, double this pulse length would be required. A detailed description of the apparatus is given. It consists basically of a programming unit which enables six different methods of measurement to be used, a transmitter, a high frequency head and a receiver. The field H_o is about 3844 Oe and is produced by an Alnico magnet. This field corres corresponds to a proton resonance frequency of 16.365 Mc/s. Nonuniformity is about 1 Oe in a sample of about 2 cm^3. The duration of the 90° pulse is about 2 μ sec. Errors in the measurement of T_1 and T_2 are about 5%. Control measurements were carried out on an aqueous solution of 4 mole/litre $VOCl_2$ and values of T_1 and T_2 equal to 160 and 112 μ sec respectively obtained. For pure de-aerated benzene T_1 was 18.82 sec. Values of T_1 and T_2 from about 20 μ sec up to 100 sec or more can be measured by this method. There are 6 figures.

ASSOCIATION: Kazanskiy pedagogicheskiy institut
(Kazan' Pedagogic Institute)

SUBMITTED: February 24, 1962

Card 2/2

ACCESSION NR: AP4012516 S/0056/64/046/001/0003/0009

AUTHOR: Agishev, A. Sh.

TITLE: Investigation of Brownian rotation of nonspherical molecules of a liquid by nuclear magnetic resonance

SOURCE: Zhurnal eksper. i teoret. fiz., v. 46, no. 1,. 1964, 3-9

TOPIC TAGS: nuclear magnetic resonance, liquid, liquid molecule, Brownian rotation, nonspherical liquid molecule, normal paraffin molecule, hexane, octane, decane and dodecane, tetradecane, hexadecane, octadecane, activation energy, viscosity barrier, dipole dipole interation, spin relaxation rate, characteristic rotation time

ABSTRACT: As a sequel of an earlier study of Brownian rotation of an aromatic series of molecules dissolved in carbon tetrachloride, (ZhETF, v. 43, 1154, 1962) the author determines the characteristic

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ACCESSION NR: AP4012516

rotation time of normal paraffin molecules dissolved in the same solvent. The paraffins investigated are hexane, octane, decane, dodecane, tetradecane, hexadecane, and octadecane. The experimental and theoretical results are compared and it is shown that the most accurate of all theories of Brownian rotation of liquid molecules is the hydrodynamic theory in which a microfriction factor is allowed for. Temperature measurements show that the activation energy for the reorientation of the investigated molecules is equal to the viscosity barrier of the solvent. The contributions of the intermolecular dipole-dipole interactions to the measured spin-relaxation rates are investigated and are found to decrease with increasing molecule size. "In conclusion, the author takes the opportunity to thank K. A. Valiyev for guidance and continuous interest in the work." Orig. art. has: 3 figures, 10 formulas, and 2 tables.

ASSOCIATION: Kazanskiy gosudarstvenny*y pedagogicheskiy institut (Kazan' State Pedagogical Institute)

Card 2/4

AGISHEV, A.Sh.; ZINYATOV, N.Z.

Measurement of time intervals with a [illegible] scaler. Prib. i tekh. eksp. 9 no.1:211-212 Ja-F '64. (MIRA 17:4)

1. Permskiy pedagogicheskiy institut.

ACCESSION NR: AP4035479 S/0051/64/016/005/0881/0887

AUTHOR: Valiyev, K.A.; Agishev, A.Sh.

TITLE: Investigation of the character of Brownian rotary movement of molecules in liquids

SOURCE: Optika i spektroskopiya, v.16, No.5, 1964, 881-887

TOPIC TAGS: Brownian motion mechanics, molecular rotation, nuclear magnetic resonance, electron paramagnetic resonance

ABSTRACT: Rotary Brownian movement of molecules in a liquid is defined as chance wandering of the orientation of the molecules with respect to the laboratory system of coordinates. The most convenient parameters to use in treating the problem are the Euler angles. It is assumed that the ambience of the molecule gives rise to a potential barrier, which the molecule must overcome in rotating to the orientation in which the energy of its interaction with its neighbors attains another minimum. The problem is first approached theoretically making use of the equations describing rotational diffusion (M.A.Leontovich, Statisticheskaya fizika/Statistical Physics/ M.-L.1944), and tensor analysis is employed to find the relation between ro-

Card 1/2

ACCESSION NR: AP4035479

tation through a given angle and the correlation time (the time between two successive rotations). Some experimental data obtained as a result of spin echo measurements on solutions of nitrobenzene and camphor in CS_2 and CCl_4 are described. These are then discussed from the standpoint of the theory and evaluations are made of the mean angle of rotation on the basis of Langevin equations for rotation of molecules. Use of the theory of Brownian rotation of molecules in the diffusion approximation appears to be justified, although it is noted that the theoretical evaluations of the mean angle of rotation may actually be underestimates. Orig.art.has: 9 formulas and 1 table.

ASSOCIATION: none

SUBMITTED: 18Jul63 DATE ACQ: 22May64 ENCL: 00

SUB CODE: ME NR REF SOV: 011 OTHER: 007

Card 2/2

AGISHEV, A.Sh.; YEMEL'YANOV, M.I.

Spin echo study of the progressive diffusion of nonspherical molecules in liquids. Zhur. strukt. khim. 5 no.3:377-382 My-Je '64. (MIRA 18:7)

1. Kazanskiy pedagogicheskiy institut.

BURENIN, P.I., podpolkovnik meditsinskoy sluzhby, kandidat meditsinskikh nauk; RAZGOVOROV, B.L., mayor meditsinskoy sluzhby, kandidat meditsinskikh nauk; AGISHEV, A.V.

Feasibility of necrectomy in combined third-degree burns. Voen-med. zhur. no.1:23-26 Ja '56. (MLRA 10:5)
(BURNS, experimental,
necrotomy (Rus))

AGISHEV, A.V.

Large cyst of the pancreas causing gastric obstruction.
Khirurgiia 35 no.3:117-118 Mr '59. (MIRA 12:8)

1. Iz khirurgicheskogo otdeleniya Moskovskoy gorodskoy klinicheskoy bol'nitsy No.6 (glavnyy vrach N.S.Shevyakov).
(PANCREAS, cysts
large cyst causing gastric obstruct. (Rus))
(STOMACH, dis.
obstruct. caused by large pancreatic cyst (Rus))

AGISHEV, A.V.

Hashimoto's lymphoid goiter. Khirurgiia 37 no.5:127-128 My '61.
(MIRA 14:5)

1. Iz 2-go khirurgicheskogo otdeleniay (zav. - prof. D.L. Vaza) Moskovskoy gorodskoy klinicheskoy bol'nitsy No.6 (glavnyy vrach N.S. Shevyakov).

(THYROID GLAND--DISEASES) (GOITER)

AGISHEV, A.V.

Two cases of gastric lipoma. Khirurgiia no.8:116-117 Ag '61.
(MIRA 15:5)

1. Iz 2-go khirurgicheskogo otdeleniya (zav. - prof. D.D. Vaza) Moskovskoy gorodskoy klinicheskoy bol'nitsy No.6 (glavnyy vrach N.S. Shevyakov).

(STOMACH--TUMORS)

AGISHEV, A.V.

Riedel's goiter (fibrous thyroiditis). 1Za Probl. endok. i gorm. 8 no.2:125-126 Mr-Ap'62. (MIRA 16:7)

1. Iz 2-go khirurgicheskogo otdeleniya (zav.-prof. D.L.Vaza) Moskovskoy gorodskoy klinicheskoy bol'nitsy No.6 (glavnyy vrach N.S.Shevyakov).
(GOITER)

AGISHEV, I.N., inzhener; IVANOVA, G.M., inzhener.

Apparatus for the recovery of silica gel. Elek.sta. 25 no.12: 44-45 D '54. (MLRA 7:12)
(Steam boilers)

Agishev, I. N.

AID P - 4015

Subject : USSR/Power

Card 1/1 Pub. 26 - 4/31

Authors : Agishev, I. N. and G. M. Ivanova, Engs.

Title : Improving steam separation processes in medium-pressure boilers.

Periodical : Elek. sta., **11**, 10-15, N 1955

Abstract : **Authors** report on the remodeling of a 3-drum boiler at a power plant in Siberia. The steam separation processes in a reconditioned equipment are explained in detail. Further remodeling of the equipment at this power plant, e.g., two double-drum boilers, is reported. However, the authors claim further research and tests are necessary. The use of cyclone type separators is advocated. Nine diagrams.

Institution : None

Submitted : No date

IMANGAZIYEV, K.I.; AGISHEV, M. Kh.

Determining the resources of assimilable phosphates in soils by the use of the phosphorus isotope P^{32}. Vest. AN Kazakh. SSR 20 no.12:15-24 D '64 (MIRA 18:2)

1. Chlen-korrespondent AN KazSSR (for Imangaziyev).

AGISHEV, R.

Agishev, R. "In the mines of Bureya", (The development of new coal deposits, outline), Dal'nity Vostok, 1949, No. 1, p. 64-107.

SO: U-4630, 16 Sept. 1953, (Letopis 'Zhurnal 'nykh Statey, No. 23, 1949).

ASIKRITOVA, N.A., red.; BURTSEV, M.I., glavnyy inzh., red.; BURYAK, A.R., red.; GLOTOV, D.I., tokar', red.; ZAROVNYY, P.I., dispetcher, red.; NOSANOV, V.A., red.; TSEPKOV, I.V., red. [deceased]; AGISHEV, R.K., red.; MARKOVA, S.M., red.; KAYDALOVA, M.D., tekhn.red.

[Energomash; 25 anniversary of the Khabarovsk Electric Power Machinery Plant] Energomash; 25 let proizvodstvennoi deiatel'nosti Khabarovskogo zavoda energeticheskogo mashinostroeniia. Khabarovsk, 1958. 349 p. (MIRA 12:9)

1. Khabarovskiy zavod energeticheskogo mashinostroyeniya. 2. Khabarovskiy zavod energeticheskogo mashinostroyeniya "Energomash" (for all except Markova, Kaydalova). 3. Zaveduyushchaya partiynym kabinetom zavoda "Energomash" (for Asikritova). 4. Sekretar' partiynogo byuro zavoda "Energomash" (for Buryak). 5. Deputat Khabarovskogo gorodskogo Soveta deputatov trudyashchikhsya (for Glotov). 6. Direktor zavoda "Energomash" (for Nosanov).

(Khabarovsk--Machinery industry)

AGISHEV, R.Ya., Cand Phys-Math Sci--(diss) "Certain boundary-value problems for one differential equation of ~~a composite~~ the type." Kazan', 1958. 6 pp incl cover (Min of Education RSFSR. Kazan' State Pedag Inst), 150 copies (KL,30-58,121)

AGISHEV, V.K.

On the agenda-mechanization of the processing of resinous wood. Gidroliz. i lesokhim. prom. 18 no.6:32 '65. (MIRA 18:9)

1. TSentral'nyy nauchno-issledovatel'skiy i proyektnyy institut lesokhimicheskoy promyshlennosti.

AGISHEV, V.N.; BUSALAYEV, L.V.

Ejection suction pump. Mashinostroitel' no.11:43 '65.
(MIRA 18:11)

JPRS/DC-214
CSO DC-1237

Name: AGISHEV, Ye. I.

Dissertation: Non-magnetic impulse mass analyzers

Degree: Cand Phys-Math Sci

Defended at [redacted]: Acad Sci USSR, Leningrad Physicotechnical Inst

Publication [redacted] Date, Place: 1956, Leningrad

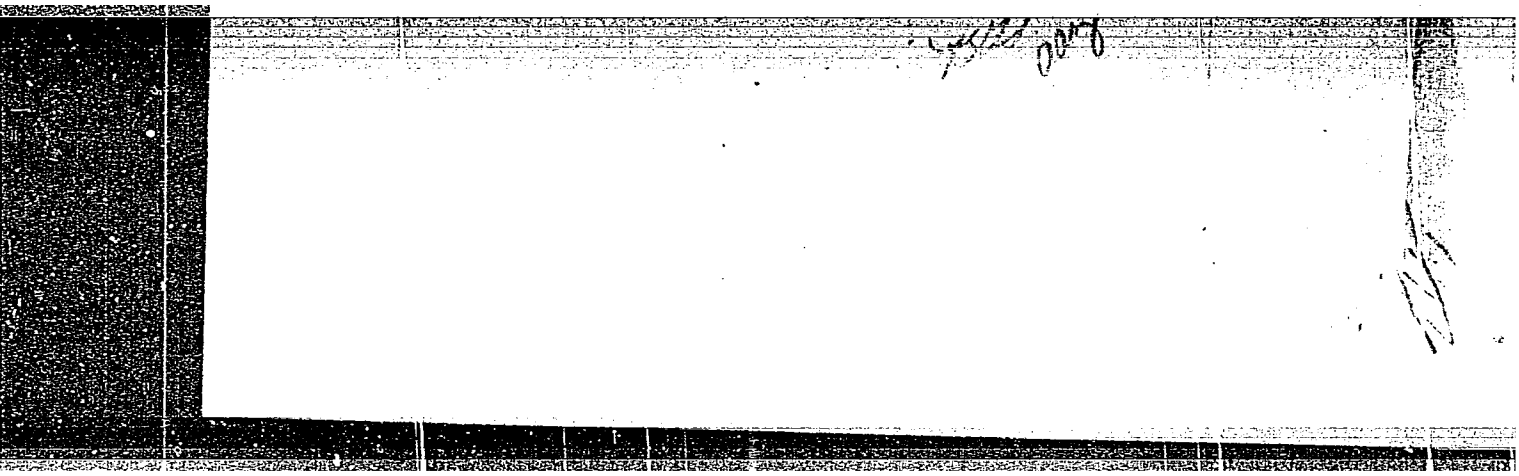
Source: Knizhnaya Letopis', No 47, 1956

7857

IMPULSE MASS SPECTROSCOPE. E. I. Agishev and N. [illegible]

Ionov. Zhur. Tekh. Fiz., 26, 263 (1956) Jan. [illegible]

Results of design modifications developed for mass spectrometers previously described by N. [illegible]



APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100520007-6"

PA - 2873

AUTHOR: Not given

TITLE: Dissertations (July-December 1956). Department for Physical-Mathematical Science. (Zashtchite dissertazii. Otdelenile fisiko-matematicheskikh nauk, Russian)

PERIODICAL: Vestnik Akademii Nauk SSSR, 1957, Vol 27, Nr 4, pp 132-132 (U.S.S.R.)

Received: 5 / 1957 Reviewed: 7 / 1957

ABSTRACT: The following dissertations were submitted at the Institute for Crystallography for the purpose of obtaining the Academic degree of "Candidate of Physical and Mathematical Sciences:

E.D.DUKOVA: "Experimental Research of the Stratified Spiral Growth of Crystals of the Gaseous Phase".

At the Physical-Technical Institute:

S.M.RIVKIN: "Investigation of the Behavior of Unbalances Current Carriers (Experimental Investigation of the Process of Motion, Generation, Recombination of Non-Balanced Current Carriers)"

E.I.AGISHEV: "Non-Magnetic Momentum-Mass-Analyzers".

V.G.BOLCHEV: "The Investigation of the Thermoelectronic and Repeated Electron Emission in the Solid and Liquid State of Brass, Silver, and Germanium as well as in Tin."

Card 1/2

PA - 2873

Dissertations (July-December 1956). Department for Physical-Mathematical Science.

I.I.NOVAK: "The Use of Infrared Spectroscopy for the Investigation of Some Types of Intermolecular Interaction".

L.K.PEKER: "The Properties of Atomic Nuclei in the Case of Low Energy Excitation."

ASSOCIATION: Not given
PRESENTED BY:
SUBMITTED:
AVAILABLE: Library of Congress

Card 2/2

AUTHORS: Agishev, Ye. I., Ionov, N. I. SOV/57-58-8-27/37

TITLE: Mass Spectrometer With a Pulsed Ion Source (Mass-spektroskop s impul'snym istoohnikom ionov)

PERIODICAL: Zhurnal tekhnicheskoy fiziki, 1958, Nr 8, pp. 1775 - 1788 (USSR)

ABSTRACT: Since the present work is a continuation of that reported in reference 1 problems bearing upon the resolution and the intensity of the mass spectrograph are approached in this paper. Further experiments carried out with test mass spectrographs in the laboratory are described. These experiments furnished the design data for industrial equipment similar to the series of test apparatus. The evidence advanced provides the following information of the particular features of the pulsed mass spectrograph: 1) The resolution of the spectrograph can be raised to values as high as several hundreds. The resolution is basically limited by difficulties arising in the design of an amplifier with a sufficient amplification factor and a band width of the order of 100 mc. 2) The intensity of this apparatus operating with an ion-focusing source is higher than that

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Mass Spectrometer With a Pulsed Ion Source

of magnetic mass spectrographs with the same resolution. This is due to the fact that practically no limitations are imposed on the diameter of the aperture of the ion source in mass spectroscopes. 3) On account of the direction and velocity focusing it is possible to analyze the ions being formed in the ionization chamber. Thus the intensity of light is increased and it is possible to investigate ionization processes with a small probability (for example the photoionization of gases). 4) When the accelerating potentials U_1 are small the resolution is determined from the initial energy distribution of the ions. Hence, the mass spectroscope can be used in the measurement of the width of the mass-peaks of the source energies of split-off ions. A knowledge of the initial energies is highly important in the investigation of the binding energies of atoms in molecules. 5) The oscillograph permits to localize simultaneously the whole mass spectrum of the gas under investigation corresponding to one definite moment of ionization. 6) The modifications of the gas composition in the ionization chamber in principle can be located by the pulse sequence of the ionizing pulses of the electron current which in the de-

Mass Spectrometer With a Pulsed Ion Source

scribed equipment is 10^{-4}sec. This particular feature of the device is of importance in the study of the time course of various processes. The Scientific Superior Collaborators E. Ya. Zandberg and B. A. Mamyrin assisted in the construction of the test mass spectroscopes. There are 8 figures and 5 references, 4 of which are Soviet.

