S/024/60/000/006/009/015
E031/E413

The Approximate Analysis of Systems With Stochastic Parameters

an expansion for the above terms, which when substituted in Eq.(4) gives the result

$$
\begin{aligned}
K_z^*(t, t') = & \sum_{v=-\infty}^{\infty} \left[|\Phi(j\omega_v)|_0^2 + \sum_{k=1}^{n} \left(\frac{\partial |\Phi(j\omega_v)|^2}{\partial \Delta q_k} \right)_0 M[\Delta q_k] + \right. \\
& + \frac{1}{2!} \sum_{k,p=1}^{n} \left(\frac{\partial^2 |\Phi(j\omega_v)|^2}{\partial \Delta q_k \partial \Delta q_p} \right)_0 M[\Delta q_k \Delta q_p] + \dots \left] D_v e^{j\omega_v(t-t')} + \right. \\
& + \sum_{v,\mu=-\infty}^{\infty} \left[(\Phi(j\omega_v^*)\overline{\Phi(j\omega_\mu^*)})_0 + \sum_{k=1}^{n} \left(\frac{\partial \Phi(j\omega_v^*)\overline{\Phi(j\omega_\mu^*)}}{\partial \Delta q_k} \right)_0 M[\Delta q_k] + \right. \\
& + \frac{1}{2!} \sum_{k,p=1}^{n} \left(\frac{\delta^2 \Phi(j\omega_v^*)\overline{\Phi(j\omega_\mu^*)}}{\partial \Delta q_k \partial \Delta q_p} \right)_0 M[\Delta q_k \Delta q_p] + \dots \left] A_v \overline{A}_\mu e^{j(\omega_v^* t - \omega_\mu^* t')} \right. \quad (7)
\end{aligned}
$$

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00342

S/024/60/000/006/009/015
E031/E413

The Approximate Analysis of Systems With Stochastic Parameters

As an example, $\Phi(j\omega)$ is taken as $(k_0 + \Delta k)/\left[1 + j\omega(T_0 + \Delta T)\right]$ corresponding to an inertial link with stochastic variations of the amplitude coefficient and the time constant.   There is 1 Soviet reference.

SUBMITTED: April 11, 1960

Card 4/4

28956
S/146/61/004/003/005/013
D217/D301

26.2195

AUTHOR: Anan'yev, Yu.F.

TITLE: Measuring random stationary processes by incidental
            pick-ups

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Priboro-
            stroyeniye, v. 4, no. 3, 1961, 55 - 58

TEXT: The author assumes that the realization of a certain sta-
tionary process is attained by the use of several pick-ups, whose
parameters q_k exhibit, with respect to their nominal values q_{ko},
random variations $\triangle q_k$. It is required to reproduce the statisti-
cal properties of the resultung process, e.g. to determine its
spectral density and its correlation function from the statistical
processing of realizations in hand and from the known values of
random quantities y_k. The same conditions may be applied to measu-

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S/146/61/004/003/005/013

D217/D301

Measuring random stationary ...

ring random stationary processes by non-stationary pick-ups provided it is possible to isolate from every realization some intervals of time, greater than the correlation time T_c of the process, during which the pick-up parameters could be, even in approximation, considered constant. The results of transforming random functions by incidental (random) linear operators using strict theoretical methods are cumbersome even in the simplest cases. In the present article the author shows that the approximate solution of the above problem is comparatively simple. In the steady state the spectral densities $S_x(\omega)$ and $S_y(\omega)$ of signals at the input and output of a stable linear system with frequency characteristic $\Phi(j\omega)$ are related by

$$S_y(\omega) = /\Phi(j\omega)/^2 S_x(\omega). \qquad (1)$$

In practical cases $/\Phi(j\omega, \triangle q_1, \triangle q_2 \dots \triangle q_n/^2$ is nearly always continuous and can be differentiated and can be represented by

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Measuring random stationary ...

power series

$$|\Phi(j\omega)|^2_{\Delta q_\kappa} = |\Phi(j\omega)|^2_0 + \sum_{k=1}^{n}\left(\frac{\partial|\Phi(j\omega)|^2}{\partial\Delta q_k}\right)_0\Delta q_\kappa +$$

$$+\frac{1}{2!}\sum_{k,l=1}^{n}\left(\frac{\partial^2|\Phi(j\omega)|^2}{\partial\Delta q_k\partial\Delta q_l}\right)_0\Delta q_\kappa\Delta q_l + \frac{1}{3!}\sum_{k,l,h=1}^{n}\left(\frac{\partial^3|\Phi(j\omega)|^2}{\partial\Delta q_k\partial\Delta q_l\partial\Delta q_h}\right)_0\Delta q_\kappa\Delta q_l\Delta q_h + ..., \qquad (2)$$

Substituting Eq. (2) into (1) and taking terms not higher than quadratic

$$M\left[S_y(\omega|\Delta q_\kappa)\right] \simeq \left\{|\Phi(j\omega)|^2_0 + \sum_{k=1}^{n}\left(\frac{\partial|\Phi(j\omega)|^2}{\partial\Delta q_k}\right)_0 M\left[\Delta q_\kappa\right] + \right.$$

$$\left. +\frac{1}{2!}\sum_{k,l=1}^{n}\left(\frac{\partial^2|\Phi(j\omega)|^2}{\partial\Delta q_k\partial\Delta q_l}\right)_0 M\left[\Delta q_\kappa\Delta q_l\right]\right\}S_x(\omega) \qquad (3)$$

and
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$$M\left[S_y(\omega|\Delta q_\kappa)\right] = S_y(\omega). \qquad (4)$$

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Measuring random stationary ...   D217/D301

Eq. (3) is the required result. By using it, the spectral density
of measured signal $S_x(\omega)$ can be expressed in approximation by the
spectral density of the registered signal $S_y(\omega)$ and initial mo-
ments $M/\triangle q_k/$ and $M/\triangle q_k \triangle q_\ell/$ of the first and second orders of
random variations of parameters respectively. It has been shown
that the correlation function is easier to evaluate than the spec-
tral density and that both are related by the Fourier transform
(Ref. 1: Pugachev, V.S., Teoria sluchaynykh funktsiy i ee prime-
neniye k zadacham avtomaticheskogo upravleniya (Theory of Random
Functions and its Application to Automatic Control Problems) GITTL
M. 1957)

$$K_y(\tau) = \int_{-\infty}^{\infty} S_y(\omega)e^{j\omega\tau}d\,\omega. \qquad (5)$$

Replacing in Eq. (5) the integral canonical form of the correla-
tion function by its canonical resol tion over the interval $- T_c <$

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Measuring random stationary ...

$< \tau < T_c$, from Eq. (3) the relation for correlation functions is obtained as

$$K_y(\tau) \approx \sum_{\nu=-\infty}^{\infty} \left\{ |\Phi(j\omega_\nu)|_0^2 + \sum_{k=1}^{n} \left(\frac{\partial |\Phi(j\omega_\nu)|^2}{\partial \Delta q_k} \right)_0 M |\Delta q_k| + \right.$$

$$\left. + \frac{1}{2!} \sum_{k,l=1}^{n} \left(\frac{\partial^2 |\Phi(j\omega_\nu)|^2}{\partial \Delta q_k \partial \Delta q_l} \right)_0 M |\Delta q_k \Delta q_l| \right\} D_\nu e^{j\omega_\nu \tau}. \qquad (7)$$

where $D_\nu = S_x^c (\omega_\nu) \triangle \omega$. Eq. (7) is the canonical resolution of the correlation function $K_y(\tau)$. Thus, if processes X(t) and Y(t) are analyzed during the same time interval, then, under the conditions as above, the dependence, between the dispersions of random coefficients of their canonic resolutions is given by

$$D_\nu' = \frac{D_{\nu_Y}}{F_\nu}, \qquad (10)$$

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D217/D301

in which F_ν denote coefficients of $D_\nu e^{j\omega_\nu \tau}$ in Eq. (7), which depend on the consecutive number of the harmonic and on the first two initial moments of variations $\triangle q_k$. It is pointed out that the coefficient F_ν can be determined by either partially differentiating the square of the modulus of frequency characteristic of the measurement channel or the method of transformation as given by M.L. Bykhovskiy (Ref. 4: Osnovy dinamicheskoy tochnosti elektricheskikh i mekhanicheskikh tsepey (Fundamentals of Dynamic Accuracy of Electric and Mechanical Circuits), GITTL, M, 1957). The latter is stated to be easier if the analytical expression for the frequency characteristic with $\triangle q_k$' is complicated or unknown. An example of solution is given when

$$[\Phi(j\omega)]_0 = \Phi = \text{const.} \tag{13}$$

There are 4 references: 3 Soviet-bloc and 1 non-Soviet-bloc. The

Card 6/7

28956
S/146/61/004/003/005/013
Measuring random stationary ...   D217/D301

reference to the English-language publication reads as follows:
L.A. Zadeh, Correlation functions and power spectra in variable
networks, Proc. IRE, 1950, 38, No. 11.

ASSOCIATION: Moskovskiy ordena Lenina aviatsionnyy institut im.
             Sergo Ordzhonikidze (Moscow Order of Lenin Aviation
             Institute im. Sergo Ordzhonikidze)

SUBMITTED: May 25, 1960

Card 7/7

ANAN'YEV, Yuriy Fedorovich, inzh., assistent

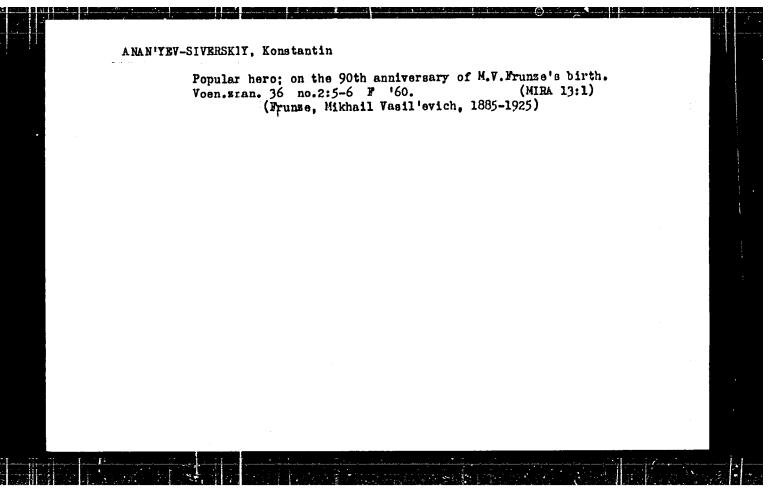Measurement of random processes with inertial transducers.
Izv. vys. ucheb. zav.; elektromekh. 4 no.9:70-78 '61.
(MIRA 14:9)

1. Moskovskiy ordena Lenina aviatsionnyy institut imeni
S. Ordzhonikidze.
(Automatic control) (Transducers)
(Electronic measurements)

ANAN'YEV-RYASHCHENKO, P. S.

