

33141

S/120/61/000/006/007/041

E032/E114

21.6000

AUTHORS: Khrimyan, A.V., Yegiyan, K.Sh., ~~Nalbandyan, N.A.~~,  
Avakyan, V.V., and Karapetian V.A.

TITLE: Measurement of charged-particle masses with the aid  
of scintillation counters

PERIODICAL: Pribory i tekhnika eksperimenta, no.6, 1961, 52-56

TEXT: The method can be used to (a) select particles which  
stop in the scintillator owing to ionization losses, and  
(b) to determine the mass of the particles by measuring their  
energy and range in the scintillator. The device consists of a  
telescope of  $n$  scintillation counters ( $C_1, \dots, C_n$ ) with  
thickness  $l_1, \dots, l_n$  respectively. If a particle which has  
passed at an angle of  $\varphi$  through  $k - 1$  scintillators has come  
to rest in the scintillator  $C_k$  at a depth  $l_x$ , and at the end  
of its range in the  $m + 1$  scintillators  $C_{k-m}, \dots, C_k$  the  
energy losses  $\Delta E_{k-m}, \dots, \Delta E_k$  were due to ionization only, then  
it can be shown that:

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$$\frac{\Delta E_{k-i}}{\Delta E_{k-(i+1)}} = f_i \left( \frac{\Delta E_{k-(i+1)}}{\Delta E_{k-(i+2)}}, l_{k-1}, \dots, l_{k-(i+2)} \right) \quad (1)$$

(i = 0, ..., m - 2)

This holds whatever the nature of the particle, the direction of its motion, and range in the last scintillator  $C_k$ . Thus, by measuring the energies  $\Delta \mathcal{E}_1, \dots, \Delta \mathcal{E}_n$  in the scintillators  $C_1, \dots, C_n$  one can select with the aid of Eq. (1) all those particles which come to rest in the scintillators  $C_{k-m}, \dots, C_k$  by losing energy in ionization processes only. For stable particles  $\Delta \mathcal{E}_i = \Delta E_i$ . If on the other hand a primary particle decays (or is captured) in the scintillator  $C_k$  then the energy liberated in  $C_k$  is  $\Delta \mathcal{E}_k = \Delta E_k + \delta E_k$  where the latter quantity is the energy of the secondary particles. In this case the first equation (i = 0) in Eq. (1) can only be used for the determination of the unknown energy:

$$\Delta E_k = \Delta \mathcal{E}_{k-1} f_0 (\Delta \mathcal{E}_{k-1} / \Delta \mathcal{E}_{k-2}) \quad (4)$$

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and the remaining relations in Eq.(1) are used to select the ionization stoppages. The energy loss of a particle with an ionizing power  $I/I_{min}$  in the scintillator  $C_1$  is given by:

$$\Delta \epsilon_i = B (I/I_{min}) C_i \ell_i \text{ MeV} \quad (5)$$

where  $B$  is in MeV/cm and represents the minimum ionization loss in the particular scintillator, and  $\ell_i$  is the thickness of the scintillator  $C_i$  in cm. Thus the energy lost by a particle before stopping in scintillators  $C_{k-m}, \dots, C_k$  is given by

$$E = \sum_{i=k}^{k-m} \Delta \epsilon_i$$

If Eq.(1) is not satisfied for  $i = 0$ , then

$$E = \sum_{i=k-1}^{k-m} \Delta \epsilon_i + \Delta E_k \quad (6)$$

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where  $\Delta E_k$  is given by Eq.(4). The range of a particle in the scintillators  $C_{k-m}, \dots, C_k$  is given by:

$$R = \left( \sum_{i=k-1}^{k-m} l_i + l_x \right) \operatorname{cosec} \varphi \quad (7)$$

in which all the quantities except  $l_x$  are known. If the scintillators are looked upon as simple filters then

$$l_x = 1/2 l_k \pm 1/2 l_k.$$

$l_x$  can also be determined from a relation of the form:

$$l_x = F(f_0, l_{k-1}, l_{k-2}) \quad (3)$$

In order to verify the above method the authors have used the results obtained with the instrument described by A.I. Alikhanov, A.V. Khrimyan, V.K. Kosmachevskiy, V.V. Avakyan, Yu.V. Gorodkov, K.Sh. Yegiyanyan and N.A. Nalbandyan (Ref.6: Proceedings of the International Conference on Cosmic Rays, 1959, 1960, v.1, 183)

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Measurement of charged-particle ... S/120/61/000/006/007/041  
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The instrument consists of a magnetic mass spectrometer, a five-layer proportional counter (A.I. Alikhanov, V.A. Lubimov, G.P. Elisiyev, CERN Symposium, v.2, 1956, 87) and five scintillation counters (V.K. Kosmachevskiy and M.S. Aynuddinov, PTE, no.3, 1956, 49). The rms error in the momenta between 0.2 and 1 GeV/c was approximately 8 to 5% for protons and 2 to 4% for  $\pi$ -mesons. The ionizing power of the particles could be measured with the proportional counter to an average accuracy of  $\pm 14\%$ . For particles stopping in the scintillation counters the average losses in the scintillators could be measured to  $\pm 10\%$ . Preliminary results indicate that the efficiency of selection of particles which come to rest owing to ionization only is about 0.8. The average accuracy with which the masses can be determined from the energies and ranges is approximately 20%. The statistics on which these results are based are limited and therefore the results are only preliminary. The experiment did not confirm the possibility of investigating the masses and decays of unstable particles. The method may find wide-ranging applications and is amenable to automation. Acknowledgments are  
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expressed to A.I. Alikhanov and A.I. Alikhanyan for interest and discussions, and to Yu.V. Gorodkov, M.P. Lorikyan, I.P. Karabekov, K.A. Khurshudyan, G.P. Matevosyan, V.V. Truzyan, E.V. Patvakanyan, G.M. Smsaryan, A.A. Oganesyanyan and B.V. Tovmasyan for assistance in the organisation and execution of this work.

There are 4 figures and 11 references: 5 Soviet-bloc and 6 non-Soviet-bloc. The four most recent English language references read as follows:

Ref.2: J.W. Keuffel, R.L. Call, W.H. Sandmann, M.O. Larson.  
Phys. Rev. Letters, v.1, 1958, 203.

Ref.4: Phys. Rev., v.114, 1959, 1150.

Ref.5: E. Birman, R. Lea, J. Orear, S. Rosendorff.  
Phys. Rev., v.113, 1959, 710.

Ref.7: J. Steinberger, 1958 Annual International Conference on  
High Energy Physics at CERN, Geneva, 1958.

ASSOCIATION: Fizicheskiy institut AN ArmSSR  
(Physics Institute, AS Armenian SSR)

SUBMITTED: April 3, 1961  
Card 6/6

X

S/048/62/026/006/005/020  
B125/B112

AUTHORS: Khrimyan, A. V., Avakyan, V. V., Nalbandyan, N. A.,  
Yeghyan, K. Sh., and Pleshko, M. P.


TITLE: Composition of the nuclear active cosmic radiation particle  
current in the momentum range exceeding 1.8 Bev/c at  
3250 m above sea level. I.

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26,  
no. 6, 1962, 722 - 727

TEXT: The relative number of pions present in the current of nuclear  
active cosmic radiation particles was determined for momenta above 1.8 Bev,  
at an altitude of 3250 m on the Aragats mountain in Armenia. A magnetic  
mass spectrometer (6850 oe) was used, the measuring apparatus comprising  
also a five-layer gas proportional counter and five scintillation  
counters. The electrons, the muons, and the particles produced in the  
measuring apparatus itself were screened out. The first series of  
measurements recorded mainly the particles absorbed by the filters and  
their secondary products. In the second series all particles were re-  
corded. At  $p = 1.8$  Bev, 65 positively charged particles were recorded,  
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Composition of the nuclear...

after which the number dropped to 4 particles at 11.2 Bev. One negative particle each was measured at 1.8 and 2.2 Bev, two were recorded at 11.2 Bev. Fig. 2 shows the spectrum obtained in the second series of measurements. Only 3% of the particles recorded in the momentum range 1.8 to 22 Bev/c were negative. The ratio  $N_{\pi^+}/N_{\pi^-}$  for momenta above 1.8 Bev does not differ considerably from the ratio in the interval up to 720 Mev/c. The pion portion in all nuclear active particles in the momentum interval is, however,  $6 \pm 2\%$ , or 10% at most. At momenta above 2 Bev/c the relative number of K-mesons, protons, and deuterons cannot be determined by the method of "ionization-momentum" or by the method used in the present paper. There are 2 figures and 2 tables. The most important English-language reference is: G. Bozoki, E. Fenyves, L. Janossy, Nucl. Phys., 24, 412 (1961). 

