

68-7-8/16

The Influence of Soluble Admixtures on the Crystallization of Ammonium Sulphate Under Coke Oven Works' Conditions.

crystal faces. Similar experiments were carried out with industrial mother liquors (filtered), the results are given in Table 2. It was found that there was a sharp difference between the velocities of crystal growth in artificial and works' mother liquors at the same level of admixtures present, namely the rate of growth was higher than that which could be expected. This is explained by the influence of organic compounds in mother liquor. To explain the role of the latter compounds the influence of additions of oxalic acid to mother liquor (0.5 g/100 ml) on the rate of growth increases, probably due to the formation of stable complex ions with  $Al^{+++}$ ,  $Fe^{++}$  and  $Fe^{+++}$  which are unable to crystallise on crystal faces of ammonium sulphate and therefore have no influence on the rate of their growth. It is therefore concluded that organic substances present in mother liquors form complex ions with aluminium and iron ions thus counteracting their inhibiting influence on the growth of sulphate crystals. The influence of temperature (40 and 60 C) and acidity (within the range of 3-8%) of mother liquor on the crystal growth was also investigated (Table 4). An increase in the temperature by 20 C increases the rate

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The Influence of Soluble Admixtures on the Crystallization of Ammonium Sulphate Under Coke Oven Works' Conditions.

of volume growth of crystals by a factor of 1.5. The ratio of the length to width of crystals obtained in the investigated saturators varied within 10-15, while that for the crystal grown in the same liquors but under laboratory conditions between 4 and 6. Thus the shape of crystals grown under works conditions depends not only on the presence of admixtures but on supersaturation of the mother liquor. The latter causes rapid precipitation of needle-like nuclei. When pyridine recovery is practiced then after the removal of pyridine, iron and aluminium compounds and tar particles remain in suspension. If the liquid is filtered then the rate of growth of crystals and their shape is improved (Table 5). Therefore filtration or settling of the liquor after the removal of pyridine bases is recommended. There are 5 tables, 11 figures and 13 references, including 8 Slavic.

ASSOCIATION: Siberian Metallurgical Institute (Sibirskiy Metallurgicheskiy Institut).

AVAILABLE: Library of Congress  
Card 4/4

ZARETSKIY, Ya.S.; RASPOPOVA, L.V.; AVECHKO-ANTONOVICH, L.A.;  
FRIDLAND, V.M.; KIRPICHNIKOV, P.A.; TAGANTSEV, A.V.

New thiokol sealers for the construction industry. Stroi.  
mat. 10 no.3:8-9 Mr '64. (MIRA 17:6)

Tagantsev, K

21. 6  
0

3

The influence of water vapor and oxygen on the photoelectric effect and luminescence of zinc oxide. A. N. Terenin, E. K. Putseiko, and K. Tagantsev (Univ. Leningrad). J. phys.adium 17, 000-0000. At 100-mm. Hg pressure only insignificant changes are produced by O on degassed ZnO samples. H<sub>2</sub>O vapors decrease the intensity of the luminescence if the pressure is held at 18.8 mm. Hg. Between 1 and 10 mm. Hg an increase of the intensity was observed. Pronounced extinction is observed if ZnO first is exposed to O and then to H<sub>2</sub>O vapor. Moist O (p<sub>H<sub>2</sub>O</sub> = 18 mm.) increases the photoelec. potential of vacuum-degassed ZnO. O can be replaced by adsorbed quinone

vapor. The phenomenon is explained by a decrease of the recombination rate due to an electronic affinity of the adsorbed mols.

F. Schosberger  
PM mt. xllb

AUTHORS: Tagantsev, K.V. and Terenin, A.N.

51-3-11/24

TITLE: Effect of adsorption of gases on luminescence of zinc oxide. (Vliyaniye adsorbtsii gazov na lyuminestsentsiyu okisi tsinka).

PERIODICAL: "Optika i Spektroskopiya" (Optics and Spectroscopy), 1957, Vol.2, No.3, pp. 355-360 (U.S.S.R.)

ABSTRACT: Continuation of the work of A. N. Terenin, V. Gachkovskiy and K. Ya. Kasparov (Izvestiya Akad. Nauk SSSR., O.M.E.N. (ser.khim.), p.805, 1936; Acta Physicochimica U.R.S.S., Vol.4, p.521, 1937; Doklady Akad. Nauk SSSR, Vol.28, p.515, 1940) on quenching of luminescence of solids by gases and vapours. ZnO was deposited on glass or metal plates and heated in vacuo to 200 or 400 C. It was excited by a mercury lamp. A uranium-glass plate served as a luminescent standard. A differential photometer was used to measure the difference between the emissions of ZnO and of the uranium glass. The emission intensity was measured using (a) short exciting light pulses of 10 seconds with at least 5 minute dark intervals and (b) continuous excitation. Pulse measurements showed that adsorption of oxygen, ozone (produced by electrodeless discharges), water vapour and quinone vapour on ZnO, which was vacuum dried, produces

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Effect of adsorption of gases on luminescence of zinc oxide.  
(Cont.)

51-3-11/24

quenching of luminescence at adsorbed gas or vapour pressures from 0.1 mm Hg upwards. Continuous excitation increased the emission intensity of the quenched samples as long as the excitation was applied. When the continuous excitation ceased the emission fell to the original quenched value. This effect was ascribed to photodesorption of the adsorbed molecules. An energy level scheme for ZnO is given. This has two local levels in the energy gap: an upper one with excess Zn atoms (dark conductivity centres) and a lower one with Zn<sup>+</sup> ions (photoconductivity and luminescent centres). Adsorption of O<sub>2</sub>, O<sub>3</sub>, O, H<sub>2</sub>O and quinone produces a double layer and more electron trapping levels at the ZnO surface. The results are interpreted in terms of the above energy scheme.

Card 2/2

There are 9 figures and 13 references, 11 of which are Slavic.

SUBMITTED: October 6, 1956.

ASSOCIATION: Physical Research Institute, Leningrad State University.  
(Nauchno-Issledovatel'skiy Fizicheskiy Institut,  
Leningradskogo Gosudarstvennogo Universiteta).

AVAILABLE:

SUBJECT: USSR/Luminescence

48-4-16/48

AUTHORS: Tagantsev K. V. and Terenin A. N.

TITLE: Effect of Gas Adsorption on Zinc Oxide Luminescence (Vliyaniye adsorbtsii gazov na lyuminestsentsiyu okisi tsinka)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, 1957, Vol 21, #4, pp 525-527 (USSR)

ABSTRACT: Dry oxygen has a quenching effect on the luminescence of zinc oxide trained at 200°C under vacuum. Water vapor also causes quenching. Oxygen and water vapor combined have a strong quenching effect. The quenching intensity depends on duration of illumination. When illumination lasted long, the luminescence after being quenched arises again. Oxygen subjected to the action of electric discharges causes strong quenching. The luminescence, once quenched, arises again at continuous illumination. Low-pressure quinone vapors also quench the luminescence of zinc oxide, which appears again at continuous illumination.

Card 1/2      These phenomena can be interpreted from the viewpoint of electron capture by negatively-charged adsorbed molecules.

TITLE:

Effect of Gas Adsorption on Zinc Oxide Luminescence (Vliyaniye  
adsorbtsii gazov na lyuminesentsiyu okisi tsinka) <sup>48-4-16/48</sup>

In a discussion that followed this report A. Krasnovskiy added that acidification of water intensifies its quenching abilities, and reduction in pH toward alkalinity decreases the quenching effect.

No references are cited.

INSTITUTION: Leningrad State University im. Zhdanov

PRESENTED BY:

SUBMITTED: No date indicated

AVAILABLE: At the Library of Congress.

Card 2/2



TAGANTSEY, K.V.

chem  
phys

21 7  
1917. EFFECT OF THE ADSORPTION OF GASES ON THE LUMINESCENCE OF ZINC OXIDE. K.V. Tagantsev and A.N. Terent'ev. Dokl. Akad. Nauk SSSR, Vol. 112, No. 2, 241-2 (1957). in Russian.