"Development of the Sheaths of the Nerve Fibers of the Vegetative and Somatic Sys-
tems." Cand Biol Sci, Omsk State Veterinary Inst, 1953. (RZhBiol, No 8, Dec 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational
Institutions (12)

SO: SUM No. 556, 24 Jun 55

ANAN'YEV-SIVERSKIY, Konstantin

Popular hero; on the 90th anniversary of M.V.Frunze's birth.
Voen.zran. 36 no.2:5-6 F '60.   (MIRA 13:1)
            (Frunze, Mikhail Vasil'evich, 1885-1925)

UZDENNIKOV, A.; IVANOVA, V.M.; SALO, V.M.; ANAN'YEVA, A.

Abstracts. Apt.delo 12 no.3:83-85 My-Je '62.   (MIRA 16:1)
(PHARMACY)

Ананьева, А. А.

Category : USSR/Acoustics - Atmospheric acoustics. Hydroacoustics   J-5

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 2168

Author   : Anan'yeva, A.A.
Inst   : Acoustics Institute, Academy of Sciences USSR
Title   : Non-Directional Ceramic Sound Pickups

Orig Pub : Akust. zh., 1955, 2, No 1, 10-27

Abstract : Description of spherical and cylindrical non-direction broad-band sound pick-
           ups made of barium-titanate ceramics. The directivity characteristics of such
           receivers, with radial polarization, are given and are shown to be in the plane
           perpendicular to the axis in the case of cylinders and in the equatorial plane
           in the case of spheres. The directivity characteristics are shown to be almost
           circular over a wide frequency range (from 15 to 200-300 kc). In the plane
           containing the out-put, the directivity characteristics of spherical receiver
           are quite different from circles.
               The frequency characteristics cited show that the operating band retains a
           relatively constant sensitivity up to frequencies corresponding to the lowest
           natural frequencies of the mechanical vibrations of the ceramic piezo-elements
           and of the supporting structure. A solution is proposed for the problem of in-
           creasing the sensitivity of ceramic receivers, which is low in the case of
           radial polarization (on the order of several microvolts per bar). One employs

Card   : 1/2

Category : USSR/Acoustics - Atmospheric acoustics. Hydroacoustics   J-5

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 2168

for this purpose the so-called mechanical-stress transformation, i.e., one em-
ploys the tangential stresses in a thin-walled cylinder and sphere, caused by
the sound pressure on the outer surface. The transformation coefficient, de-
termined as the ratio of the tangential stress to the outer pressure, is R/2a
for a sphere and R/a for a cylinder (where R is the radius and a the thickness
of the walls). To be able to use the maximum piezo-modulus of the ceramic,
tangential polarization is used and the electrodes are coated on the surface.
With this type of polarization, the circular directivity does not extend to such
high frequencies as in the case of radial polarization. Computation data are
given for the static sensitivity of cylindrical hydrophones with tangential pol-
arization; experimental data are also given, and satisfactory agreement between
experiment and theory is noted. The sensitivity of cylinders 52 mm in diameter
with walls 1.5 mm thick reached 250 microvolts/bar.

Card   : 2/2

ᴀNᴀNᴵᴇVᴵᴇ, ᴀ ᴀ.

USSR / Acoustics. Atmospheric Acoustics   J-5

Abstract   : A cylindrical radiator made of barium titanate ceramic has
              a specially prescribed distribution of normal velocities on
              the radiating outer cylindrical surface. The velocity of
              the constants along the periphery of the cross section that
              is perpendicular to the axis, and are distributed along the
              standing-wave law along the generatrix of the cylinder.

Card   : 1/4

a distribution is attained by making the electrodes
formed on the outer surface in the form of rings with a
longitudinal periodicity d/2 along the length of the radia-
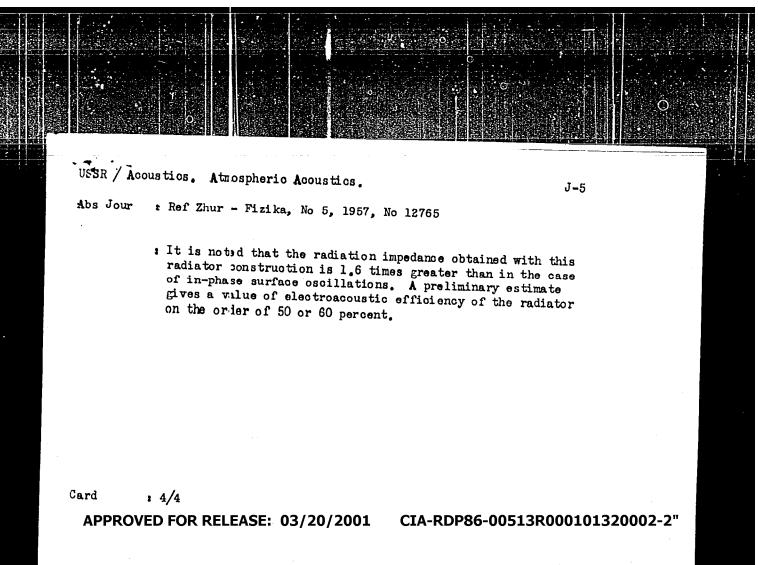tor, and making the radial polarization directed in out po-
sition for sections of the ceramic tube corresponding to
neighboring rings. The same electrodes are used to excite
the oscillations in the radiator by means of an alternating
field.

    The direction of propagation of a radiated wave makes an
angle ±α with the plane perpendicular to the axis of the cy-
linder. The angle α is determined by the relation sin x = λ/d
where λ is the wavelength of the sound in the water, and d
is the periodicity of the distribution of the normal veloci-

Card   : 2/4

the conditions
ceramic, D is the cylinder diameter), and a longitudinal
resonance, corresponding to $\lambda_1 = d$. The value of d is so
chosen as to make α = 90 for the first radial resonance,
i.e., the directivity characteristics has one large maximum
in the direction of the radiator axis. For longitudinal
resonance, the directions of maximum radiation make an an-
gle of   90° with the plane perpendicular to the axis. If
the tube is sufficiently long, it is possible to obtain at
the radial-resonance frequency a sharp directivity in the
axial direction, having small dimensions of radiator in the
direction perpendicular to the radiation.

USSR / Acoustics. Atmospheric Acoustics.   J-5

Abs Jour   : Ref Zhur - Fizika, No 5, 1957, No 12765

            : It is noted that the radiation impedance obtained with this
            radiator construction is 1.6 times greater than in the case
            of in-phase surface oscillations. A preliminary estimate
            gives a value of electroacoustic efficiency of the radiator
            on the order of 50 or 60 percent.

Card   : 4/4

A n a n 'y e v a, A. A.

46-3-10/15

AUTHOR: Anan'yeva, A.A.

TITLE: On the Shift of Resonant Frequencies of a Plane Piezoelectric
         Radiator Working with an Active Load (K voprosu o smeshchenii
         razonansnykh chastot ploskogo p'yezoelektrichcskogo izluchat-
         elya pri rabote na aktivnuyu nagruzku)

PERIODICAL: Akusticheskiy Zhurnal, 1957, Vol.III, Nr 3, pp.282-285
         (USSR)

ABSTRACT: N.N.Andreyev (Ref.1) has carried out an analysis of the
         plane radiator without losses in a general form. This gen-
         eral treatment was particularized by the present author
         (Ref.2) to an active load in the acoustic case. The latter
         treatment leads to results which are interesting from the
         practical point of view. Thus it is of interest to calculate
         the effective thickness of a piezoelectric radiator which
         is in the form of a plane plate when it is working in some
         medium having a wave resistance of $\rho_H c_H$ and under the con-
         dition of maximum radiating power, at constant voltage or
         constant current through the radiator. From an analysis of

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On the Shift of Resonant Frequencies of a Plane Piezoelectric
Radiator Working with an Active Load.

         the plane radiator working with an active load $\rho_H c_H$ with-
         out internal losses in the piezoelectric material, it
         follows that, in the case of the constant current regime
         one obtains maximum acoustic power at a frequency corresp-
         onding to the maximum active component of the electric im-
         pedance of the radiator. The results of calculations are
         shown in 4 figures. The first figure gives the calculated
         effective thickness of a plate corresponding to a maximum
         current sensitivity when the plate is working in a medium
         with a wave resistance $\rho_H c_H$ (I - the case of one-sided
         radiation, II - the case of two-sided radiation); Fig.2 gives
         the calculated effective thickness of a plate corresponding
         to a maximum voltage sensitivity of the radiator. Finally,
         Fig.3 gives the calculated effective thickness of a plate
         of barium titanate corresponding to the maximum voltage
         sensitivity for one-sided radiation into a medium with a
         wave resistance $\rho_H c_H$. The calculation carried out in
         this paper shows that an active load has a considerable
         effect on the resonance frequencies of a plane ideal
Card 2/3 emitter compared with the same emitter working without a

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On the Shift of Resonant Frequencies of a Plane Piezoelectric
Radiator Working with an Active Load.

       load on the acoustic side. The calculations may turn out
       to be convenient in the analysis of a piezoelectric emitt-
       er working in a solid medium, e.g., in defectoscopy. There
       are 4 figures, no tables and 2 Russian references.

ASSOCIATION. Institute of Acoustics of the Academy of Sciences of the
       USSR, Moscow (Akusticheskiy institut AN SSSR, Moskva)

SUBMITTED: May 29, 1957.

AVAILABLE: Library of Congress.

Card 3/3

SOV-46-4-3-2/18

AUTHOR: Anan'yeva, A. A.

TITLE: Calculations for a Cylindrical Piezoelectric Radiator with
Negligible Internal Losses (K raschetu porshnevogo p'yezo-
elektricheskogo izluchatelya bez ucheta vnutrennikh poter')

ABSTRACT: N. N. Andreyev (Ref.1) has carried out some calculations
on the piezoelectric radiator in the form of a plane infinite
lamina which vibrates in a direction perpendicular to its
plane and which has negligible internal losses. This calcula-
tion is now particularised to the case of one and two-sided
radiation into various media. The frequency dependence of
the active and reactive components of the specific electri-
cal impedance are calculated and presented in the form of
graphs. Other calculations are concerned with the dependence
of the sonic pressure on frequency at constant current and
constant voltage in the case of ideal plane cylindrical radia-
tors of quartz and barium titanate working in water. Fairly
extensive tables of the various parameters involved are given.
It is recommended that the criterion for the suitability of a
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SOV-46-4-3-2/18

Calculations for a Cylindrical Piezoelectric Radiator with Negligible Internal Losses

substance to be used in a radiator should be the maximum possible ratio of the active to the reactive components. It is shown that when choosing material for narrow band radiators it is essential to choose materials with a large piezo-modulus, high density and a large Young's modulus. There are 8 figures, 2 tables of numerical data and 10 references, 7 of which are Soviet.

ASSOCIATION: Akusticheskiy institut AN SSSR, Moskva (Acoustical Institute of the Academy of Sciences of the USSR, Moscow)

SUBMITTED: July 2, 1957.

