POLAND/Optics - Spectroscopy K-7

Abs Jour : Ref Zhur - Fizika, No 3, 1958, No 7024

Author : Les F., Niewodniczanski, H.
Inst : Jayellonian University, Cracow, Poland
Title : Hyperfine Structure of the Forbidden Line CdI 3141A ($5s^2\ {}^1S_0$--$5s5p^3P_2^0$).

Orig Pub : Bull. Acad. polon. sci., 1957, Cl. 3, 5, No 3, 299-303

Abstract : An investigation was made of the hyperfine structure of the forbidden 3141A line in the spectrum of CdI. The source of light was a Schuler lamp with hollow cathose. The spectral instrument was a Fabry-Perot interferometer, crossed with a quartz spectrograph. The microphotogram shows that the line consists of a single component. This is in good agreement with the Bowen theory (Bowen J.S., Reviews of Modern Physics, 1936, 8, 58) according to which the transition with J 2 is due to the interaction of the magnetic moments of the electron shell and of the nucleus. Cadmium was used with a natural isotope content; 74.9% even. Since all the even isotopes have

Card : 1/2

MIENIADOWSKI, H.; CZAPICKI, J.

Use of fluid oils in the production of shortening. p. 25. (Prace Instytutow i Laboratoriow Badawczych Przemysłu Mleczarskiego i Spożywczego, Vol. 2, No. 1, 1950. Warsaw, Poland)

SO: Monthly List of East European Accessions (EEAI) LC, Vol. 6, No. 9, Sep 1957. Uncl.

POLAND/Optics - Spectroscopy. K

Abs Jour : Ref Zhur Fizika, No 10, 1959, 23654

Author : Liszka, L., Niewodniczański, H.

Inst : Jagiellonian University, Krakow, Poland

Title : Intensity Ratio in the "Forbidden" Doublet λ 2998 and λ 2927 A. U. in the Spectrum of Atomic Oxygen

Orig Pub : Acta phys. polon., 1958, 17, No 5, 345-351

Abstract : A study was made of the intensity ratio of the lines of the forbidden doublet OI, corresponding to the transitions $^1S_0 - ^3P_1$ ($\lambda = 2972.2$ Å) and $^1S_0 - ^3P_2$ ($\lambda = 2958.1$ Å). The former line, previously discovered, corresponds to magnetic dipole radiation, while the second line, first observed in this investigation, corresponds to electric quadrupole radiation. A special U-shaped tube was developed for the observation of this

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POLAND/Optics - Instruments for Optical Analysis. K

Abs Jour : Ref Zhur Fizika, No 10, 1959, 23886

Author : Kisiel, A., Niewodniczanski, H.

Inst : Jagiellonian University, Krakow, Poland

Title : A High Luminosity Quartz Spectrograph for the Far Ultraviolet Region 2300 -- 1850 A.

Orig Pub : Acta phys. polon., 1958, 17, No 5, 361-364

Abstract : The authors describe a prism quartz spectrograph of high luminosity (1:1.822) for the far ultraviolet region (2300 -- 1850 Å). The optical system of the spectrograph consists of two plane-convex short-focus lenses (collimator, f = 65.2 mm and camera f = 87.7 mm) and a Cornu prism (length of base 47 mm). To eliminate absorption of light by the atmospheric oxygen, CO_2 is blown through the instrument; in this case the absorption for λ 1860 Å

Card 1/2

K

POLAND/Optics - Spectroscopy.

Abs Jour : Ref Zhur Fizika, No 11, 1959, 26106

Author : Lee, Z., Mrs, Niewodniczanski, H.

Inst : Jagiellonian University, Krakow, Poland

Title : Intensity Ratios of Spectral Lines in CdI Triplets at Different Conditions of Excitation.

Orig Pub : Acta phys. polon., 1958, 17, No 5, 365-368

Abstract : In various sources of light (electrodeless discharge in vapor of pure cadmium and in vapors of cadmium in an argon or xenon atmosphere, a hollow cathode in the atmosphere of helium or argon, a spark, arc, or high-frequency discharge) the ratios of the intensities of the lines of the triplet of CdI (5086, 4800, and 4678 Å) are different, depend on the excitation conditions in the source, and differ in all cases from the theoretical relation.

