

S/069/62/024/003/002/006
B110/B138

Experimental studies ...

increase in the H-ion concentration decelerates hydrolysis and accelerates the film growth : pH = 0.5: 1500 - 2500 Å. The adsorption of colloidal iron hydroxide particles with a primary degree of dispersion (T. Svedberg (Obrazovaniye kolloidov (Formation of colloids), NTI, L., 1927 p. 3)) through the surface caused the formation of thin films with a mirrorlike luster. The increase in film thickness depends on the particle concentration and on the primary degree of dispersion. The film thickness thus increases with the hydrolysis. A temperature rise accelerates hydrolysis and volume coagulation. A considerable hydrolysis deceleration of acidified solutions causes volume coagulation at low temperatures thus reducing film growth. The same effect is observed with a concentration increase. There are 2 figures and 1 table.

ASSOCIATION: Ural'skiy politekhnicheskiy institut im. S. M. Kirova,
Sverdlovsk (Ural Polytechnic Institute imeni S. M. Sverdlovsk)

SUBMITTED: July 14, 1961

Card 2/2

SKRYLEV, L.D.; BORISIKHINA, V.I.; MOKRUSHIN, S.G.

Effect of surface-active agents on the process of extraction of
colloid-suspended mixed heavy metal ferrocyanides from their hydrosols
by the method of emulsification. Zhur.prikl.khim. 35 no.11:2398-2402
N 162. (MIRA 15:12)

1. Ural'skiy politekhnicheskii institut imeni S.M.Kirova.
(Ferrocyanides) (Surface-active agents) (Extraction (Chemistry))

8/080/62/035/011/010/011
D423/D307

AUTHORS: Borisikhina, V.I., Skrylev, L.D., and Mokrushin, S.G.
TITLE: The problem of the breakdown of emulsions by freezing
PERIODICAL: Zhurnal prikladnoy khimii, v. 35, no. 11, 1962,
2563 - 2565

TEXT: A study was made of the effect of low temperatures on the breakdown of gelatinized emulsions containing 75 - 80 % carbon tetrachloride, stabilized with colloidal solutions of mixed ferrocyanides of lead, thorium, nickel, cobalt and uranyl, 30 ml of emulsion were cooled over the temperature range -1 to -30°C in a glass test tube 200 mm long and 20 mm in diameter. The samples were thawed out in a thermostat at + 15°C. Emulsion breakdown was increased with reduction of temperature and also with increasing time of freezing. Under identical conditions, breakdown depended on the nature of the stabilizing agent. No significant breakdown was observed down to -3°C with all emulsions over times up to 5 hrs., but 75 - 78 % destruction occurred at -15°C except for cobalt-stabilized emulsions (51 % at -21°C). The mechanism of breakdown is very
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The problem of the breakdown of ...

S/080/62/035/011/010/011
D423/D307

complex but is undoubtedly related to the effects of low temperatures on the emulsifying ability of gelatine. Theories are put forward associated with formation of aggregates, increase of viscosity change of specific rotation of the plane of polarization and freezing out of water which leads to reduction in magnitude of the electric charge on the emulsion droplets. The greatest role in emulsion breakdown was played by the mechanical action exerted by ice crystals on the emulsion droplets, so that rupture of the stabilizing gelatine-ferrocyanide films occurs and which facilitates considerably the process of coalescence. The power of the mechanical action of ice on the oil droplets is quite large, since it is explained by the expansion of water on freezing. There are 2 figures and 2 tables. ✓

ASSOCIATION: Ural'skiy politekhnicheskiy institut imeni S.M. Kirova
(Ural'skiy Polytechnic Institut imeni S.M. Kirov)

SUBMITTED: July 20, 1961

Card 2/2

SKHYLEV, L.D.; MOKRUSHIN, S.G.

Problem of intensification of leaching of heavy metal ions from waste waters of industrial plants. Zhur.prikl.khim. 36 no.2:454-455 F '63.
(MIRA 16:3)

1. Ural'skiy politekhnicheskiy institut imeni S.M.Kirova.
(Sewage—Purification) (Salts)

SHVEYKINA, R.V.; MOKRUSHIN, S.G.

Extraction of iodine from aqueous solutions by gelatin foam.
Zhur.prikl.khim. 36 no.6:1348-1350 Je '63. (MIRA 16:8)

1. Ural'skiy politekhnicheskiy institut.
(Iodine) (Gelatin)

SKRYLEV, L.D.; MOKRUSHIN, S.G.

Effect of temperature on the rate of the emulsion extraction of
colloids. Koll.zhur. 25 no.5:593-595 S-O '63. (MIRA 16:10)

1. Ural'skiy politekhnicheskiy institut im. S.M.Kirova.

MOKRESHIN, S.G.; ZHUKOVA, L.G.; BOBKOVA, Ye.P.

Formation of thin films of metal hydroxides on the surface of electrolyte solutions. Izv. vys. ucheb. zav.; khim. i khim. tekhn. 7 no.3:416-418 '64. (MIRA 17:10)

L. Ural'skiy polibekhanicheskiy institut imeni Kirova, kafedra fizicheskoy i kolloidnoy khimii.

BULATOV, N.K.; MOKRUSHIN, S.G.

Effect of additions of electrolytes and gelatin on the formation
of thin iron hydroxide films on a glass surface. Koll.zhur. 26
no.1:17-21 Ja-F '64. (MIRA 17:4)

1. Ural'skiy politekhnicheskii institut imeni Kirova, Sverdlovsk.

SKRYLEV, L.D.; MOKRUSHIN, S.G.

Kinetics of the separation of colloidal substances from hydrosols by
foam chromatography. Zhur.prikl.khim. 37 no.1:211-213 Ja '64.
(MIRA 17:2)

SAFOZHNKOVA, N.V.; NOKRUSHIN, S.G., nauchn. red.

[Kinetics of chemical reactions in solutions; a manual]
Kinetika khimicheskikh reaktsii v rastvorakh; uchebnoe
posobie. Sverdlovsk, Ural'skii politekhn. in-t im. S.M.
Kirova. 1963. 133 p. (MIRA 17:7)

BORISIKHINA, V.I.; MOKRUSHIN, S.G.

Extraction of metals dissolved in a colloidal state by the
method of emulsification. Zhur. prikl. khim. 37 no.8:1695-
1699 Ag '64. (MIRA 17:11)

1. Ural'skiy politekhnicheskiy institut imeni Kirova.

SKRYLEV, L.D.; SAVEL'YEV, V.N.; MOKRUSHIN, S.G.

Hydrolysis of hydrochloric acid solutions of niobium pentoxide.
Zhur. prikl. khim. 37 no.10:2179-2187 O '64.

(MIRA 17:11)

1. Ural'skiy politekhnicheskii institut imeni Kirova.

I 53986-65 EWT(1)/EWP(6)/EPA(6)-2/EWT(m)/EPP(c)/EMP(1)/EPR/EPA(w)-2/T/EWP(t)/
 EEC(b)-2/EWP(b) Pab-10/Fq-4/Pr-4/Ps-4/Pt-1/Pi-4 IJP(c) JD/WJ/GG/WZ
 UR/0153/65/008/002/0250/0253
 ACCESSION NR: AP5015570

AUTHOR: Saranov, Ye. I.; Mokrushin, S. G.

68
62
B

TITLE: Kinetics of formation of thin copper films on glass

SOURCE: IVDZ. Khimiya i khimicheskaya tekhnologiya, v. 8, no. 2, 1965, 250-253

TOPIC TAGS: thin film technology, copper thin film, copper catalytic deposition, chemical reduction kinetics

ABSTRACT: Kinetics of the catalytic reduction of copper sulfate has been studied with the purpose of depositing on glass transparent thin films of copper of given thickness. The advantage of the chemical deposition method for producing thin film devices and the absence of literature data on the deposition of copper films were stressed. Before copper deposition, the glass-plate substrate was activated first with tin and then with palladium. A continuous spectrophotometric method was used for monitoring the increase in the film thickness which was found to increase linearly with increasing optical density. Kinetic curves indicated two phases in the deposition process. In the first phase, the process obeyed an exponential law corresponding to the formation of copper nuclei on the activated glass surface. The second phase, described by a linear time dependence of the optical density, corres-

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I 5986-65
ACCESSION NR: AP5015570

ponded to copper deposition on nuclei. The most important rate determining factor was the copper concentration in solution (0.001--0.006 mol/l). The growth rate of the film increased linearly with concentration. The effects of the viscosity of the solution and temperature (in the 20--40C range) were also studied. The process of copper deposition was assumed to be controlled by a combination of the diffusion of copper ions in solution and the kinetics of the catalysis on the surface. Orig. art. has: 5 figures and 1 formula. [JK]

ASSOCIATION: Ural'skiy politekhnicheskii institut im. S. M. Kirova, Kafedra fizicheskoy i kolloidnoy khimii (Ural Polytechnic Institute, Chair of Physical and Colloid Chemistry)

SUBMITTED: 11Jan64

ENCL: 00

SUB CODE: GC

NO REF SOV: 008

OTHER: 009

ATD PRESS: 4021

Card 2/2

BULATOV, N.K.; MOKRUSHIN, S.G.

