

KOVALEVA, V.P.; TOPCHIYEV, D.A.; KABANOV, V.A.; KARGIN, V.A.

Polymerization of pyridine. Izv. AN SSSR. Otd. khim. nauk no. 2:387
F '63. (MIRA 16:4)

1. Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova.
(Pyridine) (Polymerization)

L 12630-63 BWP(j)/KPF(c)/BWT(m)/BDS ASD Pp-l/Pr-l RM/WW
ACCESSION NR: AP3002879 8/0020/63/150/005/1073/1076

AUTHOR: Kabanov, V. A.; Kargin, V. A.

TITLE: Autocatalysis in polymerization reaction

SOURCE: AN SSSR. Doklady*, v. 150, no. 5, 1963, 1073-1076

TOPIC TAGS: autocatalysis, polymerization reaction, diffusion, jelly-effect, autocatalytic acceleration, growth rate, autocatalytic polymerization

ABSTRACT: Acceleration of polymerization reactions during accumulation of polymer in a system usually is connected with a decrease of constant of the rate of kinetic chain breaking, as a function of the difficulty of diffusion of active polymer nuclei as influenced by increase in viscosity of the medium (jelly-effect). There are other possibilities for autocatalytic acceleration, combined, for example, with an increase of chain growth rate constant if the active nucleus appears in contact with already prepared macromolecule or an aggregate of macromolecules. There is interest in the study of autocatalytic polymerization exhibited by systems for which breaking reactions are not combined with collisions of two macroradicals, since it is difficult to isolate the matrix effect from the jelly-effect. Equations for propagation, chain growth, and chain breaking are given as a simple kinetic schematic of autocatalysis polymerization. "In

Card 1/2

65
63

L 12630-63

ACCESSION NR: AP3002879

conclusion, the authors express gratitude to M. S. Yenikolopyan for his discussion of the work". Orig. art. has: 4 figures and 2 formulas. 2

ASSOCIATION: Moakovskiy gosudarstvennyy universitet im. M. V. Lomonosova
(Moscow State University)

SUBMITTED: 15Feb63

DATE ACQ: 15Jul63

ENCL: 00

SUB CODE: 00

NO REF SOV: 003

OTHER: 003

mcs/ol
Card 2/2

KARGIN, V.A., akademik; KABANOV, V.A.; KARGINA, O.V.

Preparation and study of the catalytic properties of high-molecular weight polystyrene sulfonic acid. Dokl. AN SSSR 153 no.4:845-847 D '63. (MIR 17:1)

1. Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova.

GUL', Valentin Yevgen'yevich; KABANOV, V.A., red.

[Strength of polymers] Prochnost' polimerov. Moskva,
Izd-vo "Khimiia," 1964. 227 p. (MIRA 17:7)

VASILEVSKIY, K. P.; KABANOV, V. A.; DERVIZ, T. Ye.

"The strengths and pressure-broadened widths of lines in the $4J_2 + J_3$ Band of CO_2 ."

report presented at the Atmospheric Radiation Symp, Leningrad, 5-12 Aug 64.

KABANOV, V.A.

International Symposium on Macromolecular Chemistry, in Paris. Vysokom.
soed. 6 no.2:365-372 F '64. (MIRA 17:2)

ACCESSION NR: AP4019020

S/0062/64/000/002/0391/0392

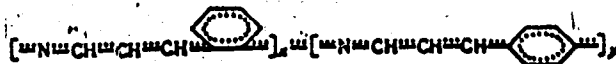
AUTHORS: Topchiyev, D.A.; Popov, V.G.; Kabanov, V.A.; Kargin, V.A.

TITLE: Polymerization of quinoline and autocatalysis forming macromolecules with conjugate system

SOURCE: AN SSSR. Izv. Seriya khimicheskaya, no.2, 1964, 391-392

TOPIC TAGS: quinoline polymerization, quinoline autocatalysis, quinoline, autocatalysis, autocatalytic reaction, quinoline zinc chloride complex

ABSTRACT: Seeking autocatalytic reactions having general applications the authors investigated the polymerization of the quinoline-zinc chloride complex (Qui₂ZnCl₂) in the presence of catalytic quantities of proton-containing substances (HPO₃, Qui·HCl) over the temperature range of 250-370C. They obtained polymer products varying in color from red to black (depending upon the conditions). They were polyquinolines with a structure of



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ACCESSION NR: AP4019020

Thus quinoline polymerization takes place with opening of the hetero-
cycle. Similar to the case of pyridine, the operation is autocataly-
tic, i.e., it is stimulated by "seeding" the mass with a sample of
already polymerized product. It is typical that the best results are
obtained with a "seed" prepared at the same temperature as that of
polymerization. The reaction is highly specific. Orig. art. Has 1
figure, one formula, no tables.

ASSOCIATION: Institut neftekhimicheskogo sinteza im. A.V. Topchiyeva
(Institute of Petrochemical Synthesis)

SUBMITTED: 26Nov63 DATE ACQ: 27Mar64 ENCL: 00
SUB CODE: OH NR REF SOV: 002 OTHER: 000

Card 2/2

ACCESSION NR: APL030371

S/0190/64/006/003/0512/0515

AUTHORS: Topchiyeva, I. N.; Klobin, V. K.; Potapov, V. M.; Levina, R. Ya.;
Kabany, Ya. A.; Kargin, V. A.

TITLE: Synthesis of optically active polymers on the basis of propylenediamine and
cyclopropanedicarboxylic acid

SOURCE: Vy*sokomolekulyarnyye soyedineniya, v. 6, no. 3, 1964, 512-515

TOPIC TAGS: polymer, optically active polymer, polyamide, cyclopropanedicarboxylic
acid, propylene-1,2-diamine, interfacial polycondensation, dichloride of cyclopro-
panedicarboxylic acid, turbidimetric titration

ABSTRACT: Synthesis of an optically active polymer from racemic components where
the rate of incorporation of the D or L forms into the macromolecule differed was
investigated. To 0.35 gm of racemic propylenediamine (in 400 ml water containing
0.8 gm KOH, at room temperature and under energetic stirring) were added dropwise
0.75 gm of the dichloride of trans-cyclopropanedicarboxylic acid in 90 ml of
chloroform. After standing 30 minutes the polyamide was separated by filtration,
washed with 10% HCl and water, and purified by dissolution in 85% formic acid and

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ACCESSION NR: AP4030371

subsequent precipitation with ammonia. The synthesis of a polyamide from L-propylenediamine was conducted in a similar way. From this polyamide the cyclopropanedicarbonic acid component was recovered by hydrolysis with phosphoric acid, treatment with barium hydroxide, and passage through a column containing the cationic resin KU-2. The recovered acid was found to be optically inert, while the polyamide itself displayed an optical rotation of a sign opposite to that of the original L-propylenediamine (its optical rotation dispersion curve being normal). It was also observed that the melting point of the optically active polymer was 40 to 50 degrees higher than that of the racemic polyamide. Orig. art. has: 1 formula and 3 charts.

ASSOCIATION: Moscovskiy gosudarstvennyy universitet im. N. V. Lomonosova (Moscow State University)

SUBMITTED: 26Mar63

DATE ACQ: 07May64

ENCL: 00

SUB CODE: CH

NO REF SOV: 002

OTHER: 007

Card 2/2

KOVALEVA, V.P.; KUKINA, Ye.D.; KABANOV, V.A.; KARGIN, V.A.

Polymerization of pyridine in a complex with zinc chloride. Vysokom.
soed. 6 no.9:1676-1683 S '64. (MIRA 17:10)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.

L 10376-65

ENT(1)/EPA(s)-2/EWG(k)/ENT(m)/EPF(c) IWS(1) CT

ACCESSION NR: AP4047208

8/0190/64/006.011 1000000

AUTHOR: Topchiyev, B. A.; Kabanov, V. A.; Kargin, V. A.

TITLE: Polymerisation of quinoline in a complex with zinc chloride

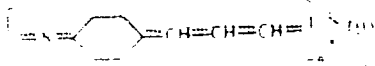
SOURCE: Vy²sokomolekulyarny²ye soyedineniya, v. 6, no. 10, 1964, 1814-1820

TOPIC TAGS: quinoline, polyquinoline, zinc chloride, ²organic semi-conductor, semiconducting polymer

ABSTRACT: A study has shown the feasibility of the polymerization of quinoline in a complex with ZnCl₂. The (C₈H₇N)₂ZnCl₂ complex polymerized in the melt at above 310°C to form dark products. The products were characterized by infrared, ultraviolet, and elemental analysis. The products were soluble in various solvents. The molecular weight of the products increased with increasing temperature and reaction time. Elemental analysis and spectroscopy suggest that structures of the type $-(C_8H_6N)_n-$ are formed.