ASSOCIATION: Leningradskiy fiziko-tekhnicheskiy institut AN SSSR (Leningrad Physical and Technical Institute, AS USSR)

SUBMITTED: July 10, 1957

AGISHEV, Ye.I.; BELYAKOV, Yu.I.

Thermionic emission from nickel in the presence of halides. Zhur. tekh.fiz. 29 no.12:1480-1483 D '59. (MIRA 14:6)
(Thermionic emission) (Nickel)

24.6700, 24.7400

77316
SOV/57-30-2-13/18

AUTHORS: Agishev, E. I., Belyakov, Yu. I.

TITLE: A Nonstationary Thermionic Emission From Nickel and Tungsten in Vacuum

PERIODICAL: Zhurnal tekhnicheskoy fiziki, 1960, Vol 30, Nr 2, pp 223-225 (USSR)

ABSTRACT: Using a time-of-flight (pulse) mass spectroscope described earlier by Agishev and Ionov (ZhTF, XXVIII, 1775, 1958), the authors were able to observe a short-living m/e 100 peak during fast heating of nickel and tungsten emitters up to a temperature of 600 to 900° C. The effect was reproducible and lasted only a few seconds after which one could observe the "stationary" peaks of alkaline metals. The effect was obtainable even after introducing CCl_4, freon, and butane, up to a pressure of 10^{-5} to 10^{-4} mm Hg. Platinum did not show this effect. Although the authors have no explanation for the effect,

Card 1/4

they present various experimental results. The curve shown on Fig. 1 represents the relationship between the maximum current, I, and the time of cooling of the emitter. The emitter was first heated up to 850° C and held there for 10 sec. It was then cooled for a time t, after which it was again heated to 850° C, and the maximum current taken. The curve was reproducible, and the effect in general does not show signs of wear. The authors also investigated the I_{max} as function of the minimum temperature to which the emitter would cool down during the time t. They further obtained a curve showing the maximum e/m 101 ion current versus the maximum temperature of fast heating. The tungsten emitter showed a similar behavior. The authors noted that the effect disappeared after heating the emitter above 1200° C. This could mean that this very probably complex ion results from adsorption on the emitter surface of some residual gas components of the system. Heating above 1200° C then destroys the "active" surface

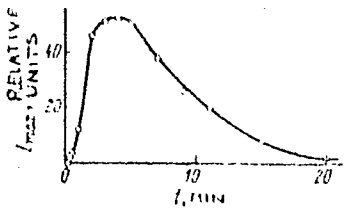

Fig. 1.

layer responsible for some catalytic action producing the 101 ion. The platinum surface is probably free from this catalyzer even at low temperatures. The ions could be the result of some organic radical with low potential of ionization. Professor N. I. Ionov discussed results and supplied advice. There are 2 figures; and 2 Soviet references.

A Nonstationary Thermionic Emission From Nickel and Tungsten in Vacuum

77316
SOV/57-30-2-13/18

ASSOCIATION: Physico-Technical Institute AS USSR, Leningrad (Fiziko-tekhnicheskiy institut AN SSSR, Leningrad)

SUBMITTED: August 14, 1959

Card 4/4

MELEKHINA, V.P.; Prinimali uchastiye: DYUZHEVA, Yu.V., khimik; AGISHEVA, A.S., khimik; KUKAINA, V.P., khimik; KOSENKOVA, A.M., khimik

Materials for setting up a sanitary protective zone for Klin Thermometer Manufacturing Factory. Uch. zap. Mosk. nauch.-issl. inst. san. i gig. no.6: 41-44 '60. (MIRA 14:10)

1. Klinskaya sanitarnaya epidemiologicheskaya stantsiya (for Agisheva). 2. Moskovskaya oblastnaya sanitarnaya epidemiologicheskaya stantsiya (for Kukaina, Kosenkova). 3. Moskovskiy nauchno-issledovatel'skiy institut sanitarii i gigiyeny imeni F.F.Erismana (for Dyuzheva).
(KLIN--AIR--POLLUTION) (MERCURY--TOXICOLOGY)

ABRAMOV, M.M., dots.; AGISHEVA, S.A.

Chemical composition and physiological effect of extracts from the leaves and fruit of Zygophyllum fabago L. Nauch. trudy Samark. inst. sov. torg. 8:255-259 '57. (MIRA 12:7)
(Caltrop)

AGITSKIY, V.A.; DYN'KINA, S.Ye.

Underground leaching of copper. Gor.zhur.no.11:35-38 N '56.
(MLRA 10:1)

1.Unipromed'.
(Copper mines and mining) (Leaching)

LEONTOVICH, M.A., akademik, redaktor; GREKHOVA, M.T., professor, redaktor; AYZERMAN, M.A., doktor tekhnicheskikh nauk, redaktor; GINZBURG, V.A., professor, redaktor; GORELIK, G.S., professor, redaktor; LEONTOVICH-ANDRONOVA, Ye.A., dotsent, redaktor; ZHELETSOV, N.A., dotsent, redaktor; PETROV, V.V., kandidat tekhnicheskikh nauk, redaktor; NIKOLAYEV, Ya.N., dotsent, redaktor; AGITOVA, N.A., redaktor; BRYLEYEV, A.M., redaktor; ALEKSEYEV, T.V., tekhnicheskiy redaktor.

[Dedicated to the memory of Aleksandr Aleksandrovich Andronov] Pamiati Aleksandra Aleksandrovicha Andronova. Moskva, 1955. 718 p.
(MIRA 8:4)

1. Akademiya nauk SSSR.
(Mathematical physics)(Automatic control)(Astrophysics)

DEVYATYKH, G.G.; AGIULOV, N.Kh.

Effect of the take-off rate on the efficiency of film rectifying columns. Zhur. fiz. khim. 34 no. 11:2509-2512 N '60.
(MIRA 14:1)

1. Nauchno-issledovatel'skiy institut khimii pri Gor'kovskom gosudarstvennom universitete.
(Distillation)

AGIYAN, E. T.

AGIYAN, E. T.: "The characteristics of hybrids of local sheep and the fine-wooled breeds from the Spitak region of the Armenian SSR, and methods to continue improving them." Yerevan, 1955. Min Higher Education USSR. Yerevan Zooveterinary Inst. (Dissertation for the Degree of Candidate of Agricultural Sciences)

SO: Knizhnaya Letopis' No. 47, 19 November 1955. Moscow.

USSR / Farm Animals. Cattle. Q-3

Abs Jour: Ref Zhur-Biol., No 12, 1958, 54746.

Author : Agiyan, E. T., Matinyan, R. M., Minasyan, R. O.
Inst : Not given.
Title : The Problem of the Frequency of the Feeding of Calves.

Orig Pub: Byul. nauchno-tekhn. inform. Arm. n.-i. in-ta zhivotnovodstva i veterinarii, 1957, No 1, 11-14.

Abstract: During the first two months of feeding milky rations to calves twice and thrice daily, no differences in their development were ascertained. In the second half of the milk-feeding period, during which rations were supplemented with roughages and concentrates, the calves fed thrice daily, according to the author's opinion, were developing more uniformly and intensively.

Card 1/1

Q-3

USSR / Farm Animals. Sheep and Goats.

Abs Jour : Ref Zhur - Biol., No 14, 1958, No 64475

Author : Agiyan, E. T.
Inst : Armenian Scientific Research Institute of Animal Husbandry and Veterinary Medicine.
Title : On the Quality of the Wool of the Fine-Wool X Coarse-Wool Hybrids of the Spitak Rayon of the Armenian SSR

Orig Pub : Tr. Arm. n.-i. in-ta zhivotnovodstva i veterinarii, 1957, 2, 53-66.

Abstract : The results of the crossing of the local coarse-weool ewes of the Mazekh breed with rams of the Caucasian fine-wool and Soviet Merino breeds in the kolkhozes of the Spitak Rayon of the Armenian SSR are described. There was a considerable increase of the production and improvement of the quality of wool in the crossbreeds. The wool of the adult hybrids contains more down wool and intermediate fiber than

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MANUKYAN, M.A., kand.sel'skokhozyaystvennykh nauk; AGIYAN, E.T., kand.-sel'skokhozyaystvennykh nauk

Structure of the flock in sheep farming of the Armenian S.S.R. Trudy Arm. nauch.-issl. inst.zhiv. i vet. 4:41-52 '60. (MIRA 15:5)

(Armenia--Sheep)

ACC NR: AT7004334 SOURCE CODE: UR/0000/66/000/000/0161/0171

AUTHOR: Agizim, A. M. (L'vov); Kirianaki, N. V. (L'vov); Marenkov, V. B. (L'vov)

ORG: none

TITLE: Encoders and decoders in a six-channel radio telemetry system

SOURCE: AN UkrSSR. Metody i sredstva preobrazovaniya informatsii (Methods and means of information conversion). Kiev, Naukova, dumka, 1966, 161-171

TOPIC TAGS: telemetry system, analog digital encoder, digital analog decoder

ABSTRACT: Developed by the L'vov Polytechnic Institute in 1961-62, the radio-telemetry system is intended for simultaneous measurement of temperature (T), salinity (S), and depth (H) at six points of the ocean at a range up to 50 km from the receiver-carrying ship; a depth down to 200 m is measurable. The encoder is based on a bridge circuit with a resistance box in the comparison arm; the lowest resistor in this box is 30 kohms, and the highest, 60 Mohms, which permits neglecting relay-contact resistance and relay-insulation resistance. A binary-decimal code with weights 242'1 and a polarized relay in the measure magazine simplify the circuit, cut

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ACC NR: AT7004334

down consumption, and accelerate conversion. High sensitivity of the bridge is ensured by its pulse supply; the pulses are taken from a capacitor intermittently connected to a storage battery by a relay. The decoder installed at the ship isolates subcarrier frequencies of 5, 7, 9, 11 kc from received (amplified and detected) radio signals. After a second detection, an AND-gate singles out the starting pulse, and an OR-gate generates clock pulses used for counter operation. A digital-analog converter yields data to a recorder, a punch, and a display unit. Other details are given. Orig. art. has: 3 figures and 8 formulas.

SUB CODE: 09, 17 / SUBM DATE: 14Jul66 / ORIG REF: 002

Card 2/2

AGKATSEV, Vladimir Mikhaylovich; NIKOLAYEV, V.G., red.; DATRIYEVA, Ye.U., tekhn. red.

[For further expansion of fruit culture and viticulture in North Ossetia] Za dal'neishii pod"em sadovodstva i vinogradarstva v Severnoi Osetii. Ordzhonikidze, Severo-Osetinskoe knizhnoe izd-vo, 1960. 27 p. (MIRA 14:11)
(North Ossetian A.S.S.R.—Fruit culture)
(North Ossetian A.S.S.R.—Viticulture)

AGLADZE, G.D., Cand Agr Sci -- (diss) "On the problem of the characteristics of the vegetative ~~layer~~ and ~~the~~ establishment of ~~feeding price~~ (the nutritive value) of the Shirak-Eldarskiy winter pastures." Tbilisi, Pub House of Georgian Agr Inst., 1958, 22 pp (Min of Agr USSR. Georgian Order of Labor Red Banner Agr Inst) 100 copies (KL, 32-58, 110)

USSR/Colloid Chemistry. Dispersion Systems B-14

Abs Jour : Ref Zhur - Khimiya, No 8, 1957, 26395

Author : S.N. Papuashvili, M.Ye. Shishniashvili, L.D. Agladze,
Inst : Academy of Sciences of Georgian SSR, Institute of Chemistry
Title : Nature of Acidity of Al-Bentonite and Influence of Exchangeable (Mobile) Aluminum on Its Colloidal-Chemical Properties

Orig Pub : Tr. In-ta khimii AN GruzSSR, 1956, 12, 23-35

Abstract : It is shown that the variety of bentonite - Al-Bentonite (I) is gradually saturated not with H^+ ions, but with Al^{3+} ions during the process of refining by electrodialysis and, consequently, instead of its H-variety, the Al-variety is formed contrarily to the usual idea. The formation of Al-bentonite is the result of partial destruction during the electrodialysis process in colloidal minerals, at which the amount of exchangeable Al^{3+} rises sharply with the decrease of pH of the suspension to a certain limit. It is shown that at the potentiometric titration, the amount of alkali absorbed by I is proportional to the amount of exchangeable Al^{3+}, if the chemical interaction of the alkali with the alumosilicate

Card : 1/2

Abs Jour : Ref Zhur - Khimiya, No 8, 1957, 26395

nucleus of I was insignificant. The influence of the content of exchangeable Al^{3+} on some colloidal-chemical properties of electrodialysed suspensions of I (structural viscosity, dynamic shearing stress, stability and water yield) was also studied quantitatively. The hydrophilic nature and the electro-kinetic potential of colloidal I particles decrease with the increase of the exchangeable Al^{3+}.

PAPUASHVILI, S.N.; SHISHINASHVILI, M.Ye.; AGLADZE, L.D.

Influence of mobile aluminum and silicon on the structural cohesion and shearing stress of clay suspensions [in Georgian with summary in Russian]. Trudy Inst. khim. AN Gruz. SSR 13:3-16 '57. (MIRA 11:4)
(Aluminum) (Silicon) (Clay)

PAPUASHVILI, S.N.; SHISHNIASHVILI, M.Ye.; AGLADZE, L.D.

Effect of electrolytes on the structural and mechanical properties of an askangel suspension. Trudy Inst.khim. AN Gruz.SSR 14: 73-82 '58. (MIRA 13:4)
(Askangel)

ACC NR: AP6031950 SOURCE CODE: UR/0251/66/043/003/0593/0598

AUTHOR: Papava, G. Sh.; Agladze, L. D.; Tsiskarishvili, P. D.; Vinogradova, S. V.; Korshak, V. V. (Corresponding member AN SSSR)

ORG: Institute of Physical and Organic Chemistry im. P. G. Melikishvili Academy of Sciences GruzSSR (Institut fizicheskoy i organicheskoy khimii, Akademii nauk GruzSSR); Institute of Hetero-Organic Compounds, Academy of Sciences, SSSR (Institut elementoorganicheskikh soyedineniy, Akademiya nauk SSSR)

TITLE: Mixed polyaryl ester-penton block-copolymers

SOURCE: AN GruzSSR. Soobshcheniya, v. 43, no. 3, 1966, 593-598

TOPIC TAGS: block copolymer, polyaryl ester, penton, phenolphthalein, bisphenol A, isophthaloyl chloride, terephthaloyl chloride, polyaryl resin

ABSTRACT: Several mixed polyaryl ester-penton block-copolymers were prepared by polycondensation of various amounts of penton, phenolphthalein and for bisphenol-A, and terephthaloyl and/or isophthaloyl chloride. The copolymers yielded strong films from chloroform solutions. The effects of individual components on the properties of the copolymers were studied. The results, given in the form of tables, indicate that: 1) introduction of up to 10% penton does not substantially lower the softening temperature of polyaryl esters, however, larger amounts of penton lower this temperature; 2) for equal penton content, the softening temperature of the copolymers is affected by the structure of both the bisphenol and the carboxylic acid; 3) intro-

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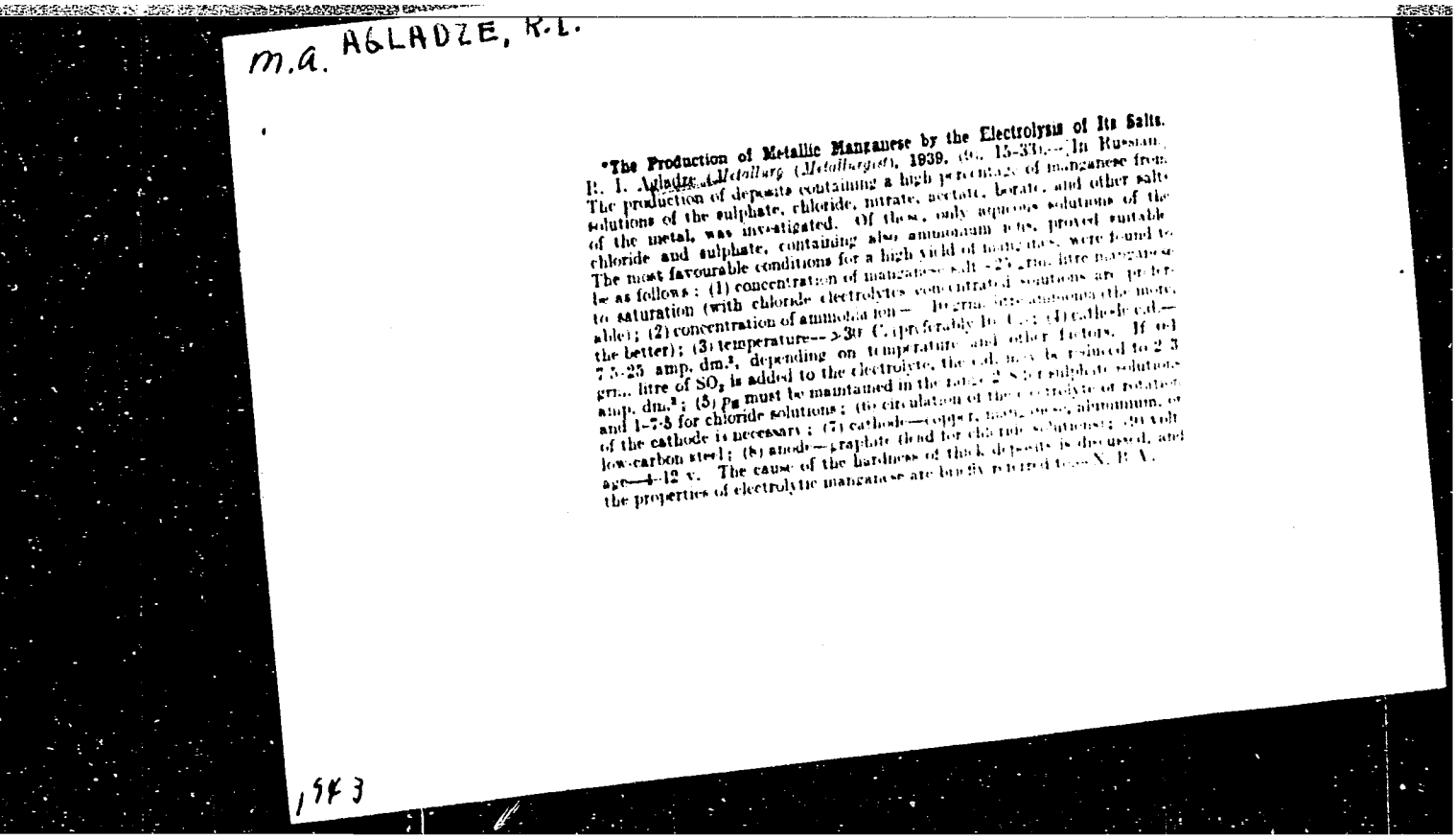
ACC NR: AP6031950

duction in the copolymer backbone of components with a different structure lowers the softening temperature of the copolymers; 4) small amounts of penton (up to 2.5%) increase the crystallinity of the copolymers, while larger amounts lower this crystallinity and inprove their elasticity. Orig. art. has: 4 tables. [BO]