Kinetics and mechanism of formation of thin films of iron hydroxide on a glass surface in ferric chloride solutions.
Koll. zhur. 27 no.2:158-164. Mar-Apr '65. (MIRA 18:6)

1. Ural'skiy politekhnicheskii institut imeni Kirova, Sverdlovsk.

L 56567-65 EWP(e)/EWT(m)/EWP(1)/EWP(1)/EWP(b) Fq-d JJP(c) JD/WH

ACCESSION NR: AP5014525

UR/0069/65/027/003/0379/0382
539.216.2

25
214
8

AUTHOR: Kirayev, G. A.; Uritskaya, A. A.; Mokrushin, S. G.

TITLE: Experimental studies of laminar systems. Part 30. Kinetics of formation of thin cadmium sulfide films on the surface of glass ✓

SOURCE: Kolloidnyy zhurnal, v. 27, no. 3, 1965, 379-382

TOPIC TAGS: cadmium sulfide, thin film, thiocarbamide, glass coating, colometric analysis

27 27 14

ABSTRACT: The formation of cadmium sulfide took place in accordance with the ionic reaction $Cd^{2+} + S^{2-} \rightarrow CdS$. Since ionic reactions in solutions are faster than molecular reactions, the authors chose the decomposition of thiourea as the rate-determining step in the formation of CdS. The kinetic curves, plotted by using dithizone to determine the cadmium concentration, indicate autocatalytic accumulation of CdS in the reagent solution. The experimental data were therefore treated by using the kinetic equation of an autocatalytic reaction:

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L 56567-65

ACCESSION UR: AP5014525

$$K = \frac{2.3}{t(a+b)} \log \frac{(b+x)a}{(a-x)b}$$

where a is the initial number of moles of cadmium tetraamine, b is the initial number of moles of the reaction product, and x is the number of moles of cadmium tetraamine which has reacted during time t . It was found that the rate constant of the decomposition of thiourea (buildup of cadmium sulfide) is directly proportional to the hydroxyl ion concentration, i.e., a homogeneous base-catalysis takes place in the system, and that a heterogeneous catalytic process also occurs at the same time. The rate constant of the reaction is directly proportional to the concentration of thiourea. Orig. art. has: 4 figures, 2 tables, and 4 formulas.

ASSOCIATION: Ural'skiy politekhnicheskii Institut im. S. M. Kirova, Sverdlovsk (Ural Polytechnic Institute)

SUBMITTED: 06Jul63

ENCL: 00

SUB CODE: 00, MT

NO REF SOV: 003

OTHER: 002

Card 2/2

KITAYEV, G.A.; URITSKAYA, A.A.; MOKRUSHIN, S.G.

Experimental studies of laminar systems. Part 30: Kinetics of
the formation of thin cadmium sulfide films on a glass surface.
Koll.zhur. 27 no.3:379-382 My-Je '65.

(MIRA 18:12)

1. Ural'skiy politekhnicheskiy institut imeni Kirova, Sverdlovsk.
Submitted July 6, 1963.

L 27900-66

ACCESSION NR: AP5024023

UR/0069/65/027/005/0767/0772
541.18.048

2
B

AUTHOR: Uritskaya, A. A.; Kitayev, G. A.; Mokrushin, S. G.

TITLE: Experimental studies of laminar systems. Part 31. Kinetics and mechanism of formation of cadmium sulfide films on a glass surface

SOURCE: Kolloidnyy zhurnal, v. 27, no. 5, 1965, 767-772

TOPIC TAGS: cadmium sulfide, colloid, chemical reaction kinetics, chemical dispersion

ABSTRACT: The kinetics of formation of colloiddally dispersed cadmium sulfide in aqueous alkaline solutions with the use of thiourea were studied between 15 and 45C in closed vessels, in which thicker films of better quality are obtained than in open vessels. The process was shown to be heterogeneous, autocatalytic, and catalyzed by hydroxyl ions and by the surface of the solid phase dispersed in the solution. The order of the reaction with respect to the alkali, ammonia, and thiourea was determined. The formation, growth, and structure of the cadmium sulfide films depend on the course of generation of primary colloidal particles of the dispersed phase. "The authors express their thanks to Prof. G. V. Skrotskiy and Cand. Phys. Sci. O. K. Shabalina for assistance in work
Card 1/2

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L 27900-66

ACCESSION NR: AP5024023

with the electron microscope." Orig. art. has: 7 figures, 2 tables, and 5 formulas.

ASSOCIATION: Ural'skiy politekhnicheskiy institut im. S.M. Kirova (Ural Polytechnic Institute)

SUBMITTED: 12Jun64

ENCL: 00

SUB CODE: IC, CC

NO REF SOV: 001

OTHER: 002

Card 2/2 CC

SKRYLEV, L.D.; SAVEL'YEV, V.N.; MOKRUSHIN, S.G.

Kinetics of slow hydrolysis of aqueous solutions of ferrous
chloride. Zhur. prikl. khim. 38 no.5:1150-1153 My '65.
(MIRA 18:11)

1. Ural'skiy politekhnicheskiy institut imeni S.M.Kirova.

I 63051-65 ENT(m)/EPE(n)-2/ENP(t)/ENP(b) Pu-4 LJP(e) JD/JG
ACCESSION NR: AP5017772 UR/0080/65/038/007/1444/1447
546.862+546.521

31
30
B

AUTHOR: Savel'yev, V. N.; Skrylev, L. D.; Mokrushin, S. G.

TITLE: Separation of niobium from titanium

SOURCE: Zhurnal prikladnoy khimii, v. 38, no. 7, 1965, 1444-1447

TOPIC TAGS: niobium, titanium, hydrolytic separation, ultracentrifugation, ultrafiltration

ABSTRACT: The object of this work was to separate niobium (V) from titanium (IV) by direct hydrolysis of their hydrochloric acid solutions (prepared from the oxides TiO_2 and Nb_2O_5) in the presence of ammonium sulfate. The degree of precipitation of niobium depends on the duration of hydrolysis, pH of solution, and amount of ammonium sulfate added. At pH 1.2, the precipitation of niobium was highest (90%). It is postulated that the coagulation of the colloidal form of niobium formed as a result of the hydrolysis shifts the dynamic equilibrium which exists in the solution between the various forms of niobium toward the formation of niobium hydroxide. Ultrafiltration (using collodion filters with a pore diameter of 40-50 m μ) and ultracentrifugation (15 min. at 9000 rpm) in-

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L 62051-65

ACCESSION NR: AP5017772

creased the degree of precipitation of niobium by 5 to 10% as compared to ordinary filtering. The proposed method can be used for preparative purposes and is characterized by extreme simplicity. Orig. art. has: 2 tables.

ASSOCIATION: Ural'skiy politekhnicheskiy institut imeni S. M. Kirova (Ural'sk Polytechnic Institute)

SUBMITTED: 21May63

ENCL: 00

SUB CODE: IC

NO REP SOV: 022

OTHER: C04

Card

2/2

L 1617-66 EWT(m)/EWP(i)/EWP(t)/EWP(b) LIP(c) JU/JW

ACCESSION NR: AP5021426

UR/0076/65/039/008/2065/2066

541.11

37
36
B

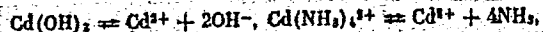
AUTHOR: Kitayev, G. A.; Uritskaya, A. A.; Mokrushin, S. G.