ASSOCIATION: Fizicheskiy institut Akademii nauk ArmSSR (Physics Institute of the Academy of Sciences ArSSR)

Card 2/2



38769

S/048/62/026/006/019/020  
B125/B102

9.6150

AUTHORS:

Khrimyan, A. V., Yeghyan, K. Sh., Nalbandyan, N. A.,  
Avakyan, V. V., and Karapetyan, V. A.

TITLE:

On the measurement of masses of charged particles by means  
of scintillation counters

PERIODICAL:

Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya,  
v. 26, no. 6, 1962, 831-836

TEXT: A group of scintillation counters can be used to determine the  
stoppings due to ionization losses and the masses (range-energy  
measurement). The apparatus here used comprised a magnetic mass spectro-  
meter ( $H = 6850$  oe), a five-layer proportional counter and five  
scintillation counters. After measuring the energies released from the  
particle in the scintillators  $C_1, \dots, C_n$  with the thicknesses  
 $l_1, \dots, l_n$  ( $n \geq 3$ ) the stoppings due to ionization losses were  
distinguished from the nuclear interactions by applying the criterion

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$$\frac{\Delta E_{k-i}}{\Delta E_{k-(i+1)}} = f_i \left( \frac{\Delta E_{k-(i+1)}}{\Delta E_{k-(i+1)}}, l_{k-1}, \dots, l_{k-(i+2)} \right) \quad (i=0, \dots, m-2)$$

$\Delta E_{k-m}, \dots, \Delta E_k$  are the energy losses in the scintillators  
 $C_{k-m}, \dots, C_k$ . The four quantities momentum, ionization power, range and energy are measured by this device. From these, the mass of the particles is found by the momentum - ionization and range - energy methods. The mass spectrum as measured by the first method has a maximum at  $\sim 1780 m_e$  and that obtained from the second method a maximum at  $\sim 1850 m_e$ .

In both cases a weak deuteron spectrum appears between 3500-4500  $m_e$ . The stoppings due to ionization are identified with an efficiency of  $\sim 0.8$ . The stoppings due to other causes are eliminated with an efficiency of  $\sim 0.9-1$ . This method was tested by the devices available at the time and can undoubtedly be improved upon by more perfect selection and use of apparatus. Its applicability to decay processes and to mass measurements of unstable particles has not yet been confirmed experimentally. There are 4 figures. The most important English-language reference is: Stenberger J. 1958 Annual International Conference on High Energy Physics at CERN, Geneva, 1958.  
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On the measurement of masses ...

S/048/62/026/006/019/020  
B125/B102

ASSOCIATION: Fizicheskiy institut Akademii nauk ArSSR (Physics Institute of the Academy of Sciences ArSSR)

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S/048/62/026/006/020/020  
B181/B104

AUTHORS: Khrimyan, A. V., Yeghyan, K. Sh., Nalbandyan, N. A.,  
Avakyan, V. V., and Karapetyan, V. K.

TITLE: Mass measurements of low-intensity charged-particle groups  
by various methods

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26,  
no. 6, 1962, 837- 840

TEXT: The mass of particles produced by the action of cosmic rays was determined from (1) momentum and ionization, (2) momentum and length of path, (3) momentum and energy, (4) ionization and energy, (5) ionization and length of path, (6) energy and length of path. The experimental arrangement (A. V. Khrimyan, V. V. Avakyan, N. A. Nalbandyan, K. Sh. Yeghyan, M. P. Pleshko, present publication, p. 722) consisted of a mass spectrometer, a proportional counter, two scintillation counters for determining the energy and length of path, and three scintillation counters for determining the energy losses of scattered particles. (2) and (3) gave masses too high, (4), (5); and (6) masses too small for the 203

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Mass measurements of low-intensity ...

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protons, 11 deuterons, and 3 muons and pions observed. Methods (2) through (6) give correct results only if non-ionizing energy losses are detected with sufficient reliability. As it is difficult to construct the necessary apparatus (high ionization gradient in very flat Wilson chambers, very thin-walled counting tubes, etc.), preference should be given to method (1). There is 1 figure. ✓

ASSOCIATION: Fizicheskiy institut, Akademii nauk ArmSSR (Physics  
Institute of the Academy of Sciences ArSSR)

Card 2/2

35595

S/056/62/042/003/005/049  
B117/B112

24.6700

AUTHORS: Khrimyan, A. V., Avakyan, V. V., Nalbandyan, N. A.,  
Yeghyan, K. Sh., Pleshko, M. P.

TITLE: Composition of nuclear-active cosmic-ray particles with  
momenta above 1.8 Bev/c at an altitude of 3250 m above sea  
level. I

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 42,  
no. 3, 1962, 669 - 674

TEXT: The nature and momentum spectra of nuclear-active cosmic-ray  
particles in the momentum range above 1.8 Bev/c were studied on Mount  
Aragats (Armenia) at an altitude of 3250 m above sea level in order to  
determine the relative number of pions in the particle flux. The investi-  
gations were made with a magnetic mass spectrometer of 6850 oe including  
a hodoscope, a thin-walled five-layer proportional counter, and five  
scintillation counters. The momenta from 2 to 20 Bev/c were determined  
with a mean square error from 10 to 80%. The ionizing power of individual  
particles was determined with a mean error of  $\pm 14\%$  (gas counter) and

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Composition of nuclear-active...

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257, 1954). It is noted that the determination of K-mesons, protons, and deuterons requires other methods. In the range  $\geq 2$  Bev/c, these particles cannot be determined by measuring the ionization and momentum, or by the method applied here. Professor A. I. Alikhanyan is thanked for valuable hints, and V. Sh. Kamalyan, Yu. V. Gorodkov, I. P. Karabekov, B. N. Moiseyev, G. G. Matevosyan, E. V. Patvakanyan, G. M. Smsarayan, K. A. Khurshudyan, V. S. Truzyan, and N. A. Marutyan for assistance. There are 2 figures and 18 references: 10 Soviet and 8 non-Soviet. The four most recent references to English-language publications read as follows: A. G. Barkov, V. Chamany, D. M. Haskin, P. L. Jain, E. Lohrmann, M. W. Teucher, M. Schein, Phys. Rev., 122, 617, 1961; I. H. Atkinson, W. N. Hess, V. Perez-Menez, R. W. Wallace, Phys. Rev. Lett., 2, 168, 1959; P. H. Barrett, Phys. Rev., 114, 1374, 1959; G. Bozoki, E. Fenyves, L. Janossy. Nucl. Phys., 24, 412, 1961.

ASSOCIATION: Fizicheskiy institut Akademii nauk Armyanskoy SSR (Physics Institute of the Academy of Sciences Armyanskaya SSR)

SUBMITTED: July 28, 1961

Card 3/3

S/252/63/036/002/002/003  
D218/D308

**AUTHORS:** Kocharyan, N.M., Corresponding Member of the AS Arm. SSR, Nalbandyan, N.A., Arakelyan, V.Ts. and Farshyan, G.S.

**TITLE:** A study of the process of destruction and heat ageing of polychloroprene rubber (nairite)

**PERIODICAL:** Akademiya nauk Armyanskoy SSR. Doklady, v. 36, no. 2, 1963, 83-87

**TEXT:** The present paper is concerned with a study of the effect of ultrasound frequency on the degree of destruction of nairite (emulsion copolymer of chloroprene with S,  $-(CH_2-CCl=CH-CH_2)_{n_1}-(S)_{m_1}-(CH_2-CCl=CH-CH_2)_{n_2}-(S)_{m_2}-\dots$  where n is up to 100 or more and m up to 6) solutions, and with destruction of such solutions by heat at moderate temperatures. The apparatus consisted of a reactor, oil bath, and an ultrasonic generator, capable of an output of up to 50 w/cm<sup>2</sup> at 400, 600, 3000, 4000 and 5000 kc/s and up

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A study of the process ...

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100 w/cm<sup>2</sup> at 800, 1000, 1500 and 2000 kc/s. The temperature was kept constant at 20<sup>o</sup>, to 1<sup>o</sup>C. Degree of destruction was assessed by rel. viscosity, measured at 20 ± 0.1<sup>o</sup>C with Ostwald's viscometer. The acoustic power used was 17 w/cm<sup>2</sup>, and each frequency was tried for 15, 30, 45, 60 and 90 min; nairite concentration was 0.75%, in benzene. It was found that the viscosity  $\eta_t$  after t minutes of sounding is

$$\eta_t = (\eta_0 - \eta_\infty)e^{-\beta t} + \eta_\infty \quad (1)$$

where  $\beta$  is a constant,  $\eta_0$  the initial viscosity and  $\eta_\infty$  the viscosity at  $t = \infty$ . The mol. wt. decreases to a constant value, which depends on frequency and power of the ultrasound; maximum destruction occurs at 800<sup>o</sup>C. Thermal and oxidative destruction also begins rapidly and settles to a constant level (e.g. 10.5% after 1.5 months at room temperature in the presence of air, and 6.4% in the absence of air). There are 3 figures and 1 table.