SUB CODE: 07, 11/ SUBM DATE: 20Nov65/ ORIG REF: 001/

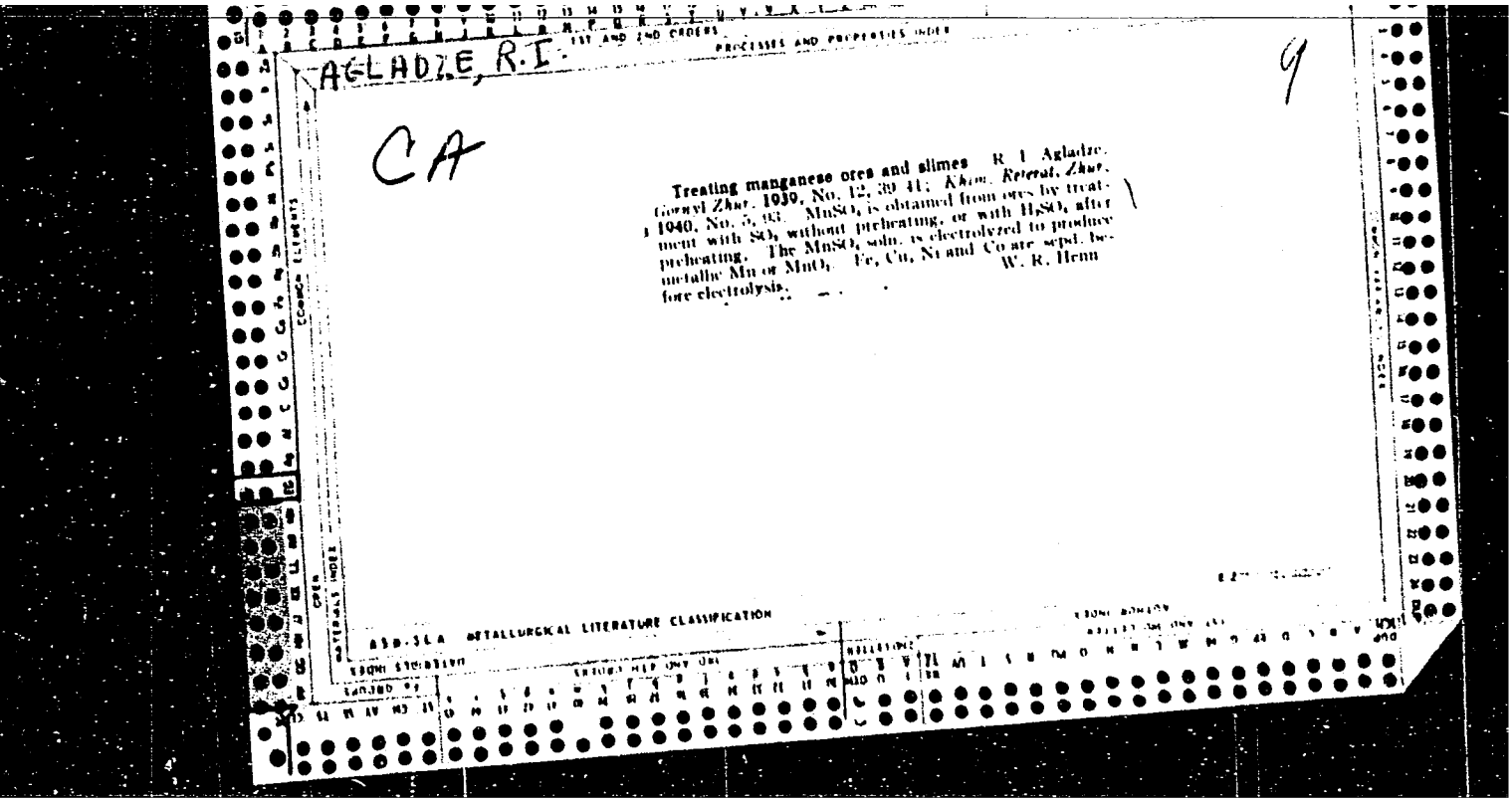
Card 2/2 LC



M.A. AGLADZE, R.I.

*The Production of Metallic Manganese by the Electrolysis of Its Salts. R. I. Agladze. *Metallurg* (*Metallurgist*), 1939, (6), 15-33.—In Russian. The production of deposits containing a high percentage of manganese from solutions of the sulphate, chloride, nitrate, acetate, borate, and other salts of the metal, was investigated. Of these, only aqueous solutions of the chloride and sulphate, containing also ammonium ions, proved suitable. The most favourable conditions for a high yield of metal, these were found to be as follows: (1) concentration of manganese salt—2% grm.-litre manganese to saturation (with chloride electrolytes concentrated solutions are preferable); (2) concentration of ammonium ion—[illegible] grm.-ions/litre; the more the better); (3) temperature—>30° C. (preferably to 60°); (4) cathode current density, 7.5-25 amp. dm.$^{-2}$, depending on temperature and other factors. If 0.1 grm.-litre of SO_2 is added to the electrolyte, the cd. may be raised to 2.3 amp. dm.$^{-2}$; (5) p_H must be maintained in the range 2-8.5 (sulphate solutions) and 1-7.5 for chloride solutions; (6) circulation of the electrolyte or rotation of the cathode is necessary; (7) cathode—copper, nickel, steel, aluminium, or low-carbon steel; (8) anode—graphite (lead for chloride solutions); 90 volt age—4-12 v. The cause of the hardness of thick deposits is discussed, and the properties of electrolytic manganese are briefly reported.—N. P. V.

1943


AGLADZE, R.I.

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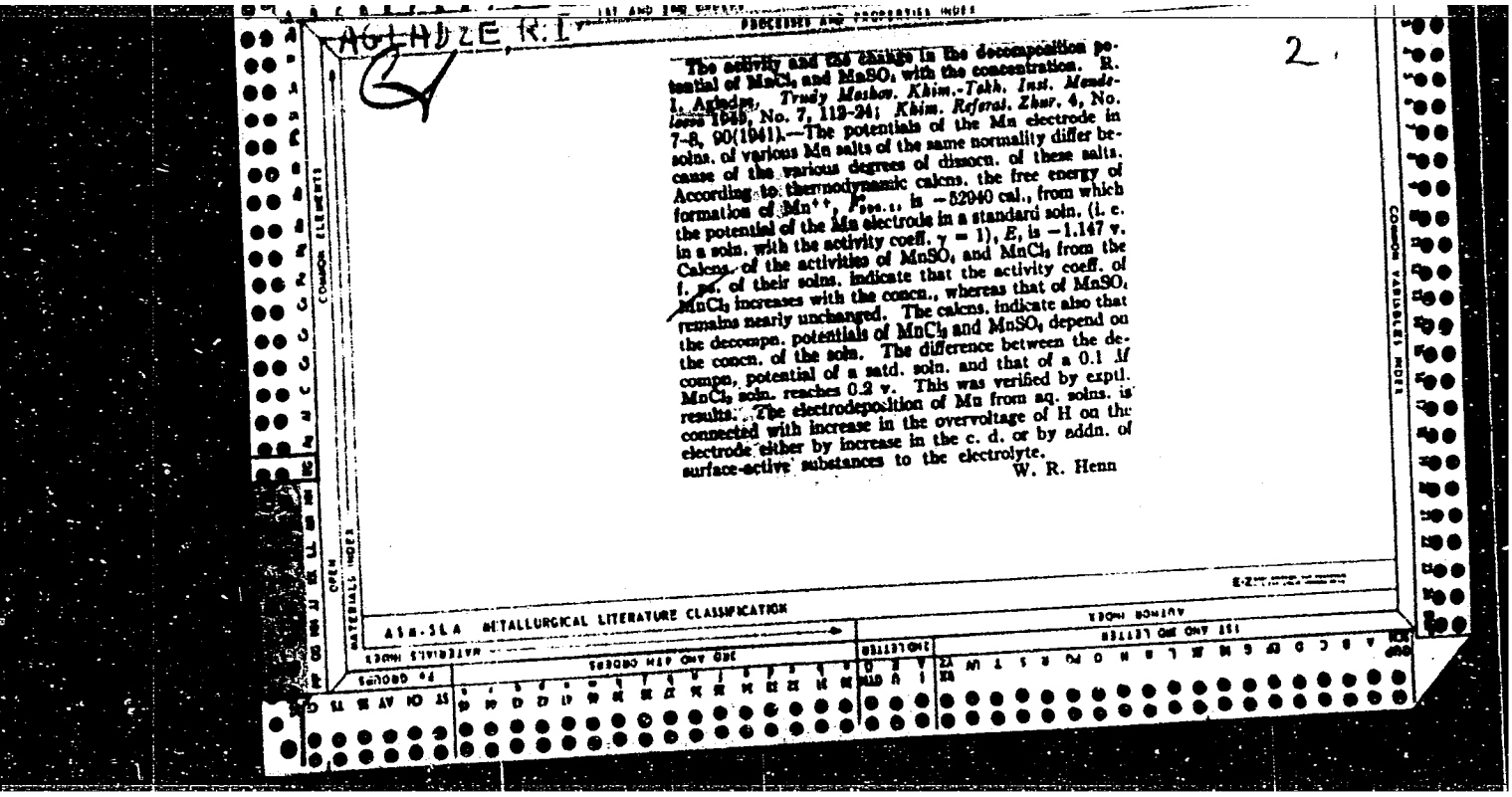
9

Treating manganese ores and slimes. R. I. Agladze. Gornyi Zhur. 1939, No. 12, 39-41; *Khim. Referat. Zhur.* 1940, No. 5, 93. $MnSO_4$ is obtained from ores by treatment with SO_2 without preheating, or with H_2SO_4 after preheating. The $MnSO_4$ soln. is electrolyzed to produce metallic Mn or MnO_2. Fe, Cu, Ni and Co are sepd. before electrolysis. W. R. Henn

ASD-SLA METALLURGICAL LITERATURE CLASSIFICATION

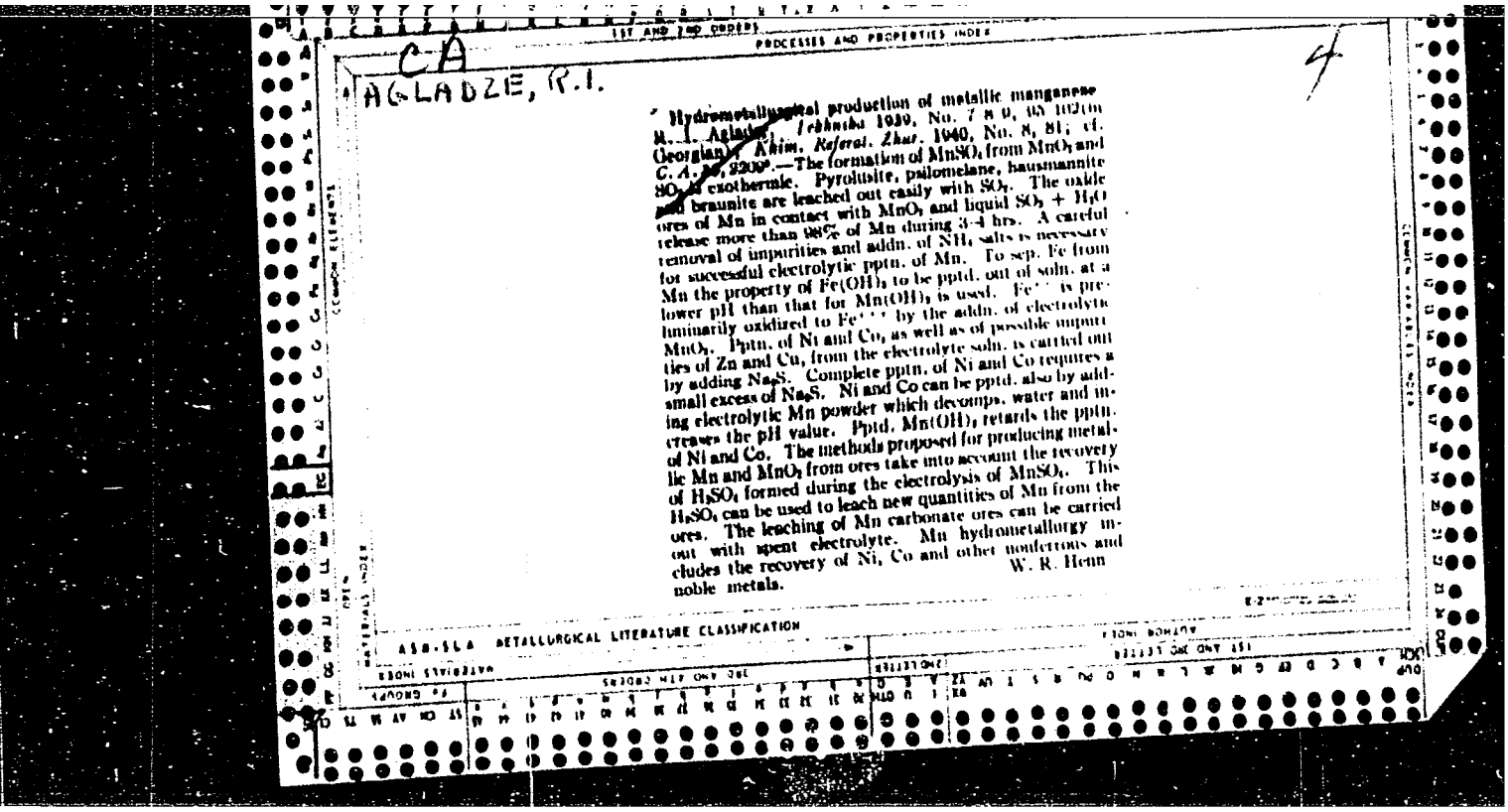


AGLADZE, R. I.

2.

The activity and the change in the decomposition potential of $MnCl_2$ and $MnSO_4$ with the concentration. R. I. Agladze, *Trudy Mosk. Khim.-Tekh. Inst. Mendeleeva* 1945, No. 7, 113-24; *Khim. Referat. Zhur.* 4, No. 7-8, 90(1941).—The potentials of the Mn electrode in solns. of various Mn salts of the same normality differ because of the various degrees of dissocn. of these salts. According to thermodynamic calcns. the free energy of formation of Mn^{++}, $F_{298.1°}$, is −52940 cal., from which the potential of the Mn electrode in a standard soln. (i. e. in a soln. with the activity coeff. $\gamma = 1$), E, is −1.147 v. Calcns. of the activities of $MnSO_4$ and $MnCl_2$ from the f. pt. of their solns. indicate that the activity coeff. of $MnCl_2$ increases with the concn., whereas that of $MnSO_4$ remains nearly unchanged. The calcns. indicate also that the decompn. potentials of $MnCl_2$ and $MnSO_4$ depend on the concn. of the soln. The difference between the decompn. potential of a satd. soln. and that of a 0.1 *M* $MnCl_2$ soln. reaches 0.2 v. This was verified by exptl. results. The electrodeposition of Mn from aq. solns. is connected with increase in the overvoltage of H on the electrode either by increase in the c. d. or by addn. of surface-active substances to the electrolyte.

W. R. Henn



CA

AGLADZE, R.I.