1. Piezoelectric crystals--Mathematical analysis

Card 2/2

AUTHOR: Anan'yeva, A. A.   SOV/46-5-1-2/24

TITLE: A Mosaic Barium Titanate Ceramic Transducer for Ultrasonic Frequencies
            (Mozaichnyy preobrazovatel' iz keramiki titanata bariya na
            ul'trazvukovyye chastoty)

PERIODICAL: Akusticheskiy Zhurnal, 1959, Vol 5, Nr 1, pp 14-20 (USSR)

ABSTRACT: The paper describes a barium titanate transducer and discusses its
            properties at 40-250 kc/s.   The transducer (Fig 1) consisted of a set
            of twenty-one polarized BaTiO$_3$ ceramic squares, 7, stuck onto a
            steel plate which forms part of the case 1. Dimensions of the squares
            were 20 x 20 x 5 mm and they were connected in parallel (total capacitance
            16 x 10^3 pF). The transducer had a plexiglas (transparent to sound)
            cover 3 with a rubber seal 4. The space 8 between the plexiglas cover
            and the steel plate (with piezoelectric squares) was filled with
            transformer oil. The back was covered with a steel cap 2 and the
            space 6 between the cover 2 and the steel plate carrying the ceramic
            squares was filled with air. When immersed in water the transducer
            was a multi-layer system consisting of water, plexiglas, transformer oil,
            barium titanate, steel, air, steel and water. Since the transducer

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A Mosaic Barium Titanate Ceramic Transducer for Ultrasonic Frequencies

radiates primarily in the $BaTiO_3$-oil-plexiglas direction, it can be repre-
sented as a four-layer system (plexiglas, oil, barium titanate, steel)
between two semi-infinite spaces (water and air). The author, following
Tartakovskiy (Ref 1), calculated the transparency coefficient for such
a four-layer system. This coefficient is shown by curve 1 in Fig 3;
it agrees qualitatively with the empirical frequency dependence of
sensitivity of the transducer, acting as a receiver, shown by curve 2
in Fig 3. The main difference between curves 1 and 2 of Fig 3 is
the absence of a pronounced peak at 180 kc/s in the empirical curve.
This is due to poor impedance matching between plexiglas and transformer
oil on one hand and the medium (water) on the other. It may be also
due to losses in the system not allowed for in calculations. Fig 4
is identical with curve 2 of Fig 3 (sensitivity of the transducer as a
receiver) and Fig 5 represents the frequency dependence of the

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SOV/46-5-1-2/24

A Mosaic Barium Titanite Ceramic Transducer for Ultrasonic Frequencies

transducer used as an emitter. Acknowledgments are made to V.S. Grigor'yev for his advice and to A.V. Sosnov and V.A. Basov for help in this work. There are 5 figures and 5 references, 3 of which are Soviet and 2 English.

ASSOCIATION:Akustichoskiy institut AN SSSR, Moskva (Acoustics Institute, Academy of Sciences, U.S.S.R., Moscow)

SUBMITTED: December 23, 1957

Card 3/3

SOV/46-5-2-18/34

AUTHOR: Anan'yeva, A.A.

TITLE: Letter to the Editor   (Pis'mo v redaktsiyu)

PERIODICAL: Akusticheskiy zhurnal, 1959, Vol.5, Nr 2, p 241   (USSR)

ABSTRACT: The letter gives six corrections to an earlier paper by
            the author ("On the calculation of a piston-type piezo-
            electric radiator without allowing for internal losses";
            Ak. Zh., Vol IV, Nr 3, 1958.   Acknowledgment is made to
            Yu.F. Shpilev, who pointed out some of these mistakes.

ASSOCIATION: Akusticheskiy institut AN SSSR Moskva (Acoustics
             Institute, Ac. Sc. USSR, Moscow)

Card 1/1.

85890

9.2180 (3203,1162)
24.7800 (1144 only)

AUTHORS: Anan'yeva, A. A., Ugryumova, M. A., and Strizhkov, B. V.

TITLE: Some Anomalous Properties of Chemically Pure Barium Titanate Ceramics

TEXT: This is the reproduction of a lecture delivered at the Third Conference on Ferroelectricity which took place in Moscow from January 25 to 30, 1960. The authors studied the properties of high-purity $BaTiO_3$ ceramics which had been obtained via the following reactions:

$$BaCl_2 \cdot 2H_2O + TiCl_4 + 2H_2C_2O_4 \cdot 2H_2O \rightarrow BaTiO(C_2O_4)_2 \cdot 4H_2O + 6HCl + H_2O$$
$$\downarrow 790°C$$
$$BaTiO_3 + 2CO_2 + 4H_2O$$

The reactions and respective results were studied by thermographic, X-ray, and chemical analyses. The specimens obtained were submitted to heat treatment at 900 - 1450°C. In these specimens, ε was measured as a function of

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85890

Some Anomalous Properties of Chemically Pure   S/048/60/024/011/026/036
Barium Titanate Ceramics   B006/B060

the heat treatment temperature and the curve obtained was compared with
that taken from technically pure $BaTiO_3$. While the ε of high-purity $BaTiO_3$
specimens attains a maximum (6000) at a temperature of $1240^\circ C$, and then
drops to a constant value of 2300, the ε-value of technically pure
specimens remains below 1500. Fig. 2 shows ε as a function of the duration
of the heat treatment at 1270 and $1350^\circ C$ (high purity) and $1350^\circ C$
(technological). Only in the former case does ε decrease with time, while
remaining constant in the two latter cases. Fig. 3 illustrates the
dependence of density, porosity, and water uptake of the specimens on the
heat treatment temperature. The sharpest changes were observed at $1240^\circ C$.
At this temperature, density attains its maximum (5.94 g/cm^3) and conserves
it; porosity and water uptake are practically nil. Fig. 4 shows micro-
pictures of sections of the individual specimens undergoing a heat treat-
ment at various temperatures. The grain size was found to be highly
temperature-dependent. There are 4 figures and 5 non-Soviet references.

Card 2/2

85891

9.2181 (2303, 3203)

24.7800 (1144, 1162)

S/048/60/024/011/027/036
B006/B060

AUTHORS: Anan'yeva, A. A., Strizhkov, B. V., Ugryumova, M. A.

TITLE: Dielectric and Piezoelectric Properties of Chemically Pure Barium Titanate Ceramics

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1960, Vol. 24, No. 11, pp. 1405 - 1408

TEXT: This is the reproduction of a lecture delivered at the Third Conference on Ferroelectricity which took place in Moscow from January 25 to 30, 1960. N. S. Novosil'tsev, A. L. Khodakov, and the authors of this paper examined polycrystalline specimens of chemically pure barium titanate and determined the dependence of the electrophysical properties on the heat treatment temperature. A report is made here of the dielectric, elastic, and piezoelectric properties of chemically pure $BaTiO_3$. The heat treatments were made at 1180, 1240, 1270, and 1400°C (specimens 1 - 4), and also commercially pure specimens (No.5) were examined for a comparison (1380°C). Investigation results are given in diagrams and tables. Fig. 1 shows the temperature dependence of the various specimens 1 - 5, the peak
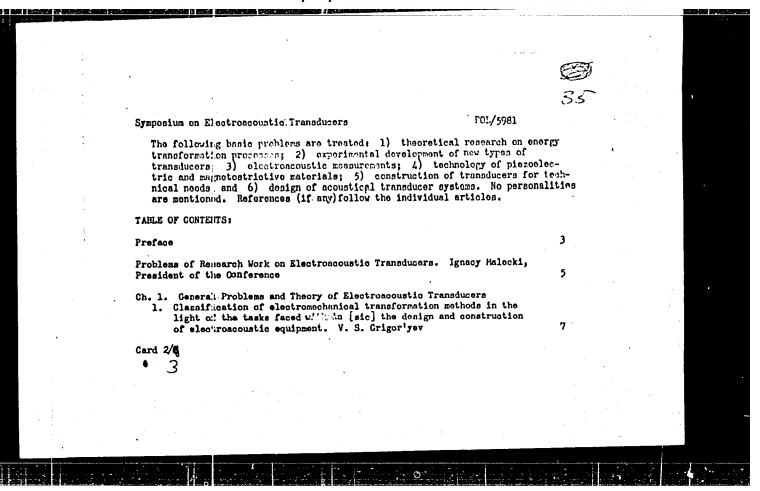
Card 1/3

Dielectric and Piezoelectric Properties of   S/048/60/024/011/027/036
Chemically Pure Barium Titanate Ceramics   B006/B060
85891

values being tabulated. Fig. 2 shows $\epsilon(t)$ for polarized and nonpolarized coarse-grained chemically pure $BaTiO_3$ specimens; the two ϵ-peaks (1st and 2nd phase transition) are well marked and are somewhat higher for the polarized specimen. The acoustic velocity c was determined in pure $BaTiO_3$ ceramics on the basis of the radial vibrations of polarized specimens. Fig. 3 shows its temperature dependence; c rises rapidly with temperature and remains practically constant from $1300^\circ C$ on. Fig. 4 illustrates the dependence of the piezoelectric modulus d_{31} on the heat treatment temperature. For chemically pure $BaTiO_3$ ceramics, d_{31} is about 1.5 times as high as for commercially pure $BaTiO_3$. Specimens submitted to heat treatment below $1250^\circ C$ exhibited very high d_{31} values; thus, e.g., the specimen treated at $1170^\circ C$ had a $d_{31} \sim 5 \cdot 10^{-6}$ CGSE. There are 4 figures, 2 tables, and 4 references: 3 Soviet and 1 US.
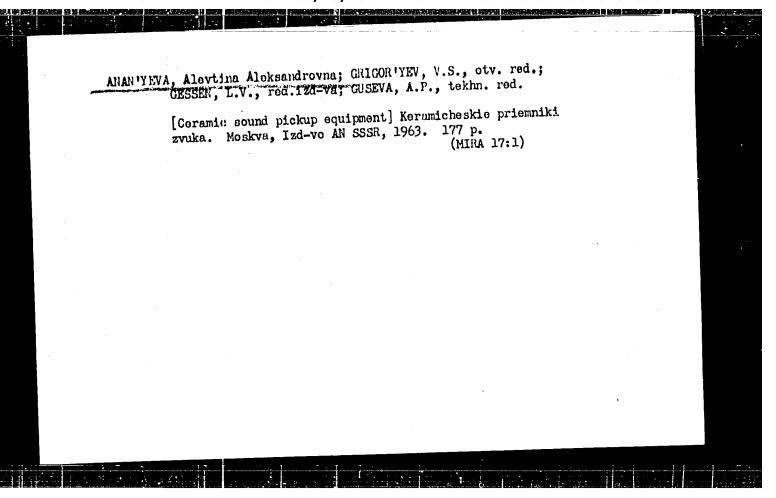
Card 2/3

ANAN'YEVA, A. A. Cand Tech Sci -- "Sound receivers made of barium-titanate

ceramics." Kiev, 1961 (Min of Higher and Secondary Specialized Education UkSR.

Kiev Order of Lenin Polytechnic Inst). (KL, 4-61, 194)

-167-

Symposium on Electroacoustic Transducers   ГО./5981

The following basic problems are treated: 1) theoretical research on energy transformation processes; 2) experimental development of new types of transducers; 3) electroacoustic measurements; 4) technology of piezoelectric and magnetostrictive materials; 5) construction of transducers for technical needs and 6) design of acoustical transducer systems. No personalities are mentioned. References (if any) follow the individual articles.