An aqueous suspension of ZnO obtained by burning Zn in air was spread on glass plates which were then heated for several hours at 200° or 400° C in a high vacuum. The luminescence was excited by a Hg lamp and measured with a photoelectric photometer. The measurements were conducted (1) after continuous illumination, and (2) after short (10 sec) illuminations with dark intervals of ≥ 5 min, with or without added vapours or gases. Dark-period adsorption of H<sub>2</sub>O or O<sub>2</sub> was found to quench markedly the luminescence; a particularly intense quenching was shown by quinson and by O<sub>2</sub> which was shortly before subjected to a weak electrodeless discharge (probably O<sub>2</sub>). The luminescence of ZnO, quenched by O<sub>2</sub> during short illuminations, was found to flare up at higher O<sub>2</sub> pressures and continuous illumination, this phenomenon being reversible and probably due to photodesorption of O<sub>2</sub>; similar behaviour was found with O<sub>2</sub>, H<sub>2</sub>O and quinson vapour. A tentative theoretical explanation is given. F. Lachman

via RLL  
MT

Physical Inst., Leningrad State Univ.

22160

S/C48/61/025/004/009/048  
B104/B201

24.3500

AUTHOR: Tagantsev, K. V.

TITLE: Extinction and flare-up of luminescence of zinc oxide under the action of adsorbed and capillary-condensed vapors and gases

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, v. 25, no. 4, 1961, 464-466

TEXT: The present paper has been read at the 9th Conference on Luminescence (Crystal Phosphors), Kiyev, June 20-25, 1960, and is the continuation of a study conducted by the author jointly with Terenin (Ref. 1: Tagantsev K. V., Terenin A. N., Optika i spektroskopiya, 2, 355 (1957); Izv. AN SSSR. Ser. fiz., 21, 525, (1957)). The object of the investigation was zinc oxide, produced by burning zinc in the air, and subjected to after-treatment in some cases. The specimens exhibited either a green luminescence band with a maximum at about 510 mμ, or one of the bands prevailed. During the experiment the ZnO was trained in high vacuum for four hours at 200°C, the luminescence was excited with Hg radiation, and the intensity was measured

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B104/B201

Extinction and flare-up...

with a differential photometer. With a view to excluding an effect of light upon the system absorbent - absorbate, 10-second flashes were employed, with pauses of at least 5 minutes in-between. The following results were obtained: 1) nitrogen oxide extinguishes luminescence in short-time exposure; a growth of luminescence is observed on passing over to a longer exposure; 2) acetone- and benzene vapors have a similar effect; 3)  $N_2O$ ,  $CO$ , and  $CO_2$  exhibit no effect upon luminescence. The possible mechanisms of these effects are discussed. The emission of luminescence radiation from the luminescence centers which, like the conductivity centers, are regarded as thermally ionized excessive Zn atoms, takes place by recombination with conduction electrons. Extinction takes place in the following manner: the adsorbed nitrogen-oxide molecule captures in the dark an electron from the conduction band, which gives rise to a bending of the band and to an impoverishment of electrons in the conduction band on the surface. The recombination probability is thus reduced. Experiments conducted by V. N. Filimonov have confirmed this view. A similar mechanism is described for the extinction of luminescence by benzene. It is polarized in benzene adsorption, with the negative pole facing the zinc oxide. This leads to an increase of the electron energies on the surface, whereby the conduction

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Extinction and flare-up...

band is likewise bent. Luminescence is appreciably reduced by the capillary condensation of benzene- and acetone vapors. In the author's opinion this is correlated with a change in the conditions of diffuse-scattered light. It had been already established in the abovementioned previous work that dry oxygen causes luminescence to extinguish in a number of specimens, while in others, extinction by oxygen occurs only in the presence of water. The latter case of extinction is explained by a reduction of the acceptor level of oxygen on its approaching the dipole molecules. Thus, extinction should also occur at high concentrations of dipole molecules, i.e., in case of a capillary condensation. Experiments have confirmed this conclusion to be correct. A. N. Terenin is thanked for his assistance. F. I. Vilesov is mentioned. There are 2 figures, 1 table, and 6 references: 5 Soviet-bloc and 1 non-Soviet-bloc.

ASSOCIATION: Laboratoriya fotokataliza Leningradskogo gos. universiteta im. A. A. Zhdanova (Laboratory for Photocatalysis, Leningrad State University imeni A. A. Zhdanov)

Card 3/5

1. A. G. H. I. J.

2. [Illegible text]

3. [Illegible text]

BRONIKOVA, N. V.; BRONIKOV, A. I.; PRIGORNY, A. I.; KURKOVA, N. V.

"Relations between the ultra-fine structure of the plant plastid apparatus and its functions."

report submitted for 10th Intl Botanical Cong, Edinburgh, 3-12 Aug 64.

Inst of Biological Physics, AS USSR, Moscow.

Dimitroff, I. S.

"Investigation of the impact of flying birds in a  
power line (draft Section)." Air Electric Power Station USSR.  
Institute of Large Airplane and Engineering Sciences Institute  
P. O. Department, Moscow, 1957. (Dissertation for the degree of Candidate in Physical Sciences)

at: Embassy, Moscow, No. W, July 1955

1294  
USSR/Processes and Equipment for Chemical Industries--  
Processes and apparatus for chemical Technology.

K-1

Abs Jour: Ref Zhur-Khimiya, No 3, 1957, 10594

Author : Tagantseva, T. F.

Inst : Not given

Title : Heat Transfer Between Suspended Ground Peat Particles  
and an Air Stream

Orig Pub: <sup>vol. 13</sup> Torf. Prom-st, 1956, No 5, 30-32

Abstract: The drag produced by suspended ground peat particles and the heat transfer to an air stream have been investigated. Experimental equipment and operating methods are described. The drag coefficient in the region of  $Re = 200-4,000$  is practically independent of the  $Re$  and varies irregularly between the limits 0.5 and 0.8. The heat transfer is adequately expressed by the equation  $Nu = 0.32Re^{0.9}$ . On the basis of the experimental data obtained, marked differences are shown to exist between the values of the drag coefficient for

Card 1/2



USSR/Processes and Equipment for Chemical Industries-- K-1  
Processes and apparatus for chemical technology.

Abs Jour: Ref Zhur-Khimiya, No 3, 1957, 10594

Abstract: Irregularly shaped particles and the drag coefficient  
for spherical particles.

Card 2/2

TAGANTSEVA, T.F.

✓ 1238. HEAT TRANSFER IN DRYING OF MILLED PEAT IN SUSPENSION.  
Tagantseva, T.F. (Torr. Prom. (Peat Ind., Moscow), 1957, (2), 17-20). V. 34  
The movement of a semi-dispersed system and the heat transfer between the  
stream of gas and the peat particles are examined and formulae based on  
experiments are given for the relationship between the Nusselt and Reynolds  
numbers in a tube dryer. (L).

ALL-UNION ~~Thermo~~ Technical Inst. in DZERZHINSKIY

TAGANTSEVA, T. F.

✓ 228. HEAT TRANSFER BETWEEN HOVERING PARTICLES OF MILLED PEAT AND A  
STREAM. Tagantseva, T.F. (Trif. Prom. (Peat Ind., Moscow), 1956, (5),  
30-32). Experimental work at VII on the drying of peat in suspension is  
described. The results show the difference between the flow round hovering  
particles of irregular shape like milled peat and that round spherical ones. *fuel*  
A formula is derived for heat transfer to hovering particles of milled peat.  
(L.)

TAGANTSEVA, T.F., kandidat tekhnicheskikh nauk.

Method for the calculation of a vertical-tube gas-fed dryer for  
milled peat. Torf.prom. 34 no.5:16-18 '57. (MIRA 10:10)  
(Peat--Drying) (Drying apparatus)

14(10)

SOV/170 59-4-3/20

AUTHOR: Tagantseva, T.F.