Card 1/2

POLAND/Nuclear Physics - Installations and Instruments. Methods of Measurement and Research C

Abs Jour : Ref Zhur Fizika, No 11, 1959, 24245

Author : Niewodniczanski, Henryk; Zakrzewski, Jerzy

Inst :

Title : The First "Large" Cyclotron in Poland

Orig Pub : Problemy, 1959, 15, No 2, 146-149

Abstract : Brief description and technical data.

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P/046/60/005/001-2/008/008
A222/A026

21.2200

AUTHOR: Niewodniczański, Henryk; Zakrzewski, Jerzy

TITLE: The First "Big Cyclotron" in Poland

PERIODICAL: Nukleonika, 1960, No. 1-2, Supplement Nr. 1

TEXT: The authors present a detailed description of a cyclic resonance accelerator (first built by E. O. Lawrence in 1932) built at the Kraków center of the Instytut Badań Jądrowych PAN (Nuclear Research Institute of the Polish Academy of Sciences). Basic parts of the "Y-120" cyclotron were furnished by the USSR according to an agreement on international cooperation in nuclear research. The installation has been officially put into operation on November 22, 1958. Chief contractor of the building construction project, which started in the second quarter of 1956, was Zarząd Budowlano-Montażowy (Construction and Assembly Administration) of Zjednoczenie Przemysłowe Budowy Huty im. Lenina (Industrial Union for the Construction of the Metallurgical Plant "im. Lenina"), while general supervision was executed by Zarząd Inwestycji Badań Jądrowych (Administration of Nuclear Research Investments). Basic technical data of the cyclotron are:

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diameter of electromagnet pole pieces - 120 cm; height of the gap between pole pieces - 34.5 cm; total weight of the electromagnet core - 120 tons; capacity of electromagnet winding at a magnetic field intensity of 15 kOe - 100 kw; stabilization of the magnetic field - $\pm$ 0.03%; capacity of h.f. generator - 120 kw; frequency of the resonance circuit - 9-15 mc; frequency stabilization - 0.01%; voltage amplitude between dees - 150 kv; inside height of acceleration chamber - 17 cm; effective edge radius - 52.5 cm; deflector voltage - 60 kv; energy of deuterons - 13 mev; energy of particles - 26 mev; ion stream on inside beryllium window - 1 ma. Gabarite dimensions of the electromagnet are 4.35 x 2.86 x 1.5 m. The high vacuum diffusion assemblies are aided by cryogenic nitrogen-cooled traps and capable of producing a vacuum of $5 \cdot 10^{-7}$ mm Hg. Under operational conditions, the vacuum in the installation is of the order 10^{-5} mm Hg. The cyclotron draws 500 kw of electric power. The outlined program foresees work on proper shaping of the magnetic field to make possible acceleration of protons to 30 mev and more. The research program is mainly concerned with stripping, especially with polarization effects relevant to the phenomenon. At present, research is conducted on the polarization of neutrons evolved in deuteron stripping on ^{12}C nuclei. To that end use is

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made of special equipment built by Zakład II IBJ (Department II of the Nuclear Research Institute), which consists of a proportional helium pressure counter (about 10 atm) and proper electronic apparatus with a ten-channel amplitude analyzer operating in coincidence with scintillation neutron counters (Hornyak type) to establish the asymmetry of dexter and sinister dispersion, thus determining the degree of neutron polarization. Preliminary results confirmed polarization of neutrons from the reaction $^{12}C(d,n)\ ^{13}N$ for a reaction angle of 15^{o} in a laboratory set-up. With a view to further research work on these problems, construction of a magnetic energy analyzer of neutrons evolved in the stripping reaction, and evading under angles different from the deuteron beam is being prepared at the Department. A number of advanced scientists of the Department were delegated for practice to foreign research centers, among them two, who have been working for 1 1/2 years on polarization effects in the stripping phenomenon at the cyclotron of the Nuclear Research Laboratory of Liverpool University. There are 3 figures and 16 photographs.

ASSOCIATION: Instytut Badań Jądrowych PAN, Ośrodek Fizyki Jądrowej
(PAN Nuclear Research Institute, Nuclear Physics Center)

SUBMITTED: May 1959

Card 3/3

P/045/60/019/02/01/013
B018/B011

AUTHOR: Niewodniczański, Henryk.