TABLE OF CONTENTS:

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3

Symposium on Electroacoustic Transducers   POL/5981

Card 5/8

ANAN'YEVA, Alevtina Aleksandrovna; GRIGOR'YEV, V.S., otv. red.;
GESSEN, L.V., red.izd-va; GUSEVA, A.P., tekhn. red.

[Ceramic sound pickup equipment] Keramicheskie priemniki
zvuka. Moskva, Izd-vo AN SSSR, 1963. 177 p.
(MIRA 17:1)

ANAN'YEVA, A.A.; BEREZIN, V.A.

Calculating the static sensitivity of a three-layered cylindrical
transducer. Akust. zhur. 10 no.1:15-19 '64.   (MIRA 17:5)

1. Akusticheskiy institut AN SSSR, Moskva.

ACCESSION NR: AP4025727   S/0046/64/010/001/0015/0019

AUTHORS: Anan'yeva, A. A.; Berezin, V. A.

TITLE: Computation of static sensitivity of a three-layer cylindrical transformer

SOURCE: Akusticheskiy zhurnal, v. 10, no. 1, 1964, 15-19

TOPIC TAGS: static sensitivity, cylindrical transformer, piezoelectric element, mechanical stress, elastic property, piezoelectric modulus, sound radiator, dielectric penetrability, plane deformation, tangent stress, radial stress

ABSTRACT: The authors compute the change in static sensitivity of a three-layer cylindrical transformer with an internal cylindrical piezoelectric transforming element and external passive layers relative to the natural sensitivity of the transforming piezoelement subject to pressure by the external lateral surface. They analyze the equations for computing the distribution of stress in the radial direction in the material of a three-layer transformer. They determine the influence of the elastic properties of the material of the external layers on the static sensitivity. The tangential mechanical stresses in a specific construction essentially exceed the radial stresses. In the consideration of radial mechanical stresses it is clear that the greatest "sound-transparent", i.e., transmitting

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ACCESSION NR: AP4025727

internal pressure to the sensitive element with minimal loss, is the interstitial (second) layer whose elastic properties are close to the elastic properties of the first and third layers (steel and ceramics). In the latter case the three-layer transformer degenerates into a single-layer one. The radial stresses in the material of a cylindrical transformer with optimal elastic properties for the interstitial layer are less than the sonic pressure on the surface; thus any reinforcement is theoretically involved with decrease in the static sensitivity of the transformer with respect to the sensitivity of the transforming element. The greatest loss of static sensitivity of a transformer occurs because of the presence of the first "rigid" (reinforced) layer in which, when it is thin, very large tangential stresses arise if it is in contact with the pliable interstitial layer two. If in the construction of the transformer it is necessary to leave an external thin metallic layer, then it is advisable to take measures to increase its pliability. Only thus can high static sensitivity be realized. Orig. art. has: 5 figures and 6 formulas.

ASSOCIATION: Akusticheskiy institut AN SSSR, Moscow (Institute of Acoustics, AN SSSR)
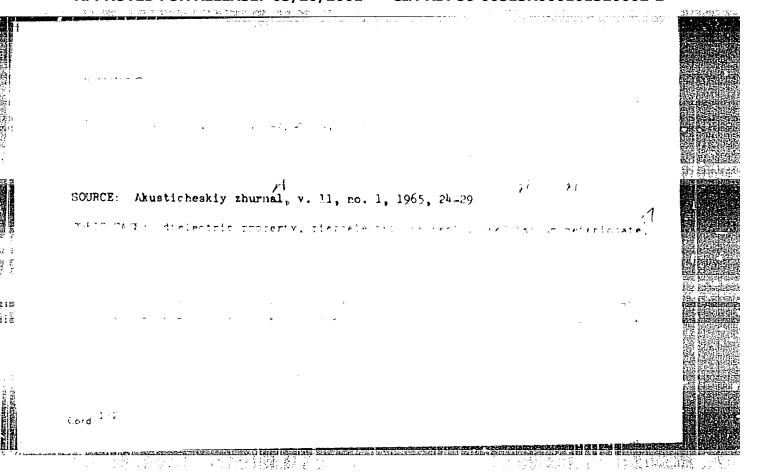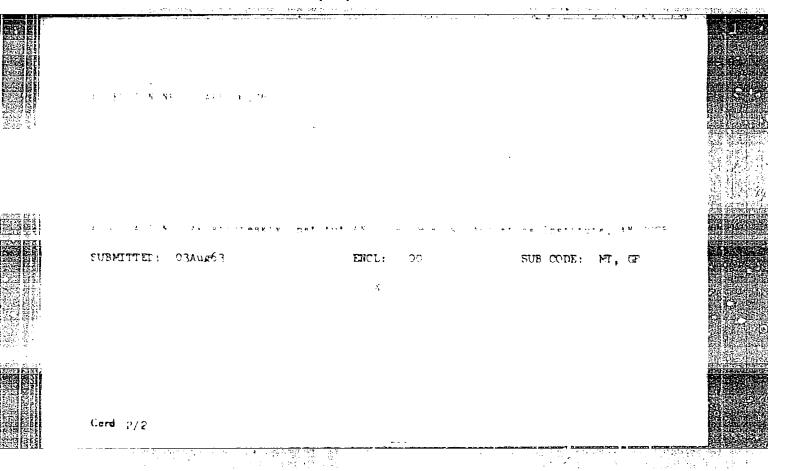
SUBMITTED: 08Apr63   DATE ACQ: 10Apr64   ENCL: 00

SUB CODE: AP, PH   NO REF SOV: 002   OTHER: 001

Card 2/2

SOURCE: Akusticheskiy zhurnal, v. 11, no. 1, 1965, 24-29

SUBMITTED: 03Aug63 ENCL: 00 SUB CODE: MT, GP

Card 2/2

L 13808-65   EWT(1)/EWP(e)/EPA(s)-2/EWT(m)/EPF(n)-2/EPA(w)-2/EEC(t)/EEC(b)-2/EWP(t)/
Pab-10/P-10/Peb/Pg-4/Pl-4   IJP(c)/SS(mp)-2/SSD(n)-s/SSTR/EFWL/ESTOT/
y/WH

ACCESSION NR:

AUTHOR: Anan'yeva, A A.; Ugryumova. M. A.   3

TITLE: Effect of small additions of group III and IV elements on
the dielectric and piezoelectric properties of lead barium metanio-
bate ferroelectric ceramics

SOURCE: Akusticheskiy zhurnal, v. 10, no. 3, 1964, 265-270

TOPIC TAGS: ferroelectricity, ceramic dielectric, dielectric con-
stant, dielectric loss, piezoelectric modulus, barium inorganic
compound, lead compound, group III element, group IV element

ABSTRACT: The interest in solid solutions of the lead barium
metaniobate $(Pb_{0.6}Ba_{0.4}Nb_2O_6)$ is due to their high piezoelectric
moduli and stable properties over a wide temperature range. Addi-
tives of Sc^{+3}, Y^{+3}, La^{+3}, Nd^{+3}, Hf^{+4}, and Ti^{+4} in the form of

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L 13808-65
ACCESSION NR: AP4044608

oxides were introduced into the solid solution in amounts of 1%.
The additives were purposely chosen to have a valence different
from that of the corresponding component of the fundamental lattice,
so as to ensure a definite change in the dielectric and piezoelectric
properties of the material. The preparation of the samples is brief-
ly described. The tests have shown that addition of La_2O_3 (1%) im-

proves the piezoelectric properties of the solid solution, and that
the effect of La^{+3} exceeds that of all other elements of groups III
and IV of the periodic system. The greater effect of lanthanum is
ascribed to the fact that lanthanum has an ionic radius closer to that
of lead than any of the other elements. The piezoelectric modulus
d_{31}, the dielectric constant, and the parameter $(d_{31}E)$ all increased

appreciably following the addition of lanthanum. The latter in-
creased from 2.41 x 10^{12} to 3.67 x 10^{12} cgs esu, or by about 1.5
times. No noticeable changes in other parameters of the lead barium

2/3

L 13808-65

ACCESSION NR: AP4044608

/

metaniobate were observed. Orig. art. has: 3 figures and 3 tables.

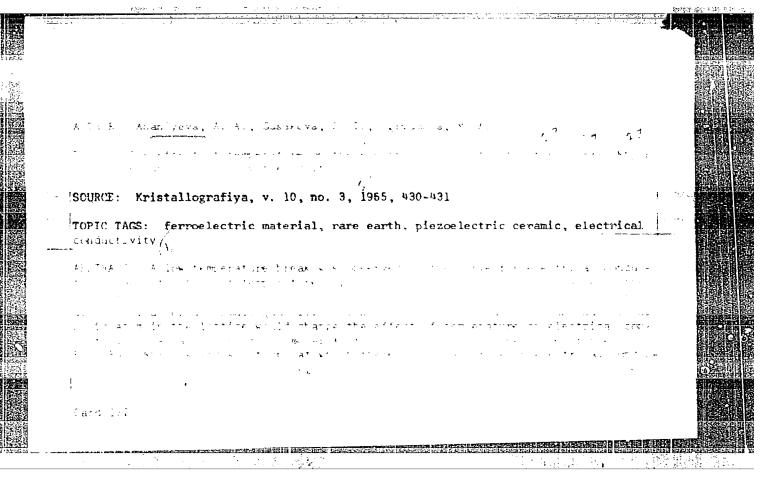ASSOCIATION: Akusticheskiy institut AN SSSR, Moscow (Acoustic Institute, AN SSSR)
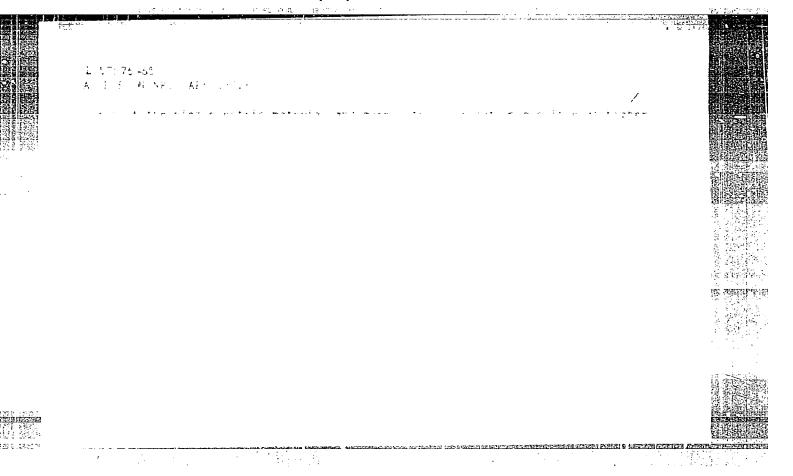
SUBMITTED: 03Aug63   ENCL: 00

SUB CODE: EC, EM   NO REF SOV: 010   OTHER: 005

3/3

ANAN'YEVA, A.A.; UGHITENOVA, M.A.

Effect of admixtures of lanthanum oxide and zirconium dioxide on the dielectric and piezoelectric properties of lead barium metaniobates. Akust. zhur. 11 no.1:24-29 '65.