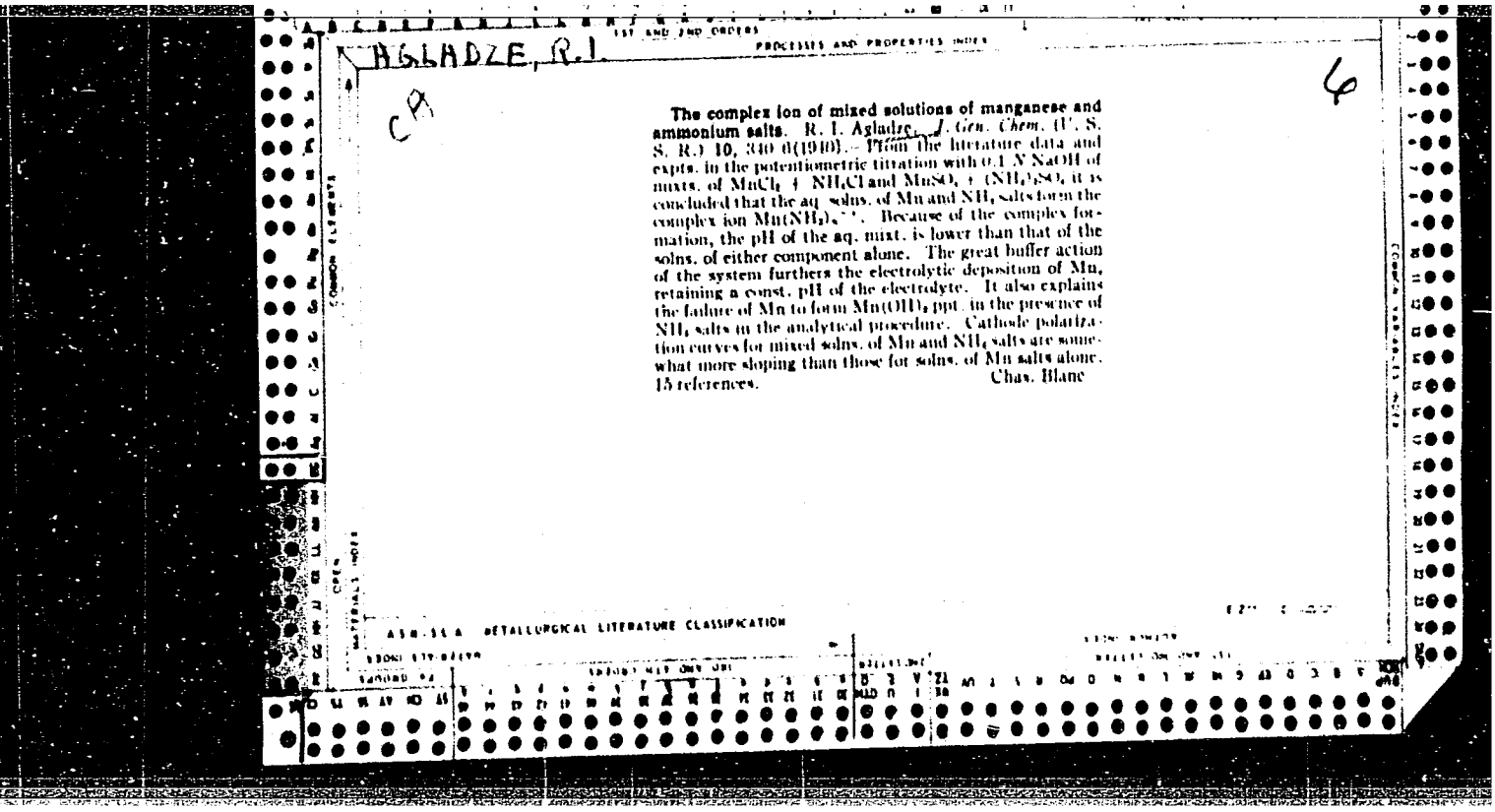
4

PROCESSES AND PROPERTIES INDEX

Hydrometallurgical production of metallic manganese. R. I. Agladze. *Tekhnika* 1939, No. 7 8 9, 85 102(in Georgian); *Khim. Referat. Zhur.* 1940, No. 8, 81; cf. *C. A.* 33, 2209.—The formation of $MnSO_4$ from MnO_2 and SO_2 is exothermic. Pyrolusite, psilomelane, hausmannite and braunite are leached out easily with SO_2. The oxide ores of Mn in contact with MnO_2 and liquid $SO_2 + H_2O$ release more than 98% of Mn during 3-4 hrs. A careful removal of impurities and addn. of NH_4 salts is necessary for successful electrolytic pptn. of Mn. To sep. Fe from Mn the property of $Fe(OH)_3$ to be pptd. out of soln. at a lower pH than that for $Mn(OH)_2$ is used. Fe^{++} is preliminarily oxidized to Fe^{+++} by the addn. of electrolytic MnO_2. Pptn. of Ni and Co, as well as of possible impurities of Zn and Cu, from the electrolyte soln. is carried out by adding Na_2S. Complete pptn. of Ni and Co requires a small excess of Na_2S. Ni and Co can be pptd. also by adding electrolytic Mn powder which decomps. water and increases the pH value. Pptd. $Mn(OH)_2$ retards the pptn. of Ni and Co. The methods proposed for producing metallic Mn and MnO_2 from ores take into account the recovery of H_2SO_4 formed during the electrolysis of $MnSO_4$. This H_2SO_4 can be used to leach new quantities of Mn from the ores. The leaching of Mn carbonate ores can be carried out with spent electrolyte. Mn hydrometallurgy includes the recovery of Ni, Co and other nonferrous and noble metals.

W. R. Henn

A58-51A METALLURGICAL LITERATURE CLASSIFICATION

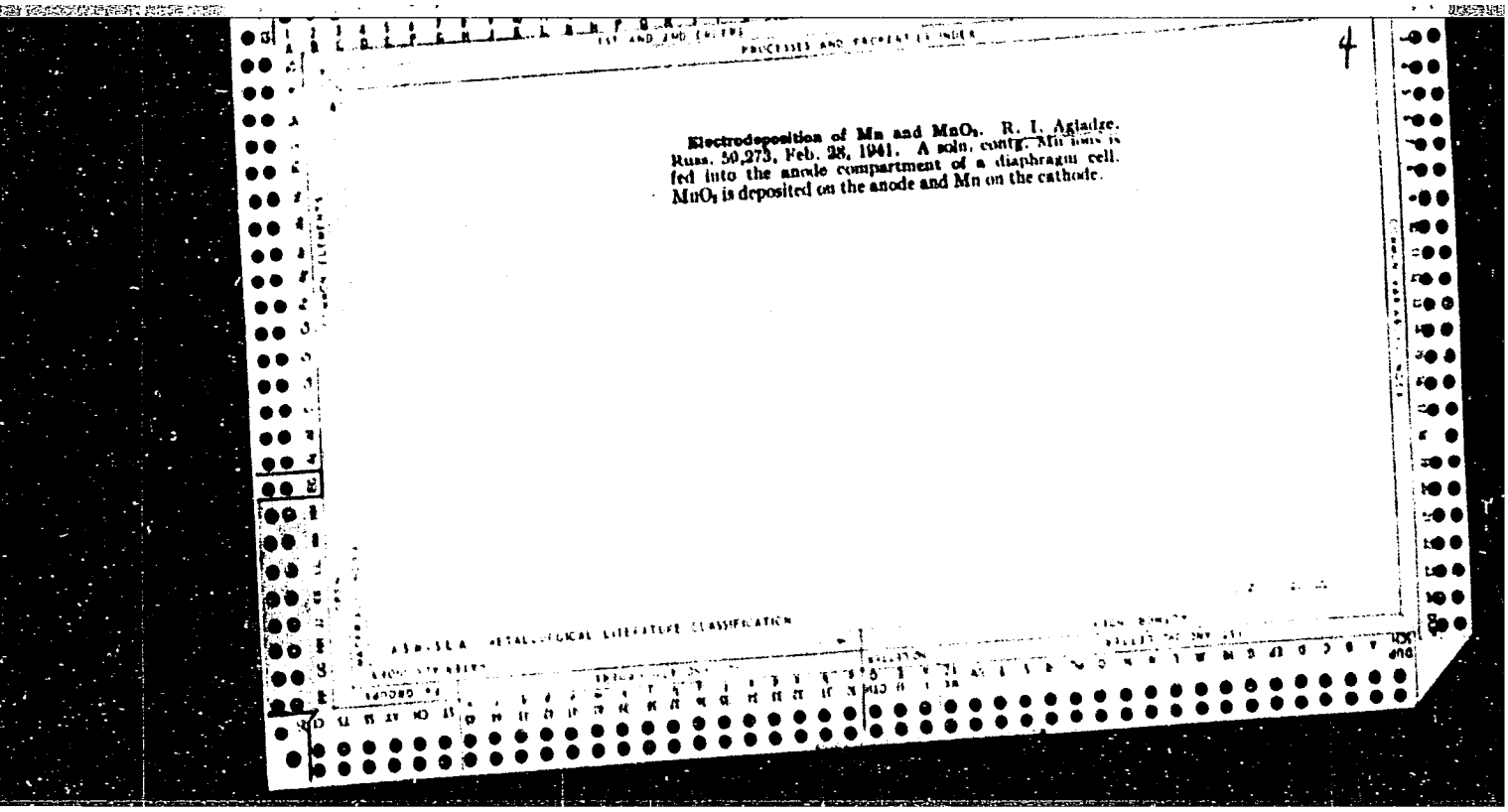


AGLADZE, R.I

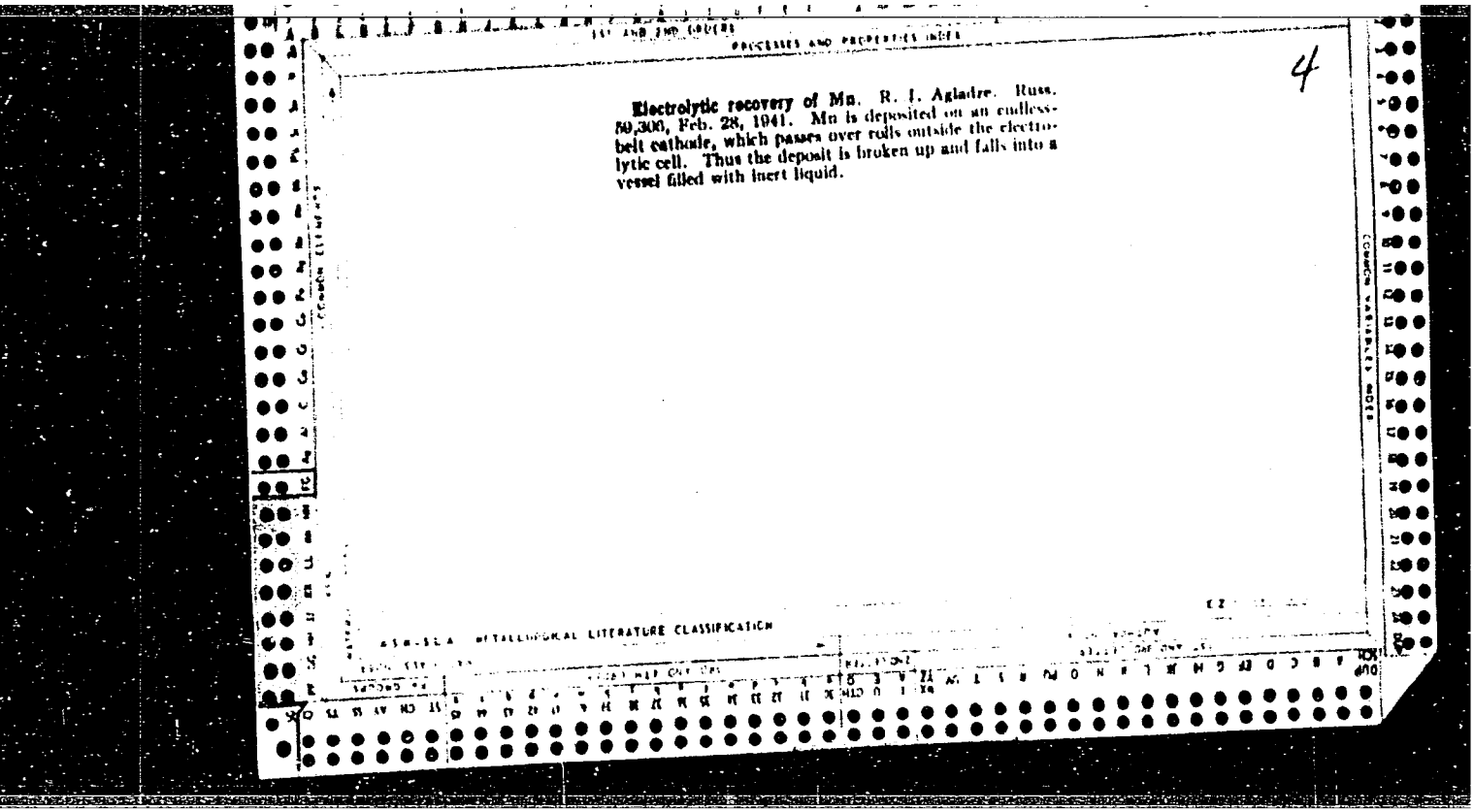
6

The complex ion of mixed solutions of manganese and ammonium salts. R. I. Agladze. *J. Gen. Chem.* (U. S. S. R.) 10, 340-6(1940).—From the literature data and expts. in the potentiometric titration with 0.1 *N* NaOH of mixts. of $MnCl_2$ + NH_4Cl and $MnSO_4$ + $(NH_4)_2SO_4$ it is concluded that the aq. solns. of Mn and NH_4 salts form the complex ion $Mn(NH_3)_6^{++}$. Because of the complex formation, the pH of the aq. mixt. is lower than that of the solns. of either component alone. The great buffer action of the system furthers the electrolytic deposition of Mn, retaining a const. pH of the electrolyte. It also explains the failure of Mn to form $Mn(OH)_2$ ppt. in the presence of NH_4 salts in the analytical procedure. Cathode polarization curves for mixed solns. of Mn and NH_4 salts are somewhat more sloping than those for solns. of Mn salts alone. 15 references.

Chas. Blanc

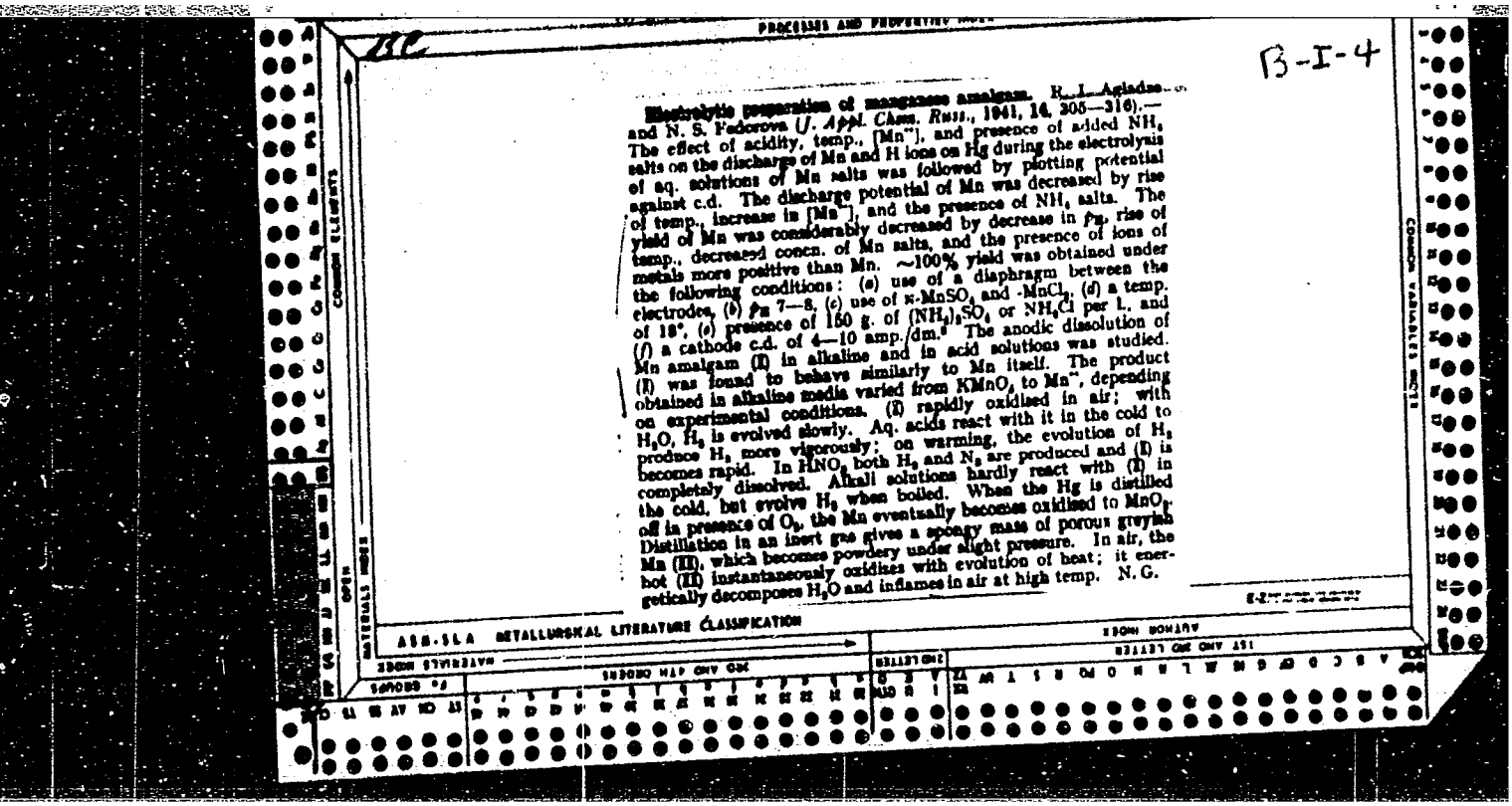


Electrodeposition of Mn and MnO_2. R. I. Agladze. Russ. 50,273, Feb. 28, 1941. A soln. contg. Mn^{++} ions is fed into the anode compartment of a diaphragm cell. MnO_2 is deposited on the anode and Mn on the cathode.