TITLE: Andrzej Sołtan (1897-1959)

PERIODICAL: Acta Physica Polonica, 1960, Vol. 19, No. 2, pp. 125-131

TEXT: This is a detailed biography of the Polish physicist Professor Doctor Andrzej Sołtan who died on December 10, 1959. A. Sołtan was born in Warsaw on November 25, 1897, received his secondary education in Petrograd (Russia) during the First World War, and subsequently studied physics at Warsaw University. Even before being graduated he was appointed assistant at the Institute of Experimental Physics of Warsaw University and worked together with Professor Stefan Pieńkowski. He was chiefly concerned with spectroscopic investigations. In 1926, he received the title of Doctor of Philosophical Sciences. He spent one year in Paris where he conducted studies on X-ray spectroscopy. After his return, he became known for his development of a new mercury lamp model. In 1933, he went to the USA for 1 year (California Institute of Technology, Pasadena). Back in Warsaw he continued his research work begun there. He worked together with

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Andrzej Sołtan (1897-1959)

P/045/60/019/02/01/013
B018/B011

Professor Ludwik Wertenstein and Doctor Jan Cichocki. Before 1938, he was Chief Assistant at the Institute of Physics of Warsaw University and subsequently held the post of a director of the physical research laboratory of the Philips Works in Warsaw. During the German occupation of Poland, he taught at an underground university. In 1944 he was evacuated to Vienna with the factory. After the end of the war he returned to Poland and took over the post of a director of the physical laboratory at the Łódź Institute of Technology. In 1950, he was appointed Corresponding Member of the Polska Akademia Umiejętności (Polish Academy of Science and Letters) in Cracow. In 1952 he became a Member of the Academy of Sciences in Warsaw. In the same year he was appointed Director of the Laboratory of Radioactive Isotopes, which was incorporated in the newly established Institute of Nuclear Research in 1955. He also was Director of the Center of Nuclear Research at Świerk. Besides other honorific posts he also held that of President of the Scientific Council of the Institute of Nuclear Research and was a Member of the Scientific Council of the Joint Institute of Nuclear Research at Dubna (USSR). He attended numerous international conferences. A list of the publications of this outstanding scientist is given.

Card 2/2

NIEWODNICZANSKI, Henryk

Research activities at the Institute for Nuclear Physics in Krakow. Nauka Pol 9 no.4:123-138 O-D '61.

1. Czlonek rzeczywisty Polskiej Akademii Nauk, dyrektor Instytutu Fizyki Jadrowej, Krakow, ul. Radzikowskiego.

P/045/61/020/003/004/004
B133/B228

AUTHORS: Bożek, E., Niewodniczański, H., Ogaza, S., Szymczyk, S., and Norseyev, Yu. V.

TITLE: Energy levels in the ^{166}Er nucleus

PERIODICAL: Acta Physica Polonica, v. 20, no. 3, 1961, 257-266

TEXT: In the present paper, some gamma-gamma coincidence experiments in the decay of ^{166}Yb are described, and a level scheme of ^{166}Er is proposed, which is more complete than that given by Gromov et al. [Ref. 7: Gromov, K. I., Dzhelepov, B. S., Pokrovskiy, V. N., Izv. Akad. Nauk SSSR, 23, 821 (1959)]. The isotopes of Yb were obtained by irradiation of Ta targets with 660-Mev protons from the synchrocyclotron of the Dubna Joint Institute of Nuclear Research (USSR). The measurements in Cracow were begun 1.5 to 3 days after the irradiations, which were performed in intervals of about two months. In the first two runs, the measurements of gamma radiation were made at different times for the decay analysis of the entire spectrum of the isotope mixture of ytterbium. From this analysis

it was established that the coincidence measurements for ^{166}Yb may be carried out in the first week of measurements. In the next two runs, gamma-gamma coincidence measurements were performed. The single-count gamma spectrum was recorded by a scintillation spectrometer using a 1 1/2" × 1" NaI (Tl) crystal, an EMI 6097 F photomultiplier and a 100-channel pulse-height analyzer. The resolution of this spectrometer for the 661-kev ^{137}Cs line was 8.2%. The gamma-gamma coincidence spectra were recorded on the multichannel pulse-height analyzer, gating the spectrum from one counter with coincidence pulses from a fast-slow coincidence circuit (Fig. 1). NaI (Tl) crystals 1 3/4" × 2" and 2" × 2" and EMI 6097 F photomultipliers were used. Resolution was 9% for the ^{137}Cs line. The resolution time of the coincidence circuit was $2\tau=5.5\times10^{-8}$ sec. The existence of an 880-kev transition reported up to now only by Brabec et al. [Ref. 4: Brabec, W., Gromov, K., Dzhelepow, B. S., Dmitriev, A. G., Morozov, W. A., Izv. Akad. Nauk SSSR, 23, 812 (1959)] is confirmed by the coincidence measurements of the authors, but they could not find the 153- and 522-kev lines measured by Baranovskiĭ and Pokrovskiĭ [Ref. 5:

Energy levels...