(MIRA 18:4)

1. Akusticheskiy institut AN SSSR, Moskva.

A   S   Ananyeva, A. A., Gusareva,

SOURCE: Kristallografiya, v. 10, no. 3, 1965, 430-431

TOPIC TAGS: ferroelectric material, rare earth, piezoelectric ceramic, electrical conductivity

ABSTRACT

Card 1/2

L 25776-66   EWT(1)/EWT(m)/EWP(t)   IJP(c)   JD
SOURCE CODE: UR/0070/65/010/003/0430/0431

ACC NR: AP6016367   60

AUTHOR: Anan'yeva, A. A.; Gusakova, G. I.; Ugryumova, M. A.   B

ORG: Acoustics Institute (Akusticheskiy institut)

TITLE: Temperature dependence of electroconductivity of Pb sub 0.6 Ba sub 0.4 Nb sub 2 O sub 6 with and without additions of La sub 2 O sub 3

SOURCE: Kristallografiya, v. 10, no. 3, 1965, 430-431

TOPIC TAGS: lead, barium, phase transition, niobium compound, temperature dependence, electric conductivity, lanthium oxide, piezoelectricity, dielectric permeability

ABSTRACT: Almost all piezoelectric materials having high Curie points lose this property at temperatures much below their Curie points, owing primarily to increased electrical conductivity of these materials at high temperatures.
Measurements made of the temperature dependence of conductivity and dielectric permeability for a sample are plotted on a graph, which shows a stepwise variation in conductivity at the phase transition temperature. Another break in this curve is seen at a higher temperature, indicating another change in the conductivity mechanism. This point agrees well with the polarization temperature of 150-160°C suggested by other authors for this compound.
When La2O3 is added to the sample, the break points of the conductivity curve shift in the direction of higher temperature, the lower point experiencing the greater shift; and the greatest shift occurs for a sample containing 0.5 mole % La2O3. Higher percents of La2O3 drops the lower point a little below that of the untreated compound. Orig. art. has: 2 figures. [JPRS]

SUB CODE: 20, 11 / SUBM DATE: 11Mar64 / ORIG REF: 006 / OTH REF: 005
UDC: 548.0:537

Card 1/1 cc

AM4033663   BOOK EXPLOITATION   S/0791

Anan'yeva, Alevtina Aleksandrovna

Ceramic sound receivers (Keramicheskiye priyemniki zvuka) Moscow, Izd-vo AN SSSR, 1963. 177 p. illus., biblio. Errata printed inside back cover. 2200 copies printed. Responsible editor: Grigor'yev, V. S.; Editor of the publishing house: Gessen, L. V.; Technical editor: Guseva, A. P. (At head of title: Akademiya nauk SSSR. Akusticheskiy institut)

TOPIC TAGS: ceramic sound receiver, piezoceramic receiver, accoustic receiver, barium titanate, dielectric, piezoelectric, wide band receiver, flat diaphragm, characteristic frequency, spherical shell, cylindrical shell, resonance receiver

PURPOSE AND COVERAGE: It is hoped that this book will be useful to accoustic engineers and experimenters in the field, as the author presents some of the results obtained by himself and his colleagues in research on piezoceramic sound receivers. The author thanks V. A. Berezin, V. A. Basov, Ye. V. Vavilov, A. N. Sapry*gin, and A. V. Sosnov for their experimental work. Thanks are expressed to Academician N. N. Andreyev and to Doctor of Technical Sciences V. S. Grigor'yev

Card 1/3

AM4033663

for their helpful attention to the experimental work and the preparation of the manuscript. Finally, the author acknowledges the assistance of Mechanics A. V. Prakhov and P. D. Kholin, who sometimes played a decisive role in the practical development of the sound receivers.

TABLE OF CONTENTS:

Card 2/3

ANAN'YEVA, A. A.

    SENYANINOVA-KORCHADINA, M.V.; ANAN'YEVA, A.A.

        Seasonal and age fluctuation in the starch and water content of evergreen bog. Ericales and crowberry. Uch. zap. Len.un no.213;295-311 '56.   (MIRA 10:3)

            (Ericales) (Crowberry)

ANAN'YEVA, A.R.

Devonian flora of mountain regions of the southeastern part of
Western Siberia. Biul.MOIP. Otd.geol. 29 no.3:103-104 My-Je '54.
(MLRA 7:8)
(Siberia, Western--Paleobotany) (Paleobotany--Siberia, Wes-
tern)

LOKSHINA, R.D., kand. ekon. nauk; KOROLEVA, M.G., kand. farm. nauk;
     KOROBOVA, Z.N.; UZDENIKOV, A.N.; MARTYNOVA, M.P.; PANCHENKO, Ye.I.
     ANAN'YEVA, A.V.

     Development of a methodological basis for the determination of
     medication requirements. Sbor. nauch. trud. TSANII 4:20-30 '63
                                                      (MIRA 17:3)

     1. Otdel organizatsii i ekonomiki aptechnogo dela (rukovoditel'
     otdela - kand. farm. nauk A.M. Sidorkov) TSentral'nogo aptechno-
     go nauchno-issledovatel'skogo instituta.

ANAN'YEVA, E.L.; SHTEYNGEL', A.S., red.

[Integrated brigades of innovators in Azerbaijan] Kom-
pleksnye tvorcheskie brigady v Azerbaidzhane. Baku,
Azerneshr, 1963. 32 p.   (MIRA 17:4)

ANAN'YEVA, G. V.

Investigation of cements with ionization X-ray analysis. N. A. TORopov, P. F. Konovalov, A. I. Efremov, AND G. V. Anan'eva. Tschent. 20 [3] 17-20 (1954). Processes of dissociation of limestone, transformations of kaolinite, and formation of dicalcium silicate were investigated with an ionization X-ray installation consisting of X-ray tube, goniometer, high-temperature furnace, X-ray radiation receiver (gas amplifier), electrometric amplifier of d.c., and recording device. Ionization curves show that dissociation of the carbonate takes place somewhat above 500° and is complete at 700°C. Curves also show that at 900° dicalcium silicate changes from the γ modification into an entirely new type (α' modification). At 600°, kaolinite undergoes structural changes and becomes amorphous; it remains amorphous to 900° to 1000°, after which mullite begins to form gradually and then rapidly at 1200°. At 1200°, α cristobalite forms from excess amorphous silica.   B.Z.K.

③

ANAN'YEVA, G.V.

TOROPOV, N.A.; KONOVALOV, P.F.; YEFREMOV, A.I.; ANAN'YEVA, G.V.

Use of the high-temperature X-ray ionization method for studying processes that take place in alumina production. TSvet.met. 27 no.2:37-42 Mr-Ap '54.   (MIRA 10:10)

1. Giprotsement.
                    (Alumina)   (X rays)

16(1)

AUTHORS: Anan'yeva, G.V., and Balaganskiy, V.I.   SOV/42-14-1-5/27

TITLE: On the Oscillation of the Solutions of Some Differential
Equations of Higher Order (O koleblemosti resheniy nekotorykh
differentsial'nykh uravneniy vysshego poryadka)

ABSTRACT: With respect to the solutions of $y^{(n)}+f(x)y = 0$ the author
proves a well-known result of Kneser $\left[\text{Ref 1}\right]$ under somewhat
weaker assumptions. Furthermore the equation

$$\frac{d}{dx}\left\{g_{n-1}\frac{d}{dx}\left[g_{n-2}\frac{d}{dx}\left(g_{n-3}\cdots\cdots\frac{d}{dx}\left(g_1\frac{dy}{dx}\right)\cdots\right)\right]\right\}+f(x,y) = 0$$ (1)

is considered. It is assumed that $f(x,y)$ is continuous, that the
$g_k(x)$ are $(n-k)$ times differentiable, and that the uniqueness
of the solution is guaranteed. Let

$$Y_k = g_k\frac{dY_{k-1}}{dx}, \qquad Y_n = \frac{dY_{n-1}}{dx}, \qquad Y_o = y.$$

Theorem: If $\operatorname{Sgn} f(x,y) = \operatorname{Sgn} y$ for $x \geq x_o$, $\lim\limits_{|y|\to\infty}\dfrac{|f(x,y)|}{\varphi(x)} = \infty$

Card 1/2

On the Oscillation of the Solutions of Some   SOV/42-14-1-5/27
Differential Equations of Higher Order

is uniformly in x, where $\varphi(x) > 0$ for $x \geqslant x_0$, $\int_a^{\infty} \varphi(x)dx = \infty$,

$\int_a^{\infty} \dfrac{dx}{g_k(x)} = \infty$, $g_k(x) > 0$ for sufficiently large x, then for

even n (1) has only oscillating solutions (for $x > 0$); if n is
odd and the solution y is not oscillating, then it holds
$\lim\limits_{x \to \infty} Y_k(x) = 0$, $k=0,1,\ldots,n-1$, where the signs of the

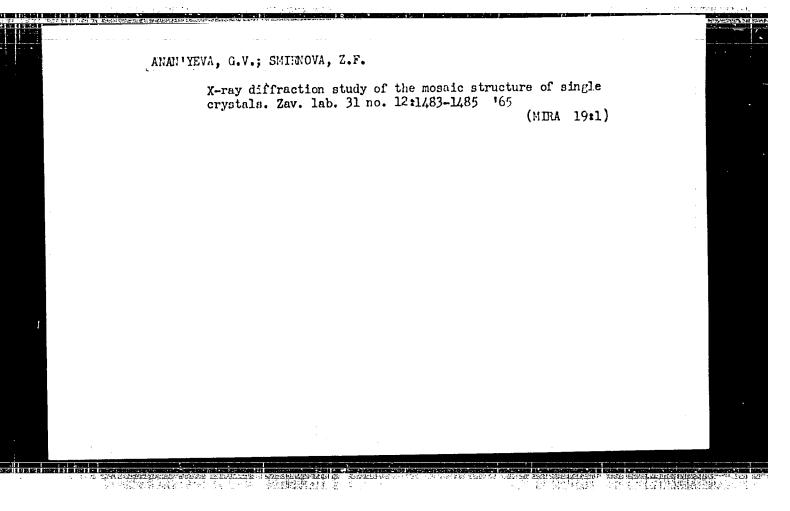$Y_0, Y_1, \ldots, Y_{n-1}$ for sufficiently large x are invariable and
alternating. The authors thank V.A.Kondrat'yev.
There is 1 German reference.

SUBMITTED: November 27, 1957

Card 2/2

L 11543-66   EWT(l)/EWT(m)/T/EWP(t)/EWP(b)/EWA(c)   JD/LHB

AUTHOR: Anan'yeva, G. V.; Smirnova, Z. F.

ORG: none

TITLE: X-ray investigation of the single crystal aggregates

TOPIC TAGS: single crystal, x ray, lattice defect, sapphire, ruby, fluorite, goniometer, crystal structure, x ray investigation, x ray spectrum

ABSTRACT: The mosaic structure of single crystals was examined with a URS-50I diffractometer. The object of the study was to determine the feasibility of a detailed investigation of structural imperfections in single crystals of sapphire, ruby and fluorite. X ray spectra of single crystals were taken by placing them in a URS-50I diffractometer in such a way that the single crystal surface coincided with the axis of the GUR-3 goniometer. The crystal surface was illuminated with an x ray beam with 5-9 degree horizontal deflection and an unlimited vertical deflection. The x ray photographs were taken successively during 2-3° vertical rotation of the crystal sample with respect to the axis of the GUR-3 goniometer. During the rotation of a sample composed of randomly oriented particles of single crystals, various particles pass

UDC: 548.734

Card 1/2

L 11543-66

ACC NR: AP6000183

through the deflection point. Examination of the series of photographs at various sample positions with respect to the horizontal axis makes it possible to determine the topographical details of the single crystal structure. Orig. art. has: 2 figures.