TITLE: Conditions of chemical deposition of thin cadmium sulfide films on a solid surface

SOURCE: Zhurnal fizicheskoy khimii, v. 39, no. 8, 1965, 2065-2066

TOPIC TAGS: cadmium sulfide, thin film, thiourea, thermodynamic calculation

ABSTRACT: The process of deposition of cadmium sulfide films from aqueous solutions (with the use of thiourea as the sulfiding agent) is treated thermodynamically. The treatment consists in a graphical solution of the equations describing the equilibria



The equations

$$\text{pH} = \text{pK}_{\text{H}_2\text{O}} - 1/2 \text{SP} + 1/2 \text{p}[\text{Cd}^{2+}] \quad (1)$$

(where $\text{pK}_{\text{H}_2\text{O}} = 10^{-14}$ is the ion product of water at 25°C and SP is the solubility

Card 1/2

L 1647-66

ACCESSION NR: AP5021426

product) and

$$4p[\text{NH}_3] = pK + p[\text{Cd}(\text{NH}_3)_4^{2+}] - p[\text{Cd}^{2+}], \quad (2)$$

are solved graphically. The graph is used to find the relative concentrations of OH^- and NH_3 , or pH and $p[\text{NH}_3]$, at which cadmium hydroxide is formed in the solution. Thus, the thermodynamic method describes the decomposition of thiourea with the evolution of S^{2-} ions and the resulting formation of cadmium sulfide and its deposition as a mirror film on any solid surface. The method also makes it possible to simplify the system by eliminating the alkali and using only two reagents - the cadmium salt and thiourea. Orig. art. has: 1 figure and 6 formulas.

ASSOCIATION: Ural'skiy politekhnicheskii institut (Ural Polytechnic Institute)

SUBMITTED: 04Jan65

ENCL: 00

SUB CODE: GC

NO REF SOV: 003

OTHER: 005

Card 2/2 *LP*

L 45774-66 EWT(l)/EWT(m)/T/EWP(e)/EWP(t)/ETI IJP(c) GG/WH/JD

ACC NR: AP6031944 (N) SOURCE CODE: UR/0080/66/039/009/1951/1956

AUTHOR: Bulatov, N. K.; Mokrushin, S. G. 47
BORG: Ural Polytechnical Institute im. S. M. Kirov (Ural'skiy politekhnicheskiy institut)TITLE: Formation of thin films of titanium hydroxide on glass substrate

SOURCE: Zhurnal prikladnoy khimii, v. 39, no. 9, 1966, 1951-1956

TOPIC TAGS: titanium dioxide, thin film, optic coating, chemical deposition, chemical reaction kinetics, HYDROXIDE, METAL FILM

ABSTRACT: Formation of thin titanium hydroxide films on a glass substrate by chemical deposition from solutions was studied experimentally in view of the relative simplicity of this method and the possibility of obtaining ultrathin and thin oxide films on substrates of any geometric form by using this method. These advantages of the chemical deposition from solutions over other known methods of deposition make it the preferred technique for obtaining thin TiO_2 films for optical, electronic, and other applications. The method consists in immersing a glass plate into an HCl solution of $TiCl_4$ and subsequent hydrolysis of this solution to precipitate colloidal titanium hydroxide. Under appropriate conditions, a mirror-like film with up to 1500 Å optical thickness may be obtained in a single operation. Thicker films may be prepared by repeated immersions into freshly made solutions. A simultaneous study

Card 1/2

UDC: 539.238+546.824

L 45774-66

ACC NR: AP6031944

0

of the kinetics of film growth and of the hydrolysis of the solutions revealed the dependence of the film growth rate in the initial period of hydrolysis on the rate of hydroxide nucleation on the substrate and, subsequently, on the rate of increase in size (radius) of the hydroxide particles in solution. The film growth rate, during the second stage of hydrolysis, was described by a kinetic equation which shows a linear dependence of the growth rate on the Ti (IV) concentration in solution. Further study revealed the existence of the optimal Ti (IV) concentration, pH, and temperature of solution for growth of transparent, mirror-like films. The effect of these factors on the growth rate was described primarily as the effect on the nucleation process which is dependent on supersaturation in solution. The optimal concentration, pH, and temperature correspond to a minimum supersaturation which is required for formation of transparent, mirror-like films. Orig. art. has: 5 figures and 5 formulas. [JK]

SUB CODE: 07/ SUBM DATE: 03Nov64/ ORIG REF: 006/ OTH REF: 006/ ATD PRESS: 5084

rd
Card 2/2

L 07822-67 EWT(m)/EWP(t)/ETI IJP(c) JD

ACC NR: AP6034205

(N)

SOURCE CODE: UR/0153/66/009/004/0574/0576

AUTHOR: Kitayev, G. A.; Lundin, A. B.; Mokrushin, S. G.

ORG: Department of Physical and Colloidal Chemistry, Ural Polytechnical Institute
im. S. M. Kirov (Kafedra fizicheskoy i kolloidnoy khimii, Ural'skiy politekhnicheskiy
institut)

TITLE: Chemical deposition of lead selenide thin films ¹ ² ⁴

3a
B

SOURCE: IVUZ. Khimiya i khimicheskaya tekhnologiya, v. 9, no. 4, 1966, 574-576

TOPIC TAGS: lead selenide, semiconducting film, thin film optic coating, chemical
deposition, chemical reaction, infrared sensor

ABSTRACT: A chemical method using unsubstituted selenourea as the selenizing agent
has been developed for deposition on a glass substrate of mirror-bright, adherent
lead selenide thin films of a given thickness up to several thousand angstrom.
Development of the method was prompted by the importance of lead selenide films as
infrared sensors and by the desirability of a simplified technique of preparation of
these films. The films were deposited by the reaction of lead nitrate with
selenourea in alkaline solution and in the presence of the citrate or thiosulfate
ion, as lead complexing agent, Na₂SO₃ as inhibitor of the selenourea decomposition
and hydrazine, ammonia, or potassium hydroxide as pH regulator. Selection of optimum
concentrations of the reactants was made on the basis of thermodynamic stability of

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UDC: 539.232

L 07822-67

ACC NR: AP6034205

lead hydroxide in the presence of the complexing agent. The region of possible formation of the films was found to be coincident with that of the stability of lead hydroxide and the experimentally determined region of optimum composition to be within the former region. Extremely adherent, mirror-bright, and transparent films, with optic thickness of the order of 6000\AA , were obtained from optimized solutions at pH = 7.9—8.2. The nature of the complexing ion and of the alkali was of secondary importance. In opposition to an earlier statement in a Western source, applicability was shown of unsubstituted selenourea to deposition of the lead selenide films. Orig. art. has: 1 figure and 3 formulas.

SUB CODE:: 07 / SUBM DATE: 26Oct64/ ORIG REF: 003/ OTH REF: 004
ATD PRES: 5101

Card 2/2 bc

ROZANOV, N.S., starshiy nauchnyy sotrudnik; MOKRUSHIN, V.N., inzh.

Investigating of the effect of noncemented joints on the stressed
state of the concrete dam of the Bratsk Hydroelectric Power Station.
Izv. VNIIG 76:43-54 '64. (MIRA 18:10)

MEDZHIBOZHSKIY, M.Ya.; PRIVALOV, M.M.; GUROV, A.K.; MOKRUSHIN, V.V.;
GRITSKOV, V.S.

Efficiency of the various variants for injecting compressed air
into the fuel spray and the bath of large open-hearth furnaces.
Izv. vys. ucheb. zav.; Chern. met. 5 no.8:35-43 '62.

(MIRA 15:9)

1. Sibirskiy metallurgicheskiy institut i Kuznetskiy metallurgicheskiy
kombinat.

(Open-hearth furnaces) (Compressed air)

S/148/62/000/012/001/008
E071/E151

AUTHORS: Medzhibozhskiy, M.Ya., Privalov, M.M., Gurov, A.K.,
and Mokrushin, V.V.

TITLE: Features of the technology and quality of steel for
different variants of air injection into the flame and
the bath of a large open hearth furnace

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Chernaya
metallurgiya, no.12, 1962, 41-55

TEXT: The investigation was carried out on a 400 ton open
hearth furnace operating with 60-62% hot metal charge and fired
with a mixture of coke oven gas and producer gas. The experimental
method, and the technical, thermal and economic criteria of
operation, have been described previously (Izv. VUZ, Chernaya
metallurgiya, no.8, 1962). It is concluded that: the injection of
compressed air into the flame and the bath led to improvements as
measured by all the criteria. Blowing the bath had the following
effects: a) the dephosphorisation of the metal was completed
during the melting period; b) the desulphurisation of steel is
considerably speeded up; c) the rate of carbon elimination
Card 1/3

Features of the technology and ...