L 10276-65

ACCESSION NR: AP4047208



The polymer yield as a function of time tends to a maximum depending on temperature. This was interpreted in terms of the establishment of a polymerization-depolymerization equilibrium. It was shown that the reaction was a catalytic in nature and was a reversible process.

and at the same time, the unpaired spin concentration formed also rose. ORIG. art. has: 5 formulas and 5 figures.

ASSOCIATION: Institut neftekhimicheskogo sinteza AN SSSR
 Institute of Petrochemical Synthesis, AN SSSR

Card 2/3

L 19376-05

SUBMITTED: 02/06/51

ATE PRESS: 3119

25

W 19376

51 REF 50V. 010

Card 3/3

11352-65 EPA(s)-2/EWT(m)/EPP(c)/EWP(j)/T Pe-4/Pr-4/Pt-10 RPL/ASD(a)-5/
AFETR, E... ASD... Pa-4/ESD(dp)/AFWL RM S/O190'64/006/010/1852/1861

ACCESSION NR: AP4047216

AUTHOR: Kabanov, V. A.; Kargin, V. A.; Kovaleva, V. P.; Topchiyev, D. A.

TITLE: The kinetics and mechanism of polymerization of aromatic heterocyclic compounds

SOURCE: Vv*sokomolekulyarny*ye soyedineniya, v. 6, no. 10, 1954, 1852-1861

TOPIC TAGS: aromatic heterocyclic compound, polymerization, quinoline, organic semiconductor, semiconductivity polymer, polypyridine

ABSTRACT: A study has been made of the kinetics and mechanism of polymerization of aromatic heterocyclic compounds as exemplified by quinoline and polypyridine. A kinetic scheme has been proposed for auto-catalytic polymerization which takes into account the reversibility of propagation, the equilibrium between the monomer and the polymerization equilibrium in the system. Kinetic equations have been derived which are in agreement with the principal laws of polymerization.

Card 1/2

L 11352-65

ACCESSION NR: AP4047216

1 3

pyridine and quinoline polymerization in stoichiometric complexes with $ZnCl_2$. A polymerization mechanism is proposed for aromatic nitrogen-containing heterocyclic compounds, and the role of the complexing agents is discussed. By binding the unshared electron pair on the nitrogen atom, the complexing agent increases the polarization of the N—C bond in the ring and facilitates ring cleavage by a proton to form a conjugated carbonium ion. Propagation proceeds by the successive addition of monomer molecules to this ion. Orig. art. has 32 formulas, 1 table, and 4 figures.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet

SUBMITTED: 16DA863

ATO PRESS: 3138

ENCL: 00

SUBGROUP: 2/2

INDEXED: 01/2000

OTHER: 00

Card 2/2

L 25101-65 ENG(j)/EWI(m)/EPF(c)/EPF(n)-2/EAR/ERP(j)/T/EWA(h)/EWA(i) Pc-4/
Pr-4/Ps-4/PeB/Pj-4/Pu-4 RPL RWH/WW/CG/RM

ACCESSION NR: AP5001764

S/0063/04/08/006/0602/0619

4
B
1/5
B

AUTHOR: Kargin, V. A. (Academician); Kabanov, V. A. (Candidate of chemical sciences)

TITLE: Polymerization in structured systems

SOURCE: Vsesoyuznoye khimicheskoye obshchestvo. Zhurnal
1974, 11, 1

TOPIC TERMS: structured polymer system, vapor condensation polymerization
polymerization kinetics, reactive polymer center, polymerization

ABSTRACT: Some aspects of polymerization in solid systems are surveyed.
Reaction of α -diimines induced by photochemical thermal treatment of

cess monomer. This process has great advantages because of its selectivity
respect to the initiator, and the condensation temperature and the avoidance of
undesirable side products in the system. Polymerization kinetics in the

Chem 114

L 25101-65

ACCESSION NR: AF5901761

depends on its exceeding some critical value of size and is determined by the

two groups may be distinguished in respect to the character of propagation
the first group is characterized by normally ascending curves, the second

ZIGZAG WILL BEAT WITH REGULARITY SEPARATE CENTERS AND LATER ON
preferably at their boundaries. This may be temperature-dependent and is vi-
sualized by normally ascending or S curves. The second group is characterized

Card 2/4

L 25101-65

ACCESSION NR: AP5001764

zation by vapor cooling (see above, e. g. acrylonitrile at -160 to -130 C) the polymerization rate is limited by the rate of phase transformation and on crystal formation of the glass forming liquid. Experiments

have shown that the rate of polymerization of styrene with magnesium at a temperature 1.5-2 C below the melting point will result in a higher molecular weight than at a temperature only 0.5 C below the melting point. The most favorable

Card 3/4

L 25101-65

ACCESSION NR AP5001764

molecular weight during post-polymerization of crystal line monomers may
actually be treated as the resulting lengthening of the above. It is

ASSOCIATION

SUBMITTED: 00 ENCL: 00 SUB CODE: IC, W, W

NR REF SOV 040

OTHER 059

Card 4/4

L 25072-65 kn(m)/err(s)/EPR/ERF(j)/T Po-4/Pr-4/16-1,11-1

ACCESSION NR: AP5001765

S/0063/84/009/006/0620/0629 37 B

AUTHOR: Kabanov, V. A. (Candidate of chemical sciences); Zubov, V.P.

polymerization

Zhurnal v. 9 no. 8 1964 620-629

ABSTRACT: ... studied quantitatively ... polymerization depends only insignificantly on the nature of the monomer ... of the order of 25-30 cal/mol/grad. The enthalpies of polymerization by short bonds will depend on the type of bond ...

Card 1/3

... will increase with an increase of the rate of ...
critical temperature ...

(activity) of the monomer and does not depend directly on the poly-
mer concentration in the system. The latter's concentration will act only as a ...

complex-forming agents affords effective changes of the thermodynamic
characteristic of the reaction system. Polymerization is accompanied by the ...
the complex-forming agent whose bond with the members of the polymer chain
is rather weak. Then the polymer will become isolated in a separate phase ...
the liberated complex-forming agent remains in the melt and assumes the role
of a diluent for the non-polymerized complex. It is concluded that structure form-

Card 2/3

L 25072-65

ACCESSION NR: AP5001765

at the time of the seizure of the documents, the CIA had a list of the

the

certain conditions, in sort, legislative influence on the direction of the

ASSOCIATION: None

SUBJECT: 0000

ENCL: 00

SUB CODE: 00

NR REF SOV: 021

OTHER: 042

Card 3/3

SHREYNER, E.S.; EUBOV, V.P.; KABANOV, V.A.; KARGIN, V.A., akademik

Effect of the phase state of diketene on the chemical structure
of macromolecules formed during its polymerization. Dokl. AN
SSSR 156 no. 2:396-399 My '64. (MIRA 17:7)

PAPISOV, I. M.; PISARENKO, T. A.; PANASENKO, A.A.; KABANOV, V.A.;
KARGIN, V. A., akademik

Nature of the initiator and the phase state of acetaldehyde as
influencing the chemical structure of macromolecules formed during
acetaldehyde polymerization. Dokl. AN SSSR 156 no. 3:669-672
'64. (MIRA 17:5)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.

TOPCHIYEVA, I.N.; LEVINA, R.Ya.; KABANOV, V.A.; KARGIN, V.A.,
akademik

Stereospecific effects in interfacial polycondensation.
Dokl. AN SSSR 156 no. 4:929-931 Je '64. (MIRA 17:6)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.

L 8652-66 EWT(m)/EWP(j)/T/EWA(c) RPL WW/WM

ACC NR: AP5025964 SOURCE CODE: UR/ 0190/65/007/010/1779/1786

AUTHOR: Papisov, I. M.^{44,55}; Kabanov, V. A.^{44,55}; Kargin, V. A.^{44,55} 46
B

ORG: Moscow State University im. M. V. Lomonosov^{44,55} (Moskovskiy gosudarstvennyy universitet)

TITLE: Conditions for the onset of rapid polymerization below the monomer melting points. Rapid polymerization as thermal explosion^{7,44,55}

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 10, 1965, 1779-1786

TOPIC TAGS: polymerization, polymerization kinetics, methylmethacrylate, organic nitrile compound

ABSTRACT: The investigation of polymerizing frozen monomers in thin layers is continued in this study with acrylonitrile, methylmethacrylate and acrylonitrile-propionitrile mixtures. The dependence of the occurrence of explosive polymerization in systems produced by simultaneous freezing of monomer and initiator (magnesium) vapor upon the thickness of the condensate layer, initiator concentration and surface temperature change was examined. It was shown that the rate of explosive polymerization below the melting point of the monomers taking

Card 1/2

UDC: 66.095.26
2

L 8862-66

ACC NR: AP5025964

place in the process of phase transitions is determined by the rate of these transformations. Explosive polymerization under such conditions has the characteristics of spontaneous thermal ignition. Orig. art. has: 11 equation, 3 tables and 2 figures.