SUB CODE: 20/   SUBM DATE: 00/   ORIG REF: 001/   OTH REF: 004

HW
Card 2/2

ANAN'YEVA, G.V.; SMIRNOVA, Z.F.

X-ray diffraction study of the mosaic structure of single
crystals. Zav. lab. 31 no. 12:1483-1485 '65
(MIRA 19:1)

ACCESSION NR: AP4041801

S/0080/64/037/007/1612/1615

AUTHOR: Ostroumov, V. V.; Anan'yeva, G. V.

TITLE: Electrolytic layer of germanium

SOURCE: Zhurnal prikladnoy khimii, v. 37, no. 7, 1964, 1612-1615

TOPIC TAGS: germanium, electrodeposition, electroplating, nonaqueous electrolyte, impurity reduction, ethylene glycol, ethylene chlorohydrin, deposit brightness, amorphous structure, polycrystalline structure, electrical resistance, p type conductivity, annealing, scaling, vacuum deposition, hole conductivity

ABSTRACT: The conditions for electrodepositing germanium from nonaqueous solution, and the structure and properties of the electrodeposit were examined. The amount of impurities was reduced by separating the cathode and andoe with a porous glass filter and using high purity graphite anode. The electrolyte comprised a 5% solution of GeCl$_4$ and ethylene glycol. The ethylene chlorohydrin formed at the anode during the electrolysis decreased the cathodic yield and reduced the brighteness of the deposit. A 20 micron deposit of germanium was obtained in 7-9 hours of electrolysis. X-rays indicated this material to be amorphous, but heating to

Card 1/2

L 19624-65   EWT(m)/EWP(t)/EWP(b)   IJP(c)/RAEM(a)/SSD/AFWL/ESD(gs)/ESD(t)
J5

ACCESSION NR: AP5000508

S/0080/64/037/011/2431/2437

AUTHOR: Styrkas, A. D.; Ostroumov, V. V.; Anan'yeva, G. V.

TITLE: Simultaneous electrolytic precipitation of antimony and indium from non-aqueous solutions

SOURCE: Zhurnal prikladnoy khimii, v. 37, no. 11, 1964, 2431-2437

TOPIC TAGS: nonaqueous electrolysis, ethylene glycol electrolyte, quartz electrode, indium refining, antimony refining, indium antimonide, electrolytic precipitation

ABSTRACT: The difficulties associated with the aqueous electrolys s of indium and anti-mony sulfates were avoided by using ethylene glycol for a solvent and substituting $In_3(SO_4)_2$ with water of crystalization which is still soluble in ethylene glycol. Solutions were electrolyzed under carbon dioxide, separating the anode from the cathode with a quartz glass partition and using quartz ca [...]

[...]glycol to increase adherence. With a constant current density of [...]
and an indium sulfate content of [...] the antimony content of the deposited [...] was found to increase with $Sb_3(SO_4)$ concentration. Current density had practically [...] effect on the composition of the layer obtained from a 0.05N solution of both sulfates

Corc 1/2

L 19624-65
ACCESSION NR: AP5000508

corresponding to a 1:1 ratio of the metals, but above 2 ma/cm^2 the yield was sharply reduced. The porous and crumbling nature of the deposits could not be improved by raising the electrolyte temperature from 20 to 160°. They always contained crystals of antimony or bismuth, due to the presence of metal ions in the electrolyte. During electrolysis, heating in hydrogen increased the InSb content at the expense of the pure metals. Orig. art. has 6 figures.

ASSOCIATION: none

SUBMITTED: 10Jul63   ENCL: 00   SUB CODE: IC

NO REF SOV: 007   OTHER: 004

Card 2/2

AUTHORS: Chernevskaya, E. G.; Anan'yeva, G. V.

ORG: State Institute of Optics im. S. I. Vavilov (Gosudarstvennyy opticheskiy institut)

TITLE: On the structure of mixed crystals based on CaF_2, SrF_2, and BaF_2

SOURCE: Fizika tverdogo tela, v. 8, no. 1, 1966, 216-219

TOPIC TAGS: calcium fluoride, strontium compound, barium compound, crystal lattice structure, solid solution, alkali earth mineral, crystal lattice defect, mixed crystal

ABSTRACT: Inasmuch as earlier investigations of two-component systems based on CaF_2, SrF_2, and BaF_2 were limited to solid solutions in powdered form, the authors used crystals grown in vacuum high-temperature installations (I. V. Stepanov and P. P. Feofilov, Rost kristallov [Crystal Growth], p. 225, AN SSSR, 1957). The structure

Card   1/3

L 21240-66

ACC NR: AP6003789

investigations were made with a type URS-50 x-ray installation. The results showed that the systems CaF_2-SrF_2 and SrF_2-BaF_2 form solid solutions with arbitrary component ratio, in which the lattice constant of the mixed crystals increasing linearly with the percentage composition. The lattice constants of these two crystals satisfy Vegard's law for all compositions. The CaF_2-BaF_2 system satisfies the additivity law for BaF_2 contents up to 2% and CaF_2 content up to 6 -- 8%. The number of particles per unit cell of the lattice was found to be approximately 12 for the mixed crystals CaF_2-SrF_2, SrF_2-BaF_2 and for the single-component crystals CaF_2, SrF_2, and BaF_2. The deviation of this number from 12 did not depend on the composition of the crystals and was approximately the same for all types of crystals. It is also concluded that the atoms of the different alkaline earth metals in the solid solutions CaF_2-SrF_2 and SrF_2-BaF_2 can participate in the formation of the lattice defects to an equal degree, and the number of the 'defect' particles of each component is determined by its percentage

Card   2/3

L 21240-66
ACC NR: AP6003789

content in the crystal.   The authors thank N. A. Afans'yeva and M.
V. Zasolotskaya for carrying out many of the measurements. Orig.
art. has: 2 figures, 2 formulas, and 1 table.

SUB CODE: 20/   SUBM DATE: 05Jan65/ ORIG REF: 005/ OTH REF: 008
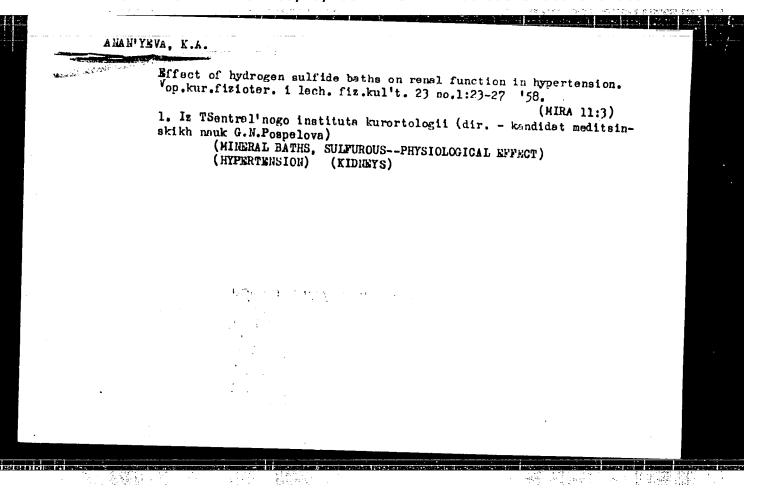
Card   3/3 dan

ARAN'YEVA, K. A.

"On certain functional renal shifts in patients with hypertonic diseases under the influence of hydrogen-sulfide baths." Min Health USSR. Central Inst for the Advanced Training of Physicians. Moscow, 1956. (Dissertations for the Degree of Candidate in Medical Science)

So; Knizhaya letopis', No. 16, 1956

ANAN'YEVA, K.A.

Effect of hydrogen sulfide baths on renal function in hypertension.
Vop.kur.fizioter. i lech. fiz.kul't. 23 no.1:23-27 '58.

(MIRA 11:3)

1. Iz TSentral'nogo instituta kurortologii (dir. - kandidat meditsin-
skikh nauk G.N.Pospelova)
    (MINERAL BATHS, SULFUROUS--PHYSIOLOGICAL EFFECT)
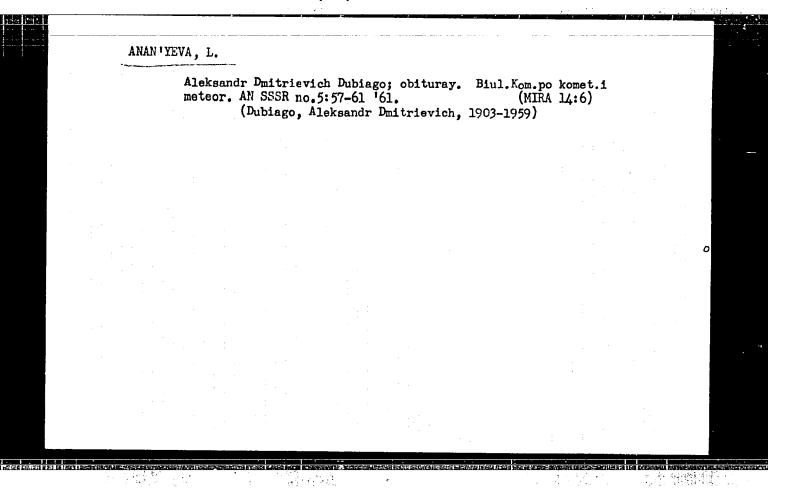   (HYPERTENSION)   (KIDNEYS)

ALIYEV, Ya.Yu. [deceased]; GREBENSHCHIKOVA, N.P.; KRYLOV, G.M.; IBRAGI-
MOV, Yu.I.; KHAMIDOV, Yu.A.: ANAN'YEVA, K.V.

Conversion of natural gas on a nickel catalyst in the presence
of silica. Uzb. khim. zhur. 9 no. 4:69-74 '65. (MIRA 18:12)

1. Institut khimii AN UzSSR. Submitted July 24, 1964.

ANAN'YEVA, L.

Aleksandr Dmitrievich Dubiago; obituray. Biul.Kom.po komet.i meteor. AN SSSR no.5:57-61 '61.   (MIRA 14:6)
(Dubiago, Aleksandr Dmitrievich, 1903-1959)

ANAN'YEVA, L., master, Geroy Sotsialisticheskogo Truda (Noginsk);
VOZDUKHOVA, A., inzh. (Noginsk)

Machine designers, the final decision is yours. Sov.profsoiuzy
18 no.22:4-6 N '62.   (MIRA 15:12)

1. Khlopchatobumazhnyy kombinat imeni V.I. Lenina (for Anan'yeva).
                    (Textile machinery)

SOROKINA, N.S., kand. khimich. nauk, dotsent; BOGDANOV, L.A., inzh.;
ANAN'YEVA, L.A., inzh.; KHARLASHKIN, V.I., inzh.; ZHILA, T.I.,
Inzh.; PIVOVAROVA, T.V., inzh.; KOTOV, M.P., prof.