ASSOCIATION: Tsentral'naya nauchno-issledovatel'skaya fiziko-  
telchnicheskaya laboratoriya Akademii nauk Armyanskoy  
SSR (Central Scientific Research Physico-Technologi-

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A study of the process ...

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D218/D308

cal Laboratory of the Academy of Sciences of the  
Armenian SSR)

SUBMITTED: September 20, 1962

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L 57091-65 EWT(m)/EPF(c)/EWP(j)/T/EWP(k) Pc-4/Pr-4 RM

ACCESSION NR: AP5018545

UR/0252/64/039/004/0221/0226

AUTHOR: Kocharyan, N. M. (Corresponding member AN ArmSSR); Nalbandyan, N. A.; Arakelyan, V. Ts.; Farshyan, G. S.

TITLE: Absorption of ultrasonic waves in benzene solutions of polystyrene

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38  
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SOURCE: ANArmSSR. Doklady, v. 39, no. 4, 1964, 221-226

TOPIC TAGS: ultrasonic wave, acoustic absorption, acoustic theory, acoustic wave, benzene, polystyrene, solution property

ABSTRACT: Reported on is the molecular mechanism of the propagation of ultrasonic waves in polymer solutions. According to classical theory, the sound absorption coefficient equals

$$\alpha = \frac{2\omega^2}{3\rho c^3} \eta,$$

where  $\omega$  = cyclic frequency of sound,  $\rho$  = density of liquid,  $c$  = velocity of sound,  $\eta$  = shift viscosity. For certain analogous series (for example, alcohols), satisfactory quantitative agreement of classical theory

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ACCESSION NR: AP5018545

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experimentation has been observed. But for many liquids (aromatic hydrocarbons, acetates, formates, and others) even qualitative agreement of classical theory with experiment is lacking. The inability to explain, from the classical theory point of view, certain effects associated with

absorption of ultrasonic waves in liquids has led to a new relaxational theory of ultrasonic wave absorption. In the simplest case this theory yields an expression for the absorption coefficient in the form:

$$\alpha = \frac{\omega^2}{2\rho c^3} \left\{ \frac{4/3(\eta)}{1 + \omega^2 \tau_1^2} + \frac{\eta'}{1 + \omega^2 \left(\frac{\rho \beta_s}{\beta_s}\right)^2 \tau_2^2} \right\},$$

where  $\tau_1$  = time of relaxation of shift viscosity;  
 $\tau_2$  = time of relaxation of bulk viscosity;  
 $\beta_{00}$  = instantaneous elastic compressibility;  
 $\beta_s$  = ordinary statistical compressibility.

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It was found that in a benzene solution of polystyrene excess absorption consists of two components. The first reduces the absorption coefficient,

concentration over the second; therefore, excess absorption is relative. Experimental data showed that the absorption coefficient of benzene solutions of polystyrene decreases with increase in temperature, for temperatures up to 40°C. The second source of excess absorption is due to the process of infrared wave absorption.

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L 57091-65

ACCESSION NR: AP5018545

ASSOCIATION: Tsentral'naya nauchno-issledovatel'skaya fiziko-tehnicheskaya laboratoriya Akademii nauk Armyanskoy SSR (Central Scientific-Research Physical-Technical Laboratory, Academy of Sciences Armenian SSR)

SUBMITTED: 27Apr63

ENCL: 00

SUF CODE: OC,GP

NR REF SOV: 007

OTHER: 002

JPHS

*RR*  
Card 4/4

KOCHARYAN, N.M.; PACHADZHIAN, Kh.B.; NALBANDYAN, N.A.; AGARONYAN, A.A.

Physical properties of polymethylmethacrylate. Dokl. AN Arm.  
SSR 40 no.3:145-150 '65. (MIRA 18:12)

1. Tsentral'naya nauchno-issledovatel'skaya fiziko-tekhnicheskaya  
laboratoriya AN ArmSSR. 2. Chlen-korrespondent AN ArmSSR (for  
Kocharyan). Submitted July 12, 1964.

TARAYAN, V.M.; NALBANDYAN, N.S.

Effect of iron on the color of a rhenium-thiocyano complex.  
Izv. AN Arm.SSR. Khim.nauki 14 no.5:435-440 '61. (MIRA 15:1)

1. Institut geologicheskikh nauk AN Armyanskoy SSR.  
(Rhenium compounds)  
(Thiocyano compounds)



KOVALEV, G.N.; RAABE, G.; NALBANDYAN, R.M.; GURMAN, V.S.; SERGEYEV, G.B.

High-speed photochemical hydrobromination of ethylene and propylene at low temperatures. Dokl. AN SSSR 142 no.2:396-398 Ja '62. (MIRA 15:2)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova. Predstavleno akademikom N.N.Semenovym.

(Ethylene)

(Propene)

(Hydrobromic acid)

YESAYAN, N.A.; NALBANDYAN, R.M.

Effect of gamma-aminobutyric acid on the adrenaline content of  
rat adrenal glands. Vop. biokhim. 3:85-91 '63.

(MIRA 17:12)

1. Institute of Biochemistry, Academy of Sciences of the Armenian  
S.S.R., Erevan.

VANIN, A.F.; NALBANDYAN, R.M.

Free radicals of a new type in yeast cells, Biofizika 10 no.1:  
167-168 '65. (MIRA 18:5)

1. Institut khimicheskoy fiziki AN SSSR, Moskva.

NALBANDYAN, S.; KHAZAN, I.

Experimental continuous precast reinforced concrete bridge.  
Avt. dor. 22 no.5:10-11 My '59. (MIRA 12:8)  
(Bridges, Concrete)

NALBANDYAN, S.K.

From the history of geometric leveling in Russia during the second half of the 19th century and the beginning of the 20th century. Trudy MIIZ no.10:23-28 '60. (MIRA 16:12)

NAIBANI, L.

NAIBANI, L., How to improve cattle breeding. p.16.

Vol. 9, no. 8, August 1955 Tirane, Albania PER BUJQESINE SOCIALISTE

SO: Monthly List of East European Accessions, (EEAL), IC, Vol. 5, No. 10, Oct. 1956

Г. З. Налбанов, Г. З.

Subject : USSR/Mining AID P - 571  
Card 1/1 Pub. 78 - 8/22  
Author : Nalbanov, G. Z.  
Title : The use of secondary methods of oil recovery with intensive pumping of water into the stratum in the Krasno-Kama region  
Periodical : Neft. Khoz., v. 32, #8, 31-32, Ag 1954  
Abstract : The author analyses the geological conditions in oil strata having a number of cracks. Pumping of water into pressurized wells is used for searching the remaining oil deposits. The author recommends periodical pumping of air or gas instead of water until oil will not come out from the exploited oil well.  
Institution : None  
Submitted : No date

NALBANT, T.

Study of the genera of Botiinae and Cobitinae (Pisces, Ostariophysi, Cobitidae). Trav Muz Nat 4:343-379 '63.



NALBANTOV, Anastas, inzh.

Mechanical packing in road construction. Stroitelstvo ll no.6:  
27-29 N-D '64.

NALBANTOV, G.

Building up the dialectic-materialistic ideology through  
teaching human anatomy and physiology. Biol i khim 7  
no. 2: 18-24 '64.

NALBANTOV, G.

Necessary materials and experiments and their utilization in the teaching of anatomy and physiology of man. Biol i khim 4 no.5:11-19 '61.

(ANATOMY, HUMAN) (PHYSIOLOGY)

NALBAT, A. ~~С~~

PA 42/49T55

USSR/Medicine - Anatomy  
Medicine - Tumors, Chordoma

Jan/Feb 49

"Causes of Chordoma," A. S. Nalbat, Chair of  
Pathoanat', Khar'kov Med Inst, 4 pp

"Arkhir Patologii" Vol XI, No 1

Describes five cases in detail, with three photo-  
graphs.

42/49T55

*venereol., N.S.*

KRICHEVSKIY, A. M.; MIKHAYLOVA, P. V.; NURZINA, V. I.; RATINA, S. M.;  
POKHIL, A. I.; MALBAT, A. S.