S/148/62/000/012/001/008
E071/E151

increases by a factor of 1.5 - 2.0 and during the actual blowing period by a factor of 2.0 - 2.2; d) the rate of increase of the metal temperature is accelerated by 70% and amounts to 114 °C/hour; e) slag formation is accelerated, resulting in the early formation of a homogeneous slag. The rate of carbon elimination is most strongly influenced by the excess of oxygen in the furnace gases at the burner intake. An increase of the flow rate and pressure of the injected air is effective if it is accompanied by an increase in the excess oxygen in the furnace atmosphere. A clear relationship between the rate of carbon elimination and the excess of oxygen in the furnace atmosphere permits the use of air injection into the bath for the automatic control of refining. The use of air injection into the bath does not cause a deterioration in steel quality in comparison with steel produced by other methods of air injection or with steel produced by conventional methods. It is particularly important that in the course of the heat as well as in the finished steel, the content of nitrogen and oxygen in the metal both during the heat and in the finished steel shall remain the same as in heats with air

Card 2/3

Features of the technology and ... S/148/62/000/012/001/008
E071/E151
injection to the flame only, or in heats carried out by the
conventional methods.
There are 6 figures and 6 tables.

ASSOCIATION: Sibirskiy metallurgicheskiy institut
(Siberian Metallurgical Institute)

SUBMITTED: December 27, 1961

Card 3/3

MEDEZHBOZHSKIY, M.Ya.; PRIVALOV, M.M.; GUROV, A.K.; MOKRUSHIN, Y.V.;
GRITSKOV, V.S.; *Prinimali uchastiy:* TSYMBAL, V.P.; BYCHKOV, P.M.;
KURGUZKIN, V.P.; VALOV, M.Ye.; SHCHEKOLKIN, M.S.

Making a combined use of compressed air in a high-capacity
open-hearth furnace. Stal' 22 no.10:894-900 0'62. (MIRA 15:10)
(Open-hearth furnaces) (Compressed air)

MOKRUSHIN, Ye.L.

Development of the infinity concept in a mathematics course for
grade 5-8 students of a general-education secondary school.

Uch. zap. MOPI 98:119-294 '60.

(MIRA 15:1)

(Mathematics—Study and teaching)

80212

S/126/60/009/04/003/033
E111/E435

12.1141
18.8100

AUTHORS: Druzhinin, V.V. and Mokrushina, N.I.

TITLE: Temperature Dependence of Hysteresis and Eddy-Current Losses of Electrical Steel

PERIODICAL: Fizika metallov i metallovedeniye, 1960, Vol 9, Nr 4, pp 498-502 (USSR)

ABSTRACT: The operating range of magnetic cores has extended considerably not only towards higher temperatures (up to 400°C) but also towards lower temperatures (down to -100°C). Investigations on the temperature dependence of the coercive force, the specific losses, the permeability and the magnetic-temperature hysteresis of this steel have been described in earlier work (Ref 1 to 3). In this paper, the results are described of investigations of the temperature dependence of the individual components of the iron losses, namely: the hysteresis, eddy-current and additional losses. The experiments were carried out on ring specimens (6 cm outer dia, 4 cm inner dia, weighing 350 to 400 g) of hot-rolled electrical steel containing 1 and 3.5 to 4% Si, with various ratios of the hysteresis to eddy-current losses.

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80212

S/126/60/009/04/003/033
E111/E435**Temperature Dependences of Hysteresis- and Eddy-Current Losses of Electrical Steel**

Each layer of the magnetizing and metering coils was insulated by means of glass-fibre tape and inside each layer the adjacent turns were not in contact. The total losses were measured by means of an "absolute" wattmeter method with an accuracy of 2 to 3%; the hysteresis losses were determined from the area of the static hysteresis loop, which was measured by a ballistic method; for determining the "calculated" eddy-current losses, the thickness of the rings was calculated by means of known formulae and the specific electric resistance determined. At various temperatures, this resistance was determined using known values of the temperature coefficient of the electric resistance. The measurement and calculation of the total hysteresis and eddy-current losses were made for $B_{max} = 10000$ gauss and $f = 50$ c/s. The additional losses were determined by subtracting the hysteresis- and eddy-current losses from the measured total losses. For obtaining differing ratios of the hysteresis-to-eddy current and additional losses, specimens of differing grain sizes and differing sheet

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80212

S/126/60/009/04/003/033

E111/E435

Temperature Dependences of Hysteresis- and Eddy-Current Losses of Electrical Steel

thicknesses (0.2 to 2 mm) were used; a total of 10 transformer and 8 dynamo steels were tested. The changes with temperature in the hysteresis- and eddy-current losses of dynamo and transformer steels differ to some extent for the range -80 to $+250^{\circ}\text{C}$. The results obtained for dynamo-steel specimens, 0.5 mm thick, and for transformer-steel specimens, 0.35 mm thick, are graphed in Fig 1 and 3 respectively. In Fig 2, the relative variation of the individual losses (in percent of the respective 20°C value) are graphed as a function of the temperature for dynamo-steel sheet, 1 mm thick. The following conclusions are arrived at: 1) in dynamo steel (1.0 to 1.2% Si) the hysteresis losses drop by 10 to 15% and the eddy-current losses drop by 25 to 35% in the case that the temperature rises to 250°C ; the decrease in the "additional" losses is 30 to 40%; 2) on decreasing the temperature of dynamo-steel specimens from room temperature to -80°C , the increase in the total losses is somewhat more pronounced (1.3 to 1.5 times) than in the case of heating

Card 3/4

80212
S/126/60/009/04/003/033
E111/E435

Temperature Dependences of Hysteresis- and Eddy-Current Losses of Electrical Steel

to 120°C; 3) for hot-rolled transformer steel, the variation of the hysteresis- and eddy-current losses for the temperature range -80 to +150°C is within the limits of accuracy of the investigations; further increase in the temperature of the specimens to 250°C brings about a drop in the total losses by 6 to 9%. There are 3 figures, 1 table and 9 Soviet references.

ASSOCIATION: Verkh-Isetskiy metallurgicheskiy zavod
(Verkh-Isetck Metallurgical Works)

SUBMITTED: July 11, 1959

Card 4/4

✓

KANAVETS, I.F.; BATALOVA, L.G.; Prinimala uchastiye MOKRUSHINA, M.V.

Determination of optimum conditions for processing thermoplastics
by compression molding. Plast.massy no.3:18-28 '62. (MIRA 15:4)
(Thermoplastics--Molding)

KANAVETS, I.F.; BATALOVA, L.G.; Prinimala uchastiye: MOKRUSHINA, M.V.,
laborant

Method of determining the thermal stability and highest per-
missible temperature for processing thermoplastic materials.

Plast.massy no.4:22-27 '62.

(MIRA 15:4)

(Plastic--Thermal properties)

MOKRUSHINA, V.S.

Differentiated norms of the consumption of lumber in the production
of planed containers. Der. prom. 12 no.1:22-23 Ja '63.
(MIRA 16:5)

1. Tavdinskiy lesokombinat imeni V.V.Kuybysheva.
(Container industry)

MOKRY, J.

Technological schemes and assembly work in continuous housing construction. Pt. 1. p. 123. POZEMNI STAVBY. (Ministerstvo stavebnictvi) Praha. Vol. 3, no. 3, Mar. 1955.

SOURCE: East European Accessions List (EEAL), Library of Congress, Vol. 4, No. 12, December 1955.

Mokry, J.

Mokry, J. Assembly-line operation and finishing work organized by
the Subsidiary Building Production Agency. p. 461.

Vol. 4, no. 12, Dec. 1956

POZEMNI STAVBY
TECHNOLOGY
Czechoslovakia

So. East European Accessions, Vol. 6, No. 5, May 1957

MOLNAR, J.; TIGYI, A.; LISSAK, K.

Connection between vagal afferentation and higher nervous activity.
Acta physiol.hung. 18 no.1:19-26 '60.

1. Institute of Physiology, Medical University, Pecs.
(VAGUS NERVE physiology)
(CENTRAL NERVOUS SYSTEM physiology)

MOLNAR, J.; TIGYI, A.; LISSAK, K.

Changes of the nucleic acid content in the denervated sub-maxillary gland of the dog. Acta physiol. acad. sci. Hung. 24 no. 3:279-286 '64

1. Institute of Physiology, Medical University, Pecs.

*

MOLNAR, J.; TIGYI, A.; LISSAK, K.

Changes of the nucleic acid content in the denervated sub-
maxillary gland of the dog. Acta physiol. acad. sci. Hung.
24 no.3:279-286 '64

1. Institute of Physiology, Medical University, Pecs.

HORVAI, Ferenc; MOLNAR, Janos

Belt conveyors with middle frames. Ujit lap 14 no.21:28 10 H '62.

1. Epitegegyarto es Javito Vallalat, Budapest, XVIII, Halmi dulo.

MOLNAR, Janos

Stereo radio. Pt.10. Radiotekhnika 14 no.2170-71 F'64.