SUB CODE: OC, GC, TD/ SUBM DATE: 23Nov64/ ORIG REF: 009/ OTH REF: 005

BYK.
Card 2/2

L 8859-66 FWT(m)/EWP(j)/T/EWA(c) RPL WH/RM

ACC NR: AP5025965

SOURCE CODE: UR/0190/65/007/010/1787/1791

AUTHOR: ⁴⁴⁵⁵ Kabanov, V. A., ⁴⁴⁵⁵ Papisov, I. M., ⁴⁴⁵⁵ Gvozdetkiy, A. N., ⁴⁴⁵⁵ Kargin, V. A. ⁴⁴⁵⁵ORG: Moscow State University im. M. V. Lomonosov (Moskovskiy gosudarstvennyy universitet) ⁴⁴⁵⁵ 46

TITLE: Role of "mobile prearrangements" in rapid polymerization below the monomer melting points

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 10, 1965, 1787-1791

TOPIC TAGS: polyacrylonitrile, crystallization, polymerization, copolymerization, polymerization kinetics, polymerization rate, copolymer

ABSTRACT: polymerization of acrylonitrile in the system inert diluent-acrylonitrile and copolymerization in the acrylonitrile-propionitrile system were investigated at temperatures below the monomer melting point to determine if diffusion migration of the monomer molecule is sufficient for rapid conversion to the polymer. Reactions were run at -196° using n-hexane or cyclohexane as inert diluents. The copolymeri-

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2

L 8859-66

ACC NR: AP5025965

zation product with propionitrile, regardless of initial monomer concentration, contained 57 mol% propionitrile, corresponding to its content in the eutectic phase. The most favorable conditions for rapid polymerization of monomers below their melting points occur at the instant when the mobility of the monomer molecule coincides with the ordering of the monomer molecules in the crystal, for instance, during phase transition in the solid polymer. This condition exists at the boundary of the crystals and the noncrystallized mass during the motion of the crystallization front. It is suggested that "mobile prearrangements" are formed momentarily on the crystal phase boundary; these are rapidly converted to polymer chains. Thus the polymerization front moves immediately behind the phase transition front. Orig. art. has: 3 figures and 2 tables.

SUB CODE: GC, OC, TD/ SUBM DATE: 23Nov64/ ORIG REF: 003/ OTH
REF: 004

BVK
Card 2/2

1. 39436-65 ppe/-\ /5/ro/4\ /EA/a\ /EM/m\ /? Pr-H/Pr-H RM
ADDRESS: S/O

AUTHORS: Kabanov, V. A. (Academician AN BSSR); Kabanov, V. A.; Aliyev, K. V.;

TITLE: Specific polymerization of β -vinylpyridine salts ✓

SOURCE: AN BSSR, Doklady, v. 160, no. 3, 1965, 504-507

TOPIC TAGS: pyridine, vinyl, polymerization

ABSTRACT: When β -vinylpyridine reacts with alkyl halides, instead of monomers of

elemental composition of the high-molecular products from reactions of β -vinylpyridine and alkyl halides in various solvents (benzene, acetone).

Elemental composition of the high-molecular products from reaction between 4-vinylpyridine and ethyl bromide in various solvents (benzene, acetonitrile, methyl alcohol) at different molar ratios of the components (1:3 to 3:1) corresponds to poly-4-vinylpyridine ethyl bromide (within the limits of analytical error).

Card 1/2

L 39436-65

ACCESSION NR: AP5005689

lower the specific gravity. Radical polymerization is thus excluded.
Mechanism of polymerization is also excluded. All examples are

SUBMITTED: 12Aug64

ENCL: 00

SUB CODE: 00, 00

L 35418-65 EWF(c)/EPR/ENP(j)/EWT(m)/T Pc-L/Pi-L/Pr-L/Pe-L RPL RM/RWH/WW

ACCESSION NR: AP5006857

S/0020/65/160/004/0857/0860

AUTHOR: Kargin, V. A. (Academician); Kabanov, V. A.; Zubov, V. P.

TITLE: Behavior of macromolecules as individual-phase particles in the case of a polymerization-depolymerization equilibrium

SOURCE: AN BSSR. Doklady, v. 160, no. 4, 1965, 857-860

TOPIC TAGS: equilibrium constant, polymerization equilibrium, depolymerization equilibrium, monomer, polymer, monophasic system, equilibrium concentration, monomer molecule, macromolecule

ABSTRACT: PDE (polymerization-depolymerization equilibrium) sets in owing to the reversibility of the chain-growth reaction. Generally PDE is described by the combined whole of the equilibria in reversible elementary reactions of the attachment of a monomer to active polymer chains. It is shown that the PDE constant is determined by the equilibrium activity of the monomer and is not directly dependent on the amount of monomer in the system. The presence of monomer particles in a system affects only the thermodynamic activity of the monomer. Since the PDE constant

Card 1/2

I. 35440-65

ACCESSION NR: AP5006857

mined only by the activity of the monomer, the chemical potential of the polymer is independent of its concentration in the reaction medium. In other words, even when a polymer is soluble in a reaction system, the PDE is described as heterogeneous. ~~Thermodynamically it is completely analogous to the equilibrium in a monocomponent liquid \rightleftharpoons vapor system.~~ This means that, when analyzing the PDE at the level of monomer molecules and polymer-chain links, the individual macromolecule may be considered as a tiny crystal or a drop of liquid suspended in a reaction medium, i.e. as an individual-phase particle.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University)

SUBMITTED: 12Aug64

ENCL: 00

SUB CODE: MR, OC

NO REF SOV: 002

OTHER: 022

Card 2/2

L 53901-65 EWT(m)/EPT(c)/EWP(j)/ENA(c)/T Pc-1/PT-1 RM

ACCESSION NR: AP5011539

UR/0020/65/161/005/1131/1134

AUTHORS: Kargin, V. A. (Academician); Kabanov, V. A.; Kargina, O. V.

37
30
B

TITLE: Polymerization of 4-vinylpyridine in polystyrole sulfonic acid

SOURCE: AN SSSR. Doklady, v. 161, no. 5, 1965, 1131-1134, and insert facing p. 1119

TOPIC TAGS: polymerization, polystyrole, pyridine, IR spectrum, electron microscope

ABSTRACT: The results are given of studies of the reaction of 4-vinylpyridine with a strong polymeric acid: polystyrole sulfonic acid. The acid was obtained by radiation polymerization of styrole sulfonic acid. It was found that addition of a 30% solution of polystyrole sulfonic acid in methanol to 4-vinylpyridine (molar ratio of the latter to the acid of 10:1) leads to immediate precipitation of readily solidifying sediment. The IR spectrum of the resulting product was compared with the spectra for vinylpyridine and poly-4-vinylpyridine. The band at 926 cm^{-1} , belonging to deformational vibration of C-H in the vinyl group and being present in the spectrum for 4-vinylpyridine, was absent in all the

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L 53901-65

ACCESSION R: AP5011539

compared spectra. This indicates polymerization in the reaction. Elemental analysis of the reaction product shows 4.65% N and 10.07% S, corresponding to 11.07%, respectively. From the IR spectra...

...the polymerization product formed with pyrostyrene sulfonic acid. The latter is a selective polymeric activator in this reaction. By means of electron and polarizing microscopes, spiral growths were observed in the polymeric forms. It is concluded that these are due to internal stresses arising through redistribution of interatomic distances during growth of macromolecules from monomer molecules chemisorbed on the polystyrene sulfonic acid. In conclusion, the authors express their thanks to the workers at M. M. Kuskov's laboratory for recording the IR spectra." Orig. art. has: 5 formulas and 2 figures (one of which was not with the article).

ASSOCIATION: Akademiya nauk SSSR (Academy of Sciences SSSR)

SUBMITTED: 26Nov64

ENCL: 00

SUB CODE: 00, 00

NO REF SOV: 001

OTHER: 000

Card 2/2

PC-4/PT-L/PI-L 12(c) 30/PM

AUTHOR: Papisov, I. M.; Kabanov, V. A.; Kargin, V. A. (Academy of Sciences)

TITLE: Mechanism of seeding of the polymeric phase within

SOURCE: AN SSSR. Doklady, v. 162, no. 1, 1965, 136-139

TOPIC TAGS: solid phase, polymerization, polymer chain

ABSTRACT: An attempt was made to correlate the dimensions of the supercritical

be either single chains or banks of parallel chains

Card 1/3

L 6703-65
ACCESSION NR

thermal effects and entropy of polymerization as well as upon temperature and properties of the monomer crystal lattice. Number of chains (x^*) in the critical seed

where r_0 is radius of the polymer chain, σ is the packing coefficient, l_0 is length extension of the polymer chain caused by addition of one monomer, l is length of the assumed cylindrical polymer seed, ΔG_0 is change in volume free energy during the process of addition of one monomer unit to the polymer chain. If $x^* > 1$, then formation of a single polymer chain in the crystalline monomer phase is thermodynamically favorable. In this case there are a definite number of chains.