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Baranovskiĭ, W. I., Pokrovskiĭ, W. N., Izv. Akad. Nauk SSSR, 23, 819 (1959)]. Besides a confirmation of the results of [6] (see list of English references), the authors obtained the following coincidences: between the 710-kev line and the 460-, 710-, 790-kev peaks; between the 790-kev line and the 185-, 460-, 710-kev peaks; between the 1180-kev line and the 880-kev peak; between the 1270-kev line and the 185- and 600-kev peaks, and between the 2070-kev line and the 80- and 185-kev photopeaks. On the basis of these experiments and the energy values of transitions given by Gromov et al., the authors suggest a new level scheme for ^{166}Er from the decay of ^{166}Tm (Fig. 6). The branching ratios of transitions between the levels with K=2 and K=0 are calculated on the strength of Alaga's theory. For the level scheme proposed by the authors, they are in better agreement with the experimental values than for the scheme given in [6]. The present proposal of the level scheme for ^{166}Er needs some more confirmation. To get this, the authors are starting now gamma-gamma directional correlation experiments in order to obtain definite values of spins for the 788-, 862-, 957-, and 2140-kev levels. The authors thank S. Chojnacki and I. A. Yutlandov for the preparation of sources, and K. Malinowski and

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Energy levels...

P/045/61/020/003/004/004
B133/B228

T. Walczak for assistance in measurements. There are 6 figures, 3 tables, and 7 references: 4 Soviet-bloc. The 3 references to English-language publications read as follows: Ref. 1: Mihelich, J. W., Harmatz, B., Handley, T. H., Phys. Rev., 108 989 (1957); Ref. 2: Jacob, K. B., Mihelich, J. W., Harmatz, B., Handley, T. H., Bull. Am. Phys. Soc., 3, 358 (1958). Ref. 6: Boskma, P. De Waard, H., Nuclear Phys., 12, 533 (1959).

ASSOCIATION: Institute of Nuclear Physics, Cracow; Joint Institute for Nuclear Research, Dubna (Yu. V. Nerseyev)

SUBMITTED: October 7, 1960

Card 4/6

Energy levels...

P/045/61/020/003/004/004
B133/B228

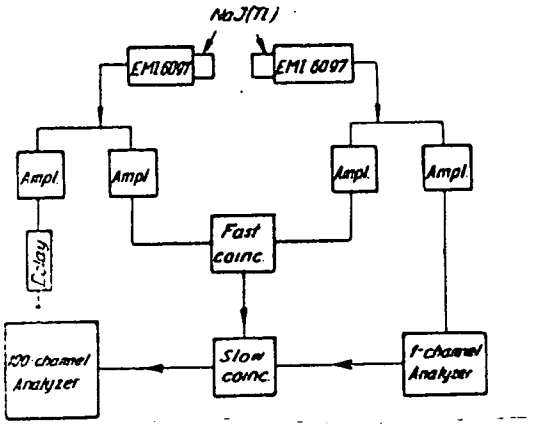

Fig. 1. Block diagram of electronics.

Fig. 1: Block diagram of the electronic apparatus

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Energy levels...