Certain data on viral etiology of psoriasis. Vest. vener.,  
Moskva no.4:11-15 July-Aug 1951. (CML 21:1)

1. Of the Ukrainian Scientific-Research Skin-Venereological  
Institute (Director -- Prof. A. M. Krichevskiy).

FRISBEN, M.P.: BRIND, A.I., Docent  
MIRIT, A.S., Docent

Skin - Tuberculosis

Case of pityriasis rubra pilaris in tuberculosis colliquativa successfully treated with vitamin D<sub>2</sub>. Vest. ven. i dermat., No. 3, 1952

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

NALBAT, A. S.

USSR/Medicine - Psoriasis

Jul/Aug 52

"Review of the Article Data on the Virus Etiology of Psoriasis, by A. M. Krichevskiy, P. V. Mikhailova, V. I. Myrzina, S. M. Patina, A. I. Pokhil, A. S. Nalbat," (Prof. B. S. Yablenik, Frunze, reviewer)

Vest Vener i Derm. No 4, pp 30, 41

Describes an exptl infection of animals with psoriasis serum. Lab findings confirmed the author's assumption that a disorder in the lipide metabolism is a diathesis factor leading to the appearance of a complex of symptoms in a rabbit closely resembling psoriasis of man. On the basis of exptl work and clinical observations, the author assumes that a filterable virus is the causal agent of psoriasis.

KALBAT, A.S. (Khar'kov)

Morphological characteristics of vascular changes of the heart in endocarditis lenta. Arkh.pat. 18 no.2:62-67'56 (MIRA 11:10)

1. Iz kafedry patologicheskoy anatomii (zav. - prof. G.D. Derman)  
Khar'kovskogo meditsinskogo instituta.  
(ENDOCARDITIS, SUBACUTE BACTERIAL, pathology,  
heart vessels (Rus))



COUNTRY : USSR  
CATEGORY : General Problems of Pathology . Tumors. U  
Comparative Oncology. Human Neoplasms.  
ABS. JOUR. : RZhBiol., No.23 1958, No.107096  
AUTHOR : D'yachenko, Ye.P.; Malbat, A.S.  
INST. :  
TITLE : A Case of an Angioma of the Pelvis.  
ORIG. PUB. : Novyy khirurg. arkhiv., 1958, no.2, 77-79.  
ABSTRACT : No abstract.

Card: 1/1

NALBAT, A.S., FINKEL', Z.N.

Problem of thrombophlebitic splenomegaly. Sov.med. 22 no.10:

52-56 0 '58

(MIRA 11:11)

1. Iz kafedry patologicheskoy anatomii (zav. - prof. G.L. Derman)  
Khar'kovskogo meditsinskogo instituta (dir. - dotsent I.F. Konenko)  
i prozektury (zav. prof. G.L. Derman) Oblastnoy klinicheskoy bol'nitsy  
Khar'kova (glavnyy vrach M.G. Madiyevskiy).

(VEINS, PORTAL SYSTEM. dis.

thrombophlebitis causing splenomegaly (Rus))  
(SPLENOMEGALY, etiol. & pathogen.

thrombophlebitis of splenic veins (Rus))

NALBAT, A.S. dotsent

Morphological changes in the auricles in protracted septic  
endocarditis. Vrach.delo no.1:29-32 '60. (MIRA 13:6)

1. Kafedra patologicheskoy anatomii (zav. - prof. G.L. Derman)  
Khar'kovskogo meditsinskogo instituta.  
(ENDOCARDITIS)

NALBAT, A.S.; CHUGUNOVA, T.I.

Peculiarities of dermatopolymyositis in children. Sov. med. 24 no.4:  
143-147 Ap '60. (MIRA 13:8)

1. Iz kafedry patolgicheskoy anatomii (zav. - prof. G.L. Derman),  
kafedry pediatrii pediatricheskogo fakul'teta (zav. - prof. V.A.  
Belousov) Khar'kovskogo meditsinskogo instituta (dir. - dotsent I.F.  
Kanonenko) na baze Oblastroy klinicheskoy bol'nitsy (glavnyy vrach  
M.G. Madiyevskiy).

(SKIN--DISEASES)

(MUSCLES--DISEASES)

NALBAT, A. S., DOC MED SCI, "PATHOMORPHOLOGY OF ENDO-  
CARDITIS LENTA." KUYBYSHEV, 1961. (MIN OF HEALTH RSFSR.  
KUYBYSHEV STATE MED INST). (KL-DV, 11-61, 226).

-229-

NAIBERCZYNSKI, Ignacy

Survey of the works of Subcommittee 2/1 on exploitation and tariff  
schedules in telegraphy. Przegl telekom 34 no.8:239-241 Ag '61.

20-114-3-58/60

**AUTHORS:** Andreyeva, T. F., Nal'borchik, E. Ya.

**TITLE:** On the Influence of the Physiological Condition of the Plant and of Some Extraneous Effects Upon the Composition of Photosynthetic Products (K voprosu o vliyanii fiziologicheskogo sostoyaniya rasteniya i nekotorykh vneshnikh vozdeystviy na sostav produktov fotosinteza)

**PERIODICAL:** Doklady Akademii Nauk SSSR, 1957, Vol. 114, Nr 3, pp. 662-665 (USSR)

**ABSTRACT:** Research work of the last years led to a proof, by means of isotopic analysis and chromatographic analysis, of the formation of amino acid and albumen substances during photosynthesis. It remained unknown, however, how large the share of these substances in the photosynthetic products was. It was unknown whether the quantity of these products changes in plants with different metabolism or in the same plant during ontogenesis under the influence of extraneous agents. There exist data on a differing distribution of carbon, which had been assimilated during photosynthesis, among the different substance fractions, and in dependence on the type of plant as well as on photosynthetic conditions. The

Card 1/3

20-114-3-58/60

On the Influence of the Physiological Condition of the Plant and of Some Extraneous Effects Upon the Composition of Photosynthetic Products

authors of the paper under review had the intention of following the participation of photosynthetic carbon in the formation of amino acids, albumen substances and carbohydrates under different physiological conditions as well as at changes in extraneous factors of the environment. Beans (Phaseolus) and peasant tobacco (Nicotiana rustica) were used in these experiments: cut-off leaves or leaf sectors, leaves still connected with the plant, under light or in the dark, were used as test material. On the day before the experiment, a solution of 1 % of  $(N^{15}H_4)_2SO_4$  with heavy nitrogen, ten times enriched, was introduced through the root. Radioactive carbon dioxide was introduced into the leaves. These are the results of the experiments: Under natural conditions of growth the formation of amino acids and of albumen substances takes place in the leaf during the photosynthesis. The quantitative relations in the composition of the photosynthetic products being formed (carbohydrates, albumen substances, amino acids, organic acids) vary according to the species of the plant, the age of the plant, the physiological state of the plant, and extraneous influences. The share of albumen in the pro-

Card 2/3



20-114-3-58/60

On the Influence of the Physiological Condition of the Plant and of Some  
Extraneous Effects Upon the Composition of Photosynthetic Products

ductive photosynthesis is not large and amounts to 1,5 - 4 %.  
The major part of the nitrogenous photosynthetic products are  
the amino acids; their amount (20 - 30 %) is subject to  
greater variations (depending on the above conditions) than  
is the quantity of albumen substances formed. There are 5  
tables and 14 references, 7 of which are Soviet .

ASSOCIATION: Institute for Plant Physiology imeni K. A. Timiryazev AS USSR  
(Institut fiziologii rasteniy im. K. A. Timiryazeva Akademii  
nauk SSSR)

PRESENTED: March 5, 1957, by A. L. Kursanov, Member of the Academy

SUBMITTED: February 24, 1957

Card 3/3

BIRECKA, H.;NALBORCZYK, E.

Biosynthesis of radio-active alkaloids of yellow and white lupine.  
Bul Ac Pol biol 7 no.6:205-211 '59 (EMBI 9:6)

1. Department of Plant Physiology, College of Agriculture, Warsaw  
presented by J. Heller.  
(Synthesis) (Lupine) (Radioactive substances)  
(Alkaloids)

BIRECKA, H.; NALBORCZYK, E.; SEBYLA, T.

Biosynthesis of alkaloids in intact and derooted plants of yellow lupine. *Bul Ac Pol biol* 8 no.5:175-181 '60. (EEAI 9:11)

1. Department of Plant Physiology, College of Agriculture, Warsaw and Laboratory of Plant Physiology, Institute of Soil Management and Fertilization, Warsaw. Presented by J.Heller.  
(LUPINES) (ALKALOIDS)

BIRECKA, H.; NALBORCZYK, E.

Separation of white lupin alkaloids and attempts of identification of some of them. *Bul Ac Pol biol* 9 no.10:401-408 '61.