ICIMW-10

$$q = \frac{\bar{v}(\bar{v} + N_0)}{N_0}$$

where: \bar{v} is the average number of monomer molecules which can polymerize at a given temperature, and N_0 is the number of monomer molecules in a unit of volume. Original has 2 figures and 13 formulas.

Card 2/3

51703-65
ACCESSION NR. AP5013419

Card 3/3 m3

L 26598-66 EWT(m)/EWP(j)/T RM

ACC NR: AP6009491

SOURCE CODE: UR/0020/66/167/001/0124/0127

AUTHOR: Kargin, V. A. (Academician); Kabanov, V. A.ORG: Moscow State University im. M. V. Lomonosov (Moskovskiy gosudarstvennyy universitet); Institute of Petrochemical Synthesis im. A. V. Topchiyeva AN SSSR, (Institut nefte-khimicheskogo sinteza, AN SSSR)TITLE: Polymerization of complex and organized monomers

SOURCE: AN SSSR. Doklady, v. 167, no. 1, 1966, 124-127

TOPIC TAGS: polymerization, thermodynamics, chemical reaction kinetics, reaction mechanism, polymer structure

ABSTRACT: Based on literature data and the author's recent research on stereospecific polymerization, a new fundamental approach to the problem of controlling the rate and selectivity of chemical reactions has been formulated. This approach involves the creation of a strong intermolecular interaction by introduction of a new component (such as a complex-forming agent) or induction of morphological changes (e.g., crystallization) in the reaction system. When applied to polymerization, either means is potentially useful for controlling the mechanism and kinetics of the reaction, and the structure and morphology of the polymer products. Monomer complex formation, in addition, can also affect the thermodynamics of the polymerization. A particular case of monomer complex formation has biochemical implications. Orig. art. has: 2 formulas.

SUB CODE: 07 /
Cord 1/1 B

SUBM DATE: 15 Dec 65 / ORIG REF: 014 / OTH REF: 005

GDC: 541.64

ACC NR: AP7003712

SOURCE CODE: UR/0190/67/009/002/0340/0344

AUTHOR: Kargina, O. V.; Ul'yanova, M. V.; Kabanov, V. A.; Kargin, V. A.

ORG: Institute of Petrochemical Synthesis im. A. V. Topchiyev, AN SSSR (Institut neftokhimicheskogo sinteza AN SSSR)

TITLE: Mechanism of polymerization of 4-vinylpyridine on macromolecular "matrices"

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 9, no. 2, 1967, 340-344

TOPIC TAGS: polymerization rate, vinyl compound, pyridine, sulfonic acid

ABSTRACT: Viscometry and UV spectroscopy were used to study the polymerization rate v_{pol} of 4-vinylpyridine (VP) in aqueous solutions of polystyrenesulfonic acid (PSSA) and polyethylenesulfonic acid (PESA), both of which served as the matrices; v_{pol} was studied as a function of the degree of neutralization of the polymeric acids α . It is shown that v_{pol} increases sharply as α approaches unity. On the basis of the established kinetic dependence of v_{pol} on α , two possible mechanisms of polymerization of VP on PSSA and PESA are considered. Both mechanisms follow from concepts according to which there is either a possibility of a rigid fixing of VP molecules on the polymeric acids, or the presence of a sufficient mobility of VP molecules to allow migration along the chain of the macromolecular acid. The mechanism based on the second of these concepts is confirmed experimentally. Orig. art. has: 2 figures and 13 formulas.

SUB CODE: 07/ SUBM DATE: 10Oct66/ ORIG REF: 003

Card 1/1

UDC: 66.095.26:678.746

COUNTRY : USSR
 CATEGORY : Farm Animals.
 ABS. JOUR. : The Swine. Q
 : RZhBiol., No. 3, 1959, No. 12062
 AUTHOR : Kabanov, V. D.
 INST. : -
 TITLE : Crossing Pigs of the Kalikinskaya and the
 : Large White Breeds.
 ORIG. PUB. : Svinovodstvo, 1957, No 10, 15-16
 ABSTRACT : Beginning in 1956, pigs of the large white
 : and the Kalikinskaya breeds were crossed at
 : the Beresovskiy MPS* Kolkhozes of the Lipet-
 : skaya oblast'. The hybrids which were thus
 : derived contain the best qualities of both
 : breeds in terms of body build and consti-
 : tutional type. At the age of 6-7 months cas-
 : trated animals reach a live weight of 90-
 : 100 kg. In all animals which were turned in
 : to the government, feed expenditure amounted
 : to 4.8 feed units per 1 kg of weight gain.

Card: 1/2

* Machine and Tractor Station
 practiced. -- O. I. Myagkova

KABANOV, V.D.

Effectiveness of crisscrossing Landrace and Large White swine.
Zhivotnovodstvo 23 no.3:74-77 Mr '61. (MIRA 17:1)

1. Vsesoyuznyy institut zhivotnovodstva.

SOV/127-58-11-14/16

AUTHORS: Rychkov, L.F. and Kabanov, V.F., Engineers

TITLE: The Concentration of the Abakan Ores (Obogashcheniye Abakanskikh rud)

PERIODICAL: Gornyy zhurnal, 1958, Nr 11, pp 68 - 72 (USSR)

ABSTRACT: The iron ore produced from the Abakan deposit is first processed at the Abakanskaya drobil'no-obogatitel'naya fabrika (Abakan Crushing-Concentrating Mill) where the large tailings are separated, and the intermediate product is sent to the Abagurskaya obogatitel'naya fabrika (Abagur Concentration Mill). The yearly output of the Abakan mill is 1,500,000 tons and will be increased to 2,500,000 tons. The output of the Abagur mill is about 3,000 tons a day. Production at both of these mills is below the planned quantities, mainly because the upper layers of the Abakan deposit are poorer in iron content than was expected. Different technical and economical indicators of work in both mills are shown in tables 1-4. There are 2 schematic diagrams and 4 tables.

ASSOCIATION: Kuznetskiy metallurgicheskiy kombinat (The Kuznetsk Metallurgical Kombinat)

Card 1/1

1. Iron ores--Processing

KABANOV, Vladimir Fedorovich; KRISHTAL', Il'ya Samoylovich; MALINOVSKAYA, Mariya Lavrent'yevna; MELAMUD, Yefim Yakovlevich; ROZENBLYUM, Yefim Grigor'yevich; MOSHAROVA, T.P., red.; TIKHONOVA, Ye.A., tekhn. red.

[Handbook of time norms for lathe work in ship repairing] Spravochnik norm i normativov vremeni na tokarnye raboty v sudoremonte. Moskva, Izd-vo "Morskoi transport," 1961. 301 p. (MIRA 14:12)
(Turning) (Ships—Maintenance and repair)

KABANOV, V.F.; NESTERENKO, A.M.; PETUKHOV, B.G.

Production and use of sinter for open-hearth furnaces in the
Kuznetsk Metallurgical Combine. Biul. TSIICHM no.1:36-38
'61. (MIRA 14:9)

1. Kuznetskiy metallurgicheskiy kombinat.
(Stalinsk--Sintering)

VINOGRADOV, V.S., inzh.; AL'TSHULER, M.A., kand. tekhn. nauk; POLYAKOV, V.G., inzh.; KUROCHKIN, A.N., inzh.; KARLAZIN, V.I., doktor tekhn. nauk; ZAIKIN, S.A., inzh.; OSTROVSKIY, G.P., inzh. [deceased]; NAUMENKO, P.I., inzh.; BOBRUSHKIN, L.G., inzh.; RUSTAMOV, I.I., inzh.; SHIFRIN, I.I., inzh.; GOLOVANOV, G.A., inzh.; KRASOVSKIY, L.A., inzh.; TSIMBALENKO, L.N., inzh.; RAVIKOVICH, I.M., inzh.; BAZILEVICH, S.V., kand. tekhn.nauk; ZORIN, I.P., inzh.; ZUBAREV, S.N., inzh.; TIKHOVIDOV, A.F., inzh.; SHITOV, I.S., inzh.; GAMAYUROV, A.I., inzh.; KUSEMBAYEV, Kh.N., inzh.; DEKHTYAREV, S.I., inzh.; VORONOV, I.S., inzh.; BURMIN, G.M., inzh.; BARYSHEV, V.M., inzh.; GOLOVIN, Yu.P., inzh.; MARCHENKO, K.F., inzh.; RYCHKOV, L.F., inzh.; NESTERENKO, A.M., inzh.; KABANOV, V.E., inzh.; PATRIKEYEV, N.N., inzh. [deceased]; ROSSMIT, A.F., inzh.; SOSEDOV, O.O., inzh.; POKROVSKIY, M.A., inzh., retsenzent; POLOTSK, S.M., red.; GOL'DIN, Ya.A., glav. red.; GOLUBEYATNIKOVA, G.S., red. izd-va; BOLDYREVA, Z.A., tekhn. red.