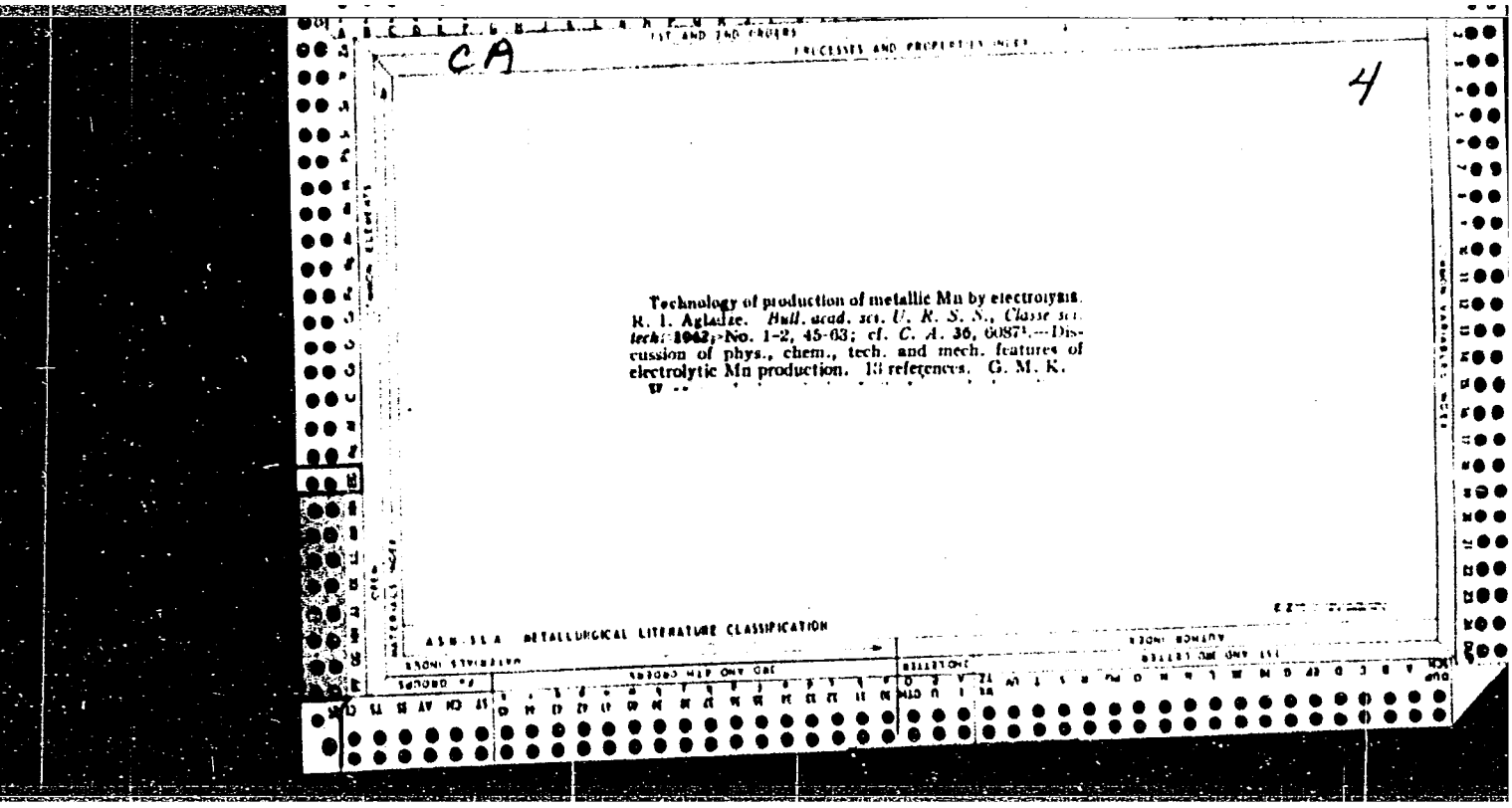
4

Electrolytic recovery of Mn. R. I. Agladze. Russ. 59,306, Feb. 28, 1941. Mn is deposited on an endless-belt cathode, which passes over rolls outside the electrolytic cell. Thus the deposit is broken up and falls into a vessel filled with inert liquid.



B-I-4

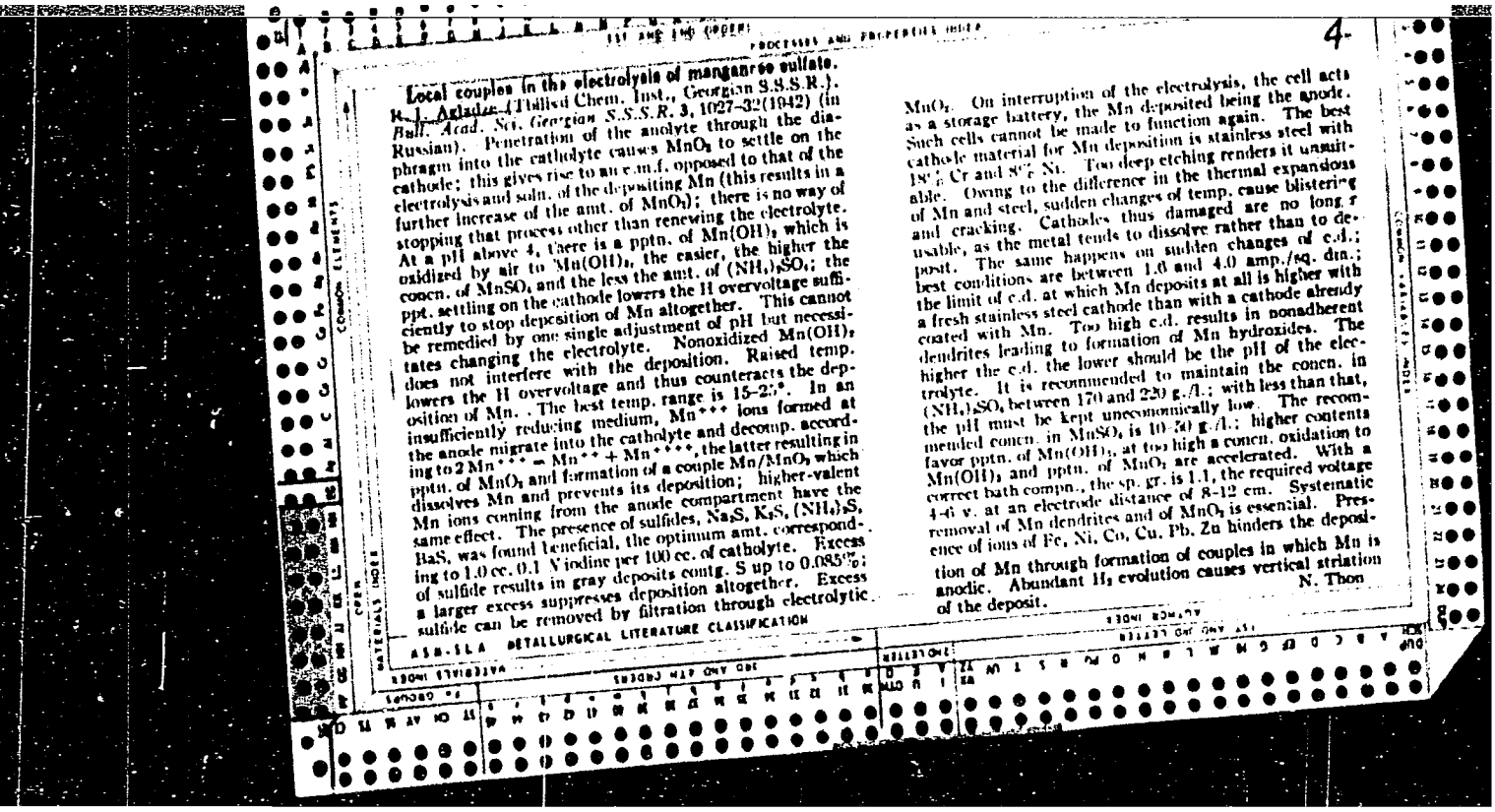
Electrolytic preparation of manganese amalgam. R. I. Agladze and N. S. Fedorova. *J. Appl. Chem. Russ.*, 1941, 14, 305—316).—The effect of acidity, temp., [Mn^{++}], and presence of added NH_4 salts on the discharge of Mn and H ions on Hg during the electrolysis of aq. solutions of Mn salts was followed by plotting potential against c.d. The discharge potential of Mn was decreased by rise of temp., increase in [Mn^{++}], and the presence of NH_4 salts. The yield of Mn was considerably decreased by decrease in p_H, rise of temp., decreased concn. of Mn salts, and the presence of ions of metals more positive than Mn. ~100% yield was obtained under the following conditions: (*a*) use of a diaphragm between the electrodes, (*b*) p_H 7—8, (*c*) use of N-$MnSO_4$ and -$MnCl_2$, (*d*) a temp. of 18°, (*e*) presence of 150 g. of $(NH_4)_2SO_4$ or NH_4Cl per l., and (*f*) a cathode c.d. of 4—10 amp./dm.^{2} The anodic dissolution of Mn amalgam (I) in alkaline and in acid solutions was studied. (I) was found to behave similarly to Mn itself. The product obtained in alkaline media varied from $KMnO_4$ to Mn^{++}, depending on experimental conditions. (I) rapidly oxidised in air; with H_2O, H_2 is evolved slowly. Aq. acids react with it in the cold to produce H_2 more vigorously; on warming, the evolution of H_2 becomes rapid. In HNO_3 both H_2 and N_2 are produced and (I) is completely dissolved. Alkali solutions hardly react with (I) in the cold, but evolve H_2 when boiled. When the Hg is distilled off in presence of O_2, the Mn eventually becomes oxidised to MnO_2. Distillation in an inert gas gives a spongy mass of porous greyish Mn (II), which becomes powdery under slight pressure. In air, the hot (II) instantaneously oxidises with evolution of heat; it energetically decomposes H_2O and inflames in air at high temp. N. G.



CA

4

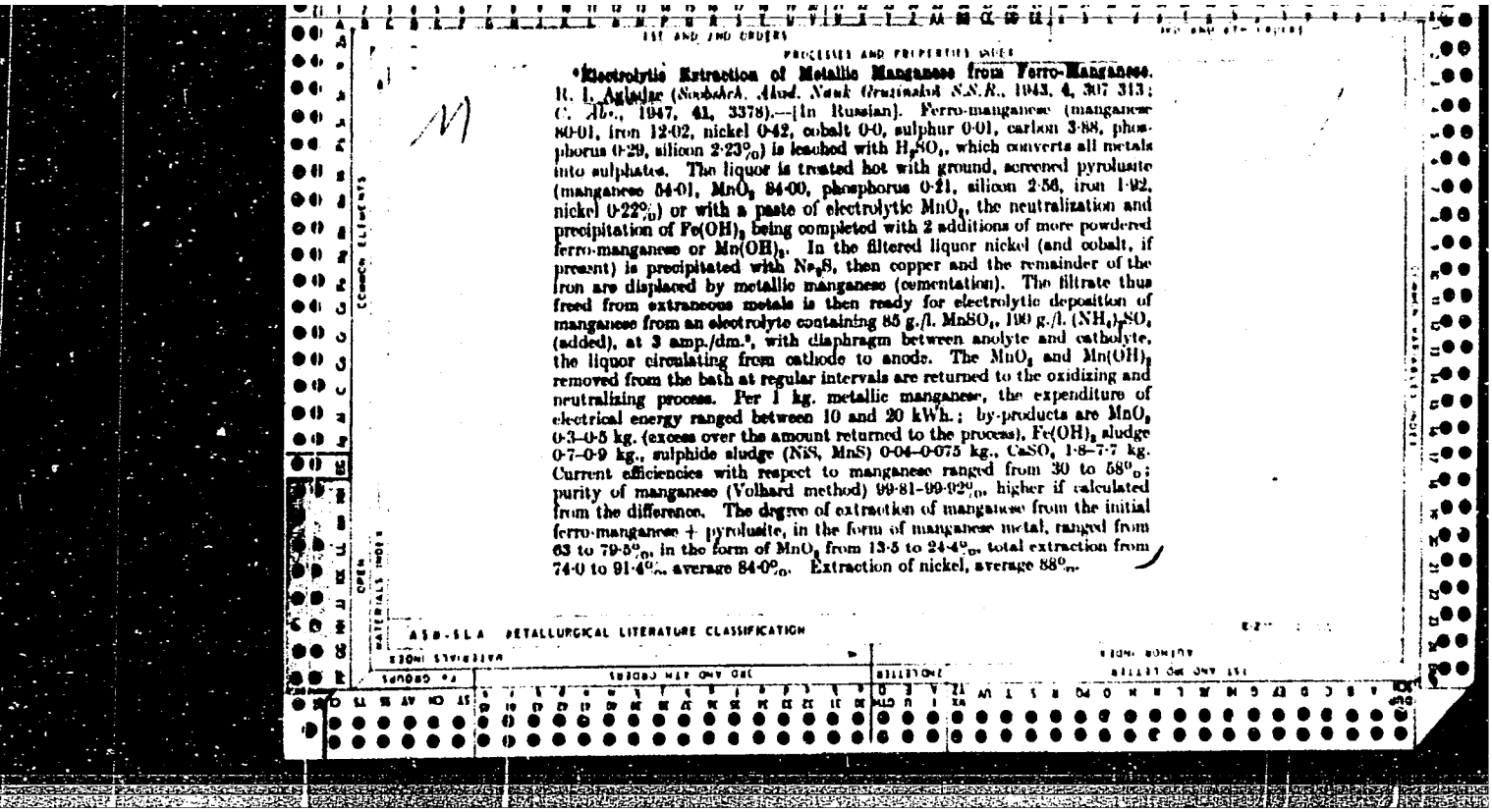
Technology of production of metallic Mn by electrolysis. R. I. Agladze. *Bull. acad. sci. U. R. S. S., Classe sci. tech.* 1942, No. 1-2, 45-63; cf. *C. A.* 36, 6087⁵.—Discussion of phys., chem., tech. and mech. features of electrolytic Mn production. 13 references. G. M. K.



4-

Local couples in the electrolysis of manganese sulfate. K. I. Agladze (Tbilisi Chem. Inst., Georgian S.S.S.R.). *Bull. Acad. Sci. Georgian S.S.S.R.* 3, 1027–32(1942) (in Russian). Penetration of the anolyte through the diaphragm into the cathodyte causes MnO_2 to settle on the cathode; this gives rise to an e.m.f. opposed to that of the electrolysis and soln. of the depositing Mn (this results in a further increase of the amt. of MnO_2); there is no way of stopping that process other than renewing the electrolyte. At a pH above 4, there is a pptn. of $Mn(OH)_2$ which is oxidized by air to $Mn(OH)_3$, the easier, the higher the concn. of $MnSO_4$ and the less the amt. of $(NH_4)_2SO_4$; the ppt. settling on the cathode lowers the H overvoltage sufficiently to stop deposition of Mn altogether. This cannot be remedied by one single adjustment of pH but necessitates changing the electrolyte. Nonoxidized $Mn(OH)_2$ does not interfere with the deposition. Raised temp. lowers the H overvoltage and thus counteracts the deposition of Mn. . The best temp. range is 15–25°. In an insufficiently reducing medium, Mn^{+++} ions formed at the anode migrate into the catholyte and decomp. according to $2Mn^{+++} = Mn^{++} + Mn^{++++}$, the latter resulting in pptn. of MnO_2 and formation of a couple Mn/MnO_2 which dissolves Mn and prevents its deposition; higher-valent Mn ions coming from the anode compartment have the same effect. The presence of sulfides, Na_2S, K_2S, $(NH_4)_2S$, BaS, was found beneficial, the optimum amt. corresponding to 1.0 cc. 0.1 N iodine per 100 cc. of catholyte. Excess of sulfide results in gray deposits contg. S up to 0.085%; a larger excess suppresses deposition altogether. Excess sulfide can be removed by filtration through electrolytic MnO_2. On interruption of the electrolysis, the cell acts as a storage battery, the Mn deposited being the anode. Such cells cannot be made to function again. The best cathode material for Mn deposition is stainless steel with 18% Cr and 8% Ni. Too deep etching renders it unsuitable. Owing to the difference in the thermal expansion of Mn and steel, sudden changes of temp. cause blistering and cracking. Cathodes thus damaged are no long r usable, as the metal tends to dissolve rather than to deposit. The same happens on sudden changes of c.d.; best conditions are between 1.0 and 4.0 amp./sq. dm.; the limit of c.d. at which Mn deposits at all is higher with a fresh stainless steel cathode than with a cathode already coated with Mn. Too high c.d. results in nonadherent dendrites leading to formation of Mn hydroxides. The higher the c.d. the lower should be the pH of the electrolyte. It is recommended to maintain the concn. in $(NH_4)_2SO_4$ between 170 and 220 g./l.; with less than that, the pH must be kept uneconomically low. The recommended concn. in $MnSO_4$ is 10–70 g./l.; higher contents favor pptn. of $Mn(OH)_2$, at too high a concn. oxidation to $Mn(OH)_3$ and pptn. of MnO_2 are accelerated. With a correct bath compn., the sp. gr. is 1.1, the required voltage 4–6 v. at an electrode distance of 8–12 cm. Systematic removal of Mn dendrites and of MnO_2 is essential. Presence of ions of Fe, Ni, Co, Cu, Pb, Zn hinders the deposition of Mn through formation of couples in which Mn is anodic. Abundant H_2 evolution causes vertical striation of the deposit.