TITLE: On the Problem of Drying Gypsum-Concrete Panels (K voprosu o sushke gipsobetonnykh paneley)

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, 1959, Nr 4, PP 15-20 (USSR)

ABSTRACT: Construction engineering employs now an industrial method of manufacturing gypsum-concrete inter-room partitions, the method of rolling. However, the capacity of existing plants is limited by the efficiency of the drying installations. Therefore the author undertook an investigation of the drying process with an aim of its intensifying and establishing the optimum run of this process. As a result of experimenting in the Magistral'nyy Plant the author arrived at the conclusion that the combined drying method is very advantageous, for it makes possible to obtain good quality panels and considerably intensifies the drying process. The combined method consists in the alternation of intense heating with subsequent cooling by local air blowing. The duration of drying was reduced from 35 to 20 or 24 hours and the capacity of the drying installation in the Magistral'nyy Plant increased by 50%. The parameters of the dry-

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On the Problem of Drying Gypsum-Concrete Panels

SOV/170-59-4-3/20

ing process were the following: the temperature of the gas at the entrance was 129°C and its velocity was 2.1 m/sec. There are 3 graphs.

ASSOCIATION: Nauchno-issledovatel'skiy institut stroitel'noy fiziki Akademii S i A SSSR (Scientific Research Institute of Construction Physics at the Academy of Construction and Architecture of the USSR), Moscow

Card 2/2

TAGANTSEVA, T.F., kand. tekhn. nauk

Intensification of drying processes of rolled gypsum concrete panels.  
Stroi. mat. 5 no.6:22-25 Je '59. (MIRA 12:8)  
(Gypsum) (Walls)

TAGANTSEVA, T.F., kand.tekhn.nauk

The first conference of the readers of the periodical "Inzhenerno-fizicheskii zhurnal." Inzh.-fiz.zhur. no.11:124-127 N '60.  
(MIRA 13:11)

(Engineering--Periodicals)



BUROV, Yu.G., kand.tekhn.nauk; TAGANTSEVA, T.F., kand.tekhn.nauk

Effect of temperature and moisture on the coefficient of heat  
conductivity of building materials. Stroi.mat. 6 no.5:34-35

My '60.

(MIRA 13:7)

(Building materials--Testing)  
(Heat--Conduction)

TAGANTSEVA, T. F.

"THE Optimum Regime of Drying of Hypso-concrete"

Report submitted for the Conference on Heat and Mass Transfer,  
Minsk, BSSR, June 1961.

TAGANTSEVA, T.F., kand.tekhn.nauk; BUROV, Yu.G., kand.tekhn.nauk

Heat conductivity of capillary porous bodies at temperatures  
below the freezing point. Stroi. mat. 7 no. 1:31-32 Ja '61.

(MIRA 14:1)

(Porosity) (Heat—Conduction)

TAGANTSEVA, T.F., kand.tekhn.nauk

The optimum conditions for drying gypsum-concrete slabs.  
Trudy NIISF no.1:22-33 '62. (MIRA 15:11)  
(Gypsum products--Drying)

L 11179-66 EWP(e)/EWT(m)/EWP(w)/T/EWP(t)/EWP(b) LIP(c) JD

ACC NR: AP6004951

SOURCE CODE: RU/0027/65/010/001/0049/0052

AUTHOR: <sup>55</sup>Tavadze, F. N.; <sup>55</sup>Bairamasvili, I. A.; <sup>55</sup>Tagareisvili, G. V.; <sup>55</sup>Hantadze, D. V.

ORG: <sup>55</sup>Institute of Metallurgy, Tbilisi

TITLE: Thermic expansion of boron and the volumetric effect of its melting

SOURCE: Studii si cercetari de metalurgie, v. 10, no. 1, 1965, 49-52

TOPIC TAGS: boron, heat expansion, metal melting

ABSTRACT: The authors found that as opposed to "semimetals" which have a small value of the Gruneisen constant and whose volume decreases on melting, boron's volume increases on melting which is a characteristic of true metals. The volume increase to the melting temperature also corresponds to the value of the Gruneisen constant for typical metals. Orig. art. has: 1 figure and 1 table.

JPRS

SUB CODE: 11 / SUBM DATE: none / ORIG REF: 005 / OTH REF: 002

60  
Card 1/1



1. YEV, V.

Economic geography of the Zeravshan Valley mountains. Mat. n.  
trudy TashGU no.251. Trudy Nauch.-issl. otd. Geog. fak. n.3:  
44-46 1964. (MIRA 1-3)

AVRAMOV, A.; KOSHEV, L.; DELIZAROV, S.; GRUEV, G., TAGAROV, T.

Apropos of the etiopathogenesis of acute appendicitis in children. *Zhirurgia (Sofia)* 18 no.3:320-327 '65.

I. VMI, Sofia, Katedra po bolnichna khirurgiya (rukovoditel: prof. St. Dimitrov), Katedra po patologichna anatomia (rukovoditel: prof. B. Kardzhiev).



1. The first paragraph of the meeting...  
during a very...  
(Safite) 18 no.3:161-162 163

2. When...  
...  
...  
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TAN 707, 1.

Vegetable garden in Dobruja. p.34. KOOPERATIVNO ZEMEDELIE.  
(Ministerstvo no zemedelieto) Sofia. Vol. 11, no. 6,  
June 1956

SOURCE: East European Accessions List, (E.EAL), Library of  
Congress, Vol. 5, no. 12, December 1956

MESHCHERSKIY, A.; TAGAROV, Z.

New historicogeographical data on the Amur. Izv. Vses. geog. ob-va  
89 no. 4: 359-362 J1-Ag '57. (MIRA 10:10)  
(Amur River)

TAGAROV, Z.; FRIDMAN, V.G., red.; PECHERSKAYA, T.I., tekhn.red.

[Labor movement in the Cherekhovo coal district] Rabochee  
dvizhenie v Cherekhovskom ugol'nom raione; kratkii istori-  
cheskii ocherk. Irkutsk, Irkutskoe knizhnoe izd-vo, 1959.  
1<sup>1/4</sup> p. (MIRA 12:12)

(Cherekhovo--Coal miners)

1290007 gh

BOLEV, P.

BRANOVANOV, D  
Surnames (in copy); Given Name

Country: Bulgaria

Academic Degree: Professor

4

Attribution: Member of the Board of Editors (Redaktsionen Suvet) of Meditsina, Editing Director: Dr L. STOYANOV

Source: Sofia, Meditsina, No 2, Mar/Apr 61, pp 36

Title: "Polio Prevention Through Active Immunization."

Co-authors:

BRANOV, Zh.  
YANKOV, K.  
KARACHOLEV, Il.

BEYLINSON, M.B.; TAGAVARYAN, L.G.

Readers conference on I.A.IA. Lipenkov's book "General  
technology of wool." Tekst. prom. 23 no.12:78 D '63.  
(MIRA 17:1)

1. Starshiy inzh. nauchno-issledovatel'skoy laboratorii  
Minskogo kamvol'nogo kombinata.

TAGAY, Ye.D.

Using the Vikhert-Chibisov method to determine the velocity parameters  
in a medium in deep seismic probing. Prikl. geofiz. no.36:50-65  
'63. (MIRA 16:9)

(Seismic prospecting)

TAGAY, Ye.D.

Methodology of seismic prospecting by the reflected wave method  
in subsalt horizons of the Caspian Lowland. Prikl. geofiz.  
no.36:36-100 '63. (MIRA 16:9)  
(Caspian Lowland--Seismic prospecting)



LIPOVETSKIY, I.A.; NEVOLIN, N.V.; TAGAY, Ye.D.

Results of regional seismic investigations in the Caspian  
Lowland. Prikl. geofiz. no.38:91-98 '64.

(MIRA 18:11)

TAGAYEV, A.M.

The IPS-2 machine for testing motor-vehicle tires. Biul.tekh.-ekon.-  
inform.Gos.nauch.-issl.inst.nauch. i tekh.inform. no.8:35-36 '62.  
(MIRA 15:7)

(Tires, Rubber--Testing)

TAGEYEVA, Nadezhda Viktorovna; TIKHOMIROVA, Mariya Matveyevna;  
PEREL'MAN, A.I., doktor geol.-miner. nauk, otv. red.;  
FILIPPOVA, B.S., red. izd-va; DOROKHINA, I.N., tekhn. red.