[Iron mining and ore dressing industry] Zhelezorudnaia promyshlennost'. Moskva, Gosgortekhnizdat, 1962. 439 p.

(MIRA 15:12)

1. Moscow. Tsentral'nyy institut informatsii chernoy metallurgii. (Iron mines and mining) (Ore dressing)

KABANOV, Vladimir Grigor'yevich, kand.tekhn.nauk, inzh.-polkovnik;
KOMAROV, Ivan Andreyevich, kand.tekhn.nauk, polkovnik;
BUZYKIN, Vasily Ivanovich, podpolkovnik; CHEBOTAROV,
Vladimir Petrovich, kapitan; MESHCHERYAKOV, G.G., red.;
ANIKINA, R.F., tekhn.red.

[Erecting underground field fortifications in average and
soft soils] Vosvedenie polevykh podzemnykh sooruzhenii v
srednikh i slabyykh gruntakh. Moskva, Voen.isd-vo M-va
obor. SSSR, 1959. 125 p. (MIRA 12:7)
(Military field engineering)

KABANOV, V. I.

"The Russian 'Tyazhelovoz' (Horse) and Its Hybrids in
Koklhozes of Molotovskaya Oblast." Cand Agr Sci, (No inst
affiliation given) Omsk, 1954. (RZhBiol, No 6, Mar 55)

SO: Sum. No. 670, 29 Sep 55—Survey of Scientific and Technical
Dissertations Defended at USSR Higher Educational Institutions (15)

USSR/Farm Animals - Horses.

Q-2

KABANOV V.I.
Abs Jour : Ref Zhur - Biol., No 7, 1958, 30917

Author : ~~Kabanov V.I.~~
Inst :
Title : On the Characteristics of the Efficiency of the Cross-
breeds of the Russian Heavy-Draft Horse.
(K kharakteristike rabochikh kachestv pomesey ruskogo
tyazhelovoza).

Orig Pub : Sb. nauchn. rabot. Kurgansk. s.-kh. in-t, 1956, vyp.
3, 263-267.

Abstract : The results of the tests carried out on the crossbred
horses of the Russian Heavy-Draft breed at the Chernush-
ensk State Thoroughbred Breeding Station showed that
crossbred horses possess high efficiency and may be used
for general duty. At 2½ years of age, they covered 2 km.
at a trot with a traction force of 25 kg. in 7 min. 48
sec.; at a pace, with a traction force of 70 kg.,

Card 1/2

- 19 -

KABANOV, V. I.

~~KABANOV, V. I.~~ Cand Agr Sci -- (diss) "The Russian heavy draught-
horse and its ^{hybrids} ~~cross-breeds~~ on the ^{kolkhozes} ~~collective farms~~ of ^{Permians} ~~Perm Ob-~~
last." Omsk (1957). 14 pp. (Author ^{is abstracts of} ~~many~~ dissertations and
^{submitted to} ~~ideas toward protection in the~~ Omsk Agr Inst im S. M. Kirov),
120 copies. (KL, 9-58, 121)

15-57-10-15039
Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 10,
p 287 (USSR)

AUTHOR: Kabanov, V. I.

TITLE: State of Technique and Technology of Oil Exploitation
and the Problem Before the Oil Men of the Lenin Region
(Sostoyaniye tekhniki i tekhnologii neftedobychy i
zadacha neftyanikov Leninskogo rayona)

PERIODICAL: V sb.: Za vysokuyu tekhn. kul'turu v dobyche nefti,
Baku, 1956, pp 8-26

ABSTRACT: Bibliographic entry

Card 1/1

~~KABANOV, V.I., inzh.~~; YERMAKOVA, A.S., inzh.; BAYTUGANTI, Ye.G., inzh.;
BERTUL'SON, Ye.A., inzh.

Attachments to pumping jacks. Bezop.truda v prom. 4 no.4:24-25 Ap.
'60. (MIRA 13:9)

(Oil wells—Equipment and supplies)

MUSAYELYANTS, R.N.; KABANOV, V.I.

Mechanization of work in changing casing lines. Trudy VNIITB
no.13:30-35 '60. (MIRA 14:12)
(Oil well casing)

MOREV, N.Ye.; ITSKOVICH, Ya.S.; GAGARINOV, B.N.; BUTUZOVA, A.N.;
DUBOVA, B.I.; FILATOV, D.K.; KABANOV, V.I.

Mechanized TSNIKHP-M-1-59 make continuous production line for
making shaped bread. Trudy TSNIKHP no.8:12-15 '60. (MIRA 15:8)
(Bakers and bakeries—Equipment and supplies)
(Assembly-line methods)

KABANOV, V.I., inzh.

Movable units for underground overhauling of wells. Bezop.truda v
prom. 6 no.11:26-27 N '62. (MIRA 16:2)

1. Vsesoyuznyy neftyanoy nauchno-issledovatel'skiy institut po
tekhnikе bezopasnosti, g. Baku.
(Oil ~~well~~—Equipment and supplies)

KOSTIN, B.A., red.; KABANOV, V.I., red.; SEROVA, Ye.V., red.;
BYKOVA, L.B., ved. red.; YAKOVLEVA, Z.I., tekhn. red.

[Assembly and use of safety devices in petroleum and gas
production] Montazh i eksploatatsiia prispoblenii po tekhnike
bezopasnosti v neftegazodobyvaiushchei promyshlennosti.
Izd.2., perer. i dop. Moskva, Gostoptekhsdat, 1963. 212 p.
(MIRA 16:4)

1. Baku. Vsesoyuznyy neftyanoy nauchno-issledovatel'skiy institut
po tekhnike bezopasnosti.
(Oil fields--Equipment and supplies)

BONDAR', V.P.; KABANOV, V.M.; SIMANOVSKIY, Yu.S.

Miniature transformer torque transducer. Izv. tekh. no.9:
23-24 S '63. (MIRA 17:1)

KABANOV, V.N., kand. tekhn. nauk

Approximation method for calculating the equivalent inductance
of a traction motor under outout conditions. Trudy Ural.
elektromekh. inst. insh. shkol. dor. transp. no.5:67-77 '62.
(MIRA 17:8)

SOLOV'YEV, A. P., insh.; KABANOV, V. M., insh.

Experience in the operation of small boiler units fired with
milled peat. Torf. prom. 40 no.3:34-35 '63. (MIRA 16:4)

1. Torfopredpriyatiye Tesovo IV.

(Peat) (Boilers—Firing)

KABANOV, Vasilij Naumovich, starshiy prepodavatel'

Special features of switching operations in the power networks of
d.c. powered rolling stock. Izv. vys. ucheb. zav.; elektromekh. 4
no.12:75-86 '61. (MIRA 15:1)

1. Kafedra elektricheskoy tyagi Ural'skogo elektromekhanicheskogo
instituta.

(Electric locomotives) (Electric railroads--Current supply)

KABANOV, V.N., kand. tekhn. nauk (Sverdlovsk); VOL'F, A.M., inzh.
(Sverdlovsk); KUIMOV, V.I., inzh. (Sverdlovsk)

New textbook on electric traction. Zhel. dor. transp. 45 no.11:
94-95 N '69. (MIRA 16:12)

DENYAKIN, Z.A.; KABANOV, V.S.

Fine grinding of chalk-clay sludge in jet separators. Tsement 26
no.5:22-24 S-O '60. (MIRA 13:10)
(Milling machinery)

KABANOV, V.S., inzh.

Main line of laboring glory. Transp.stroi. 13 no.10:40-41
0 '63. (MIRA 17:8)

KABANOV, Vasilii Sergeevich, inzh.; IVANOVA, M.N., inzh., red.;
SURODEYEV, V.P., inzh.,red.; USENKO, L.A., tekhn. red.

[Efficient use of excavators] Vysokoproizvoditel'noe ispol'zovanie ekskavatorov. Moskva, Vses. izdatel'sko-poligr, ob'edinenie M-va putei soobshchenia, 1962. 17 p. (MIRA 15:3)
(Excavating machinery)

KABANDY, V. S., inzh.; MOLOSTOV, V. F., inzh.

Aleksandr Kandalov and his crew. Transp. stroi. 13 no. 4:39-40
Ap '63. (MIRA 16:4)

(Railroads--Electrification)

DENYAKIN, Z.A., kand. tekhn. nauk; KABANOV, V.S., inzh.

Spray disintegrator for processing lime suspended matter.
Mekh. stroi. 20 no.10:18 0 '63. (MIRA 16:10)

DENIAKIN, Z.A., k.t.n. [Denyakin, Z.A.]; KABANOV, V.S.

Jet disintegrator for preparing lime suspensions. Ratsionalizatsia 13
no.12:17 '63.

DENYAKIN, Z.A., kand. tekhn. nauk; KARANOV, V.S., inzh.