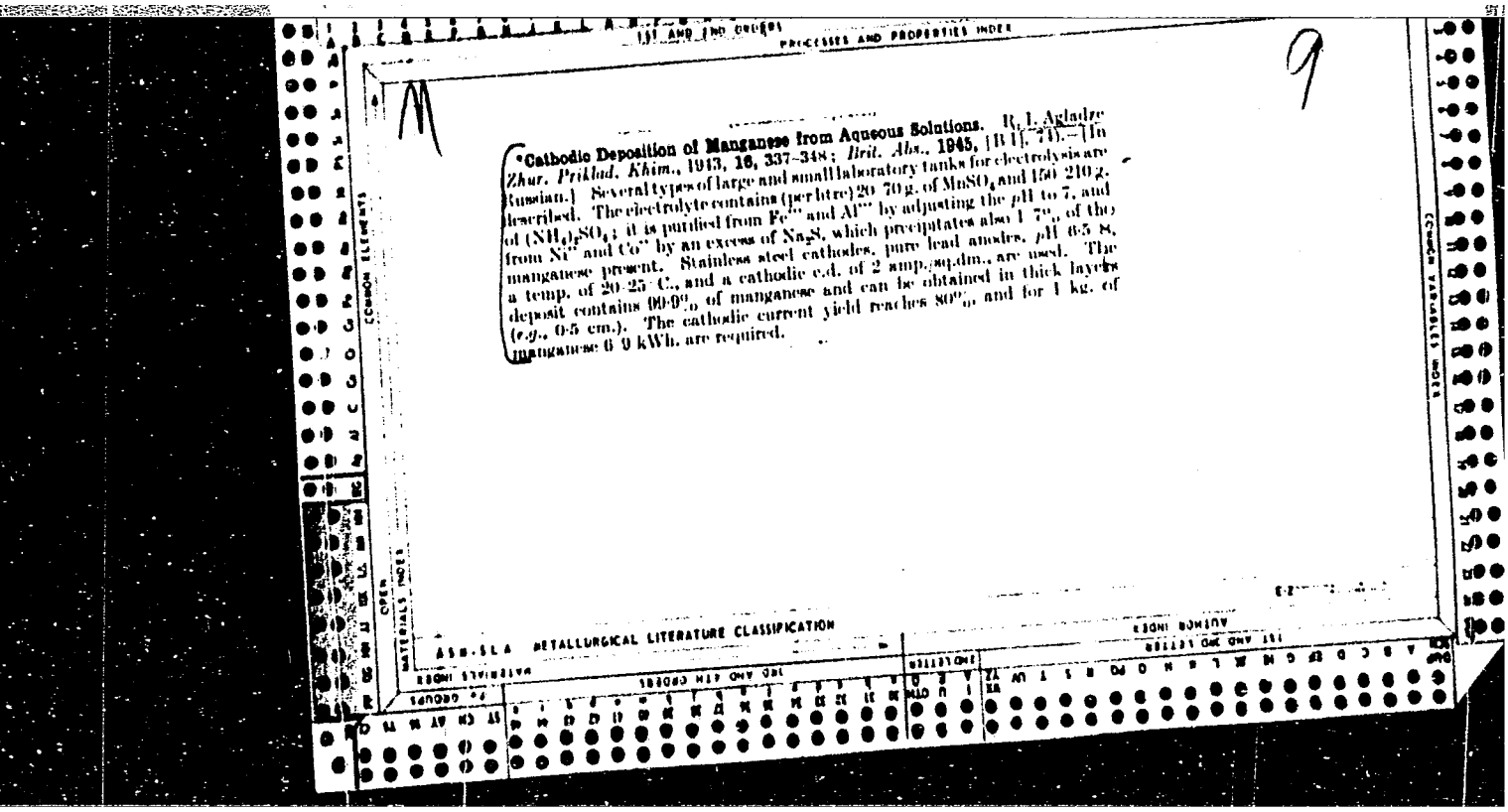
N. Thon



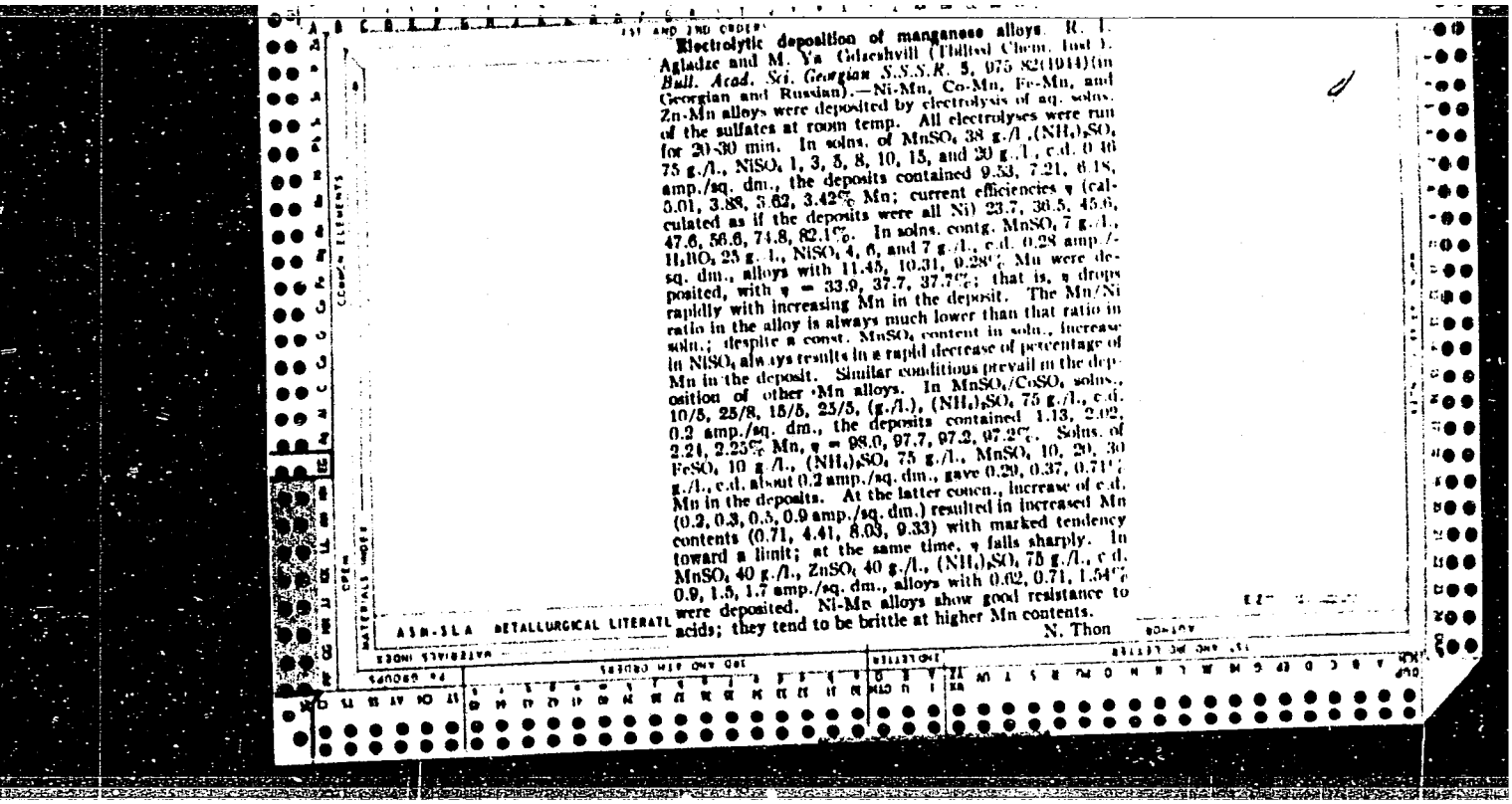
PROCESSES AND PROPERTIES INDEX

Electrolytic Extraction of Metallic Manganese from Ferro-Manganese. R. I. Aguilar (*Soobshch. Akad. Nauk Gruzinskoi S.S.R.*, 1943, **4**, 307–313; *C. Abs.*, 1947, **41**, 3378).—[In Russian]. Ferro-manganese (manganese 80·01, iron 12·02, nickel 0·42, cobalt 0·0, sulphur 0·01, carbon 3·88, phosphorus 0·29, silicon 2·23%) is leached with H_2SO_4, which converts all metals into sulphates. The liquor is treated hot with ground, screened pyrolusite (manganese 54·01, MnO_2 84·00, phosphorus 0·21, silicon 2·56, iron 1·92, nickel 0·22%) or with a paste of electrolytic MnO_2, the neutralization and precipitation of $Fe(OH)_3$ being completed with 2 additions of more powdered ferro-manganese or $Mn(OH)_2$. In the filtered liquor nickel (and cobalt, if present) is precipitated with Na_2S, then copper and the remainder of the iron are displaced by metallic manganese (cementation). The filtrate thus freed from extraneous metals is then ready for electrolytic deposition of manganese from an electrolyte containing 85 g./l. $MnSO_4$, 100 g./l. $(NH_4)_2SO_4$ (added), at 3 amp./dm.^{2}, with diaphragm between anolyte and catholyte, the liquor circulating from cathode to anode. The MnO_2 and $Mn(OH)_2$ removed from the bath at regular intervals are returned to the oxidizing and neutralizing process. Per 1 kg. metallic manganese, the expenditure of electrical energy ranged between 10 and 20 kWh.; by-products are MnO_2 0·3–0·5 kg. (excess over the amount returned to the process), $Fe(OH)_3$ sludge 0·7–0·9 kg., sulphide sludge (NiS, MnS) 0·04–0·075 kg., $CaSO_4$ 1·8–7·7 kg. Current efficiencies with respect to manganese ranged from 30 to 58%; purity of manganese (Volhard method) 99·81–99·92%, higher if calculated from the difference. The degree of extraction of manganese from the initial ferro-manganese + pyrolusite, in the form of manganese metal, ranged from 63 to 79·5%, in the form of MnO_2 from 13·5 to 24·4%, total extraction from 74·0 to 91·4%, average 84·0%. Extraction of nickel, average 88%.

A58-51A METALLURGICAL LITERATURE CLASSIFICATION

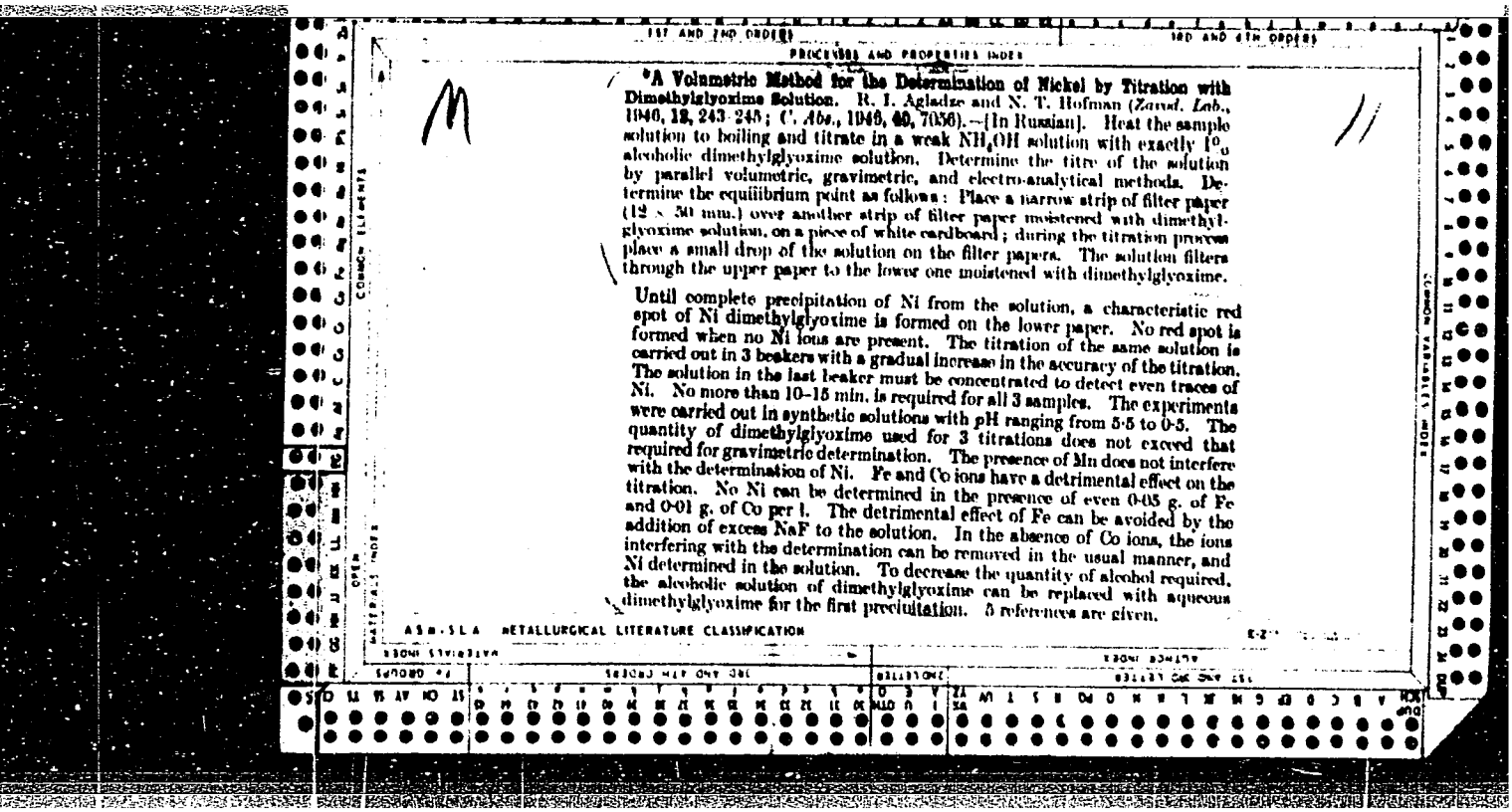


*Cathodic Deposition of Manganese from Aqueous Solutions. R. I. Agladze. *Zhur. Prikład. Khim.*, 1943, 16, 337–348; *Brit. Abs.*, 1945, [B II], 71.—[In Russian.] Several types of large and small laboratory tanks for electrolysis are described. The electrolyte contains (per litre) 20–70 g. of $MnSO_4$ and 150–210 g. of $(NH_4)_2SO_4$; it is purified from Fe^{++} and Al^{+++} by adjusting the *p*H to 7, and from Ni^{++} and Co^{++} by an excess of Na_2S, which precipitates also 1–7% of the manganese present. Stainless steel cathodes, pure lead anodes, *p*H 6·5–8, a temp. of 20–25° C., and a cathodic c.d. of 2 amp./sq.dm., are used. The deposit contains 99·9% of manganese and can be obtained in thick layers (*e.g.*, 0·5 cm.). The cathodic current yield reaches 80%, and for 1 kg. of manganese 6·9 kWh. are required.



Electrolytic deposition of manganese alloys. R. I. Agladze and M. Ya Gelashvili (Tbilisi Chem. Inst.). *Bull. Acad. Sci. Georgian S.S.S.R.* 5, 975-82(1944)(in Georgian and Russian).—Ni-Mn, Co-Mn, Fe-Mn, and Zn-Mn alloys were deposited by electrolysis of aq. solns. of the sulfates at room temp. All electrolyses were run for 20-30 min. In solns. of $MnSO_4$ 38 g./l., $(NH_4)_2SO_4$ 75 g./l., $NiSO_4$ 1, 3, 5, 8, 10, 15, and 20 g./l., c.d. 0.10 amp./sq. dm., the deposits contained 9.53, 7.21, 6.18, 5.01, 3.88, 3.62, 3.42% Mn; current efficiencies η (calculated as if the deposits were all Ni) 23.7, 30.5, 45.6, 47.6, 56.6, 74.8, 82.1%. In solns. contg. $MnSO_4$ 7 g./l., H_3BO_3 25 g./l., $NiSO_4$ 4, 6, and 7 g./l., c.d. 0.28 amp./sq. dm., alloys with 11.45, 10.31, 0.28% Mn were deposited, with η = 33.9, 37.7, 37.7%; that is, η drops rapidly with increasing Mn in the deposit. The Mn/Ni ratio in the alloy is always much lower than that ratio in soln.; despite a const. $MnSO_4$ content in soln., increase in $NiSO_4$ always results in a rapid decrease of percentage of Mn in the deposit. Similar conditions prevail in the deposition of other Mn alloys. In $MnSO_4/CoSO_4$ solns., 10/5, 25/8, 15/5, 25/5, (g./l.), $(NH_4)_2SO_4$ 75 g./l., c.d. 0.2 amp./sq. dm., the deposits contained 1.13, 2.02, 2.24, 2.25% Mn, η = 98.0, 97.7, 97.2, 97.2%. Solns. of $FeSO_4$ 10 g./l., $(NH_4)_2SO_4$ 75 g./l., $MnSO_4$ 10, 20, 30 g./l., c.d. about 0.2 amp./sq. dm., gave 0.29, 0.37, 0.71% Mn in the deposits. At the latter concn., increase of c.d. (0.2, 0.3, 0.5, 0.9 amp./sq. dm.) resulted in increased Mn contents (0.71, 4.41, 8.03, 9.33) with marked tendency toward a limit; at the same time, η falls sharply. In $MnSO_4$ 40 g./l., $ZnSO_4$ 40 g./l., $(NH_4)_2SO_4$ 75 g./l., c.d. 0.9, 1.5, 1.7 amp./sq. dm., alloys with 0.62, 0.71, 1.54% were deposited. Ni-Mn alloys show good resistance to acids; they tend to be brittle at higher Mn contents.

N. Thon



PROCESSES AND PROPERTIES INDEX

***A Volumetric Method for the Determination of Nickel by Titration with Dimethylglyoxime Solution.** R. I. Agladze and N. T. Hofman (*Zavod. Lab.*, 1940, **12**, 243–245; *C. Abs.*, 1946, **40**, 7056).—[In Russian]. Heat the sample solution to boiling and titrate in a weak NH_4OH solution with exactly 1% alcoholic dimethylglyoxime solution. Determine the titre of the solution by parallel volumetric, gravimetric, and electro-analytical methods. Determine the equilibrium point as follows: Place a narrow strip of filter paper (12 × 30 mm.) over another strip of filter paper moistened with dimethylglyoxime solution, on a piece of white cardboard; during the titration process place a small drop of the solution on the filter papers. The solution filters through the upper paper to the lower one moistened with dimethylglyoxime.