Some problems in the cyanoethylation, carboxylation, alkylation
and acylation of gelatin. Izv. vys. ucheb. zav.; tekh. leg.
prom. no.3:70-75 '63.   (MIRA 16:7)

1. Kiyevskiy tekhnologicheskiy institut legkoy promyshlennosti.
Rekomendovana kafedroy tekhnologii kozhi.
            (Gelatin)   (Polymerization)

KUL'BA, F.Ya.; MIRONOV, V.Ye.; ANAN'YEVA, L.A.; ANDREYEVA, O.S.;
ROZHANOVSKAYA, L.P.

Complex compounds of thallium triiodides with 1,10-phenan-
throline. Zhur. neorg. khim. 8 no.6:1400-1401 Je '63.
                                          (MIRA 16:6)
1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta,
kafedra obshchey khimii.
                    (Thallium compounds)
                    (Phenanthroline)
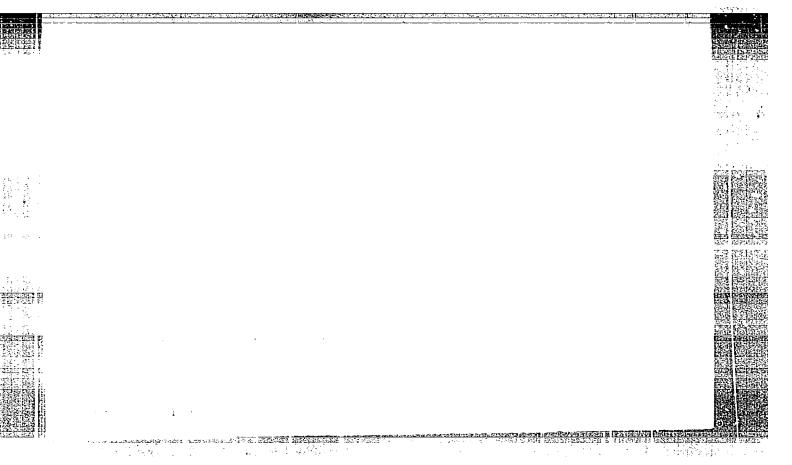
KUL'BA, F.Ya.; MIRONOV, V.Ye.; ANAN'YEVA, L.A.
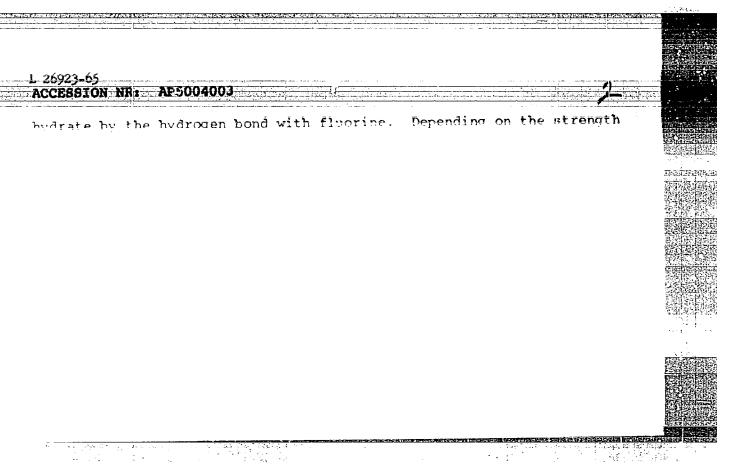
Complex compounds of monovalent thallium with 1,10-phenanthroline.
Zhur. neorg. khim. 8 no.10:2326-2328 O '63.   (MIRA 16:10)

1. Leningradskiy tekhnologicheskiy institut im. Lensoveta.
(Thallium compounds)   (Phenanthroline)

L 26923-65
ACCESSION NR: AP5004003

hydrate by the hydrogen bond with fluorine. Depending on the strength

SUBMITTED·   24.10.16.4   ENGL: SUB CODE: 33.07

3/3

Country   : USSR   Q-3
Category   : Farm Animals.
              Swine.
Abs. Jour   : Ref Zhur-Biol., No 16, 1958, 74098

Author   : Anan'yeva, L. F.
Institut.   : Kuban Institute of Agriculture.
Title   : Double-Shift Raising of Piglets in the "Komso-
              molets" Sovkhoz.

Orig Pub.   : Sb. stud. nauchn. rabot Kubanskogo s.-kh. in-
              ta, 1954 (1957), vyp. 1, 39-42

Abstract   : Piglets belonging to other litters were given
              to 4 sows according to the computation that
              each should have 20-22 piglets; they were di-
              vided into 2 groups which were admitted to the
              sows in turns.
              The effectiveness of double-shift raising was
              determined according to the development of the
              piglets during the nursing period and accor-
              ding to changes of the sows' weight. Differen-
              ces in changes of the sows' live weight were
              not observed for the experimental and the con-

Card: 1/2

                              67

ANAN'YEVA, L.F.; KRASNOV, V.D.; ALTUNINA, T.M.; MAKAROV, N.P., doktor
ekon. nauk, prof., otv. red.

[Ways of developing agriculture in the Altai; problems in the
distribution and specialization of collective farm production]
Puti razvitiia sel'skogo khoziaistva Altaia; voprosy razme-
shcheniia i spetsializatsii kolkhoznogo proizvodstva. Moskva,
Izd-vo Akad. nauk SSSR, 1962. 214 p.   (MIRA 16:2)

1. Akademiya nauk SSSR. Sovet po izucheniyu proizvoditel'nykh
sil.   (Altai Territory—Agriculture—Economic aspects)

LEMESHEV, M.Ya.; LAGUTIN, N.S.; GREKULOV, L.F.; KRASNOV, V.D.; PRONIN,
        A.A.; YAKOVLEVA, T.V.; ANAN'YEVA, L.F.; KOLOSOVA, Ye.Ya.;
        MURASHKO, Iu.V.; GABIDULLIN, V.M.; POPOV, N.I.; POPOV, N.M.;
        STUDENKOVA, N.M.; SMYSLOVA, A.S.; PANIN, N.S., red.;PANIN,N.S.,red.;
        GERASIMOVA, Ye.S., tekhn.red.

[Methods for creating an abundance of agricultural products in
the U.S.S.R.] Puti sozdaniia izobiliia sel'sko-khoziaistvennykh
produktov v SSSR. Moskva, Ekonomizdat, 1963. 317 p. (MIRA 16:6)

1. Sektor ekonomicheskikh problem sel'skogo khozyaystva Nauchno-
issledovatel'skogo ekonomicheskogo instituta Gosplana SSSR (for
all except Panin,N.S., Panin, N.S., Gerasimova).
                        (Farm produce)

86396

15.8220   2109,2209

S/020/60/135/002/025/036
B004/B056

AUTHORS: Kargin, V. A., Academician, Kozlov, P. V., Asimova, R. M.,
and Anan'yeva, L. I.

TITLE: Two Types of Plasticization of Polymers With Rigid Chains

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 135, No. 2,
             pp. 357-360

TEXT: It was the purpose of the present work to explain the two types of
plasticization of polymers with rigid chains: A) The plasticizer is soluble
to an unlimited extent in the polymer. B) The plasticizer is more or less
incompatible with the polymer. The fact that in both cases plasticization
occurs, must be attributed to the different action of the two plasticizer
types. The plasticization of cellulose (molecular weight about 200,000)
was investigated by means of the incompatible plasticizers guanidine
thiocyanate and urea. The cellulose was saturated with the plasticizer
dissolved in ethanol, dried after 2 to 3 days, and pressed into tablets at
130 - 140°C and 75 atm pressure. The thermomechanical curves of the tablets

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Two Types of Plasticization of Polymers With
Rigid Chains

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were drawn. Whereas in plasticizing with triethylphenyl ammonium oxide
(compatible with cellulose) a decrease of the vitrification temperature T_v
occurred proportional to the plasticizer content of cellulose, incompatible
plasticizers hardly changed T_v at all. In the latter case, no interaction
can occur between the molecules of the plasticizer and the macromolecules
of the polymer. The authors interpret this effect on the basis of the
structure of amorphous polymers. They assume that the polymer has
orientated secondary structures: orientated bundles of chains. In the case
A, which they describe as "intrabundle plasticization", the interaction of
the plasticizer with the active groups of the polymer is more intense than
the interaction between the polymer molecules. The secondary structure of
the polymer is therefore destroyed, and a solid solution of the plasticizer
in the polymer is formed. In the case B, which is described as
"interbundle plasticization", the plasticizer reacts only with the polymer
molecules on the surface of the secondary structures. The secondary
structure therefore remains conserved, and the polymer keeps its high
mechanical strength. Its elasticity depends on the Hook elasticity of the
secondary structure. Such a kind of plasticization is advantageous for

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Two Types of Plasticization of Polymers With
Rigid Chains

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B004/B056

obtaining low-temperature resistant materials, which are supposed to have
high elastic properties. There are 2 figures and 7 Soviet references.

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

SUBMITTED: August 12, 1960

Card 3/3

ANAN'YEVA, L.M.; ZUYEV, V.M.; DZERDZEYEVSKIY, B.L., prof., otv. red.;
OGANOVSKIY, P.N., red.

[Materials on glaciological research: Zagorsk; heat balance] Ma-
terialy gliatsiologicheskikh issledovanii: Zagorsk;teplovoi ba-
lans. Moskva, No.4. [Temperature of the soil and the snow cover]
Temperatura pochvy i snezhnogo pokrova. 1961. 141 p.
(MIRA 14:11)

1. Akademiya nauk SSSR. Institut geografii.
(Zagorsk—Soil temperature) (Zagorsk—Snow—Temperature)

ANAN'YEVA, L.M.; DZERDZEYEVSKIY, B.L., prof., otv. red.; OGANOVSKIY, P.N., red.

[Materials on glaciological research: Zagorsk; heat balance] Materialy gliatsiologicheskikh issledovanii: Zagorsk; teplovoi balans. Moskva. No.2. [Gradient observations] Gradientnye nabliudeniia. 1961. 179 p.

(MIRA 14:11)

1. Akademiya nauk SSSR. Institut geografii.
(Zagorsk—History)

ANAN'YEVA, L.M.; ZUYEV, V.M.

Main trends in modern climatological research in France. Izv.
AN SSSR. Ser. geog. no.2:104-107 Mr-Ap '61.   (MIRA 14:3)

1. Insitut geografii AN SSSR.
                (France—Climatology)

ANAN'YEVA, L.M.; RAUNER, Yu.L.; DZERDZEYEVSKIY, B.L., prof., otv. red.;
OGANOVSKIY, P.N., red.