P/045/61/020/003/004/004
B133/B228

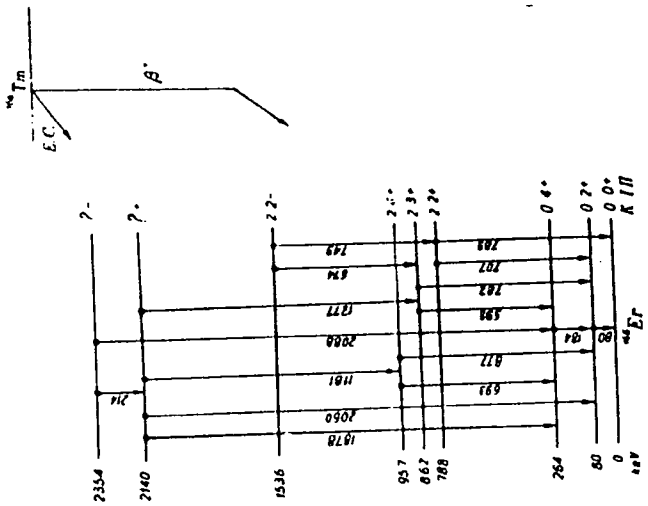

Fig. 6: Level scheme of ^{166}Er

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NIEWODNICZANSKI, H.; [illegible]

A double-beam photoelectric electrometer. [illegible]
no.317:1-19 '64.

1. Institute of Nuclear Physics, Cracow, [illegible]
of Sciences.

KISIEL, A.; NIEWODNICZANSKI, H.

Intensity ratings in doublets of the fine structure in the Al III spectrum. Acta physica Pol 20 no.8:633-645 '61.

1. Institute of Physics, Jagellonian University, Krakow.

IES, Z.; NIEWODNICZANSKI, H.

Intensity ratios of spectral lines in the sharp series triplets of atoms of the second column of the periodic table. Acta physica Pol 20 no.6:701-714 '61.

1. Institute of Physics, Jagellonian University, Krakow.

NIEWODNICZANSKI, Henryk, professor

The Institute of Nuclear Physics in Krakow. Review Pol Academy 7 no.2:53-60 Ap/Jl '62.

1. Member of the Polish Academy of Sciences and Director of the Institute of Nuclear Physics, Krakow.

GRABCZAK, Jerzy; NIEWODNICZANSKI, Jerzy

Natural radioactivity of copper ores from deposits in the Lower Silesian region. Nukleonika 7 no.2:115-122 '62.

1. Katedra Fizyki II, Akademia Gorniczo-Hutnicza, Krakow.

P/045/62/022/001/006/006

AUTHORS: Łoźyński, E., Niewodniczański, H.

TITLE: Some experiments on the electric monopole transition in ^{234}U

PERIODICAL: Acta Physica Polonica, v. 22, no. 1, 1962, 91-98

TEXT: The 0 → 0 electron conversion transition in ^{234}U with energy about 811 keV was established many years ago. It proceeds even through some levels lying between the first 0^+ excited state and the 0^+ ground state. The purpose of this work is to obtain more information about the de-excitation of the 811 keV 0^+ level by means of a study of the radiation following the β(-) decay of $^{234}Pa^m$. To the investigation of the de-excitation of the first 0^+ excited level in ^{234}U the (β-γ) and (β-e^-) coincidences have been applied. The apparatus used for determination of the 811 keV monopole transition probability, and the ratio of monopole to gamma ray intensities, consisted of a fast-slow coincidence arrangement and a conventional coincidence scintillation spectrometer with resolving time of about 10^{-7} sec. The energy resolving power of the coincidence

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Some experiments on the electric...

spectrometer was about 9.5 per cent for the 661 keV ^{137}Cs gamma rays for the gamma ray modification with a NaJ(Tl) crystal, and for the conversion electron modification with a plastic scintillator about 17 per cent. In the experiments as a source the 24.1 day ^{234}Th was used, which after two β^- decays fills the states of ^{234}U. Separation of thorium from the natural uranium was carried out by the chromatographic ion-exchange method. The source of the ^{234}Th in composition of ammonium citrate was deposited on an Al-foil. The diameter of the radioactive substance was about 5 mm. Initial activity of the ^{234}Th source was about 8μC. Purity of the source was checked experimentally by means of investigation of the decay of the source over 8 half-lives and was better than 99.99 per cent with respect to the initial activity of ^{234}Th. The measurements of $(\beta-\gamma)$ and $(\beta-e^-)$ coincidences were always made with the same counting geometry in the beta ray channel. In this case the intensities ratio μ can be expressed as follows:

$$\mu = \frac{P_e \cdot \Omega_\gamma \cdot \varepsilon_\gamma \cdot D}{P_{\gamma \cdot e} \cdot \Omega_{e} \cdot \eta} \qquad (4)$$

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Some experiments on the electric...