Until complete precipitation of Ni from the solution, a characteristic red spot of Ni dimethylglyoxime is formed on the lower paper. No red spot is formed when no Ni ions are present. The titration of the same solution is carried out in 3 beakers with a gradual increase in the accuracy of the titration. The solution in the last beaker must be concentrated to detect even traces of Ni. No more than 10–15 min. is required for all 3 samples. The experiments were carried out in synthetic solutions with pH ranging from 5·5 to 0·5. The quantity of dimethylglyoxime used for 3 titrations does not exceed that required for gravimetric determination. The presence of Mn does not interfere with the determination of Ni. Fe and Co ions have a detrimental effect on the titration. No Ni can be determined in the presence of even 0·05 g. of Fe and 0·01 g. of Co per l. The detrimental effect of Fe can be avoided by the addition of excess NaF to the solution. In the absence of Co ions, the ions interfering with the determination can be removed in the usual manner, and Ni determined in the solution. To decrease the quantity of alcohol required, the alcoholic solution of dimethylglyoxime can be replaced with aqueous dimethylglyoxime for the first precipitation. 5 references are given.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

AGLADZE, R.I.

Preparation of manganates and permanganates by means of anodic dissolution of metallic manganese [in Georgian with summary in Russian]. Trudy Inst. met. i gor. dela AN Gruz. SSR 2:1-33 '49. (MIRA 11:1)
(Manganese--Electrometallurgy)

AGLADZE, R.I.; PURTSELADZE, Kh.G.

Preparing depolarizers by the activation of Chiatura pyrolusite and red manganese [in Georgian with summary in Russian]. Trudy Inst. met. i gor. dela AN Gruz. SSR 2:61-73 '49. (MIRA 11:1)
(Manganese ores) (Electrochemistry)

AGLADZE, R.I.; LEGRAN, A.E.

Electrode potential of manganese in aqueous solutions [in Georgian with summary in Russian]. Trudy Inst. met. i gor. dela AN Gruz SSR 2:75-87 '49. (MIRA 11:1)

(Manganese) (Electrochemistry)

AGLADZE, R. I.

The preparation of barium and cadmium alloys in fused medium by electrolysis. R. I. Agladze and A. Sh. Avaliani. *Trudy Inst. Metallo i Gornogo Dela, Akad. Nauk Gruzin. S.S.R.* 2, 89–98 (Russian summary, 98–9) (1949).—By electrolysis of a fused mixt. of 40–73% $BaCl_2$ and 27–60% KCl at 700–20° with a liquid Cd cathode it was possible to obtain alloys contg. up to 40% of Ba. The alloys were very friable and chemically active. The activity increased with an increase in temp. and content of Ba. The current efficiency was 88–95% for alloys with 25–30% Ba. M. C.

(1)

AGLADZE, R. I.

35182. Metod Polucheniya Manganata Bariya. Soobshch. Akad. Nauk Gruz. SSR, 1949, No. 5, s. 275-80.

SO: Letopis' Zhurnal'nykh Statey, Vol. 48, Moskva, 1949

AGLADZE, R.I.; GDZELISHVILI, M.Ya.

Metallographic study of manganese alloys. Soobshcheniya Akad. Nauk Gruzin. S.S.R. 10, 615-20 '49. (MLRA 3:10)
(CA 47 no.18:9240 '53)

1. Inst. Metals Mining, Acad. Sci. Gruzin. S.S.R., Tiflis.

AGLADZE, R.I., redaktor; CHIKVAIDZE, G.V., tekhnicheskiy redaktor

[A collection of laboratory and industrial studies on Tkibuli liptobilite shales] Sbornik laboratornykh i zavodskikh issledovanii po tkibul'skim liptobiolitovym slantsam. Pod red. R.I.Agladze. Tbilisi, Institut metalla i gornogo dela, 1950. 250 p.[---Supplement to the collection] Dopolnenie k sborniku... 1950. 51 p. (MLRA 10:2)

1. Akademiya nauk Gruzinskoy SSR, Tiflis. 2. Deystvitel'nyy chlen Akademii nauk Gruzinskoy SSR (for Agladze)
(Oil shales)

1. AGLADZE, R. I., Acad. DZHAPARIDZE, L. N.

2. USSR (600)

4. Manganese

7. Investigation of manganese chemical sources of current. Soob AN Gruz SSR No. 9, 1950

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

AGLADZE, R. I.

Electrochemistry

Chemical source of electric current based on manganese. R. I. Agladze and L. N. Dzhaparidze (Metal. Mining Inst., Acad. Sci. Uzbek S.S.R., Tiflis). *Soobshcheniya Akad. Nauk Gruzin. S.S.R.* 11, 539–44(1950).—Primary cells which employ as the neg. electrode metallic Mn and as pos. electrode a mixt. of pyrolusite with graphite or acetylene black give the following elec. characteristics: the cells have high e.m.f. and capacity; electrolytes with NH_4 ions give the best results; in alk. electrolytes Mn is passivated and the cells do not have appreciable capacity; in weakly acidic or neutral electrolytes the neg. electrode is corroded, hence the Mn galvanic cells have poor stability.

G. M. Kosolapoff

4-23-54

(CA 48 no. 2: 467 '54)

Electrode potential of manganese in aqueous solutions. R. I. Agladze and A. B. Legran (Metal Mining Inst., Tiflis). *Zhur. Fiz. Khim.* 24, 1122-7(1950).—The potential of electrolytic (99.9%) Mn was measured at 24-25° in solns. of $MnSO_4$ (I), $(NH_4)_2SO_4$ (II), K_2SO_4 (III), H_2SO_4 (IV), $MnSO_4$ + H_2SO_4 (V), and $MnSO_4$ + $(NH_4)_2SO_4$ (VI). I, II, and III were 0.01, 0.1, or 1.0 *N*; IV was 0.01, 0.1, or 0.5 *N*. In III, the potential did not depend on K_2SO_4 concn. In I, IV, and V, it became more neg. with increasing dilu. It changed with time when the electrode was kept in the soln; this was due to the formation of oxides on the electrode surface in slightly oxidizing and neutral solns. In 0.5 *N* solns. of H_2SO_4 which were 0.01, 0.1, and 1.0 *N* in $MnSO_4$ as well as in 0.1 *N* solns of H_2SO_4 which were 0.01 and 0.1 *N* in $MnSO_4$, the potential depended solely on the H-ion concn. In the other cases investigated it depended both on the H ion and Mn^{++}-ion concn. In II, the potential became less neg. with increasing dilu., possibly because of the formation of the $[Mn(NH_3)_6]^{++}$ complex ion. The same explanation was advanced for the shift towards more neg. potentials when $(NH_4)_2SO_4$ was added to $MnSO_4$ solns. M. B.

AGLADZE, R. I.

USSR/Chemistry - Manganese Aug 51

"Preparation of Potassium Manganate and Permanganate by Anodic Solution of Metallic Manganese," R. I. Agladze, G. M. Domanskaya

"Zhur Prik Khim" Vol XXIV, No 8, pp 787-797

Anodic soln of electrolytic metallic Mn in K_2CO_3 and dil KOH solns yielded $KMnO_4$, in concd KOH solns small amt of sludge (mostly MnO_2) formed. Use of tech grade KOH decreased yield slightly. Detd optimum conditions for prepn of K_2MnO_4 and $KMnO_4$.

190T25

USSR/Chemistry - Manganese (Contd) Aug 51

Consumption of 11 kw-hr/1 kg of product and conversion of 80-90% of anodic Mn are feasible.

190T25

USSR/Chemistry - Oxidants Oct 51

"Preparation of Sodium Manganate and Permanganate by Anodic Solution of Metallic Manganese," P. I. Agladze, G. M. Domenskaya

"Zhur Prik Khim" Vol XXIV, No 9, pp 915-924

Describes method for anodic soln of electrolytic metallic Mn in Na_2CO_3 and dilute NaOH solns to prep $NaMnO_4$ and in concd NaOH solns to prep Na_2MnO_4. Discusses optimum temp, anodic cd, cathodic area. Method makes possible prepn of $NaMnO_4$ with energy consumption of 4-6 kw-hr/kg, of Na_2MnO_4 with 20 kw-hr/kg, with yield of 80-95% in respect to Mn, current yield of 30-58% for NaOH solns, 20-32% for Na_2CO_3 solns.

193T24

AGLADZE, R. I.

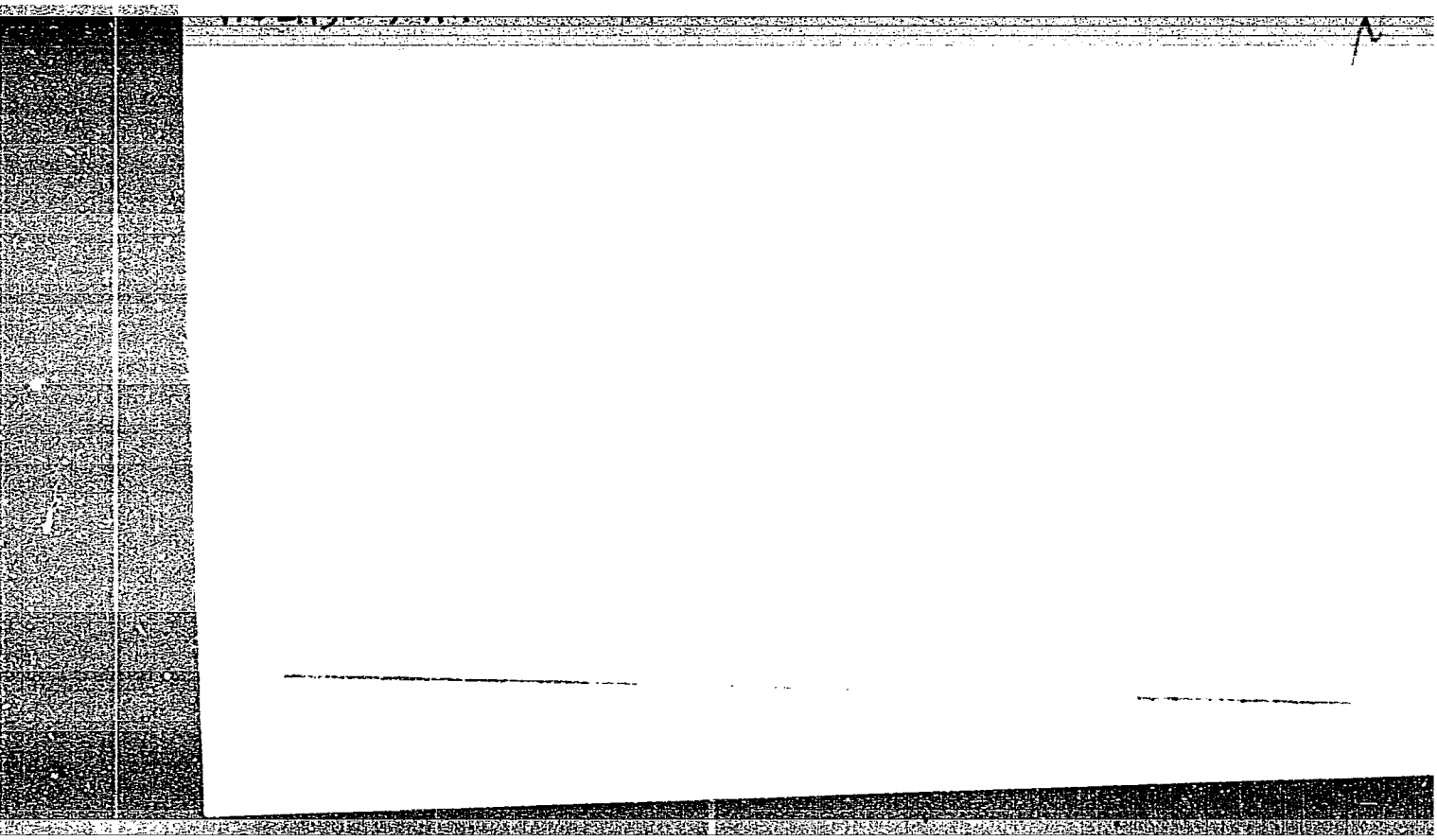
USSR/Chemistry - Oxidants (Contd) Oct 51

193T24

AGLADZE, R. I.

Chemical Abstracts
May 25, 1954
Metallurgy and Metallography

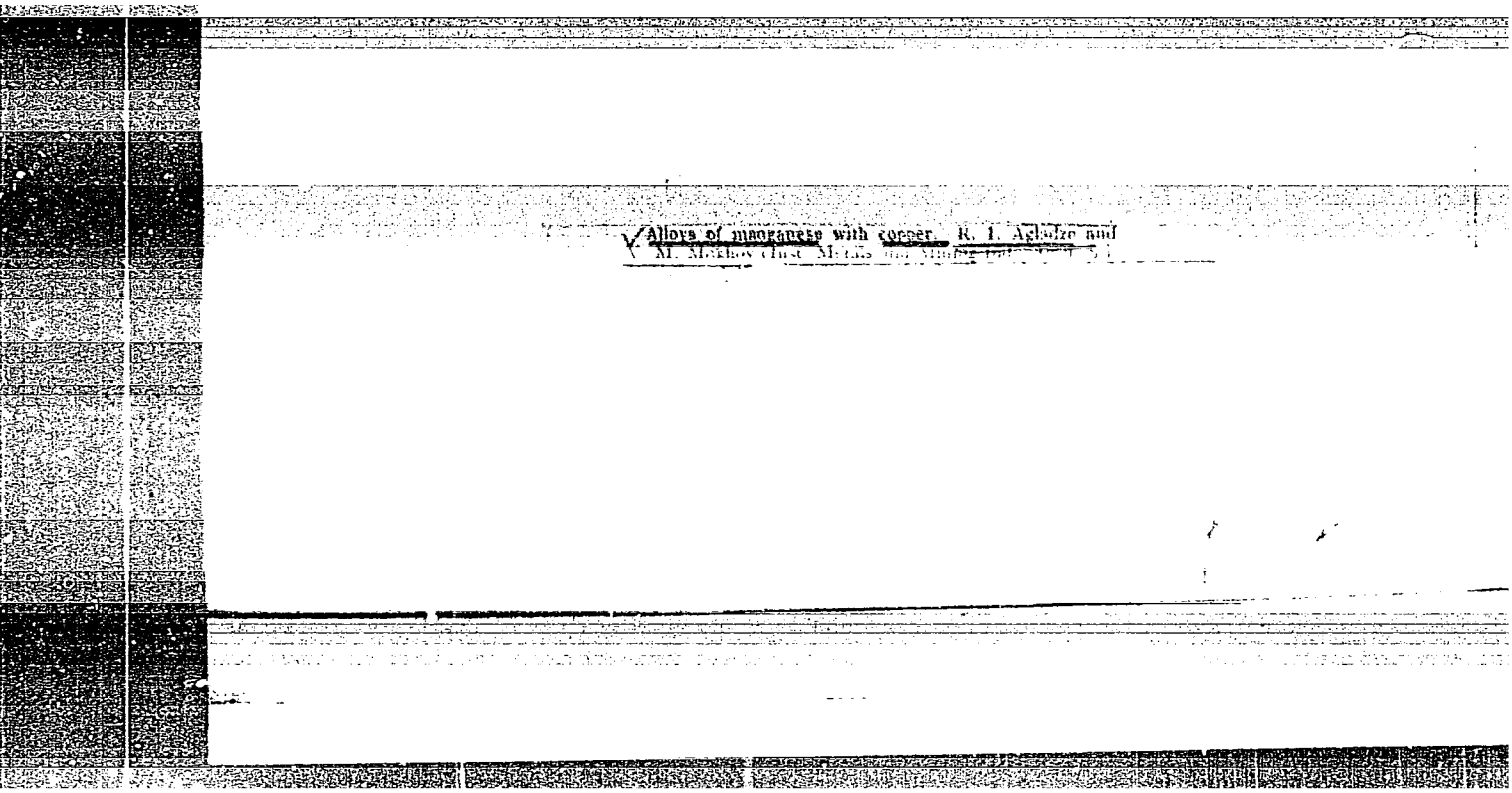
Shapes made from electrolytic manganese by the metallo-ceramic method. R. I. Agladze, V. M. Berezhiani, and L. I. Topchiashvili (Inst. Metals & Mining, Acad. Sci. Georgian S.S.R., Tiflis). *Soobshcheniya Akad. Nauk Gruzin. S.S.R.* 13, 299-306(1952).—Powders and plates of electrolytic Mn were shaped under pressures of 1-8 tons/sq. cm. and then sintered at 700-1100°. Pressure and grain size had little effect on d. of green shapes. Crushing strength of green shapes made of plates and coarse powders (0.5-0.25 and 1.0-0.5 mm.) increased as pressure increased from 2.3 to 8.0 tons/sq. cm., while that of shapes made of fine powders (0.06 to 0.25 mm.) increased sharply up to pressure of 6 tons/sq. cm. and then dropped with rising pressure. Sintering for 1 hr. at 1100° was sufficient to obtain satisfactory products. D. of sintered products increased with dispersion of powders. B. Z. Kamich



APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100520007-6"

AGLADZE, R.I.; MOKHOV, V.M.; TOPCHIASHVILI, L.I.; GVARAMADZE, M.D.; TAVADZE, F.N., redaktor; NINUA, K.V., tekhnicheskiy redaktor.