[Geochemistry of the bottom sediments in the Black Sea (north-  
western part)]Gidrogeokhimiia donnykh osadkov Chernogo moria  
(severo-zapadnaia chast'). Moskva, Izd-vo Akad. nauk SSSR,  
1962. 145 p. (MIRA 16:1)

(Black Sea--Deep-sea deposits)  
(Geochemistry)

TAGAYENSKAYA, A. A.

"Determination of the Amplitude-Phase Characteristic of a Linear System From the Curve of Its Transient Process", *Avtomatika i Telemekhanika*, Vol 14, No 2, 1953, 231-237.

Presents a series of formulas, permitting the calculation of the amplitude-phase characteristic and transfer functions of linear systems from the curve of its transient process, i.e., according to experimental data. The curve of a transient process is approximated to a step function with a constant step.

For the derivation of the formulas the so-called Laplace discrete transforms are used (Tsytkin, Ya. Z., Perekhodnye i ustanovivshiesya protsessy v impul'snykh tsepyakh (Transient and Steady-State Processes in Pulse Circuits) Gosenergoizdat, 1951).

The paper is deficient in its lack of an evaluation of computation errors. (*RZhMekh*, No 11, 1954) SO: Sum. No. 443, 5 Apr. 55

KRASSOV, I.M.(Moskva); TAGAYEVSEAYA, A.A.(Moskva); VASIL'YEVA, M.A.(Moskva)

Rectangular wave technique for determining the amplitude-phase characteristics of automatic control systems. Avtom. i telem. 14:1. (MLRA 10:3)  
no.3:322-327 My-Je '53.  
(Pneumatic control)

DUDNIKOV, Ye.G. (Moskva); KRASSOV, I.M. (Moskva); TAGAYEVSKAYA, A.A. (Moskva);  
TEMNYI, V.P. (Moskva); BARKALOV, P.T., (Moskva).

Experimental determination of the dynamic characteristics of control  
systems in industrial plants. Avtom. i telem. 14 no.4:418-423 J1-Ag  
'53. (MIRA 10:3)

(Automatic control)

1.1-01 VIKAR. A. N.

p 3

PHASE I BOOK EXPLOITATION 869

Avtomatizatsiya proizvodstvennykh protsessov (Automation of Production Processes) No. 2. Moscow, Izd-vo AN SSSR, 1958. 177 p. 6,000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Institut avtomatiki i telemekhaniki.

Resp. Ed.: Lossiyevskiy, V.L., Doctor of Technical Sciences, Professor; Ed. of Publishing House: Klimov, V.A.; Tech. Ed.: Rylina, Yu. V.

PURPOSE: This volume is intended for specialists engaged in research work and planning of automation process in various branches of industry.

COVERAGE: The volume contains articles summarizing the results of investigations carried out in laboratories for the automation of production processes of the Institut avtomatiki i telemekhaniki,

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Automation of Production Processes

869

The study attempts to characterize the status of automation of production processes and to chart the more important directions for further development. There are no references.

Finkel'shteyn, S.M. Classification of Production Processes Subject to Automation and Typical Solutions of the Latter 19  
The author reviews the classification of automated production processes with emphasis on continuous flows production which in terms of present instrumentation and outlook is most suitable for automation. There are 10 Soviet references.

Motulevich, D.Yu. and Tagayevskaya, A.A. Types of Controller Actions During Experimental Studies of Controlled Processes 43  
Types of controller actions employed in studying industrial processes are reviewed, optimum conditions for the use of this or that controller action are indicated, shapes of curves for transition process and characteristics of stable conditions for single capacity plants are shown,

Card 3/7



Automation of Production Processes 869

a review of production costs, analysis of material and labor expenditures, and subsequent introduction of automation on sectors where automation appears to be economically more effective than conventional methods of production. There are 1 Soviet, 1 Czech, and 1 American references.

AUTOMATION OF INDUSTRIAL PLANTS

Popovskiy, A.M., Gritskov, V.I., and Govorov, A.A. Automation of the Desiccating and Absorbing Departments of Plants Using the Contact Method of Producing Sulphuric Acid

97

The study describes fully the automation of the desiccating and absorbing department of the Shchelkovskiy khimicheskii zavod (Shchelkovskiy Chemical Plant). The principal product of this department is monohydrate and the automation embraces the processes within the desiccating tower, and oleum and monohydrate absorbing columns. There are 19 Soviet references.

Card 5/7

Automation of Production Processes

869

Shumilovskiy, N.N. and Pliskim, L.G. Some Problems Encountered in the Development of an Automatic Control System for the Gasification Process in a Boiling Layer

153

The authors briefly described the technological process taking place in the boiling layer, the principal plan for automatic control, and characteristic features of the boiling layer. There are 1 Soviet, 2 German and 4 English references.

Pliskim, L.G. A System of Automatic Control of the Gasification Process in a Boiling Layer

164

The article describes the plan for a complex automatic control worked out in the Institute for Automatics and Telemechanics of the USSR Academy of Sciences with the participation of GIAP (State Institute of the Nitrogen Industry) and the Chirchik khimelektrokombinat MKhP SSSR (Chirchik Chemical-Electrical Combine of the Ministry of the Chemical Industry, USSR). There are 4 Soviet and 1 English references.

AVAILABLE: Library of Congress

Card 7/7

JG/jmr  
11-25-58

<sup>21378</sup>  
S/194/61/000/009/024/053  
D209/D302

16.8000 (1031)

AUTHOR: Tagayevskaya, A.A.

TITLE: Apparatus for applying a pneumatic extremum regulator to objects with several regulating elements

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 9, 1961, 38, abstract 9 V312 (V sb. Vopr. pnevmo- i gidroavtomatiki, M., AN SSSR, 1960, 158-161)

TEXT: An apparatus is described which permits application of a pneumatic extremum regulator for general industrial use with one input for optimizing a parameter, whose magnitude depends on the position of several regulating elements (RE). When constructing the regulation scheme of this kind a method of sequential shift of RE is utilized, in which partial extrema of parameters are obtained for all inputs. An attachment which serves as an addition to the regulator, switches over the regulator from one RE to another and provides the change of speed of search for the extremum dur-

X

Card 1/3

21378  
S/194/61/000/009/024/053  
D209/D302

Apparatus for applying...

ing the change-over. This attachment is constructionally based on the system of a pneumatic discrete action computer and consists of the following basic units: 1) An impulse counter - a ring 3-discharge counting circuit; 2) A commanding unit (CU) - a ring multi-throttles with a pneumatic relay; 3) A block of integrator adjustable "repeater" assemblies. The ring counting circuits consist of retaining elements for one cycle of a given time. In operation, the command impulse from the regulator comparison element enters a pneumatic trigger which consists of retaining elements and a logic element NO. The trigger output signals control the operation of the extremum regulator integrator. Integration factor (speed of shift of RE) is determined by the throttle adjustment. The integrator output pressure appears at the input of throttle blocks and the relay with repeaters, and actuates the CU which operates the pneumatic relay. At the same time the integrator output combines with one of RE, and in the integrator circuit a corresponding adjustable throttle is connected. The switch-over of CU to the next RE takes

Card 2/3

ACCESSION R: AT4042433

S/0000/64/000/000/0005/0020

AUTHOR: Berends, T. K.; Tagayevskaya, A. A.; Tal', A. A.