MOKRY, J.;KADERA, J.

Evaluation of culture of Mycobacterium tuberculosis on the culture medium with ascites prepared according to Sula. Gruzica 21 no.6: 427-434 June 1953. (CIML 25:4)

1. Of the Sanatorium for Lung Diseases UNP, Bukov, Czechoslovakia.

Mohr, Jakob

Effect of extract of birch leaves on growth of *Myrmica*
and other termites. *Zeitschrift für Vergleichende Pathologie und Anatomie* 1910, 10, 1-10.



MOKRY, J.

MOKRY, J.; KADERA, J.; BANEŠ, A.

Effect of extract of dry Betula leaves on growth of Mycobacterium tuberculosis. Chekh. biol. 3 no.2:127-130 Apr 54.

1. Tuberkuleznyy sanatorii, Bukov.

(PLANTS,

*Betula, eff. of extract of dry leaves on growth of
M tuberc.)

(MYCOBACTERIUM TUBERCULOSIS, effect of drugs on,

*Betula leaves extract)

EXCERPTA MEDICA Sec 8 Vol 13/3 Internal Med. Mar 59

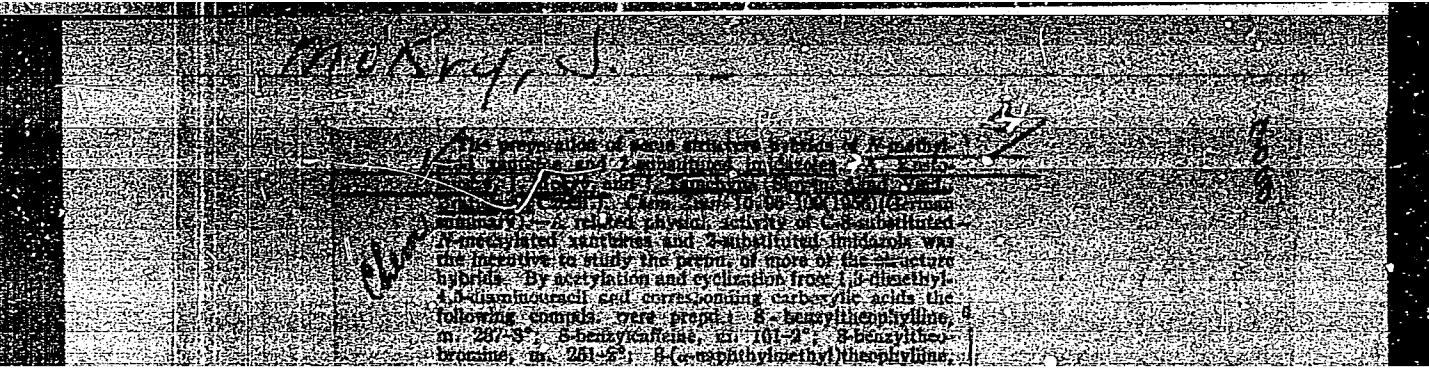
1695. THE SIGNIFICANCE OF SCALENE NODE BIOPSY IN CHEST DISEASES -
Význam biopsie skalenových uzlin v pneumologii - Mokřý J., Janoušek
S. and Podlaha J. II The Odd. Fak. Nem., Brno-Bohunice - VNITRNI
LEK. 1958, 4/3 (220-224) Tables 1

Scalene node biopsy was performed in a series of 27 suspected bronchial carcinomas (with only 4 positive results) and in some other cases as pulmonary tb etc. In 120 cases scalene node examinations from autopsy material could be divided into 4 groups: 64 cases of bronchial carcinoma, 16 of metastatic pulmonary malignancy, 28 of advanced pulmonary tb and 12 of haemoblastosis. The nodes from both sides of the neck were examined. In the cases of bronchial carcinoma the incidence of positive findings was 70.3%. It is noteworthy that among the 21 cases not diagnosed in lifetime 90% showed involvement of the scalene nodes. The right side was slightly more involved than the left; contralateral involvement was proved in 6 cases, bilateral in 5 cases. Among 16 cases of metastatic pulmonary tumours 5 gave positive results (2 hypernephromas, 1 cancer of the breast, 1 of the stomach and 1 of the prostate). Among 28 necropsies of far advanced pulmonary tb, only in 11 cases (37%) were the scalene nodes involved, 5 of them on both sides. Malignant diseases of the haematopoietic system (Hodgkin, reticulo-sarcoma, chronic lymphatic and myeloid leukaemia) showed positive findings in all cases examined. In recent cases of bronchial carcinoma not much valuable information may be obtained from scalene node biopsy. In patients with advanced malignancy, however, this method may provide definite information regarding the morphological type of the tumour and its operability.

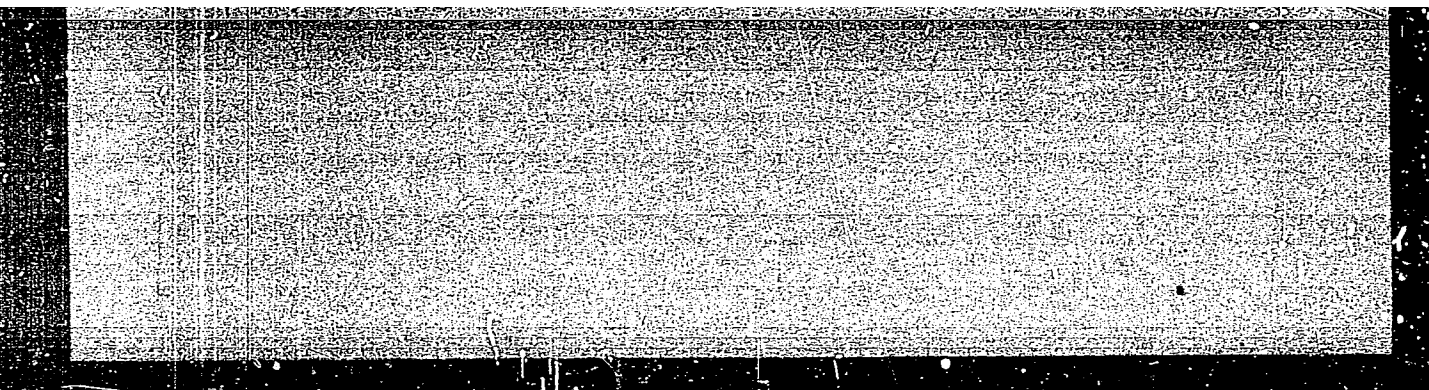
Adler - Kfar Saba (XV, 5, 6, 9, 16)

C 7. P. CH

~~Methyl cyanacetate. Josef Muckl (Slav. akad. vied. tech. org. Bratislava, Czechoslovakia, 1954).--Esters of cyanoacetic acid are best prepd. by the esterification of sodium cyanacetate (I). I tech. pure can be prepd. by evap. the reaction soln. after treating CH_2Cl_2 , CO_2Na with NaCN . Jan Micka~~



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MOKRY J
CZECHOSLOVAKIA / Organic Chemistry. Synthetic Organic G-2
Chemistry.

Abs Jour: Ref Zhur-Khimiya, 1958, No 17, 57384.

Author : Bauer S., Masler L., Orszagh S., Mokry J., Tomko J.

Inst : Not given.

Title : Study of the L-Phenylacetylcarbinol. V.

Orig Pub: Chem. zvesti, 1957, 11, No 11, 651-655.

Abstract: Hydroxides of Fe, Ni, and Co, present in L-phenylacetylcarbinol (I) in quantities of 0.1% destroy completely the optical activity of I upon standing at approx. 20°. Addition of the above quantity 0.1% of ethylenediaminetetraacetic acid to I fully protects I from the deactivation that occurs in

Card 1/2

MOKRY, J.

COUNTRY : Czechoslovakia F
CATEGORY : Laboratory Equipment. Instrumentation.
ABS. JOUR. : RZhkhim., No. 14, 1958, No. 67798
AUTHOR : Mokry, J.; Fenclo, J.; Bauer, S.; Koupis, I.
TITLE : New Distribution Procedure in Countercurrent
Flow by O'Keefe's Method in Craig's Apparatus
ORIG. PUB. : Chem. zvesti, 1958, 12, No 6, 382-389
ABSTRACT : Description of a new distribution method in
countercurrent flow of an automatic apparatus of Craig,
consisting of 200 units modified by Lotsshem [transliterated
spelling] (RZhkhim, 1954, No 16, 36040). In the proposed
procedure a two-side removal of the components being sepa-
rated is possible. Mixtures are separated in the form of
solutions. A formula and a table are given for calculation
of distribution coefficients and of ratio of phase volumes
depending on the number of vessels.