Using jet disintegrators in cement plants. TSement 30 no.5-21-22
S-0 '64. (MIRA 17:12)

1. Voronezhskiy inzhenerno-stroitel'nyy institut.

GORYUNOVA, S.V.; RZHANOVA, G.N.; OVSYANNIKOVA, M.N.; ORLEANSKIY, V.K.;
KABANOV, V.V.

Role of synchronous cultures in the study of the biology of
Chlorella and their practical use. Mikrobiologiya 31 no.6:
1107-1121 N-D '62. (MIRA 16:3)

1. Institut mikrobiologii AN SSSR.
(ALGAE—CULTURES AND CULTURE MEDIA)

GORIUNOVA, S.V. [Goryunova, S.V.]; RJANOVA, G.N. [Rzhanova, G.N.];
OVSEANNIKOVA, M.N. [Ovsyannikova, M.N.]; ORLEANSKI, V.K.
[Orleanskiy, V.K.]; ~~KABANOV, V.V.~~

Importance of synchronous cultures in the biological study of
Chlorella algae and their practical utilization. Analele biol 17
no.5:69-86 Ag '63.

SIN'KEVICH, M.S.; KABANOV, V.V.

Results obtained from furthering regeneration of forests in clear-cut areas of Karelia. Trudy Kar. fil. AN SSSR no.25:67-74 '61.
(MIRA 14:9)

(Karelia--Reforestation)

SOV/147-59-2-7/20

AUTHORS: Galkin, S.I., Kabanov, V.V. and Lyashenko, S.S. (Novosibirsk)

TITLE: Experimental Investigation of Bending of a Cantilever (Circular) Cylindrical Shell with a Large Rectangular Cut-Out when Loaded by a Concentrated Force at the Free End (Eksperimental'noye issledovaniye karkasirovannoy krugovoy tsilindricheskoy obolochki s bol'shim pryamougol'nym vyrezom pri izgibe sosredotochennoy siloy)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Aviatsionnaya tekhnika, 1959, Nr 2, pp 49-61 (USSR)

ABSTRACT: The experiments were carried out on a shell of 600 mm diameter, 3800 mm long, plated with D16AT of 0.8 mm thickness. The shell was stiffened on the outside by longitudinal stringers (pressed dural angles, Pr 100-3, of a cross-sectional area of 0.434 cm^2) and on the inside by ribs spaced at 130 mm. The total length of the cut-out was 1000 mm. The general lay-out of the shell is shown in Fig 1, while Fig 2 shows the cross-section of the rib. Along their whole length the longitudinal edges of the cut-out were reinforced by either channels with flat fillets or

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Experimental Investigation of Bending of a Cantilever (Circular) Cylindrical Shell with a Large Rectangular Cut-Out when Loaded by a Concentrated Force at the Free End

simply by flats, as shown in Fig 3. In the plane of symmetry of the shell (i.e. with respect to cut-out) two longitudinal joints were made. One end of the shell was firmly fixed (by means of a fitting attached to a steel plate) and the shell was loaded at the other (free) end, the force being applied with the aid of cables to a short steel cylinder which was fitted into the shell (see Fig 1). The force was measured by a spring dynamometer. Two different directions of loading were used, as shown in Fig 4. In the first case the force vector was in the plane of symmetry of the structure and in the second case, in the axial plane perpendicular to the plane of symmetry. Fig 5 shows the complete rig ready for experiments. The results of experiments are presented in Figures 7 to 14. The graphs also include the theoretical curves obtained from relations developed in Ref 1. All experimental data and the computational values refer to the same loading, viz 1000 kg. Figures 7 to 10

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SOV/147-59-2-7/20

Experimental Investigation of Bending of a Cantilever (Circular) Cylindrical Shell with a Large Rectangular Cut-Out when Loaded by a Concentrated Force at the Free End

refer to the symmetric loading (case 1) and Figures 11 to 14 refer to the asymmetric loading (case 2) as follows: Fig 7 shows the tangential stresses in the open portion of the shell (at sections 1 and 4, see Fig 1). It is seen that they do not remain constant and are greatest between the 8th and 9th stringers. It also appears that the strength of the longitudinal reinforcement on the edges of the cut-out has essentially only a local effect on the magnitude of stresses in the panel at the boundary of the cut-out. There is good agreement between the calculated and the experimental results. From Fig 8, which refers to sections 5 and 7, it is seen that in the closed portion of the shell the distribution of tangential stresses is extremely non-uniform, showing even local concentration of stresses. The peaks in the stress curves become less sharp further away from the cut-out.

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SOV/147-59-2-7/20

Experimental Investigation of Bending of a Cantilever (Circular)
Cylindrical Shell with a Large Rectangular Cut-Out when Loaded by
a Concentrated Force at the Free End

The strength of the reinforcement on the edges of the cut-out has an insignificant influence on the distribution of the tangential stresses. Fig 9 shows the normal stresses at sections 1, 4 and 5, while in Fig 10 the normal stress along the stringers Nr 1 and Nr 9 are shown, the last one being the reinforcement of the cut-out edge. Again there is good agreement between the experiment and the theory of Ref 1. For the case of the asymmetric loading the conclusions may be summarised as follows: The distribution of tangential stresses in the open part of the shell (Fig 11 refers to sections 1 and 4) again is not constant. The strength of the reinforcement on the cut-out edge again has only a local effect, influencing the stresses in the panel between the 8th and 9th stringers. Agreement between the experiment and the theory of Ref 1 is much poorer than in the previous case. In the closed part of the shell the distribution of tangential stresses is also non-uniform (Fig 12, sections 5 and 7).

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SOV/147-59-2-7/20

**Experimental Investigation of Bending of a Cantilever (Circular)
Cylindrical Shell with a Large Rectangular Cut-Out when Loaded by
a Concentrated Force at the Free End**

The non-uniformity becomes less intense further away from the cut-out into the closed part of the shell. The strength of the reinforcement has fundamentally a local effect influencing only the maximum stress arising in the panel between the 9th and 10th stringers. Agreement between the calculated normal stresses and the experimental values (Fig 13) is good at Section 1 (at the middle of the cut-out) but poor at the boundary of the cut-out (section 4). Fig 14 represents the distribution of normal stresses in the stringers Nr 9 and Nr 5. There are 14 figures and 1 Soviet reference.

SUBMITTED: October 21, 1958

Card 5/5

39781

S/147/62/000/002/009/020
E201/E135

10.6400

AUTHOR: Kabanov, V.V.

TITLE: Stability of a circular cylindrical shell subjected to nonuniform temperature distribution

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Aviatzionnaya tekhnika, no.2, 1962, 65-71

TEXT: It is assumed that the shell (Fig.1) is subjected to longitudinal forces of magnitude

$$T_1 = -T \cdot f(\varphi) \quad (1)$$

where: T - parameter, $f(\varphi)$ - arbitrary even function of the coordinate φ . Equilibrium conditions are expressed by:

$$D \nabla^2 \nabla^2 W - \frac{1}{R} \cdot \frac{\partial^2 F}{\partial x^2} = T_1 \cdot \frac{\partial^2 W}{\partial x^2}$$

$$R \cdot \nabla^2 \nabla^2 F = -Eh \cdot \frac{\partial^2 W}{\partial x^2} \quad (2)$$

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Stability of a circular cylindrical... S/147/62/000/002/009/020
E201/E135.

from which the equation of forces is obtained for a cylinder partially filled with liquid at zero temperature and placed in a medium at the temperature T^0 :

$$T_1 = - E h \alpha T^0 \cdot [\delta(\varphi) - (1/\pi)(\beta + 2 \sin \beta \cdot \cos \varphi)] \quad (19)$$

The maximum value of T_1 is reached when $\varphi = \beta$:

$$T_{1 \max} = - k_2 [\pi \cdot \delta(\varphi) - \beta - \sin 2\beta] \cdot T_c \quad (22)$$

Fig. 3 shows values of q (continuous lines) and corresponding values of k_2 . $q = \pi R/\ell$, ℓ = length of longitudinal half wavelength. It can be seen that the longitudinal waves are short. Assuming that $q^2 \gg n^2$, α_n can be considered independent of n ; the critical temperature is proportional to α_n :

$$q \approx q_1 \quad (23)$$

where q_1 is given by:

$$q_1 = (R/h) \cdot \sqrt{12(1 - \nu^2)} \quad (24)$$

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Stability of a circular

S/147/62/000/002/009/020
E201/E135

When $\alpha_n = 1$, k_2 is independent of h/R and the critical temperature is proportional to h/R . In this case the critical stress is equal to the critical stress in the cylinder when it is subjected to uniform axial compression. There are 5 figures.