TITLE: Structural elements of pneumoautomatic devices and systems

SOURCE: Vsesoyuznoye soveshchaniye po pnevmo-gidravlicheskoj avtomatike. 5th, Leningrad, 1962. Pnevmo- i gidroavtomatika (Pneumatic and hydraulic control); materialy\* soveshchaniya. Moscow. Izd-vo Nauka. 1964, 5-20

TOPIC TAGS: automation, automatic control system, pneumatic control system, pneumatic relay, pneumatic amplifier, pneumatic resistance, pneumatic capacitance, pneumatic repeater, pneumatic switch

ABSTRACT: Pneumatic devices have become fundamental tools in the automation of many sections of industry, such as the chemical, petroleum refining, gas, metallurgical, and lumber industries. This paper is essentially a survey of the components and assemblies of pneumatic devices which can be used in automatic control systems. The authors point out that the logical functions required in modern control systems cannot be accomplished by the devices of the AUS (Aggregate Unified System), each of which is a self-contained block, but require the flexibility of the USEPPA (Universal System of Elements for Production Pneumo-Automation) in which each new device is created by combining various universal pneumatic elements

Card

1/2

ACCESSION NR: AT4042433

(amplifiers, relays, resistances, capacitances, repeaters, switches, etc.) onto special plug-in boards. Credit for this new approach is given to Ferner (V. Ferner. Anschauliche Regelungstechnik. Berlin, Verlag Technik, 1960). They show how pneumatic elements can perform the various tasks usually associated with mechanical and electrical elements, and describe some of these elements in detail, with schematic diagrams of various systems for analog and digital control systems and relay systems. Special attention is given to generators, impulsors, and memory and delay units. Orig. art. has: 27 figures and 17 formulas.

ASSOCIATION: none

SUBMITTED: 29Jan64

ENCL: 00

SUB CODE: 1E

NO REF SOV: 007.

OTHER: 001

Card

2/2

BERENDS, T.K.; YEFREMOVA, T.K.; TAGAYEVSKAYA, A.A.; TAL', A.A.

Principle of universal elements in pneumatic control systems.  
Priborostroneniye no.11:3-S N '63. (MIRA 16:12)

ACCESSION NR: AP4011727

S/0119/64/000/001/0030/0031

AUTHOR: Tagayevskaya, A. A.; Temny\*y, V. P.

TITLE: All-Union Conference on pneumatic and hydraulic automatic devices

SOURCE: Priborostroyeniye, no. 1, 1964, 30-31

TOPIC TAGS: automatic device, automatic control, USEPPA component, pneumatic automatic control, hydraulic automatic control, pneumatic hydraulic device conference, GRK-1 hydraulic regulator

ABSTRACT: The Sixth All-Union Conference on pneumatic and hydraulic automatic devices took place in Baku on October 14-17, 1963. The Conference was attended by 450 representatives of 202 organizations from 43 Soviet cities. Seventy reports were delivered. Universal USEPPA components were adopted at the Tizpribor plant, Moscow, for manufacturing over 20 various control devices made up from these components. Also, the Ust'-Kamenogorsk instrument plant

Card 1/2



ACCESSION NR: AP4011727

has begun producing the above components and control devices. Previous types of hydraulic jet-type regulators are considered unsatisfactory. New control systems, such as the GRK-1 hydraulic regulator, developed by the Institute of Automation and Telemechanics, AN SSSR, are based on unitized components. Sluggishness in introducing new components and "opposition to the introduction" are noted. Orig. art. has: no figure, no formula, and no table.

ASSOCIATION: none

SUBMITTED: 00

DATE ACQ: 10Feb64

ENCL: 00

SUB CODE: CG, IE

NO REF SOV: 000

OTHER: 000

Card 2/2

SOURCE CODE: 00000000/0000/0000/0000/0000

Author: Ushakov, A. I.; Tarasovskaya, N. A.; Kuvshinovskiy, L. S.

Abstract: Design of continuous action controllers for general industrial use  
Source: Izv. Vuzov. Teoriya avtomatiki i telemekhaniki. Pnevmavtomatika (Pneumatic  
Automation). Moscow, Izd-vo Nauka, 1966, 71-80

Subject Terms: pneumatic control, pneumatic device, automatic pneumatic control, indus-  
trial automation, automatic control.

The paper describes the design of pneumatic controllers for general industrial use. The operating range of the voltage is 0.1-1.4 bar. At a load of 0.1-1.4 bar, the phase accuracy is 3° and the phase accuracy is 5° for no-load conditions. Two types of pneumatic resistances are available--fixed and variable. Fixed resistances are capillary tubes, 0.15 and 0.52 mm, and 20 mm length. Variable resistances are used in feedback loops, regulation circuits, and timing circuits. Over the operational range of 0-1.4 bar, these resistances are nonlinear. The capacitors consist of hermetically sealed

END 1/2

...the accuracy of the output depends on the accuracy of the input pressure with an accuracy of  $\pm 0.1\%$ . The characteristics are similar to those of the two-input amplifier. Another version of the low-frequency, accurate repeater includes an output filter. The coarse repeater is capable of transmitting signals over distances up to 500 m. It has  $\pm 0.5\%$  accuracy. The resistive divider module consists of two variable or fixed resistors and a two-input amplifier. The gain can be adjusted for each  $\pm 10\%$ . The accuracy of the two-input amplifier can be increased to  $\pm 0.1\%$  by using a lower power repeater in a feedback loop. The transfer network consists of a fixed or variable resistor and a pneumatic capacitor in series with it. It is used in the input of a two-input amplifier. A proportional module can be in two forms: summation using resistors, or summation through membranes. In the first case, a single two-input amplifier and four resistances are used in the input of the conventional differential operational amplifier. In the second case, one two-input and one two-input amplifier is used. The integrating module can also be realized by resistive summation or through membranes. In the first version, the input amplifier is combined with the input of the two-input amplifier and the output of the two-input amplifier is fed back through a resistor and a capacitor into the input of the two-input amplifier. The second version consists of a two-input amplifier and an integrator. In its input, the two-input amplifier is combined with the input of the two-input amplifier.

TAGAYEVSKAYA, A.I.

Note on certain modification of the laryngeal tissue in typhoid fever.  
Vest. otorinolar. 13 no.2:59-62 Mar-Apr 51. (CINL 20:8)

1. Scientific Worker at the Department of Morphology (Head--Prof. Ya.A. Vinnikov), Central Scientific-Research Institute of Otorhinolaryngology of the Ministry of Public Health RSFSR (Director--Honored Worker in Science Prof. V.K. Trutnev).

ТАГАНОВА, А. И.

ТАГАНОВА, А. И. -- "Morphological Changes of the Larynx in Typhoid and Typhus Fever." Sub 6 May 52, Central Inst for the Advanced Training of Physicians. (Dissertation for the Degree of Candidate in Medical Sciences.)

SO: Vechnaya "oskva January-December 1952

ТРЕТЬЯКОВА, А.И.

Some changes in the laryngeal tissues in exanthematous fever.  
Trudy gos.nauch.-issl.inst.ukha, gorla i nosa. 6:394-399 '55.  
(MIRA 12:10)

1. Iz patologo-gistologicheskoy laboratorii (zav. R.Ya.Tret'-  
yakova) Gosudarstvennogo nauchno-issledovatel'skogo instituta  
ukha, gorla i nosa.

(EXANTHEMATA) (LARYNX)

BROZGOL', A.M.; TAGAYEVSKIY, L.I.; TAPTAPOVA, S.L.

Characteristics of oral prosthesis following laryngectomy.  
Stomatologiya 40 no.3:85-88 My-Je '61. (MIRA 14:12)

1. Iz stomatologicheskogo poliklinicheskogo otdeleniya i otolaringo-  
logicheskogo otdeleniya (zav. otdeleniyem - doktor med.nauk I.N.  
Aleksandrov) Moskovskogo gorodskogo chelyustno-litseвого gospiatalaya  
(nachal'nik - dotsent A.A.Kovner).  
(LARYNX--SURGERY) (DENTAL PROSTHESIS)

The following information is classified as CONFIDENTIAL

Description: "The cultivation of the 'Transvaal' plant growing in  
Khartoum, Sudan, identified as a plant of the Institute, in Sudan.  
(Khartoum, Sudan, 1964, 20 Oct 64)

At: Khartoum, Sudan, 1964



ALIYEV, R.K.; ALLAKHVERDIBEKOV, G.B.; TAGDISI, D.G.

Chemical composition and certain pharmacological properties  
of the tea fungus infusion. Izv.AN Azerb.SSR no.7:97-109 JI  
'55. (MLRA 9:1)

(Beverages) (Fungi)

TAGDISI, D. G.