CARD: 1/1

Country : Czechoslovakia G
Category= : Organic Chemistry. Synthetic Organic Chemistry
Abs. Jour. : Ref Zhur-Khiniya, No.12, 1959, No.42383
Author : Bauer, S., Masler, L., Orszagh, S., Mokry, J.,*
Institut. : Not given
Title : On the Study of 1-Phenylacetylcarbynol. VI.
Orig. Pub. : Chem. zvesti, 1958, 12, No.8, 509-512
Abstract : The presence of $\text{Fe}(\text{OH})_2$ (II). $\text{Ni}(\text{OH})_2$ (III) or $\text{Co}(\text{OH})_2$ (IV) affects the synthesis of 1-ephedrine by means of the hydrogenated amination of 1- $\text{C}_6\text{H}_5\text{CH}(\text{OH})\text{COCH}_3$ (I) in reaction with CH_3NH_2 in the presence of colloid Pt (German Patents 524806; 548459) in the medium $(\text{C}_4\text{H}_9\text{O})_2\text{O}$ (2 at): there is an optimum concentration for every hydroxide which accelerates the hydrogenated
* Tomko, J.
Card: 1/2

MOKRY, J.

TECHNOLOGY

Periodical CHEMICKÉ ZVESTI. Vol. 12, no. 9, Sept. 1958

MOKRY, J.: KOMPIS, I.: TAMCHYNA, J. Derivatives of N-methylxanthine. II. 6-(p-carboxyphenyl)-theophylline and 6-(p-carboxybenzyl)-theophylline. p. 519.

Monthly List of East European Accessions (EEAI) LC, Vol. 8, no. 3, March, 1959. Uncl.

TOMKO, Jozef, dr., inz., C.Sc.; BENDIK, Ivan, inz.; BAUEROVA, Oldriska, PhMr. ;
~~MOSEY~~, Jozef, inz., C.Sc.; BAUER, Stefan, dr., inz., C.Sc.

Alkaloids in the above-ground part of the snowflake (*Leucojum vernum*
L.). Amaryllidaceae. Chem zvesti 15 no. 11/12:839-842 K-D '61.

I. Československa akademie vied, Oddelenie chemie alkaloidov
Chemického ústavu Slovenskej akademie vied, Bratislava. Authors'
address: Bratislava, Mlynske nivy 37, Chemický ústav Slovenskej
akademie vied.

MOKRY, Josef, inz., C.Sc.; KOMPIS, Ivan, inz.; SUCHY, Jan, inz.;
SEFCOVIC, Pavel, dr., inz., C.Sc.; VOTICKY, Zdeno, dr., inz.,
C.Sc.

Contribution to the study of vincamine constitution. Chem
zvesti 16 no.1/2:140-150 Ja-F '62.

1. Československa akademie ved, Oddelenie chemie alkaloidov
Chemickeho ustavu Slovenskej akademie vied, Bratislava.
Authors' address: Bratislava, Mlynske nivy 37, Chemicky ustav
Slovenskej akademie vied.

MOKRY, J.; KOMPIS, I.; SEFCOVIC, P.; BAUER, S.

Alkaloids from Vinca minor L. Pt. 6. Coll Cz Chem 28
no. 5: 1309-1315 My '63.

1. Abteilung der Alkaloidchemie, Chemisches Institut,
Slowakische Akademie der Wissenschaften, Bratislava.

MOKRY, J.

3

CZECHOSLOVAKIA

MOKRY, J; KOMPIS, I; SEFCOVIC, P; BAUER, S.

Department of Alkaloidchemistry, Chemical Institute,
Slovak Academy of Science, Bratislava (for all)

Prague, Collection of Czechoslovak Chemical Communi-
cations, No 5, 1963, pp 1309-1314

"Alkaloids of Vinca minor L. VI. Vincanorin, its
Isolation, Constitution and a Hypothesis of its
Biogenesis."

273510

45196
Z/043/63/000/001/003/004
D287/D307

AUTHORS: Mokřý, J., Kompiš, I., Suchý, J., Šefčovič, P. and
Votický, Z.

TITLE: Alkaloids from Vinca minor L. V. The structure of
vincamine

PERIODICAL: Chemické Zvesti, v. 17, no. 1, 1963, 41-53

TEXT: E. Schlitter and A. Furlenmeier separated vincamine, the
main constituent of Vinca minor L. for the first time. The authors
modified the method described by S. Scheindlin and N. Rubin for se-
parating the crude alkaloid from the plant and obtained a new al-
kaloid, vincarein, from the crystalline fraction of the crude al-
kaloid solution (vincarein: $C_{21}H_{24}N_2O_4$). This compound has the same
physical and chemical properties as vincamine and the authors sug-
gest that the two compounds are identical. The separation of vinca-
mine ($C_{21}H_{26}N_2O_3$) was described in an earlier publication (Chem.
Zvesti, v. 16, 1962, 140); vincaminol $C_{20}H_{26}N_2O_2$ was obtained by
Card 1/3

Alkaloids from Vinca ...

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reduction of vincamine with LiAlH_4 . Dehydrogenation with Se gave vincyrine and isovincyrine ($\text{C}_{19}\text{H}_{22}\text{N}_2$). The structure of vincamine was proved by oxidation of vincaminol: vincamone and formaldehyde were obtained and it was therefore obvious that the compound was a 1,2-diol and that the $-\text{OH}$ and $-\text{COOCH}_3$ groups in vincamine are on the same C-atom (C_{14}). The formula of vincamone, the uv and ir spectra and the m.p. of the compound are identical with those of eburnamonine. Apovincamine (obtained by dehydration of vincamine) can be subjected to catalytic hydrogenation and esterification and yields desoxyvincamine $\text{C}_{21}\text{H}_{26}\text{N}_2\text{O}_2$ which has an equatorial carbomethoxy group; the same position of the carbomethoxy group and configuration are assumed to exist in vincamine. There are 2 figures. ✓

ASSOCIATION: ČSAV, Chemický ústav Slovenskej akadémie vied, Oddelenie chémie alkaloidov, Bratislava (Czechoslovak AS, Institute of Chemistry of the Slovak Academy of

Card 2/3

Alkaloids from Vinca ...

Z/043/63/000/001/003/004
D287/D307

Sciences, Department of Alkaloid Chemistry, Bratislava)

SUBMITTED: June 6, 1962

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Card 3/3

MOKRY, Jozef, inz., CSc.; KOMPIS, Ivan, inz., CSc.

(±)-Ind-N-methyl quebrachamine, the fourth racemic alkaloid
from Vinca minor L. Chem zvesti 17 no.12:852-860 '63.

1. Ceskoslovenska akademie ved, Chemicky ustav Slovenskej
akademie vied, Bratislava, Dubravska cesta.

2

CZECH/37-59-2-5/20

AUTHORS: J. Hladký, P. Chaloupka, V. Kadečka, T. Kowalski⁴
and P. Mokřý

TITLE: Three Variations in the Intensity of Cosmic Radiation
in the First Half of 1958

PERIODICAL: Československý Časopis Pro Fysiku, 1959, Nr 2,
pp 150-156

ABSTRACT: Research into variations of the primary component of cosmic radiation as a function of changes in the atmosphere of the sun, is expected to lead to useful information on the origin of cosmic radiation. To get a full picture of this variation, a large number of observations in varying geographical positions is necessary. From the regular and irregular variations of intensity of cosmic radiation, the influence of the sun is obvious. This may, in principle, have the following two reasons. The sun may be a source of the primary particles and may modulate them by its magnetic field. They are further modulated by changes in the Earth's magnetic field. Within the framework of the International Geophysical Year, a constant registration of the intensity of the penetrating component and of the neutron component of cosmic radiation was undertaken in two observatories. These are

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CZECH/37-59-2-5/20

Three Variations in the Intensity of Cosmic Radiation in the First Half of 1958

Lomnický štít (2,634M above sea level: geomagnetic latitude 48°N) and Prague (228M above sea level: geomagnetic latitude 48°N). The apparatus in both stations is similar. The penetrating component (μ -mesons) were measured by two counting telescopes with geometry recommended by C.S.A.G.I. (Ref 4). The effective area of the set of counters was 2500 cm² at Lomnický štít and 3600 cm² in Prague. For the detection of neutrons, both stations used a monitor described by Simpson (Ref 5) and recommended by C.S.A.G.I. The continuous registration was carried out by two independent instruments in each station. The location of the stations determined the lower threshold of energies of primary particles which produced the measured components of the cosmic radiation. The range of energies can only be very roughly estimated. The average pressure at Lomnický štít is 550 mm Hg. The minimum energy of μ -mesons capable of penetrating the given amount of air and the absorber (10cm Pb) is about 1.8 GeV (Ref 6). The energy of the primary particles must be higher, i.e. about 20 GeV. ✓