1. Department of Plant Physiology, Central College of Agriculture, Warsaw. Presented by J. Heller. (Redacteur de la Serie des Sciences Biologiques).

+

NALBORCZYK, E.

Enzymatic lupanine transformations "in vitro". *Bul Ac Pol biol*  
9 no.10:409-415 '61.

1. Department of Plant Physiology, Central College of Agriculture,  
Warsaw. Presented by J. Heller. (Redacteur de la Serie des Sciences  
Biologiques).

\*

NALBORCZYK, Emil

Application of tritium in ~~biochemical~~ and biological investigations.  
Postepy biochem. 8 no.1:95-107 '62.

(TRITIUM metab)

NALBORCZYK, E.

Enzymatic transformations in vitro and in vivo of alkaloids  
of *Lupinus albus*. Pt. 1. Acta soc botan Pol 33 no.2:371-392 '64.

1. Department of Plant Physiology, Central College of  
Agriculture, Warsaw.

MAGAKYAN, A.; TOMOYAN, A.; NALCHADZHIAN, F.

Technological processes and th output of Swiss cheese. Prom. Arm.  
6 no.10:33-36 0 '63. (MIRA 17:1)

1. Tsentral'naya nauchno-issledovatel'skaya laboratoriya Upravleniya  
myasomolochnoy promyshlennosti Soveta narodnogo khozyaystva ArmSSR.



L 24164-66 EWT(1) SCTB DD

ACC NR: AP6015165

SOURCE CODE: UR/0217/65/010/001/0167/0168

AUTHOR: Vanin, A. F.; Nalbandyan, R. M.

ORG: Institute of Chemical Physics, AN SSSR, Moscow (Institut khimicheskoy fiziki AN SSSR)

TITLE: Free radicals of a new type in yeast cells

SOURCE: Biofizika, v. 10, no. 1, 1965, 167-168 22

TOPIC TAGS: yeast, free radical

ABSTRACT: An EPR signal of a new type was detected in tests on *Saccharomyces cerevisiae*, *Saccharomyces carlsbergensis*, and *Manilica murmanica*. The signal was an incompletely resolved doublet with a half-width of  $\sim 40$  gauss, a  $g$  factor of 2.03 at the absorption maximum, and an intensity corresponding to  $10^7$  spins per cell of *Saccharomyces cerevisiae*. The magnitude of the  $g$  factor and the relation between the intensity and the temperature indicated that the signal was due to the presence of organic free radicals with the unpaired electron at a sulfur atom. The authors thank L. A. Blyumenfel'd for his interest in this work and for his valuable advice. Orig. art. has: 2 figures.

JPRS/

SUB CODE: 06, 07 / SUBM DATE: 12Feb64 / ORIG REF: 001 / OTH REF: 004

Card 1/1 B

UDC: 577.37

NAICHADZYAN, S.O.

MANVELYAN, M.G.; MELIK-AKHNAZARYAN, A.F.; KOSTANYAN, K.A.; YERZNYAN,  
Ye.A.; NAICHADZYAN, S.O.; OGANESEYAN, S.T.

Electric melting of glass without cooling the electrodes. Izv. AN  
Arm. SSR Ser. FMET nauk 8 no.1:65-74 Ja-F '55. (MIRA 8:6)

1. Khimicheskiy institut AN Armyanskoy SSR.  
(Glass manufacture)

NALCHADZNYAN, S. O.

NAICHADZHIAN, S.O.

Corrosion mechanism of iron and carbon electrodes in electric furnaces used for glass melting. Izv. AN Arm. SSR Ser. FIZMATH nauk 9 no.10:3-12 '56. (MLRA 10:4)

1. Khimicheskiy institut AN Armyanskoy SSR.  
(Glass furnaces) (Electrolytic corrosion)

NALCHADZHIAN, S.O.; KOSTANYAN, K.A.; MELIK-AKHNAZARYAN, A.F.

Measuring the specific resistance of melted glass in electric  
furnace. Stek. i ker. 13 no.3:7-9 Mr '56. (MIRA 9:6)  
(Glass manufacture--Chemistry)

NALCHADZHIVAN, S.O.

MANVELYAN, M.G.; MELIK-ANKHAZARYAN, A.F.; KOSTANYAN, K.A.; NALCHADZHIVAN, S.O.

Using graphite electrodes in electric glass kilns. Stek. 1 ker. 13  
no.7:1-7 J1 '56. (MIRA 9:9)

1. Khimicheskiy institut Akademii nauk Armyanskoy SSR.  
(Electrodes, Carbon) (Glass manufacture)

NALCHADZHIAN, S. O., Cand of Chem Sci -- (diss)" Investigation of the nature of corrosion of steel and carbon electrodes of electric furnaces of var glass." Yerevan 1957, 23 pp (Chemical Institute, Academy of Sciences Armenian SSR) 150 copies (KL, 33-57, 87)

*Nalchadzhyan S.O.*

MANVELYAN, M.G.; MELIK-AKHNAZARYAN, A.F.; KOSTANYAN, K.A.; NALCHADZHIAN, S.O.

Glass layers next to the electrodes in electric glass furnaces.  
Izv. AN Arm. SSR. Ser. tekhn. nauk 10 no. 4:53-60 '57. (MIRA 10:10)

1. Khimicheskiy institut AN Armyanskoy SSR.  
(Glass furnaces) (Electrodes)



~~1940-1950-1955~~  
MANEVELYAN, M.G.; MELIK-AKHNAZARYAN, A.F.; YERZHKYAN, Ye.A.; NALCHADZHYAN,

~~S.O.~~

Using Ararat quartzites as basic materials in the manufacture of  
glass for electric bulbs. Izv. AN Arm. SSR. Ser. tekhn. nauk 10  
no.5:89-92 '57. (MIRA 11:1)

1. Khimicheskiy institut AN ArmSSR,  
(Armenia--Quartzite) (Glass manufacture)

NALCHADZHIAN, S.O., ~~2x~~ Doc Chem Sci -- (diss) "Study of  
the nature of the corrosion of steel and carbon electrodes  
of electric <sup>furnaces</sup> ~~ovens~~ for the <sup>cooling</sup> ~~preparation~~ of glass." Mos,  
1958, 23 pp with illustrations (Min of Higher Education USSR. Mos  
Order of Lenin Chem-Technologic<sup>al</sup> Inst im D.I. Mendeleev)  
120 copies (KL, 29-58, 128)

KOSTANYAN, K.A.; HALCHADZHAN, S.O.

Measuring the specific electric conductivity of fused glass. Izv.  
AN Arm. SSR khim. nauk 11 no.1:3-11 '58. (MIRA 11:6)

1. Khimicheskiy institut AN ArmSSR.  
(Glass--Electric properties)

MANVELYAN, M.G.; MELIK-AKHMAZARYAN, A.F.; KOSTANYAN, K.A.; NALCHADZHIAN,  
S.O.; YERZHKYAN, Ye.A.; OGANESYAN, S.T.

Passage of grog materials inot glass batch during electric founding  
of bulb glass. Izv. AN Arm.SSR. Ser.tekhn.nauk 11 no.4:51-69 '58.  
(Glass manufacture)

MANVELYAN, M.G.; MELIK-AKHMAZARYAN, A.F.; KOSTANYAN, K.A.; MALCHADZHIAN, S.O.;  
YERZNIKYAN, Ye.A.

Deterioration of electrodes in electric glass furnaces. Izv. AN  
Arm.SSR. Ser.tekh.nauk 11 no.5:69-70 '58. (MIRA 11:11)

1. Khimicheskiy institut AN ArmSSR.  
(Glass furnaces) (Electrodes)

KOSTANYAN, K.A.; NALCHADZHIAN, S.O.

Electric conductivity of fused glass. *Izv. AN Arm. SSR. Khim.*  
nauki 11 no.5:317-319 '58. (MIRA 12:1)

1. Nauchno-issledovatel'skiy institut khimii Sovnarkhoza ArmSSR.  
(Glass) (Electric conductivity)

NALCHADZHIAN, S.O.