SUBMITTED: November 23, 1961

Card 3/6

KABANOV, V.V. (Novosibirsk)

Stability of a circular cylindrical shell subjected to a
nonuniform compression. Izv. AN SSSR. Otd. tekhn. nauk. Mekh. i
mashinostr. no. 1:181-183 Ja-F '63. (MIRA 16:2)
(Elastic plates and shells)

ACCESSION NR: AT4010248

S/3052/63/000/003/0201/0210

AUTHOR: Kabanov, V. V. (Novosibirsk)

TITLE: Stability of a circular cylindrical shell during uneven heating

SOURCE: AN UkrSSR. Institut mekhaniki. Teplovy*ye napryazheniya v elementakh konstruktsiy; nauchnoye soveshchaniye. Doklady*, no. 3, 1963, 201-210

TOPIC TAGS: thermal stress, cylindrical shell, circular cylindrical shell, cylindrical shell stability, nonuniform heating, aircraft design

ABSTRACT: Investigation of shell stability during uneven heating and the problems connected with it are especially important in aircraft construction. The basic question is to what degree the heterogeneity of the stress exceeds the critical value of the amplitude T as compared with the magnitude of critical stress at uniform compression. $T_1 = Tf(\phi)$, where T is the stress amplitude and $f(\phi)$ is an arbitrary even function. In the case of bending of the shell by momentum, W. Flugge obtained an amplitude of critical stress equal to 1.33 times the value of critical stress at a uniform compression. Later investigations by Yu. G. Odinkov, Ye. D. Pletnikova, and P. Seide indicated that for thin-walled shells the amplitude of critical stress during bending (within the limits of the linear theory of stability) differs very little from the critical stress at uniform com-

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ACCESSION NR.: AT4010248

pression. Flugge's results can be explained by the fact that the wavelength in the longitudinal direction, as accepted by him, does not correspond to the minimum critical stress. The problem of thermal buckling of circular cylindrical shells was also considered by D. Abir and C. Nardo, and the work of P. P. Bijlard is analyzed by the author. The case of the stability of a partially filled and immersed shell, with the temperature of the liquid θ^0 and the temperature of the surrounding medium T^0 , is given as an example. The conclusion is that, according to the linear theory of stability of thin walled shells, the uneven distribution of stresses in cross-section has little influence on the critical value of the largest compressing stress. For the definition of critical temperature, the author gives the following formulas:

$T^0 = k_2 T^0_c$, where T^0 is the temperature amplitude, where

$k_2 = \frac{1}{\lambda}$ and $T^0_c = \frac{\pi}{\sqrt{3(1-\nu^2)}} \frac{h}{R}$, where h and R are the thickness and radius of the shell. Finally, $k_2 = 1/(\eta^2 - \beta - \sin 2\beta)$.

Orig. art. has: 5 figures, 29 equations, and 1 table.

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Card

ACCESSION NR: AT4010248

ASSOCIATION: Institut mekhaniki AN UkrSSR (Institute of Mechanics AN UkrSSR)

SUBMITTED: 00

DATE ACQ: 17Jan64

ENCL: 00

SUB CODE: AP

NO REF SOV: 002

OTHER: 004

Card 3/3

L 12026-65 EWT(d)/EWT(m)/EWP(w)/EWA(d)/EWP(v)/EWA(h) Pf-1/Peb
ASD(F)-2/APTC(p) EM
ACCESSION NR: AP4048507 S/0147/54/000/004/0040/0001

AUTHOR: Kabanov, V. V.

19
6

TITLE: Stability of an anisotropic circular-cylindrical shell under combined external pressure and axial forces

SOURCE: IVUZ. Aviatsionnaya tekhnika, no. 4, 1964, 46-51

TOPIC TAGS: shell buckling, shell stability, cylindrical shell, anisotropic shell, isotropic shell, orthotropic shell, constructionally orthotropic shell

ABSTRACT: The buckling of a circular-cylindrical anisotropic shell of medium length is analyzed in linear formulation. The faces of the shell are rigid diaphragms, which are rigid in their planes, and it is assumed that there are no SI compressive forces. A Kh. M. Muskhelishvili stability equation is used to derive exact expressions from which the minimum buckling load and other parameters can be determined. Approximate expressions describing the buckling effect of tensile and compressive axial forces on wave forming is discussed. Results of a numerical calculation of critical loading for certain geometrical and

Card 1/2

L 12026-65

ACCESSION NR: AP4048507

rigidity parameters of the shell are shown graphically. Design formulas for the following particular cases of shell anisotropy are deduced: isotropic shell, orthotropic shell, and constructionally orthotropic shell (stiffened by both stringers and frames). Orig. art. has: 2 figures and 1 table.

ASSOCIATION: none

SUBMITTED: 20Dec63

ENCL: 00

SUB CODE: AS

NO REF SOV: 005

OTHER: 000

ATD PRESS: 3124

Card 2/2

I 9040-65 EWI(d)/EWI(m)/EWA(d)/EWP(k)/EWA(h)/EWP(r) PI-4 ASD(f) EM

ADDRESS: NO. ATAD47897

S/0179/64/000/004/0116/0112

AUTHOR: Kabanov, V. V. (Novosibirsk)

TITLE: Stability of a circular cylindrical sandwich shell

SOURCE: AN SSSR. Izvestiya. Mekhanika i mashinostroyeniye, 1964, 116-119

TOPIC TAGS: cylindrical shell, shell stability, shell buckling, compressed cylindrical shell, sandwich shell, sandwich shell buckling, symmetrical sandwich

ABSTRACT: Local buckling of a circular cylindrical sandwich shell of symmetric (geometrically and physically) construction is analyzed.

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ACCESSION NR: AP4043893

the thickness is assumed valid for the core. Poisson's ratio is taken as the same for all layers. The shell is acted upon by a force which is constant over its length and varies sinusoidally over its circumference. The stability equation is solved by the Galerkin method as the initial one. Through application of the Galerkin method, a system of linear homogeneous algebraic equations in matrix form is obtained. The problem of determining the buckling force parameter is thus reduced to finding the maximum eigenvalue of the matrix; the eigenvector will determine deflection curves. The effect of the stability parameters of the core and faces on the share of the resistance to compression and the effect of the non-uniformity in external-force distribution on the buckling force are discussed at length. The relationships between the stability parameters and loading force are shown in diagrams. Orig. art. has 4 figures, and 20 formulas.

ASSOCIATION: none

Cards 2/3

L 16911-65 EWT(d)/EWT(m)/EWP(w)/EWP(v)/EMA(d)/EWP(k)/EMA(h) PF-4/Pet
ASD(f)-2 MLK/EM

ACCRSSION NR: AT5000823

S/0000 64,000

AUTHOR: Kabanov, V. A.

TITLE: Buckling of an anisotropic circular cylindrical shell under tension, internal pressure, and longitudinally nonuniform heating

SOURCE: Nauchnoye soveshchaniye po teorii i prikladnoy mekhanike, 1977, 41, no. 1, p. 159-167, 159-167, Kiev, Naukova Dumka, 1977, 159-167

TOPIC TAGS: cylindrical shell²⁴, circular cylindrical shell, anisotropic cylindrical shell, shell buckling, thermal shell buckling, nonuniformly heated shell

ABSTRACT: The linear stability problem of a constructionally anisotropic circular cylindrical shell of medium length, stiffened by identical longitudinal and transverse systems, and sbuted at both faces against rigid diaphragms is analyzed. A constant axial force and longitudinal variable hoop forces, either compressive or tensile, act on the middle surface of the shell. Special attention is paid to the effect of the nonuniformity of the hoop force on its critical value; the buckling behavior of a shell subjected only to hoop forces is investigated. The

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ACCESSION NR: AT5000625

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results obtained are applied to examining the stability of a shell under combined with internal pressure and a temperature jump in the longitudinal (vertical hollow cylinder in a hot medium, the cylinder being partly filled with a zero-temperature liquid); the physical constants of the shell material are dependent on the temperature. The thermal stress distribution in the central part of the shell is analyzed without taking account of the edge effect. The conditions in the cross section with the temperature jump, and those of thermal-stress damping along the longitudinal axis are taken as the boundary conditions, and an expression for the temperature of buckling is derived. The effect of thermal stresses on the critical axial compression force is determined. Results of numerical stress analysis of strongly stiffened, weakly stiffened, and plain shells are briefly discussed. Orig. art. has: 4 figures and 32 formulas.

ASSOCIATION: none

SUBMITTED: 02Jan64

ENCL: 00

SUB CODE: AS

NO REF SOV: 004

OTHER: 001

ATD PRESS: 3149

Card 2/2

I 39792-66 EWI(d)/EWI(m)/EWP(w)/EWP(v)/EWP(k)/EWA(h)/ETC(m)-6 IJP(c) WW/EM/GDS-2
ACC NR: AP6011785 SOURCE CODE: UR/0147/66/000/001/0054/0062

AUTHOR: Kabanov, V. V.