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2/6

CZECH/37-59-2-5/20

Three Variations in the Intensity of Cosmic Radiation in the First Half of 1958

For sea level, the minimum energy of primary particles must be about 30 GeV. For the neutron monitor, the situation is more complicated because the atmospheric processes involving nucleons are complicated. We may assume (Refs 8,9,10) that the particles have energies around 3 GeV for Lomnický štít and 7 GeV for sea level. During the first half of 1958, both stations registered three large variations in intensity of the penetrating and the neutron component. These were on the 25th March, 25th April and 7-9th May. These variations are shown in Figs 3, 4 and 5, together with the measurements on the intensity of the Earth's magnetic field. Table 1 shows the main characteristics of these variations. The magnetic and ionospheric data are taken from a publication by the Geophysical Institute of the Czechoslovak Academy of Science (Ref 11). The Prague data of the intensity of cosmic radiation are in good agreement with those measured in Moscow (Ref 12). The intensities of the various components of cosmic radiation are shown relative to the mean frequency of registered particles and only the

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CZECH/37-59-2-5/20

Three Variations in the Intensity of Cosmic Radiation in the First Half of 1958

barometric effect has been corrected for. The barometric coefficient at Lomnický štít is 0.299%/mm Hg for the penetrating component and 1.058%/mm Hg for the neutron component. The same corrections in Prague are 0.218 and 0.95%/mm Hg respectively. The statistical error of the measurements was $\sigma = 0.28\%$ for the meson telescopes on Lomnický štít and $\sigma = 0.41\%$ for the neutron monitors. In Prague, the errors were $\sigma = 0.21\%$ for mesons and $\sigma = 0.96\%$ for neutrons. All other errors were considerably smaller than the statistical error, with the exception of a possible error introduced by changes in the geometry due to replacements of counters. All the reported measurements were taken without such replacements. The variation on the 25th March 1958 (Fig 3) is a typical variation associated with a magnetic storm. It has an accurately defined beginning which coincides with the beginning of the storm and lasts many days. The intensity of the meson component shows an increased daily variation. The neutron component showed this increased daily variation only at the Prague station. The amplitude of the disturbance was ✓

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CZECH/37-59-2-5/20

Three Variations in the Intensity of Cosmic Radiation in the First Half of 1958

extraordinarily large and related to the intensity of the magnetic storm. Before the variation, an intensive eruption was observed on the sun (Ref 13) starting on the 23rd March at 0950 hours GMT. The variation on the 25th April (Fig 4) was a relatively small one. The state of the Earth's magnetic field was practically undisturbed until the next day. No eruption was observed on the sun. The May variation (Fig 5) showed a short increase in the neutron intensity at Lomnický štít on the 7th May at 2300 hours GMT. This was followed on the 9-10th May by a short decrease with a badly defined beginning, registered by all detectors. It is possible that the effect is due to a direct emission of particles with energies smaller than 7 GeV, possibly from a small eruption observed on the sun at 2335 hours GMT. During the following decrease, no large magnetic disturbance was observed. These measurements are for the period from 1st January to 30th June 1958. Measurements in both stations are being continued.

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CZECH/37-59-2-5/20

Three Variations in the Intensity of Cosmic Radiation in the First Half of 1958

There are 5 figures, 1 table and 13 references, of which 5 are German, 5 English, 2 Soviet and 1 Czech.

ASSOCIATION: Fysikální ústav ČSAV, Praha
(Institute of Physics, Czechoslovak Ac. Sc., Prague)

*) Akademia Górniczo-Hutnicza, Kraków
(Mining-Metallurgical Academy, Cracow)

Card 6/6

SUBMITTED: November 4, 1958



81751

Z/037/60/000/04/004/014
E073/E535

24.6810

AUTHORS: Lehraus, I., Mokřý, P. and Slavík, B.

TITLE: Apparatus for Continuous Measurement of the Variation of the Intensity of Cosmic Radiation

PERIODICAL: Československý časopis pro fyziku, 1960, No 4, pp 297-302

ABSTRACT: A description is given of the Czechoslovak design of the cubic telescope and neutron monitor which were built in accordance with the general CSAGI specifications for measurements to be carried out within the framework of the I.G.Y. programme. A brief description of the characteristics of the apparatus has been published in an earlier paper of the team of the authors (Ref 2). The description of this apparatus is published mainly at the request of foreign stations. The metering equipment consists of two duplicate sets of apparatus, namely, two cubic telescopes with GM counters for detecting μ -mesons and two detectors of the nucleonic component with proportional neutron counters. The

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81751

Z/037/60/000/04/004/014
E073/E535

Apparatus for Continuous Measurement of the Variation of the Intensity of Cosmic Radiation

intensities are determined from the sum of both sets of apparatus. The duplication of the apparatus is intended to ensure continuous measurement and also to enable verification of the data measured by the two sets of instruments. Both the cubic telescope and the neutron monitor are described; the block schematics of these are given in Figs 1 and 2. The authors also describe practical experience gained with using this apparatus. It was found that for some parts of the apparatus it is desirable to use designs differing from those recommended by CSAGI (Refs 1 and 3), particularly due to the differing properties of some of the electronic components and counters. Without the intervention of the operator continuous faultless operation of the apparatus can be maintained for about a week. The occurring disturbances are mainly due to changes in the settings of the discriminators, the quenching circuits and the amplifiers in the neutron monitor caused by ageing of

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81751

Z/037/60/000/04/004/014

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Apparatus for Continuous Measurement of the Variation of the Intensity of Cosmic Radiation

the electron tubes. In the case of systematic checks, failures are likely to occur only in one set of apparatus so that the appropriate data can be obtained by extrapolating the results from the other set of apparatus. It was found that the characteristics of the miniature tubes produced by TESLA (Czechoslovakia) varied considerably during the first few days of operation and, therefore, they could be used only in the less critical circuits. The service life of the telephone electro-mechanical counters varied greatly and was about five million pulses. Originally film cameras of the type "Admira 8 mm" were used for the photo recording but these did not prove satisfactory, since the mechanism was fully worn out after a few tens of thousands of individual exposures. Fig 3 shows recordings of the differences in the intensity of the penetrating component of the cosmic radiation obtained

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Apparatus for Continuous Measurement of the Variation of the Intensity of Cosmic Radiation

by means of the cubic telescopes in Prague during the two days of November 12, 1958 and December 10, 1959. Acknowledgments are expressed to Academician J. Novák, Chairman of the Czechoslovak I.G.Y. Committee for his encouragement and to Professor Doctor V. Petržílka and Corresponding Member of the Czechoslovak Academy of Sciences Doctor P. Chaloupka for their initiative and cooperation and also to Doctor J. Pernegr and M. Votruba for their useful suggestions and criticisms. There are 3 figures and 5 references, 2 of which are Czech and 3 English.

ASSOCIATION: Fyzikální ústav ČSAV, Praha (Physics Institute, Czechoslovak Academy of Sciences, Prague)

SUBMITTED: December 31, 1959

Card 4/4

84949

13,2920
21,5300Z/057/60/000/006/003/010
E192/E382AUTHOR: Mokřý, PřemyslTITLE: On the Life of Geiger-Müller Counters 19PERIODICAL: Československý časopis pro fyziku, 1960, No. 6,
pp. 526 - 529 + 1/2 plate on p. 590a

TEXT: The problem of securing long life for Geiger-Müller counters was encountered in connection with the measurements of cosmic radiation by means of equipment employing 90 GM tubes. The equipment was required to give continuous service of several years. The tubes were of the type GM 40/600 K and were made by Tesla in Czechoslovakia. A counter of this type has a copper cathode of 37 mm diameter which is coated with a passivating layer of iron. It has a tungsten anode of 0.4 mm diameter and its active length is 60 cm. The tube is filled with 8 cm Hg argon and 2 cm Hg of ethylene. The tube is of the self-quenching type but in self-quenching conditions its life is rather limited. Consequently, a suitable quenching circuit was developed; a detailed diagram of this device is shown in Fig. 2. The circuit is in the form of a monostable multivibrator and it can work with several GM tubes in parallel;
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84949

Z/057/60/000/006/003/010

E192/E382

On the Life of Geiger-Müller Counters

the common output voltage is taken from point 1 (Fig. 2). For testing the individual tubes these are connected to the output 2 which is controlled by the voltage applied to point 3. The quenching pulses are rectangular in shape. The duration of the pulses is determined by the time constant $T_1 = R_2 C_1$; the other time constant $T_2 = R_1 C_2$ is much higher.