Mechanism of corrosion of iron and carbon electrodes in electric glass furnaces. Trudy Inst.khim.AN Azerb.SSR 17:114-122 '59.  
(MIRA 13:4)

1. Institut khimii AN ArmSSR.  
(Electrodes)

(Electrolytic corrosion)

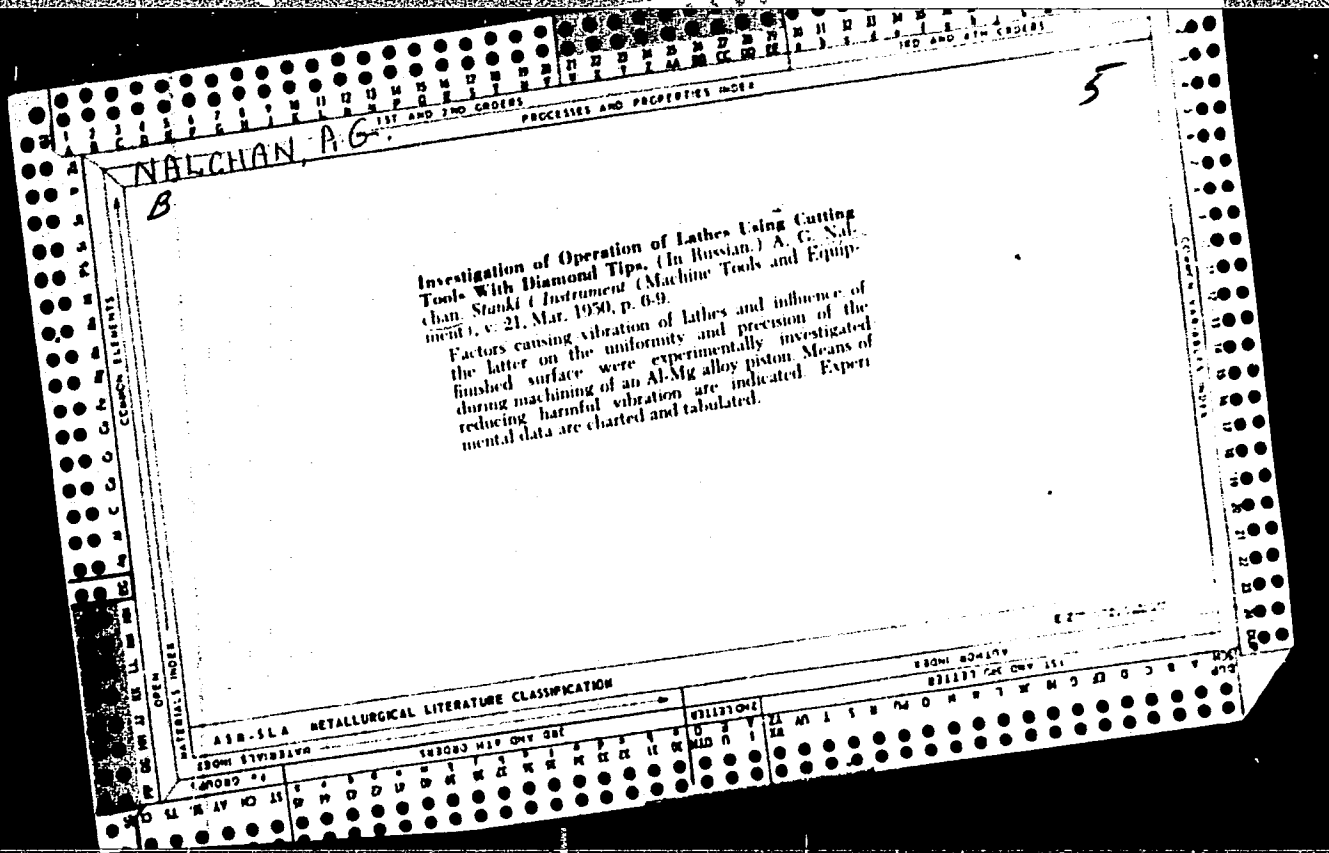
MANVELYAN, M.G.; MELIK-AKHNAZARYAN, A.F.; KOSTANYAN, K.A.; NAICHADZHIAN,  
S.O.; YERZINYAN, Ye.A.; TATEVOSYAN, K.M.

Melting borosilicate glass in vertical electric furnaces.  
Stek. i ker. 17 no. 2:5-9 F '60. (MIRA 13:6)  
(Glass manufacture)



MANVELYAN, Manvel Gareginovich; MELIK-AKHNAZARYAN, Ashot Fedorovich;  
KOSTANYAN, Kostan Artavazdovich; NALCHADZHIAN, Suren  
Oranogovich; YERZNKYAN, Yelena Amayakovna; ARUTYUNYAN, S.B.,  
red. izd-va; GALSTYAN, V., tekhn. red.

[Glass manufacture in electric furnaces]Elektrovarka stakla.  
Erevan, Armianskoe gos.izd-vo, 1962. 221 p. (MIRA 16:3)  
(Glass manufacture) (Electric furnaces)





**NAICHAN**, Ashot Gedeonovich; **FEDOTENOK**, A.A., kandidat tekhnicheskikh nauk, retsenzent; **YERSHOV**, A.I., inzhener, retsenzent; **OLIZAROV**, P.V., inzhener, redaktor; **BAIANDIN**, A.F., inzhener, redaktor izdatel'stva; **MODEL'**, B.O., tekhnicheskii redaktor; **TIKHONOV**, A.Ya., tekhnicheskii redaktor

[Machine tools] **Metallorazhushchie stanki**. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1956. 664 p. (MLRA 9:11)  
(Machine tools)

YENIKEYEV, Kh.M.; KOZLOV, D.N.; KRUSHILIN, M.P.; MEZHUYEV, B.N.;  
NALCHAN, A.G.; NIKULIN, A.I.; PANKIN, V.A.; SHAVIN, G.F.;  
LESNICHENKO, I.I., red. izd-va; SMIRNOVA, G.V., tekhn.  
red.

[Metal-cutting machines; kinematic adjustment of metal-  
cutting machines] Metallorezhushchie stanki; kinematicheskaya  
nastroika metallorezhushchikh stankov. Pod red. A.G.Nalchana.  
Moskva, Mashgiz, 1962. 179 p. (MIRA 16:2)

1. Moscow. Vsesoyuznyy zaochnyy mashinostroitel'nyy institut.  
Kafedra "Metallorezhushchie stanki i instrumenty." 2. Prepo-  
davately kafedry "Metallorezhushchiye stanki i instrumenty"  
Vsesoyuznogo Zaochnogo Mashinostroitel'nogo instituta (for  
all except Lesnichenko, Smirnova).

(Metal cutting) (Machinery, Kinematics of)

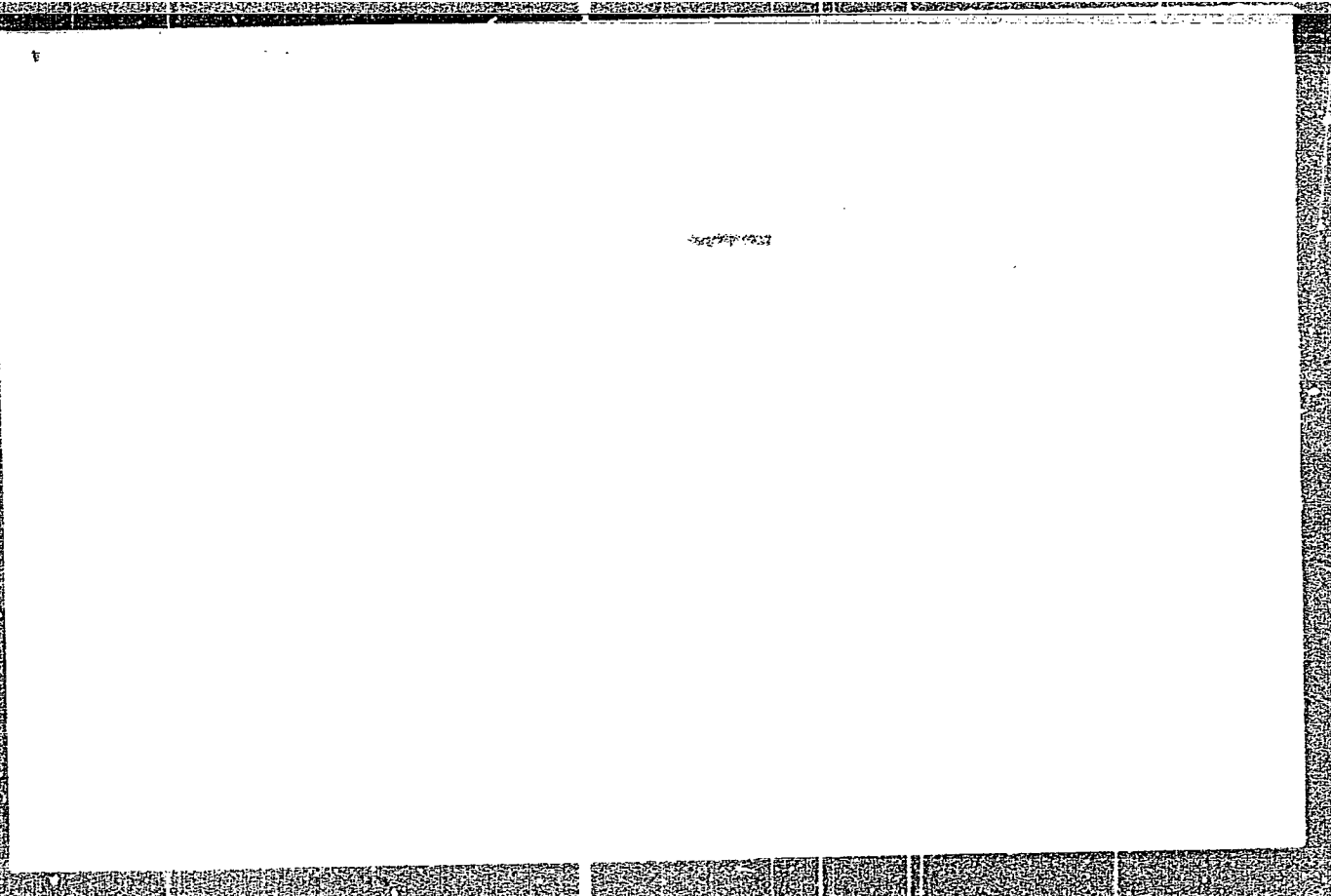
GUMENYUK, G.N.; NALDZHAN, V.V.; NOSKOV, Yu.I.; ADEYANOV, V.A.