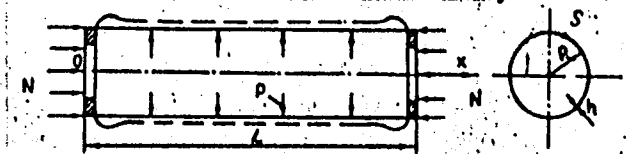
ORG: none

TITLE: The action of edge effect on the stability and ²⁶strength of a structurally anisotropic circular cylindrical shell under compression, internal pressure and heating ₂₀

SOURCE: IVUZ. Aviatsionnaya tekhnika, no. 1, 1966, 54-62

TOPIC TAGS: edge effect, cylindrical shell structure, compressive stress, temperature stress

ABSTRACT: The author studies a uniformly heated circular cylindrical shell with a dense network of longitudinal and transverse reinforcements under the effects of an axial linear compression load N and internal pressure p (see figure). This shell has



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ACC NR: AP6011785

elastic support ribs along its edges. The temperature of the shell is t , while that of the support ribs is t_p . The physical constants of the shell material, the reinforcements and supports are identical and are independent of temperature. The effect which local deformations originating at the supports have on the strength and stability of the shell is considered. The deformations are divided into axisymmetric and nonaxisymmetric. An analysis indicates that edge effect occurs even in the absence of temperature and pressure. Stress intensity may be several times greater than momentless state intensity. The maximum intensity is at the supports for a clamped shell and near the supports for a supported shell. If the temperatures of the supports and the shell are at great variance, the temperature stresses significantly increase stress intensity. Nonlinearity in the edge effect is significant when N is large. As N approaches the critical value, qualitative and quantitative changes occur in the stress pattern. The functions describing nonlinear edge effect are periodic and greatly different from the nonperiodic functions for linear edge effect. Reinforcement reduces nonlinear effects. Orig. art. has: 5 figures, 34 formulas.

SUB CODE: 20/

SUBM DATE: 06Nov64/

ORIG REF: 007/

OTH REF: 002

Cord 2/2 ML

L 27259-66 EWA(h)/EWT(d)/EWT(1)/EWP(h)/ETC(m)-6/EWP(1) WW

ACC NR: AP6009542

SOURCE CODE: UR/0413/66/000/005/0076/0076

AUTHORS: Duleyev, Ye. M.; Yunik, L. I.; Kabanov, V. Y.

56
B

ORG: none

14

TITLE: Mass flow meter gauge. Class 42, No. 179487 [announced by Special Construction Bureau "Gas Instrument Automation" of State Production Committee for Gas

Industry SSSR (Spetsial'noye konstruktorskoye byuro "Gazpriboravtomatika" Gosudarstvennogo proizvodstvennogo komiteta po gazovoy promyshlennosti SSSR)]

SOURCE: Izobreteniya, promyshlennyye obratsy, tovarnyye znaki, no. 5, 1966, 76

TOPIC TAGS: flow meter, gas flow, liquid flow

ABSTRACT: This Author Certificate presents a mass flow meter gauge containing two impellers with differing blade pitches, interconnected by an elastic element in the form of a torsion device (see Fig. 1). To increase the accuracy of measurement, one end of the torsion device is rigidly fastened to the impeller shaft and the other end is rigidly fastened to a part movable along the axle. The part is mounted between two elastic elements, e.g., springs, whose stiffness is less than that of the torsion device.

25

2

Card 1/2

UDC: 681.121.8

L 27259-66

ACC NR: AP6009542

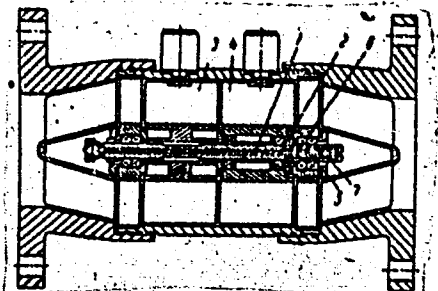


Fig. 1. 1 - torsion device; 2 - shaft;
3 and 4 - impeller; 5 - part movable along
axle; 6 and 7 - elastic elements.

Orig. art. has: 1 diagram.

SUB CODE: 14/ SUBM DATE: 29Dec64

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KABANOV, V.V.

3(7)

STATE I BOOK EXPLORATIONS NOV/21/31

Academy of Sciences, Moscow State University Institute

Trinity, Moscow, Russia, 1950, 157 p. (Series: 1st Year, Vol. 13) State and Soviet, 1,300 copies printed.

Lang, M.; A.G. Kolomoyskiy, Doctor of Physical and Mathematical Sciences; M. of Publishing House: I.K. Kabanov; Tomsk, M.; U.S.S.R., 1950.

REMARKS: This collection of articles is intended for geophysicists, hydrogeologists, and oceanographers.

COMMENTS: These articles deal with problems in the physics and chemistry of water. Several papers treat the turbulent thermal conductivity of water. In one paper, the polarization in air solution, absorption, and vapor in sea water, and the distribution of sodium in atmospheric precipitation. Papers include: Determination of the rate of heat exchange between the sea and atmosphere. 2 French, and 1 Swedish. 18

Author: Kabanov, V.V. Non-Steady State Heat Exchange Between the Sea and Atmosphere. 2 French, and 1 Swedish. 18

Author: Kabanov, V.V., V.A. Orlov, and O.A. Verbitskaya. Problems in the Salt Composition of Black Sea Water and Problems of Water Circulation. 99

Author: Kabanov, V.V. A Study of the Composition of Suspended Substances and Colored Organic Compounds in the Sea and Black Sea. 113

Author: Kabanov, V.V., and I.F. Kabanov. An Integrated Method for Investigating Colloid and Suspensions in Sea Waters. 130

Author: Kabanov, V.V., and V.E. Zhuravskaya. The Problem of Determining Copper in Sea Water. 137

Author: Kabanov, V.V., and V.E. Zhuravskaya. Determination of Selenium in Air Precipitation by the Spectral Method. 143

AVAILABILITY: Library of Congress

8/11-59 (1)

BRUYEVICH, S.V., prof., otv. red.; KABANOV, V.V.; LOSKUTOVA, I.P.,
red.; MAKUNI, Ye.V., tekhn.red.

[Conversion tables of the results of hydrochemical analyses]
Tablitsy perescheta rezul'tatov gidrokhimicheskikh analizov.
Moskva, Izd-vo Akad. nauk SSSR, 1962. 82 p. (MIRA 15:11)

1. Akademiya nauk SSSR. Okeanograficheskaya komissiya.
(Water—Analysis)

KABANOV, V.V.

Use of the pH-meter LP-57 M for determining the active reaction in sea water aboard the research vessel "Mikhail Lomonosov." Okeanologia 2 no.6:1085-1092 '62.

(MIRA 17:2)

1. Morskoy gidrofizicheskiy institut AN SSSR.

L 04569-67 EWT(d)/EWT(m)/EWP(w)/EWP(v)/EWP(k) IJP(c) WW/EM

ACC NR: AT6033811

SOURCE CODE: UR/3052/66/000/006/0197/0204

AUTHOR: Kabanov, V. V. (Novosibirsk) 28
B+1

ORG: none

TITLE: Stability of a plastic stiffened circular shell under nonuniform heating and compression 24

SOURCE: Nauchnoye soveshchaniye po teplovym napryazheniyam v elementakh konstruktsiy, 6th, Kiev, 1966. Teplovyye napryazheniya v elementakh konstruktsiy (Thermal stresses in construction elements); doklady soveshchaniya, no. 6. Kiev, Naukova dumka, 1966, 197-204

TOPIC TAGS: ^{structure} cylindric shell, circular cylindric shell, shell buckling, thermal buckling, axially compressed shell, plastic buckling, plastic shell buckling

ABSTRACT: The buckling behavior of a thin circular cylindrical shell of medium length stiffened by closely spaced stringers, and having rigid diaphragms at ends is discussed. The temperatures of the skin and the stringers are different. The states of stress and strain in the skin and the stringers are analyzed by using the strain theory supplemented by an assumption that there are no unloaded areas in the structure. The shell is treated as an orthotropically stiffened one under the conventional assumption of the thin-shell theory. Expressions for determining the stresses in the skin and the stringers are derived, and a graphico-analytic method

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of their solution is outlined. The static-stability criterion is used in investigating the buckling of the shell, assuming the membrane-stress state prior to buckling and an instantaneous transition to the buckling state under constant (prebuckling) external forces and temperatures. Expressions for forces and moments acting in the state of postbuckling equilibrium are given as well as the equation of its stability from which a formula for determining the critical force is derived for cases of symmetrical and asymmetrical buckling. The modes of buckling and the range of applicability of derived formulas are analyzed and a practical formula for calculating the buckling force is given. The graphico-analytical procedure to be used in calculating is outlined and is illustrated by a numerical sample calculation which shows in an accompanying diagram the unfavorable effect of thermal stresses on the stability of a stringer-stiffened cylindrical shell. Orig. art. has: 4 figures, 27 formulas, and 1 table.

SUB CODE: 20/ SUBM DATE: none/ ORIG REF: 002/ OTH REF: 002/ ATD PRESS: 5100

Card 2/2 vmb