With the time constants so chosen the quenching pulse is obtained with a minimum delay with respect to the front of the triggering pulse. With the anode voltage of 250 V, the amplitude of the output pulse is 220 V; the pulse is shown in the oscillogram given in Fig. 3 on p. 590a. The delay between the front of the triggering pulse, having an amplitude of 0.5 V and the leading edge of the output pulse is less than 50 μ s, the sensitivity of the circuit being 0.06 V. Even at this sensitivity the circuit is still stable and can operate satisfactorily for 1 000 hours. The stability could be increased further by using a different type of electron tube. The circuit of Fig. 1 was used to investigate the life of the tubes. The results are

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shown in the table on p. 528. It was found that, in general, by using the circuit the life could be increased tenfold. Thus, for instance, while the life without the quenching circuit is normally 2×10^8 pulses, with the quenching circuit it was possible to obtain 1.6×10^9 without the tube going out of action. The quenching circuit was still operating satisfactorily even if the pulse generated by it were reduced to $2 \mu\text{s}$. It was found that this pulse duration corresponds to the resolving time of $5 \mu\text{s}$ for the counter. The author thanks his collaborators - in particular, B. Slavík, who took part in constructing the circuit and in measuring the life of the counters. There are 3 figures, 1 table and 9 references: 3 Czech and 6 English.

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On the Life of Geiger-Müller Counters

ASSOCIATION: Fysikální ústav ČSAV, Praha
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S/035/62/000/008/035/090
A001/A101

AUTHORS: Křivský, L., Mokrý, P., Hladký, J.

TITLE: Cosmic radiation and the disturbance of the lower ionospheric layer during the flare of October 6, 1959

PERIODICAL: Referativnyy zhurnal, Astronomiya i Geodeziya, no. 8, 1962, 69, abstract 8A458 ("Byul. astron. in-tov Chekhoslovakii", 1961, v. 12, no. 3, 93 - 97, English; Russian summary)

TEXT: A class 1+ chromospheric flare was observed at the astronomical observatory of AS CzechSSR at Ondrjeova on October 6, 1959, at 14^h09^m - 14^h45^m UT (30°5 N, 63° E). The flare was accompanied by an active return ejection and intensification of the solar radio emission on wavelengths 56 and 130 cm. Simultaneous observations of atmospherics at the 27-kc frequency have shown first, their ordinary intensification due to the disturbance of region D and second, at 15^h20^m - 15^h50^m UT a marked drop of the level due, in the authors' opinion, to the disturbance of the ionosphere by cosmic radiation. Increase of intensity, which lasted 25 min, was detected in all components of cosmic radiation observed.

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Cosmic radiation and the...

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at observatories Lomnitskiy Shchit (2,634 m) and Praga-Karlova (228 m) equipped with standard neutron monitors and counter telescopes. This intensity increase, which occurred 50 - 70 min after brightness maximum of the flare field and the largest ejection loop, was greater than statistic fluctuations and occurred almost simultaneously in all components. It amounted to $2.5 \pm 0.7\%$ on the neutron monitor at the Lomnitskiy Shchit and $2.8 \pm 1.6\%$ at Praga. The intensity increase of cosmic radiation in the diffusion region of the drop was extremely great in relation to the class of the flare. It can be supposed that there exists a relation between the origination of radiation and rapid changes of filaments (under the action of changes in magnetic field during the flare development). This case was analyzed, as well as the intensification of cosmic radiation related to the rapid development of the loop-like prominence of May 4, 1960 (RZhAstr, 1961, 3A334). The conclusion has been drawn that the axis of spatial angles of ejection of cosmic rays towards the Earth passes within the loop, i.e., coincides with the orientation of the intensity electric vector. Encounter of cosmic rays with the Earth is possible, if the loop axis is directed towards the Earth, and the general magnetic field will force the particles to move to the Earth. There are 18 references.

[Abstracter's note: Complete translation]

From authors' summary

Card 2/2

HLADKY, Jan (Praha); LEHRAUS, Ivan (Praha); MOKRY, Premysl (Praha)

New methods for representing the paths of particles. Pokroky
mat fys astr 8 no.2:71-80 '63.

MOKRY, Zdenek

SURNAME, Given Names

Country: Czechoslovakia

Academic Degree:

Affiliation:

Source: Czechoslovak Hygiene, Vol. V, No 1-3, Prague, Mar 66, p 128.

Date:

MOKRY, Zdenek

Affiliation: Institute of Hygiene, Prague.

Date: Co-author of "Statistical Evaluation of Meteorological

Influences on the Contamination of the Atmosphere,"

Source, p 128.

USE, Zdenek

Affiliation: Institute of Hygiene, Prague.

Date: Co-author of "Statistical Evaluation of Meteorological

Influences on the Contamination of the Atmosphere,"

Source, p 128.

MASEK, Milan

Affiliation: Institute of Hygiene, Prague.

Date: Co-author of "Statistical Evaluation of Meteorological

Influences on the Contamination of the Atmosphere,"

Source, p 128.

Bis

CZECHOSLOVAKIA

UDC 615.517(613.287)-053.8

SOLSOVA, M.; SOLO, P.; MOKRY, Z.; Chair of Natural Sciences, Pathological Institute (Katedra Prirodnich Ved Patologickeho Institutu), Karlovy Vary; Head (Vedouci) A. FYSEK; Sanitarium (Lecebny Ustav) Mookva, Czechoslovak State Spa (Os. St. Lazni), Karlovy Vary; Head (Primar) Dr P. SOLO; Institute of Hygiene (Ustav Hygieny), Prague, Director (Reditel) Prof Dr K. SYMON.

"Tolerance of Cow's Milk in Relation to Some Dietary Habits of Healthy Adults."

Prague, Casopis Lekarů Ceskych, Vol 105, No 32, 15 Aug 66, pp 849 - 853

Abstract [Authors' English summary modified]: Occurrences of milk tolerance and of milk intolerance related to the occurrence of bitter regurgitation, and the frequency of stool in a group of 218 healthy university students is discussed. 2 Figures, 1 Table, 13 Western, 4 Czech references. (Manuscript received Nov 65).

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CZECHOSLOVAKIA

UDC 613.287.5(615.517):616.33/.34

SOLC, P.; MOKRY, Z.; Nursing Home (Lecebny Ustav) Moskva, Czechoslovak State Spa (Cs. St. Lazni), Karlovy Vary, Head (Vedouci) Dr P. SOLC; Institute of Hygiene (Ustav Hygieny), Prague, Director (Reditel) Prof Dr K. SYMON.

"Different Tolerance of Cow's Milk and Its Manifestations in Gastrointestinal Diseases."

Prague, Časopis Lékařů Časých, Vol 105, No 34, 26 Aug 66, pp 915 - 921

Abstract [Authors' English summary modified]: Divisions of patients into different groups according to their tolerance of fresh and sour milk is discussed. Relation between the intolerance of fresh milk, patient's bitter regurgitation, and diarrhea tendency is described. Sour milk causes diarrhea, but not regurgitation. 3 Figures, 3 Tables, 6 Western, 4 Czech references. (Manuscript received Nov 65).

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- 23 -

МОКРЫЯКОВ, П., полковник, канд. исторических наук

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Sil 4 no.1:69-75 Ju '64. (MIRA 17:9)

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Case of congenital tuberculosis in an infant. *Pediat. polska*
31 no.1:59-63 Jan 56.

I. Z II Kliniki Chorob Dzieci AM w Lodzi Kier: prof. dr. med.
Fr. Redlich; i z Zakladu Anatomii Patolog. AM w Lodzi. Kier:
prof. dr. med. A. Prusczynski, Lodz, Armii Czerwonej 15.
(TUBERCULOSIS, in infant and child,
congen (Pol))

BROZIK, Henryka; MOKHZYCKA, Hanna; SUFLETA, Zofia

Nutrition, care and physical development of infants in villages of the Radomsko county. *Pediat.polska* 34 no.11: 1461-1466 '59.

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(INFANT CARE)

(GROWTH in inf.& child.)

MOKRZYCKI, Adam; MACHALSKI, Jacek, Koszalin, ul. Warynskiego 4, dr.
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small intestine obstruct. with biliary calculus)
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small intestine obstruct., causing intestinal obstruct)
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obstruct.)