[Alloys of manganese with copper, nickel and zinc; a collection of papers] Splavy margantsa s med'iu, nikelem i tsinkom; sbornik rabot. Tbilisi, Izd-vo Akademii nauk Gruzinskoi SSR, 1954. 121 p. (MLRA 9:5)
(Manganese alloys)

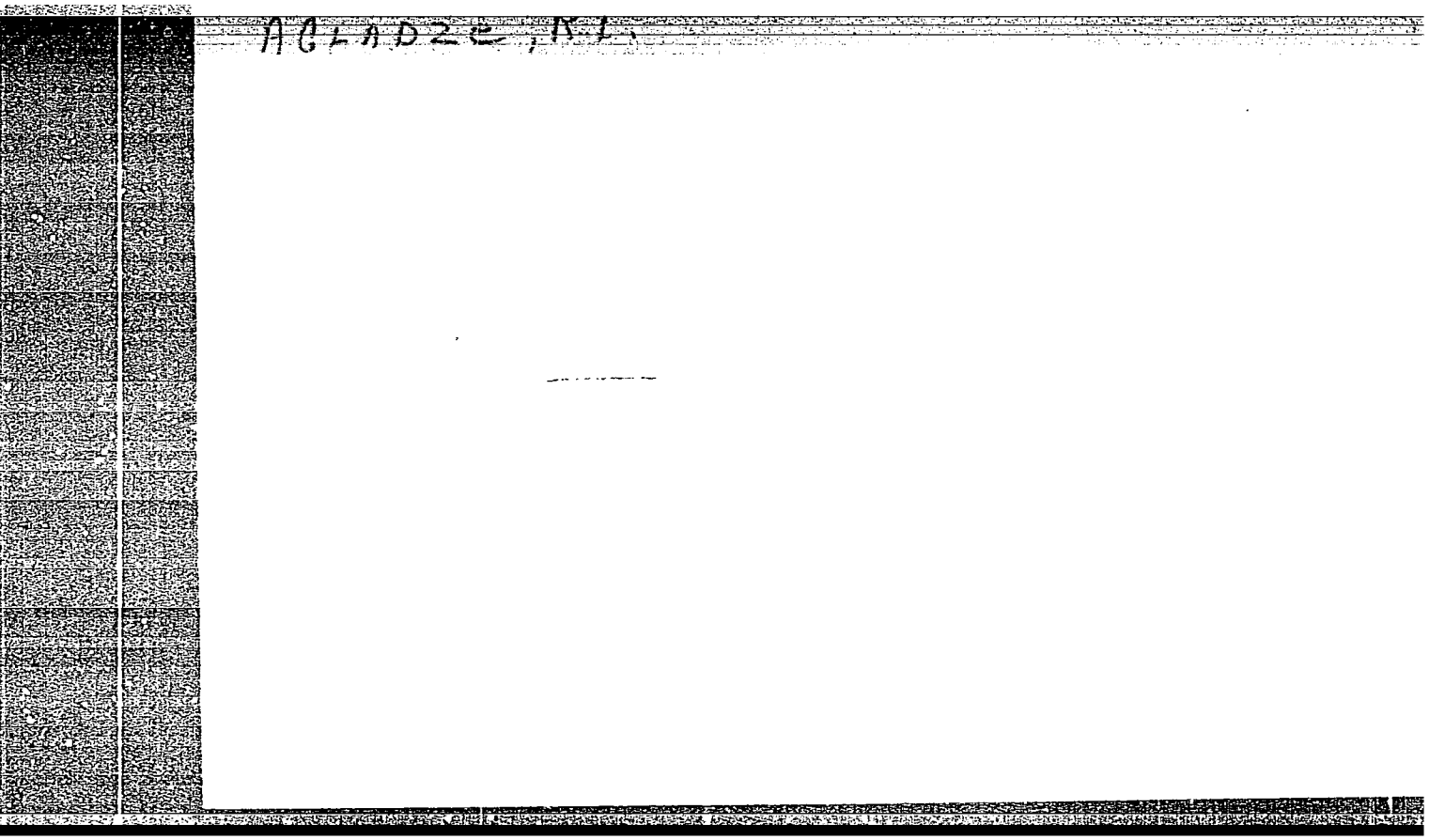


Alloys of manganese with copper. R. I. Agladze and

AGLADZE, R.I.; DZHAPARIDZE, L.N.

Potentials and corrosion of metallic manganese in ammonium chloride. Soob. AN Gruz. SSR 15 no.3:143-150 '54. (MIRA 8:5)

1. Deystvitel'nyy chlen Akademii nauk Gruzinskoy SSR (for Agladze).
2. Akademiya nauk Gruzinskoy SSR, Institut metalla i gornogo dela, Tbilisi. (Manganese--Corrosion)



AGLADZE,R.I.; BERIKASHVILI,I.G.

Obtaining permanganates by means of an anodic diffusion of ferromanganese in aqueous solutions of potassium dydroxide. Soob. AN Gruz. SSR 15 no.6:335-342 '54. (MLRA 8:6)

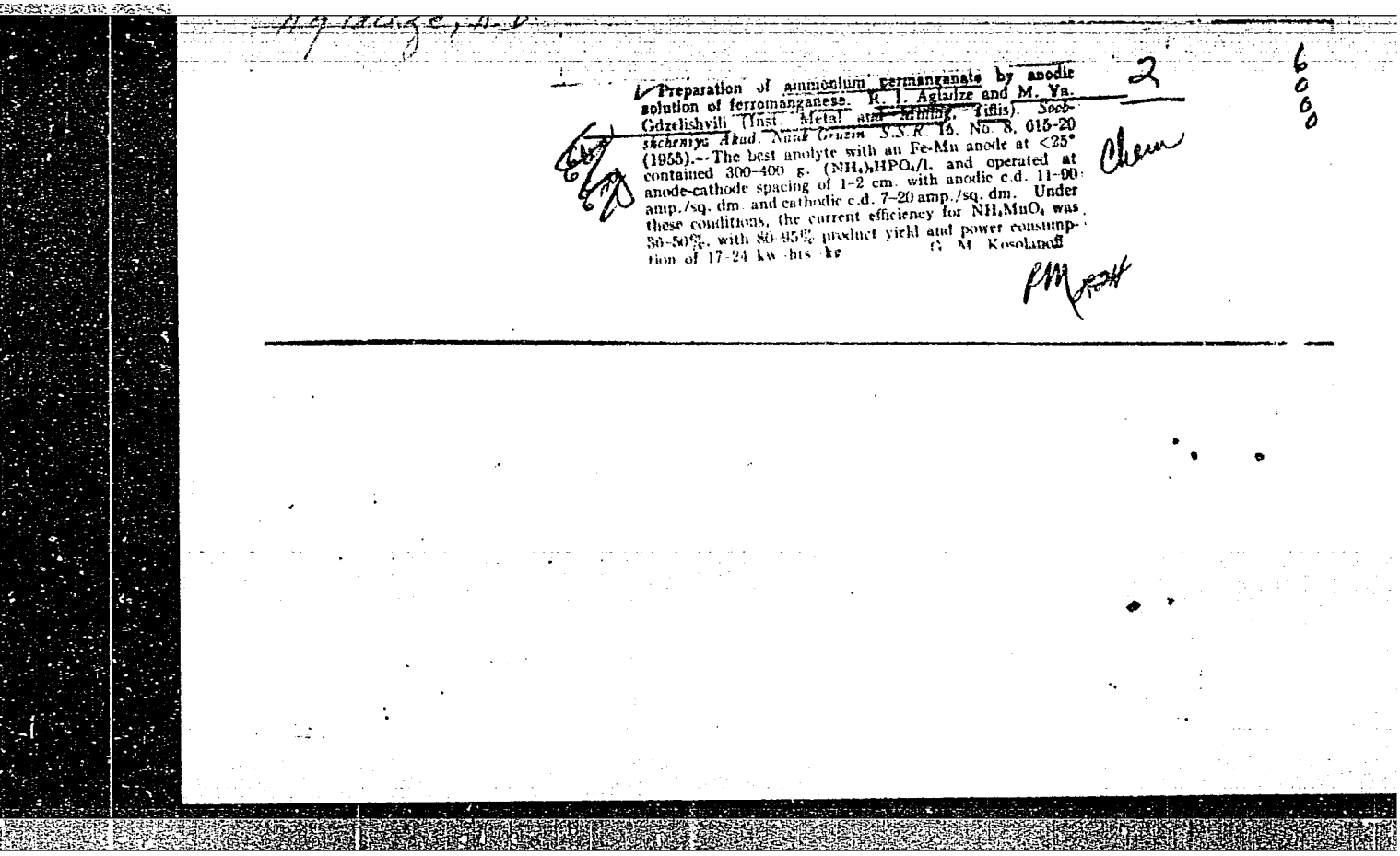
1. Deystvitel'nyy chlen Akademii nauk Gruzinskoy SSR (for Agladze)
2. Akademiya nauk Gruzinskoy SSR, Institut metalla i gornogo dela, Tbilisi.

(Permanganates)

AGLADZE, R. I.

Anodic solution of ferromanganese in solutions of sodium and potassium salts of phosphoric acid. R. I. Agladze and M. Ya. Gdzelishvili (Inst. Metals and Mineral, Akad. Sooblacheniya Akad. Nauk Gruzin. S.S.R. 16, No. 7, 531-8 (1955)(in Russian).—As a result of correlation of extensive expil. material, the following conditions were found to be best for anodic soln. of ferromanganese in phosphate solns.: For formation of $NaMnO_4$, use Na_2HPO_4 150–200 g./l., 18–20 amp./sq. dm. anodic c.d., 7–9 amp./sq. dm. cathodic c.d., operating temp. up to 25° giving current efficiency of 37–45%, product yield of 70–80%, power consumption 18–25 kw.-hr./kg. $NaMnO_4$. For making $KMnO_4$ the conditions were: K_2HPO_4 300 g./l., up to 20°, 7–30 amp./sq. dm. anodic c.d., 7–15 amp./sq. dm. cathodic c.d., giving 38–40% current efficiency, and a 60–90% product yield at 14–19 kw.-hr./kg. $KMnO_4$. Or, for $KMnO_4$, an alternate would be: K_3PO_4 600 g./l., at 13–22 amp./sq. dm. anodic c.d., 7–15 amp./sq. dm. cathodic c.d., up to 20°, giving 37–43% current efficiency and 96% product yield with power consumption of 13 kw.-hr./kg. $KMnO_4$.

G. M. Kosolapoff



Preparation of ammonium permanganate by anodic solution of ferromanganese. R. I. Agladze and M. Ya. Gdzelishvili (Inst. Metal. and Mining, Tiflis). *Soob. Akad. Nauk Gruzin. S.S.R.* 15, No. 8, 615-20 (1955).—The best anolyte with an Fe-Mn anode at <25° contained 300–400 g. $(NH_4)_2HPO_4$/l. and operated at anode-cathode spacing of 1–2 cm. with anodic c.d. 11–00 amp./sq. dm. and cathodic c.d. 7–20 amp./sq. dm. Under these conditions, the current efficiency for NH_4MnO_4 was 30–50%, with 80–95% product yield and power consumption of 17–24 kw.-hrs./kg. G. M. Kosolapoff

USSR/Chemical Technology. Chemical Products and Their Application -- Electrochemical manufacturing. Electrodeposition. Chemical sources of electrical current, I-8

Abst Journal: Referat Zhur - Khimiya, No 2, 1957, 5115

Author: Agladze, R. I., Ionatamishvili, T. V.

Institution: Institute of Metals and Mining Academy of Sciences Georgian SSR

Title: Concerning Electrochemical Discharge of Ions of Trivalent Chromium

Original Publication: Tr. in-ta metalla i gorn. dela AN GruzSSR, 1956, 7, 147-155

Abstract: Study of the effect of electrolysis conditions on the process of electrodeposition of Cr from a solution (g/liter): $Cr_2(SO_4)_3$ 52, $(NH_4)_2SO_4$ 100, Na_2SO_4 100. Acidity limits for the production of good deposits are pH 1.8-3.0. At low D (up to 5 a/dm^2) mostly H_2 is liberated at the cathode and substandard Cr deposits are obtained due to the formation, within the layer adjoining the cathode, of hydroxide and basic salts of Cr and their incorporation into the

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USSR/Chemical Technology. Chemical Products and Their Application -- Electrochemical manufacturing. Electrodeposition. Chemical sources of electrical current, I-8

Abst Journal: Referat Zhur - Khimiya, No 2, 1957, 5115

Abstract: deposit. Within the range of D 7-20 a/dm^2 deposits of maximum degree of purity are obtained, and approximately within the same range the yield on the basis of the current (CY) reaches the maximum value. CY of Cr increases with duration of electrolysis and reaches a steady level, which the authors attribute to accumulation within the electrolyte of a definite concentration of Cr^{2+} ions, formed on discharge of Cr^{3+} ions, and also to increase of pH of cathode adjoining layer. On passing through the electrolyte of air enriched with oxygen, to oxidize Cr^{2+}, CY of Cr is decreased considerably, which confirms the beneficial effect of Cr^{2+} ions on CY. Since on oxidation of Cr^{2+} metallic Cr is still deposited at the cathode, the authors consider as possible a process of direct discharge of Cr^{3+} to the metal. On increase of the temperature >50° CY decreases and quality of Cr deposit is lowered. There are considered the chemical reactions and transformations which take place during electrolysis of solutions of Cr salts of low valency and in particular the change in nature of electrolyte due to the property of Cr salts of yielding violet and

Card 2/3

USSR/Chemical Technology. Chemical Products and Their Application -- Electrochemical manufacturing. Electrodeposition. Chemical sources of electrical current, I-8

Abst Journal: Referat Zhur - Khimiya, No 2, 1957, 5115.

Abstract: green modifications. It is shown that a preliminary heating of the solution causes a lowering of pH, which is associated with the formation of the green hydrolyzable modification. On keeping of the solution the green modification changes to the violet and the pH rises. Increase in concentration of $(NH_4)_2SO_4$ and Na_2SO_4 increases CY of Cr, which in the opinion of the authors is associated with a shift in equilibrium between green and violet modifications, in the direction of the latter. The opinion is expressed that the conflicting results of a large number of factors which affect the discharge of Cr^{3+} ions, such as temperature, pH, presence of additions and their concentration, the length of storage of the solution and the duration of electrolysis, as well as concentration of Cr^{3+} and Cr^{2+}.

Card 3/3

Agladze, R. I.

USSR/Physical Chemistry - Electrochemistry, B-12

Abst Journal: Referat Zhur - Khimiya, No 1, 1957, 519

Author: Agladze, R. I., and Ionatamishvili, T. V.

Institution: Academy of Sciences Georgian SSR

Title: On the Anodic Polarization of Chromium

Original Periodical: Tr. In-ta metalla i gorn. dela AN Gruz. SSR, 1956, Vol 7, 157-174

Abstract: The anodic polarization curves (PC) of Cr, Fe, and ferrochrome (I) have been measured for different solutions and current densities (i) of up to 30 a/dm^2 at 35°. In a $(NH_4)_2SO_4$ solution (100 gms/l) at pH 0.1-4.8, chemically activated Cr dissolves at the anode with the formation of lower-valency Cr ions until a limiting value for i (i_{lim}) is reached. As i is increased further, a sharp jump in is observed on the PC and Cr begins to dissolve with the formation of Cr^{6+} ions. The addition of Cl^- and SO_3^{2-} to solutions of $CrSO^4$ and NH_4Cl as well as by decreasing the pH of NH_4Cl solutions. The anodic dissolution of I leads to the formation of Cr^{6+} and Fe^{3+} ions in

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USSR/Physical Chemistry - Electrochemistry, B-12

Abst Journal: Referat Zhur - Khimiya, No 1, 1957, 519

Abstract: 1-5 N Na_2CO_3 solution. In 1-4 N Na_2CO_3 solutions bending of the PC and forward and reverse hysteris are observed; these the authors connect to the formation of an $Fe(OH)_3$ film on the anode. During anodic dissolution of I in NaOH (10-70 gms/l) a film is also formed at the electrode; the nature of this film depends on the concentration (C) of the NaOH. At low C a brittle film is formed and a break is observed in the PC. For high C the film is compact and no break is observed in the PC. Studies of the PC's of pure Fe and Cr in Na_2CO_3 and NaOH showed that in these solutions under the conditions investigated Fe is completely passive while Cr dissolves quantitatively with the formation of Cr^{6+}.

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USSR/Chemical Technology - Chemical Products and Their Applications - Electrochemical Manufacturing. Electrodeposition. Chemical Sources of Electrical Current. I-9

Abs Jour : Ref Zhur - Khimiya, No 3, 1957, 8911

Author : Gdzelishvili, Agladze, and Ungiadze.
Inst : Institute of Metals and Mining Industry of the Georgina Academy of Sciences.
Title : Electrolytic Deposition of a Copper-Manganese Alloy.

Orig Pub : Tr. In-ta Metalla i gorn. dela AN GruzSSR, 1956, 7, 175-182 (in Georgian with a summary in Russian)

Abstract : The electrolytic deposition of Mn, Cu, and of an Mn-Cu alloy from electrolytes containing acetic, citric, and boric acids as well as

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USSR/Chemical Technology - Chemical Products and Their Applications - Electrochemical Manufacturing. Electrodeposition. Chemical Sources of Electrical Current. I-9

Abs Jour : Ref Zhur - Khimiya, No 3, 1957, 8911

sodium oxalate and ammonium sulfate is described. Deposits of satisfactory appearance of Mn, Cu and Mn-Cu are obtained from electrolytes containing boric acid, sodium oxalate and gelatin, which are characterized by high overpotentials. The polarization curves show an inflection point both in the case of Mn and Cu and in the case of Mn-Cu. Cu and Mn are plated out at low D; higher current densities are required for Mn-Cu, the Mn content in the deposit increasing with increasing D; the current efficiency in the latter case decreases with increasing D. An increase in the temperature

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USSR/Chemical Technology - Chemical Products and Their Applications - Electrochemical Manufacturing. Electrodeposition. Chemical Sources of Electrical Current. I-9

Abs Jour : Ref Zhur - Khimiya, No 3, 1957, 8911

leads to a reduction in the Mn content in the alloy and an increase in the current. Metallographic investigations have shown that all Mn, Cu, and Mn-Cu deposits have the same finely crystalline structure.

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