[Materials on glaciological research: Zagorsk; heat balance]
Materialy gliatsiologicheskikh issledovanii: Zagorsk; teplovoi
balans. Moskva. No.3. [Gradient observations. Cloudiness.
Atmospheric phenomena] Gradientnye nabliudeniia. Oblachnost'.
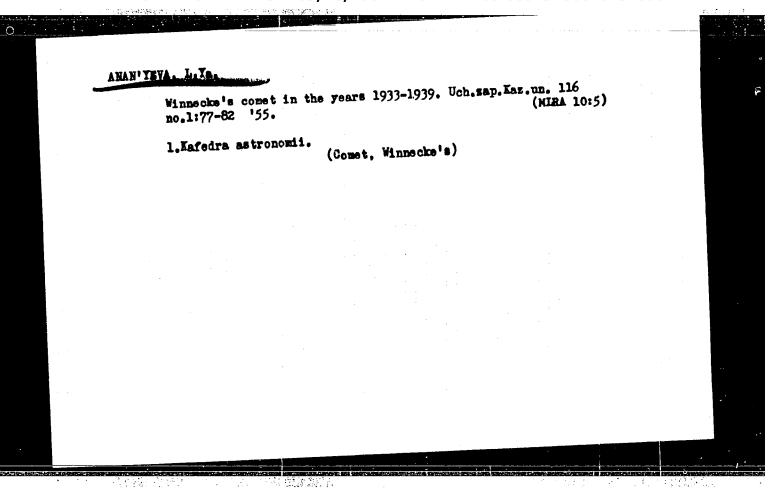Atmosfernye iavleniia. 1961. 166 p.   (MIRA 15:3)

1. Akademiya nauk SSSR. Institut geografii.
          (Zagorsk—Meteorology—Observations)

SAMARINA, O.P.; LERMAN, M.I.; TUMANYAN, V.D.; ANAN'YEVA, L.N.; GEORGIYEV, G.P.

Characteristics of chromosomal informational RNA. Biokhimiia
30 no.4:880-893 Jl-Ag '65.   (MIRA 18:8)

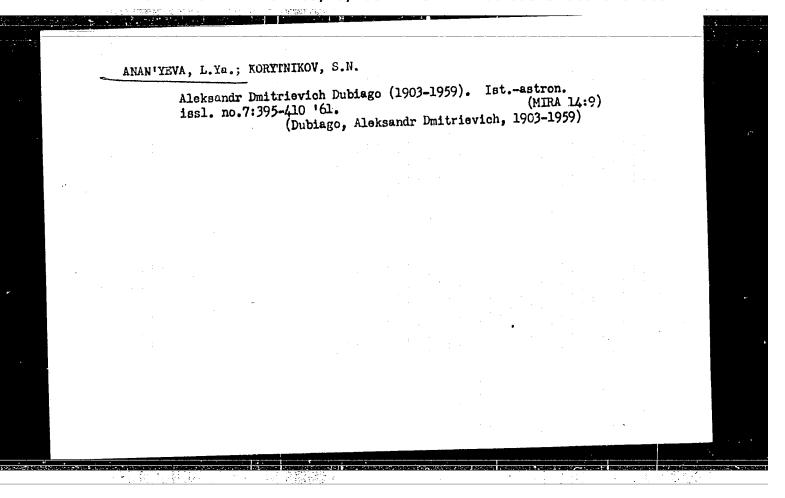1. Institut radiatsionnoy i fiziko-khimicheskoy biologii AN
SSSR, Moskva.

ANAN'YEVA, L.Ya.

Winnecke's comet in the years 1933-1939. Uch.zap.Kaz.un. 116
no.1:77-82 '55.
(MIRA 10:5)

1.Kafedra astronomii.

(Comet, Winnecke's)

VOROB'YEVA, E.; ANAN'YEVA, L.Ya.

Burnham's comet (1958a). Astron.tsir. no.211:7-8 My '60.

(MIRA 13:10)

1. Kafedra astronomii Kazanskogo universiteta.
(Comets--1958)

ANAN'YEVA, L.Ya.; KORYTNIKOV, S.N.

Aleksandr Dmitrievich Dubiago (1903-1959). Ist.-astron.
issl. no.7:395-410 '61. (MIRA 14:9)
(Dubiago, Aleksandr Dmitrievich, 1903-1959)

ANAN'YEVA, M. A.

COUNTRY	:
CAT. NO.	:
ABS. JOUR.	: Khimiya, No. 1 1958, No. 1
AUTHOR	: Anan'yeva, M.A.
INST.	:
TITLE	:
ORIG. PUB.	:
ABSTRACT	:
CARD:	1/1

GESELEVICH, Anatoliy Mikhaylovich, prof.; GORKIN, Nikolay Semenovich;
    ANAN'YEVA, M.G., red.; BABKINA, S.I., red.; BLISEYEVA, A.V.,
    red.; GABERLAND, M.I., tekhn. red.

[New surgical instruments and apparatus for chest surgery; a
textbook for physicians and students in medical institutes] Novye
khirurgicheskie instrumenty i apparaty dlia grudnoi khirurgii; po-
sobie dlia vrachei i studentov meditsinskikh institutov. Moskva,
Medgiz, 1961. 151 p.   (MIRA 15:7)
                    (CHEST--SURGERY)
          (SURGICAL INSTRUMENTS AND APPARATUS)

ANAN'YEVA, R.S., studenty RUBINOVA, N.G.

Kidney lesion in capillary toxicosis in children. Trudy Tadzh.
med. inst. 50:194-196 '61.   (MIRA 17:8)

1. Iz kafedry pediatrii (zav. prof. V.S. Vayl', rukovoditel'
raboty assistent R.Ya. Braginskyn) Tadzhikskogo gosudarstvennogo
meditsinskogo instituta imeni Abuali Ion Sino.

ANAN'YEVA, S.A.

BOROVOY, N.Ye., kandidat tekhnicheskikh nauk; ANAN'YEVA, S.A., inzhener;
SOKOLOV, P.S., redaktor; VERINA, G.P., tekhnicheskiy redaktor.

[Organization of the work of stations and side-tracks in grain
transportation] Organizatsiia raboty stantsii i pod"ezdnykh putei
pri perevozke khlebnykh gruzov. Moskva, Gos. transp. zheldor. izd-
vo, 1953. 213 p. [Microfilm]   (MLRA 7:11)
        (Grain--Transportation) (Grain--Handling)

SADIKOV, P.P.; ANAN'YEVA, S.A.; LEBEDEVA, T.P.; SMIRNOV, Ye.K.; PRIGOROVSKIY,
     V.F.,inzh.,red.; TISHKOV, L.B.; KATOLICHENKO, V.A.; PANIN; A.V.;
     NOSKOV, Yu.A.; TRIFONOVA, M.G.; KLEYMENOV, Ye.I.; BOBROVA, Ye.M.,
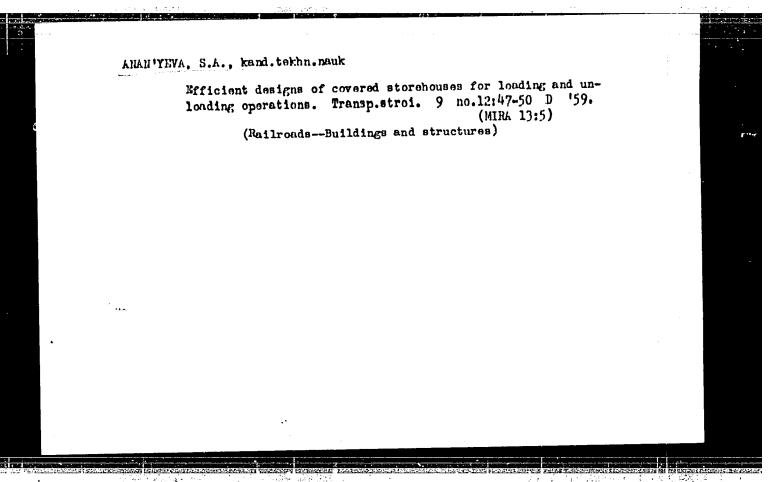   tekhn.red.

[Technical equipment for large general-purpose freight yards]
Tekhnicheskoe osnashchenie krupnykh gruzovykh stantsii obshchego
pol'zovaniia. Moskva, Gos.transp.zhel-dor izd-vo. 1958. 186 p.
(Moscow. Moskovskii institut inzhenerov zheleznodorozhnogo
transporta. Trudy, no.161)   (MIRA 12:2)
          (Railroads--Yards--Equipment and supplies)

ANAN'YEVA, S.A., kand. tekhn.nauk

Determining the length of track used for loading and unloading
and the number of mechanized units needed in railroad freight yards.
Vest. TSNII MPS [?] no.3:47-51 My '58.   (MIRA 11:6)
    (Railroads--Track) (Railroads--Freight)

ANAN'YEVA, S.A., kand.tekhn.nauk

Efficient designs of covered storehouses for loading and un-
loading operations. Transp.stroi. 9 no.12:47-50 D '59.
(MIRA 13:5)
(Railroads--Buildings and structures)

KOGAN, Liber Ayzikovich; kand.tekhn.nauk; GOKHBOM, Yevgeniy Naumovich;
VEKSLER, Vladimir,Markovich; KHOTIN, Boris Mikhaylovich;
Prinimali uchastiye: PETROVA, T.I., ANAN'YEVA, S.A.; TAL', K.K.;
BUTSKIY, A.M.; LOBOV, A.A. BOBROVA, Ye.N., tekhn.red.

[Containers] Konteinery. Pod obshchei red. L.A.Kogana. Moskva,
Vses.izdatel'sko-poligr.ob"edinenie M-va putei soobshcheniia,
1960. 318 p.   (MIRA 14:3)
        (Railroads--Freight)   (Containers)

SOV/68-59-7-20/33

AUTHORS: Fayngol'd, S.G. and Anan'yeva, V.I.

TITLE: Operating Conditions of Ammonia Stills

PERIODICAL: Koks i khimiya, 1959, Nr 7, pp 51 - 53   (USSR)

ABSTRACT: In view of repeated blocking of the ammonia stills by
             precipitating gypsum which required cleaning of the still
             every 7 - 10 days, an outside reactor and an additional
             settling tank for the removal of precipitated gypsum
             were introduced. The above measure increased the period
             between successive cleanings of the still to 30 - 33 days,
             but did not solve the problem. On the basis of the temp-
             erature-solubility relationship for gypsum (see Figure),
             the temperature conditions in the settling tank and the
             still were maintained at 110 - 111°C and 107 - 108°C
             respectively. This increased the time between the succ-
             essive cleanings of the still to 61 days. A rapid method
Card 1/2   (1 1/2 hours) of determination of SO_4^{2-} ions in the

SOV/68-59-7-20/33

Operating Conditions of Ammonia Stills

ammonia liquor based on the precipitation of $BaSO_4$ with
a solution of $BaCl_2$ of known normality and back titration
of the excess of $BaCl_2$ with a solution of trilon·B in the
presence of magnesium ions and chrommethylene blue indic-
ator is described.
There is 1 figure and 3 tables.

ASSOCIATION: Yasinovskiy koksokhimicheskiy zavod (Yasinovskiy   Coking
Works)

Card 2/2

FAYNGOL'D, S.G.; FILIPPOV, A.A.; ANAN'YEVA, V.I.

Experience in operating dephenolizing scrubbers without packing
in the zone of contact with phenolates. Koks i khim. no.1:46-49
'61.   (MIRA 14:1)

1. Yasinovskiy kbksokhimicheskiy zavod.
    (Phenols)   (Coke industry—By-products)