The characterization of the chemical composition of *Solanum nigrum*, growing in Azerbaidzhan, and the effect of its preparations upon the cardiovascular system. A. I. Karaev, R. K. Aliev, G. B. Allakhverdibekov, and D. G. Tagdisi. *Izvest. Akad. Nauk Azerbaidzhan. S.S.R.* 1935, No. 10, 61-72 (in Russian).—The plant material contains alkaloids 0.04%, glycosides and other sugar components 1.8%, fatty matter 1.8%, resinous substances 5%, volatile oils traces, and vitamin C 120 mg. %. Galenic preps. (aq. infusion and decoction), after transient stimulation, depress the central nervous system and the reflexes of the spinal cord; small doses increase and large doses decrease cardiac activity; in acute expts. an appreciable reduction in blood pressure is evident; in the isolated rabbit ear vasodilation is observed.

A. Lassa

570/24

4

ALIYEV, R.K.; ALLAKHVERDIBEKOV, G.B.; TAGDISI, D.G.; ISMAILOV, A.I.

Chemical composition of the herbage and roots of parsley, cultivated in Azerbaijan, and effect of parsley preparations on the cardiovascular system. Uch.zap. AGU no.12:53-62 '55. (MIRA 9:11)  
(Azerbaijan--Parsley) (Cardiac glycosides)

USSR/Pharmacology. Toxicology. Cardiovascular Drugs

V

Abs Jour : Ref Zhur - Biol., No II, 1958, No 51997

Author : Aliyev R.K., Allakhverdibekov G.B., Tagdisi, D.G.,  
Ismailov A.I.

Inst : Azerbaydzhan University

Title : On the Characteristics of the Chemical Composition of the  
Leaves and Roots of Petroselinum Sativum Hoffm.,  
Cultivated in Azerbaidjan and the Effects of its Prepara-  
tions Upon the Cardi-vascular System

Orig Pub : Uch. zap. Azerb. un-t, 1955, No 2, 53-62

Abstract : The leaves and roots of petroselinum sativum Hoffm. contain  
alkaloids, glycosides, saccharides, aromatic oils, or-  
ganic acids and vitamins C and K. It was demonstrated in  
experiments on mice, which received subcutaneously 1 ml  
doses of a 20-30 percent aqueous infusion and decoction  
of leaves of roots of Petroselinum, that these prepara-  
tions had a depressing effect upon the C.N.S. The effect  
of extracts from the leaves was weaker than that from the

Card : 1/2

USSR/Pharmacology. Toxicology. Cardiovascular Drugs

V

Abstr Jour : Ref Zhur - Biol., No II, 1958, No 51997

roots. In a series of experiments with isolated hearts of frogs, cats and rabbits and also upon hearts in situ, it was noted that small doses - 2 drops of a 1 percent aq. infusion of the leaves of Petroselinum, increased the amplitude and slowed cardiac contractions; larger doses (5-10 drops of 10 percent leaves infusion) were followed by depression of the cardiac activity. Intravenous administration of the infusion and decoction was followed by a fall in the blood pressure. Dilatation of blood vessels by an average of 50 percent was observed during perfusion of the blood vessels of an isolated ear of a rabbit with an infusion of Petroselinum leaves and roots, prepared with Ringer-Locke's solution in concentrations of 0.3-0.05 percent. -- A.N. Myazdrikova

Card : 2/2

USSR / Pharmacology and Toxicology. Medicinal Plants.

V-8

Abs Jour : Ref. Zhur - Biologiya, No 17, 1958, No. 80643

Author : Allakhverdibedov, G. B.; Aliyev, R. K.; Bagirov, S. N.;  
Tagdisi, D. G.

Inst : Not given

Title : On the Characteristics of the Chemical Composition and  
Some Pharmacological Properties of Galenicals of Tartaric  
Herbs Grown in Azerbaydzhan

Orig Pub : Sb. tr. Azerb. gos. med. in-ta, 1956, vyp. 2, 93-99

Abstract : The effect was studied of 10% aqueous tinctures of  
tartaric herb extractions (Onopordon acanthium; I) on cold-  
blooded and warmblooded animals. I is little toxic,  
quickens the response reaction to pain stimulations, in-  
creases the amplitude of the heart contractions, increases  
the rhythm of the heart, causes sharp narrowing of the blood-  
carrying vessels of the isolated organs of both coldblooded  
and warmblooded animals, and increases blood pressure.

Card 1/1

ALIYEV, R.K.; ALLAKHVERDIBEKOV, G.B.; TAGDISI, D.G.; ISMAILOV, A.I.

Characteristics of the chemical composition and certain pharmacological properties of garden lettuce. Uch.zap.AGU no.8:59-69 '56. (MLRA 10:4)

(Lettuce) (Pharmacology)

USSR / Pharmacology, Toxicology. Cardiovascular Drugs.  
: Abs Jour: Ref Zhur-Biol., No 9, 1958, #2388.

Author : Allahverdiyev, G. B.; Aliyev, R. K.; Bugirov  
S. N.; Karimov, A. I.; Taghibi, D. O.  
Inat : Azerbaidzhan University of Medicine  
Title : On the Characteristics of the Chemical Composition of the Grass Erysimum Nachezevanicum, Growing in Azerbaidzhan, and On the Action of Its Preparations Upon the Cardiovascular System.

Orig Pub: Uch. zap. Azerb. un-t, 1957, No 1, 125-134.

Abstract: Alkaloids constitute 0.013%, glycosides - 0.55% of dry weight of Erysimum nachezevanicum. Intramuscular injection in white mice weighing 15-20 gm of 1 ml of a 10% aqueous infusion or alcoholic fluid extract of E. nachezevanicum, in a concentration of 1:3, showed toxic effects and an equal

Card 1/3

28

Abstract: volume of a 30% infusion of extract 1:2 caused death of the animals (3 out of 5). Following administration of 1 ml of 20% infusion or 1 ml of fluid extract of Erysimum, 3 out of 5 frogs, placed on their backs, were unable to return to the normal position. (This dose was accepted by the authors as a sublethal dose.) In addition, the authors described in the state pharmacopeia of USSR (8th edition), the injection into the lymphatic sac of the frog of 1, 1 ml of a 30% aqueous infusion of E. nachezevanicum or 0.25 ml of 0.1% solution of strophanthin, similarly produced, within one hour, in 2 out of 6 frogs, a full arrest of the heart, in systole, in one frog - a transient standstill. The addition of 1 drop of a 10% aqueous infusion

Card 2/3

Abstract: of E. nachezevanicum to Ringer's solution, feeding an isolated heart, caused increase of the amplitude and slowing of the cardiac contractions; the addition of 3 drops of a 5% infusion or 2 drops of fluid extract 1:1, showed toxic effects. These data were also confirmed on isolated hearts of warm blooded animals. After intravenous injection in cats and rabbits, of a 0.2 ml doses of fluid extract 1:1, an elevation of arterial pressure was observed; after a 1 ml dose - a full

Card 3/3

29



ALLAKHVERDIBEKOV, G.B., BAGIROV, S.H., TAGDISI, D.G.,

Changes in certain chemical elements of the blood during artificial hypothermia. Azerb.med.zhur. no.6:75-77 Je '58 (MIRA 11:7)

1. Iz kafedry farmakologii (zav. - dots. G.B. Allakhverdibekov) Azerbaydzhanskogo gosudarstvennogo meditsinskogo instituta im. N.Narimanova (direktor - zasluzhennyy deyatel' nauki, prof. B.A. Eyvazov).

(BLOOD--ANALYSIS AND CHEMISTRY)  
(HYPOTHERMIA)

TAGDISI, D.G., kand.med.nauk

Correctors for ganglion blocking, neuroplegic, and lytic drugs used  
to control traumatic shock. Azerb. med. zhur. no. 4:9-17 Ap '61.  
(MIRA 14:4)

1. Iz kafedry farmakologii (zav. - dotsent G.B. Allakhverdibekov)  
Azerbaydzhanskogo gosudarstvennogo meditsinskogo instituta imeni  
N.Narimanova.