Determining the strength of rocks using irregularly shaped samples.  
Nauch. trudy KNIUI no.14:165-168 '64.

Properties of coal and enclosing rock of some Karaganda Basin  
seams. Ibid.:176-183 (MIRA 18:4)

**"APPROVED FOR RELEASE: Monday, July 31, 2000**

**CIA-RDP86-00513R001136020**



**APPROVED FOR RELEASE: Monday, July 31, 2000**

**CIA-RDP86-00513R001136020**

NALÉC, M.

5559 621.317.4  
Nowacki P., Nalecz M. Methods of Measuring Low Constant Magnetic Fields.

„Metody pomiaru małych stałych pól magnetycznych”. Przegląd Telekomunikacyjny. No. 9, 1957, pp. 261–268, 16 figs.

3

An evaluation of all known methods of measurement has demonstrated that for the measurement of magnetic field in the gap of an electromagnet the most convenient method is that of immobile coil connected with a galvanometer reacting to the field changes caused by switching in and out of the magnetizing current, while for the measurement of earth's field (up to  $10^{-3}$  oersted) any method can be employed which ensures an adequate value of the minimum measuring range. From the point of view of obtaining very low measuring ranges, the most suitable methods at present are the modern ones based on saturated double-core or bridge type testing gauges, which make it possible to obtain at a supply frequency of 50 cycles a sensitivity of 1 millioersted per scale division. This range can be further lowered by increasing the frequency, which, however, considerably puts up the cost of instruments because in this case it is necessary to use an

EW  
//

acoustic generator, filters and an amplifier. Moreover, the saturated testing gauge method is the most suitable for testing the properties of magnetic materials because of the reduced time of measurement, high sensitivity and small dimensions of the testing gauge.



POLAND / Chemical Technology. Chemical Products and H  
Their Applications. Electrochemical Industries.  
Electroplating. Galvanic Cells.

Abs Jour: Ref Zhur-Khimiya, 1959, No 4, 12423.

Author : Nowacki, Pawel; Gorski, Andrzej; Malecz, Maciej.  
Inst : Not given.  
Title : Fuel Elements.

Orig Pub: Rozpr. elektrotechn., 1958, 4, No 1, 53-67.

Abstract: A scheme for fuel-element function is cited as well as a classification of these elements based on the difference in their source of emf (direct and indirect reaction), type of electrolyte (liquid, condensed gas, solution of fused salt), aggregate condition of fuel, conditions of temperature and pressure. Known oxyhydrogen elements are described (of Davtyan, Bacon), and forecasts of their development are indicated. -- From the authors' resume.

Card 1/1

29

24:669

P/021/60/000/011/003/006  
A107/A126

9.4370

AUTHORS: Nalecz, Maciej, Doctor of Engineering and Ziomecki, Henryk, Master of Engineering

TITLE: Magnetic Induction meter using the hall effect

PERIODICAL: Przegląd elektrotechniczny, no. 11, 1960, 469 - 473

TEXT: This device was developed by the Zakład Elektrotechniki Instytutu Podstawowych Problemów Techniki Polskiej Akademii Nauk IPPT PAN (Electrotechnical Engineering Department of the Institute of Basic Problems and Technique, Polish Academy of Sciences) and serves for direct measurement of magnetic induction. The advantages of this device, compared to the conventional flux meter are: there is no need to move the sensor in and out of the magnetic field during measurements; the small size of the sensor itself (4 x 2 x 0,2 mm), which permits accurate point-to-point field measurements. This device is suitable for measuring magnetic induction on constant and variable fields with frequencies up to  $10^{12}$  cps. The author gives an exhaustive explanation of the Hall effect and its use in the new device. The article describes only principle of operation and circuitry of this device for measuring magnetic induction in constant fields

Card 1/2

Magnetic induction meter using the Hall effect

24669  
P/021/60/000/011/003/006  
A107/A126

giving the characteristics of the sensor: size 6 x 12 x 0.27 mm; resistance of steering electrodes,  $R_x = 140.5 \Omega$ ; resistance of Hall electrodes,  $R_H = 57 \Omega$ ; permanent Hall unit,  $R_H^x = 0.115 \text{ mva Gs}$ ; proper resistance,  $Q = 2.2 \Omega \text{ V}$  and maximum steering,  $I_{\text{smax}} = 55 \text{ ma}$ . In the second part of the article 3 foreign magnetic induction meters [Dr. Förster, Reutlingen, Germany; Siemens-Halske, Germany and Thomson-Houston, USA] are described. There are 9 figures and 1 Soviet-bloc reference.

ASSOCIATION: Zakład Elektrotechniki, IPPT PAN (Electrical Engineering Department of the IPPN PAN)

Card 2/2

S/194/61/000/011/002/070  
D256/D302

9,6130

AUTHORS: Kulikowski, Jan and Nalecz, Maciej

TITLE: Basic properties of magnetic field modulated transducers

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 11, 1961, 5, abstract 11 A32 (Rozpr. elektro-techn., 1960, 6, no. 4, 475-492 (in Polish; English summary))

TEXT: An analysis is presented of a transducer performance in measurements of weak magnetic fields. A linear approximation of the core magnetization curve was assumed and the sum of the even harmonics in the measuring windings emf was employed as the output quantity. Expressions were derived for calculating the mean value of the transducer output voltage, sensitivity and the dependence of the useful range of measurements upon the geometrical dimensions of the core. A description is given of a transducer measuring system with

Card 1/2

Basic properties of magnetic field...

S/194/61/000/011/002/070  
D256/D302

a mechanical phase-sensitive rectifier and a magneto-electrical instrument at the output. 4 references. [ Abstracter's note: Complete translation ]

✓  
B

Card 2/2

35402

P/026/62/010/001/001/002  
D218/D304

9.4370 (1043,1137)

AUTHORS: Nałecz, Maciej and Zawicki, Ignacy

TITLE: Application of the Hall effect to seismographic recording

PERIODICAL: Acta geophysical polonica, v. 10, no. 1, 13-24

TEXT: It is shown that by placing a Hall plate in a nonuniform magnetic field it is possible to obtain a Hall emf which is proportional to the displacement of the plate in a given direction. The region of proportionality is limited, but sufficient for practical purposes. The magnet employed by the authors is illustrated schematically in Fig. 2. In this field configuration, the Hall emf is approximately given by Eq. 2

$$U_H = \frac{R_H}{b \cdot d} \cdot I_p \cdot B \cdot X \cdot 10^{-8} \quad \text{where } d \text{ is the}$$

thickness of the plate,  $b$  its breadth,  $I_p$  - the current flowing through it,  $B$  - the magnetic flux density,  $R_H$  - Hall's constant, and  $X$  - displacement. In an actual seismograph, the plate is attached to the end of a  
Card 1/3

P/026/62/010/001/001/002  
D218/D304

## Application of the Hall ...

long rod of a suitable moment of inertia which is spring-loaded at one end and can rotate about an axis attached to a heavy base. The Hall emf is recorded by a moving-coil galvanometer, whose response can be traced out on photographic paper: Polish CH1 Hall plates were employed (12 x 6 x 0.25 mm<sup>3</sup>;  $G \cdot R_H = 2500 \text{ cm}^3/\text{coulomb}$ ). The equations of motion of the system have been solved and the results are reported and compared with those for the electrodynamic seismograph. The Hall-plate seismograph gives a higher magnification (by a factor of up to 100) and falls off more slowly with frequency. It is shown that the combination of a Hall plate and a non-uniform magnetic field can be used to measure any quantity which has a linear displacement associated with it. The authors have constructed a strain gauge and an inclinometer based on this principle. Professor Stefan Manczarski, Director of the Zakład geofizyki PAN (Geophysics Institute PAS) and Docent Doctor Roman Teisseyre are thanked for their interest and advice. There are 12 figures and 3 references: 1 Soviet-bloc and 2 non-Soviet-bloc. The references to the English-language publications read as follows: M. Natecz, *Electronic Technology*, Jan. 1961; J.L. Bower,

Card 2/3

Application of the Hall ...