(AUTONOMIC DRUGS)

TAGGISI, D.G.

Stages of the development of a traumatic shock. Izv. AN Azerb.  
SSR. Ser. biol. i med. nauk no.1:75-80 '61. (MIRA 17:6)

TAGHISI, D.C.

Toxic Factor in traumatic shock. Pat. fiziol. i eksp. terap.  
no.2:74-78 '64. (MIRA 17:9)

1. Kafedra patofiziologii (zav. prof. T.G.Pashayev) i kafedra  
farmakologii (zav. - dotsent G.B. Allakhverdibekov) Azerbaydzhanskogo  
meditsinskogo instituta imeni Narimanova, Baku.

GASANOV, A.A.; JAN YE, I.Ye.; YAGDISI, D.G.

Present state of biochemistry based on materials of the First  
All-Union Congress of Biochemists. Izv. AN Azerb. SSR. Ser.  
biol. no.4:127-133 '64. (Data 17:12)

TAGDISI, D.G., kand. med. nauk

Antihistaminic activity of naphthalan petroleum. Azerb. med.  
zhur. 42 no. 10:27-32 0 '65 (MIRA 1961)

1. Iz kafedry farmakologii Azerbaydzhanskogo meditsinskogo in-  
stituta imeni N. Narimanova (rektor - prof. Kh.A. Gasanov).  
Submitted October 27, 1964.

TAGAYEVSKAYA A. A.

Krassov I. M., Tagayevskaya A. A. and Vasil'yeva M. A., "Determination of the Amplitude-phase Characteristics of a Regulator by the Rectangular Wave Method," *Avtomatika i telemekhanika*, 1973, No. 3, Pages 322-327, 11 figures; bibliography, 4 items.

TAGAYEVSKAYA, A. A.

Dudnikov, Ye. G., Krassov, I. M., Tagayevskaya, A. A., Tenny, V. P.,  
and Barkalov, P. T., "Experimental Determination of the Dynamic  
Characteristics of Regulated Industrial Machinery," Avtomatika i  
telemekhanika, 1953, Volume XIV, No. 4, Pages 418-423, 5 figures;  
bibliography, 6 items.



TAGAYEVSKAYA A. A.

Tagayevskaya A. A., "Determination of the Amplitude-phase Characteristics of a Linear System by the Curve of its Transition Process," *Avtomatika i telemekhanika*, 1953, Volume XIV No 2, Pages 231-237, with tables; bibliography, 6 items.

EL'SHTEYN, N.N.; TAGEN, U.A. (Estonskaya SSR)

Course and treatment of chronic sepsis of candidomycosis. Vrach.  
delo no.8:111-114 Ag '60. (MIRA 13:9)

1. Tallinskaya respublikanskaya bol'nitsa i Tyuriskaya rayonnaya  
bol'nitsa Estonskoy RSR.  
(MONILIASIS)

PROCESSES AND PROPERTIES INDEX

1ST AND 2ND ORDERS

12P AND 4TH ORDERS

2

CA

Solution and swelling phenomena in cellulose esters. II. A. Tager and V. A. Kargin. *Acta Physicochim. U. R. S. S.* 14, 713-26(1941)(in German); *J. Phys. Chem. (U. S. S. R.)* 15, 1036-54(1941)(in Russian); cf. *C.A.* 37, 2633<sup>h</sup>.—The heat of soln. of cellulose nitrate (I), contg. 11.83% N, in acetone is 16-18 cal. per g. for concns. vary- ing from 0.2 to 3.1%; for cellulose acetate (II) contg. 46% OAc it is 6.9-10.6 cal. for concns. from 0.3 to 8.5% of dissolved material. Similar values are obtained for solns. in MeCOEt and MeCOPr. When I is treated with various alcs., it swells strongly in all cases; the heat of reaction is 14.2 cal./g. for MeOH, and 9.7 for EtOH; with PrOH and BuOH and glycols and glycerol, the heat of sorp- tion is zero. The heat of sorption of acetone and MeCOEt gasoline is proportional to the quantity absorbed.

*h.* heat of soln. of cellulose octaacetate (III) in acetone or CHCl<sub>3</sub> differs greatly from that of II, probably because III is a cryst. substance. Other properties of these poly- mers also indicate that they are liquid in nature. When interacting with a solvent the polymer mol. components seem to act more or less independently; this indicates great flexibility of the polymer chains. Their soln. involves very great changes in entropy, usually exceeding the energy values of the interaction.

P. H. Rathmann

ASA-51A METALLURGICAL LITERATURE CLASSIFICATION

E-21 METALL. CLASSIF.

12POM 20M17V

121177 QM QMV 111

12POM 20M17V

121177 QM QMV 111

Reversibility of solutions of cellulose nitrate, benzylcellulose, and gelatin. I. Dissolution and swelling of cellulose esters. II. A. Lager and V. A. Kargin (*J. Phys. Chem. Russ.*, 1941, **15**, 1029-1033, 1036-1054) - I. The solubility of benzylcellulose (I) in PhMe at 25° increases with the amount of (I) used but the dissolved part of (I) forms less viscous solutions than the undissolved residue. Qualitatively, dissolution of (I) in PhMe and  $C_6H_6$ , and of gelatin in  $H_2O$ , appears to be reversible.

II. The heat of dissolution of cellulose nitrate (II) in  $CO_2Me_2$  is 16-18 g. cal. per g., and of cellulose acetate (III) (56% of  $OAc$ ) in  $CO_2Me_2$  is 11 g. cal. per g., almost independent of dilution. The heat of sorption of  $CO_2Me_2$  and of  $CO_2Me_2$  from gasoline by (II) is  $\propto c$ , the amount sorbed. The heat of dissolution of cellulose octa acetate (IV) in  $CO_2Me_2$  and in  $C_6H_6$  is very different from that of (III); the difference is due probably to (IV) being cryst. and (III) liquid. Other properties of polymerides also indicate their liquid nature.

J. J. B.

24

30

The mechanism of swelling of rubberlike high-molecular substances. High-molecular isoparaffins and iso-octane. A. Tager and V. A. Kargin. *Kolloid. Zhur.* 10, 455-462 (1948). — The behavior of a polymer dissolved in its hydrogenated monomer (in this system the forces between various segments of the polymer mol. are very similar to the forces between these segments and the solvent mol.) was studied by the effect of Oppanol (I) and Vistanex (II) on the vapor pressure of 2,2,4-trimethylpentane (III). Samples of I and II were suspended on spring balances in III vapor, and the amt.  $x/m$  (g./g.) of III taken up by the adsorbent was detd. at various equil. vapor pressures  $p$  at 55°. The relative vapor pressure  $p/p_0$  varied between 0.11 and 0.59 and  $x/m$  between 0.013 and 0.18. If Raoult's law were valid for these concd. mixts., the mol. wts.  $M$  of I and II would be roughly equal and  $\approx 1000$ . The viscometric  $M$  of I was 320,000, and of II 90,000. In concd. soln. a chain of 10-12 links is the kinetic unit of I and II; in dil. solns. the whole mol. is this unit. When viscometric  $M$  values are used for calcg. the entropy  $S$  of mixing, the calcd.  $S$  is about 0.01 the exptl.  $S$ , because the presence of solvent greatly increases the no. of possible configurations of the polymer mol. I. J. B.

Lab. Colloid Chem., Physicochem. Inst. V. A. Kargin

ASAC-USA METALLOGICAL LITERATURE CLASSIFICATION

PROCESSES AND PROPERTIES INDEX

28

B

**Plasticization of High-Molecular-Weight Substances.**  
 (In Russian.) A. A. Tager. *Uspekhi Khimii* (Progress in Chemistry), v. 18, Sept.-Oct. 1949, p. 557-577.

Reviews literature on the above, studying the problem under explanation of plasticizer mechanism, compatibility of plasticizer with polymer, and influence of temperature, time, frequency, and per cent plasticizer on elastic deformation. The concept of external and internal plasticizers is discussed. Theoretical bases of compatibility are investigated. 35 ref.