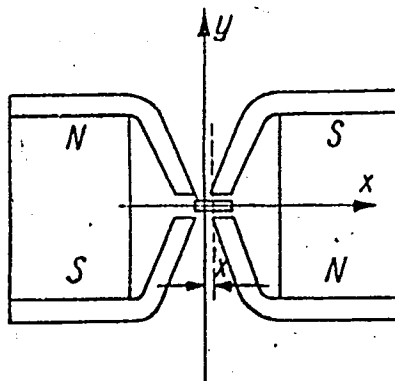
P/026/62/010/001/001/002  
D218/D304

Introduction to the Design of Servomechanisms.

ASSOCIATION: Zakład elektrotechniki IPPT PAN (Institute of Electrical Engineering IPPT PAS)

SUBMITTED: July 14, 1961

Fig. 2  
Example of a system giving a linear dependence of  $U_H$  on  $f(x)$



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Rys. 2. Przykład układu, w którym uzyskuje się zależność liniową  $U_H = f(x)$



NALECZ, MACIEJ

SURNAME, Given Names

Country: POLAND

Academic Degrees: / not given/

Affiliation: / not given /

Source: Warsaw, Rozprawy Elektrotechniczne, Vol VII, No 2, 1961, pp 277-288

Data: "Equivalent Circuits of Flux-Gate Magnetometers with all-even Harmonic Output"

Authors:

KULIKOWSKI, Jan

NALECZ, Maciej

(1)

35

GPO 981643

9.2120

31469  
P/019/61/010/004/006/006  
D265/D303AUTHOR: M. Nałęcz

TITLE: Vector diagram of a current transformer with Wilson compensation

PERIODICAL: Archiwum elektrotechniki, v. 10, no. 4, 1961, 903 - 923

TEXT: The experimental methods of finding the physical parameters of the compensating transformer winding are replaced by an analytical treatment based on vector diagrams and the fundamental frequency method of calculating complex magnetic circuits devised by P.J. Nowacki (Ref. 5: Arch. Elektr. v. 6, no. 3, 1957, 441 - 459). Neglecting the leakage flux, a set of equations is obtained for the transformer flux, voltages and magnetizing forces for a system shown in Fig. 1. After transformation, the final two equations are obtained

$$\hat{K} \hat{\Theta}_a = \hat{a}'' \hat{B}_a + \hat{b}'' \hat{B}_b \quad (17)$$

Card 1/3/2  $\hat{\Theta}_a = \hat{U}_a - \hat{U}_b \quad (3)$

Vector diagram of a ...

P/019/61/010/004/006/006  
D265/D303

which are solved by means of vector diagrams. The construction of these vector diagrams is described for two cases: 1) Neglecting the iron losses 2) taking the iron losses into account. A numerical example is given for the JT10 transformer. There are 9 figures and 11 references: 7 Soviet-bloc and 4 non-Soviet-bloc. The references to the English-language publications read as follows: B. Hague, "Instrument transformers", I. Pitman, London 1936; M.S. Wilson, "A new high accuracy current transformer", AIEE Transaction July 1929, 783 - 789; ibid, AIEE Journal, 1929, v. 48, 179 - 182.

ASSOCIATION: Katedra Miernictwa elektrycznego politechniki Warszawskiej Zakład elektrotechniki I.P.P.T. PAN (Department of Electrical Metrology, Warsaw Polytechnic Electrotechnical Enterprise, I.P.P.T. PAS)

SUBMITTED: October 17, 1960

Card 2/2

MALECZ, Maciej; ZAWICKI, Ignacy

Utilization of the Hall effect in seismographic recordings. Acta  
geophys pol 10 no. 1:13-24 '62.

1. Zakład Elektrotechniki, Instytut Podstawowych Problemów Techniki,  
Polska Akademia Nauk, Warszawa.

S/169/63/000/003/037/042  
D263/D207

AUTHORS: Nałecz, Maciej and Zawicki, Ignacy  
TITLE: A seismograph  
PERIODICAL: Referativnyy zhurnal. Geofizika, no. 3, 1963, 11,  
abstract 3G51 (Sejsmograf (Polska Akademia nauk  
(Instytut Podstawowych Problemów Techniki)) Pol'sk.  
Pat. No. 45689, 5.03.62)

TEXT: A seismograph is proposed, based on the use of a Hall plate (transducer) and the corresponding magnetic system as a transformer of a mechanical quantity into electrical. The authors show schematically the shift of a Hall element in various magnetic systems, causing a change in the mean value of magnetic induction acting on the plate. Dependence of the voltage originating in the plate on the latter's shift is shown graphically for each magnetic system. The principal scheme of a horizontal seismometer with Hall's transformer is given. The Hall elements are supplied with auxiliary current from batteries of a few volts, included in series

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A seismograph

S/169/63/000/003/037/042  
D263/D307

with variable resistance which allows a control of the sensitivity of the seismograph. The instrument is damped electromagnetically, with a coil moving in a magnetic field and connected to the corresponding resistance. Main features of the seismograph are its high sensitivity, independence of Hall voltage of the frequency of oscillation, absence of a back-action of the galvanometer on the movement of the seismometer pendulum, simple control of sensitivity by changing the auxiliary current, and the possibility of determining the inclinations of the Earth's crust.

[ Abstracter's note: Complete translation ]

Card 2/2

NALECZ, Maciej

Pawel Jan Nowacki. Nauka polska 11 no.2:59-62 Mr-Ap '63.

1. Instytut Automatyki, Polska Akademia Nauk, Warszawa.

NALECZ, Maciej (Warszawa)

Intentions and work of the Institute of Automation. Nauka polska  
11 no.4:85-99 J1-Ag '63.



NALECZ, M.

Mechanism of error compensation in a current transformer by using the Wilson method. Archiw elektrotech 12 no.2:287-334 '63.

1. Katedra Miernictwa Elektrycznego, Politechnika, Warszawa, i  
Instytut Automatyki, Polska Akademia Nauk, Warszawa.

NALECZ, Maciej, professor

The Polish Academy of Sciences Institute of Automatic Control;  
state of work and development trends. Review Pol Academy 9 no.4:  
22-26 O-D '64.

1. Director, Institute of Automatic Control of the Polish Academy  
of Sciences, Warsaw. Submitted May 1964.

ACC NR: AP6034963

SOURCE CODE: PO/0034/66/000/08-/0393/0394

AUTHOR: Nalecz, Maciej (Professor, Doctor); Warsza, Zygmunt L. (Master engineer)

ORG: Institute for Automation, PAN (Instytut Automatyki PAN); Warsaw Polytechnic Institute (Politechnika Warszawska)

TITLE: The use of Hall effect devices in closed loop displacement transducers

SOURCE: Pomiary, automatyka, kontrola, no. 8-9, 1966, 393-394

TOPIC TAGS: Hall effect ~~application~~, halotron, transducer, closed loop device, mechanical measurement *measuring tool*

ABSTRACT: The article deals with the general problem of the measurement of small mechanical displacements through readings of the output voltage of a Hall effect device located in a high-gradient magnetic field. The difficulties encountered in improving the limiting characteristics of simple transducers without an amplifier are reviewed. The principal disadvantage here is the Hall effect device itself, as the primary cause of inaccuracy and nonlinearity. On the other hand, it is also found that the halotron displacement sensor (detector) is useful only when the permanent magnet already present in the transducer (for feedback) is simultaneously employed to create the magnetic induction gradient. A closed-loop displacement transducer with induction compensation is discussed. The operational principle of the device is described and the error, which in a function of the stability and linearity of the

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UDC: 531.717.3:538.632

ACC NR: AP6034963

field delivered by the magnets as well as the uniformity and single-valuedness of the electromagnetic field, is analyzed. Orig. art. has: 2 formulas and 1 figure.

SUB CODE: 09/ SUBM DATE: none/ ORIG REF: 001/ SOV REF: 001/ OTH REF: 001

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