METALLURGICAL LITERATURE CLASSIFICATION

A33 51.4

CA

The heats of solution and swelling of some synthetic high-molecular compounds. A. Tager and V. Smatina. *Kolloid. Zhur.* 12, 474-7 (1950).—The integral heat  $Q$  of soln. of polymers in  $C_6H_6$  was independent of the final concn., which was varied from 0.2 to 4%. At 24-26° it was -1.5 and -2.6 cal./g. for 2 samples of butadiene rubber, 2.5 for polystyrene, and -1.4 and 1.7 for 2 butadiene-nitrile rubbers (Buna-20 and Buna-40). A butadiene-

styrene(75:25) copolymer (Buna-S) had  $Q = 0.36$ , i.e., the sum of the  $Q$  values of the constituents. Fresh polychloroprene had -0.12 and one aged for 1.5 yrs. had -8.5 cal./g. The more neg.  $Q$ , the more flexible and the more cryst. the polymer. The  $Q$  of polyisobutylene was in  $C_6H_6$  -1.8, toluene -0.4, heptane -0.3, and 2,2,4-trimethylpentane 0.0. The zero heat in the last instance is due to the identity between the solvent and the (double) segment of the polymer chain. J. J. Bikerman

Wend State U in Georgia

1951, A. A.

Science

Solutions of high-molecular compounds; Moskva, Gos. nauchno-tekhn. izd-vo khim. lit-ry, 1951.

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The dissolving capacity of a solvent and the viscosity of solutions of high-molecular compounds. A. Iagel and R. Verzhukh (Ural State Univ.). *Kolloid. Zh.* 13, 123-8 (1951); cf. *C.A.* 45, 2250i.—Alfrey (*C.A.* 41, 2828) expected the heat  $Q$  of soln. to det. the intrinsic viscosity ( $[\eta] = \eta/\eta_0 c$  at  $c = 0$ ;  $\eta_0$  is the viscosity of solvent and  $c$  concn.) and the slope of the straight line " $\eta/\eta_0 c$  as function of  $c$ ". This expectation is not confirmed. Thus  $[\eta]$  of polyisobutylene (I) was 1.6 in  $C_6H_6$ , heptane, and isooctane, although the corresponding  $Q$  values are  $-1.62$ ,  $-0.34$ , and  $0.0$  cal./g., whereas  $[\eta]$  and  $Q$  in toluene were 2.16 and  $-0.43$ , resp. The  $[\eta]$  of cellulose acetate (II), Ac no. 55.8, was 1.1 in  $COMe_2$  and  $HCOOH$ , although their  $Q$  values are  $+0.3$  and  $+10.5$ , resp. Three fractions of cellulose nitrate (III) had  $[\eta]$  2-4 in  $COMe_2$  and 0.5-1 in pyridine, although  $Q$  in pyridine is greater than in  $COMe_2$ . The slope of  $\eta/\eta_0 c$  was greater for greater  $Q$  in the instance of II, greater for smaller  $Q$  in the instance of III, and showed no definite dependence on  $Q$  in the instance of I. The  $[\eta]$  is not a measure of the dissolving capacity of a solvent.

J. J. Bikerman

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3482: Heats of Solution and Swelling of Some Synthetic  
High-Molecular Compounds. A. Lager and V. Samatov. *Russ  
Chemistry and Technology*, v. 24, Oct.-Dec. 1951, p. 773-  
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Thermodynamic study of systems of polymers and hydro-  
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*J. (U.S.S.R.)* 14, 895-9 (1952) Engl. translation. — See  
C.A. 47, 14659.  
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DREVAL', V.Ye.; TAGER, A.A.; FOMINA, A.S.

Concentrated solutions of polymers. Part 4: Viscosity of polystyrene solutions in various solvents. *Vysokom.soed.* 5 no.9:1404-1410 S '63.  
(MIRA 17:1)

1. Ural'skiy gosudarstvennyy universitet imeni Gor'kogo.

TAGER, A.A.; KARGIN, V.A.

Heat of solution of polymers and their hydrogenated monomers in  
the same liquid [with summary in English]. Zhur.fiz.khim. 32  
no.12:2694-2701 D '58. (MIRA 12:2)

1. Ural'skiy gosudarstvennyy universitet imeni A.M. Gor'kogo,  
Sverdlovsk.

(Heat of solution) (Polymers)

TAGER, A.A.; TSILIPOTKINA, M.V.; DORNOMIA, V.K.

Effect of the molecular weight of vitreous polymers on the packing density of their chains. Part 2: Polymethylmethacrylates [with summary in English]. Zhur.fiz.khim. 33 no.2:335-341 F '59. (MIRA 12:4)

1. Ural'skiy gosudarstvennyy universitet im. Gor'kogo Sverdlovsk.  
(Methacrylic acid)

SOV/76-33-3-14/41

5(4)

AUTHORS:

Tager, A. A., Popova, O.

TITLE:

Effect of the Molecular Weight of Vitreous Polymers Upon  
Their Chain Packing Density (Vliyaniye molekulyarnogo vesa  
stekloobraznykh polimerov na plotnost' upakovki ikh tsepey).  
III. Triacetylcellulose (III. Triatssetiltseilyulozy)  
Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 3,  
pp 593 - 598 (USSR)

PERIODICAL:

ABSTRACT:

Four different samples were investigated:  $M = 140000, 82000, 48000, 1360$  and the acetyl numbers 60.43%, 61.77%, 62.15%, 65.71%. Three of the samples were provided by P. V. Kozlov the fourth was produced by the authors (Refs 1,2). Chloroform and acetone were used as low-molecular liquids. The isothermal lines of sorption of the first sample is S-shaped, differing therefore from the isothermal lines of sorption on polystyrene (Ref 3) and polymethyl methacrylate (Ref 4) and reminds of the isothermal lines of sorption of water and cellulose (Ref 5). The quantities  $\Delta V_1, \Delta \bar{H}_1, \Delta \bar{S}_1$  were calculated from the experimental data obtained and it was found that the sorption of chloroform is accompanied by a higher heat effect than the

Card 1/2

Effect of the Molecular Weight of Vitreous Polymers Upon SOV/76-33-3-14/41  
Their Chain Packing Density. III. Triacetylcellulose

sorption of acetone. The sorption of these two liquids proceeds under a sharp decrease in entropy. The high capability of sorption, the considerable loss in heat and the decrease in entropy in connection with sorption give evidence of loose packing of the macromolecules of triacetylcellulose (I) (Refs 4,6). A particularly marked increase in the capability of sorption with the molecular weight of (I) was observed at  $M = 50000 - 70000$ . The increase in the molecular weight of the polymers increases also the integral and differential heat of mixing and reduces the entropy of mixing of the solvent. Principal agreement was found between the experimental results obtained and results previously obtained for polystyrene and polymethacrylate; it was also found that the vitreous polymers with loose packing are similar to the porous colloidal sorbents. There are 10 figures and 12 Soviet references.

ASSOCIATION: Sverdlovskiy gosudarstvennyy universitet (Sverdlovsk State University)

SUBMITTED: July 8, 1957  
Card 2/2



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Effect of annealing on molecular packing in polystyrene. Dokl. AN  
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TAGER, A. A.

GLIKMAN, S. A.

Reply to S. A. Glikman's review of the book "Solutions of high molecular weight compounds"  
by A. A. Tager. *Kill. zhur.* 14 No. 2, 1952.

Monthly List of Russian Accessions, Library of Congress, September 1952. UNCLASSIFIED.

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Thermodynamic study of polystyrene solutions. <sup>A</sup>  
Tager and Zh. S. Dombek. *Colloid J. U.S.S.R.* 15, 75-  
86 (1953) (Engl. translation). See *C.A.* 47, 4800c.  
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Temperature of vitrification and fluidity of natural rubbers  
of different molecular weights. A. Tager, M. Iovleva, T. Kantor, and L. Muzheva. J. Appl. Chem. U.S.S.R. 27, 1183-5(1964)(Engl. translation).—See C.A. 49, 7887c.  
H. M. R.

AA  
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