where P_e and P_γ are the number of coincidences of the 811 keV monopole conversion, and that of the 768 keV gamma photopick respectively; Ω_e and Ω_γ are the solid angles of respective detectors; D - is a correction, taking into account the decay of the mother source of ^{234}Th in the course of measurements; η - is a compound factor for the conversion of the 768 keV gamma transition and for the admixture of the 762 keV gamma rays; ϵ_γ - is the photopick efficiency of the used 2"x2" NaJ(Tl) crystal at the applied source to crystal distance (20 mm). In order to estimate the transition probability of the 0-0 transition in ^{234}U some fast-slow coincidence experiments were performed of the 811 keV K-conversion with the preceding it 1500 keV beta rays. The experimental result for ^{234}U is in quantitative agreement with the Rainer theoretical estimate, contrary to the case of ^{152}Sm /9/ where the theoretical estimates are one order too high. Regarding the structure of the 811 keV-first 0^+ excited state in ^{234}U nucleus the experimental values $\mu = 1.3$ and $\rho > 0.07$ point to

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Some experiments on the electric...

the collective nature of this state, more exactly to a β-vibrational one. If the 0_1^+ level in ^{234}U would be a two-proton state of the parameters μ and ρ without any admixture of the collective interaction then the expected values should be μ>2 and ρ probably not larger than obtained (0.07). It would be of great interest to obtain exact values of the monopole strength parameters for the E0(0-0) transitions in the region of strongly deformed nuclei in order to confirm the theoretical predictions. The most important English language references are: [4] Reiner, A.S., "Structure effects in the interaction between nuclei and atomic electrons", Amsterdam (1958); [9] Marklund, J., Nathan, O., Nielsen, O. B., Nuclear Phys., 15, 199 (1960); [21] Bell, R. E., Graham, R. L., Petch, H. E., Canad. J. Phys., 30, 35 (1952). There are four figures.

ASSOCIATION: Institute of Nuclear Physics, Cracow

SUBMITTED: October 13, 1961

Card 4/4

KOLONKO, N.; LEWANDOWSKI, Z.; MAKOWSKA-RZESZUTKO, M.; NIEWODNICZANSKI, H.; WIKTOR, S.; WROBEL, Z.

Energy and angular distributions of the neutrons from the stripping reaction $^{12}C(d,n)^{13}N$. Inst fiz jadr report no.200:1-15 Jl '62.

1. Instytut Fizyki Jadrowej, Krakow (for all except Wrobel).
2. Instytut Fizyki, Uniwersytet Jagiellonski, Krakow (for Wrobel).

FREINDL, L.; NIEWODNICZANSKI, H.; NURZYNSKI, J.; SLAPA, M.; STRZALKOWSKI, A.

Elastic scattering of 12.8 MeV deuterons on some light nuclei.
Inst fiz jadr report no.203:1-19 '62.

1. Institut Fizyki Jadrowej, Krakow.

NIEWODNICZANSKI, H.; MIRZYNSKI, J.; WILCZYNSKI, J.

Elastic and inelastic scattering of 12.9 MeV deuterons on [illegible] nuclei. Inst fiz jadr report no.204:1-6 '62.

1. Instytut Fizyki Jadrowej, Krakow, i Instytut Fizyki, Uniwersytet Jagiellonski, Krakow.

NIEWODNICZANSKI, Henryk

POLAND

OABLA, Lubomir; [illegible] A, Jozef; NIEWODNICZANSKI, Henryk

Institute of Physics of the University of Cracow (Instytut Fizyki)

Warsaw, Acta Geophysica Polonica, No 3, 65, pp 147-51.

"Spectral Isotopic Analysis of Lead from Polish Galena Deposits".

NIEWODNICZANSKI, H.; SIT I

Polarization of neutrons from the ^{3}H(d,n)^{4}He reaction for deuteron energies between 5.? and 11.3 MeV. Inst fiz jadr report no. [illegible]

1. Instytut Fizyki Jadrowej, [illegible].

GABLA, Lubomir; [illegible]

Isotopic [illegible] lead ores from Polish galena deposits. [illegible] 3:147-151 '63.

1. Instytut [illegible], Uniwersytet Jagiellonski, Krakow.

KOLONKO, N. Mrs.; LEWANDOWSKI, Z.; MAKOWSKA-Rzeszutko, M. Mrs.; NIEWODNICZANSKI, H.; WIKTOR, S.; WROBEL, Z. Mrs.

Energy and angular distributions of the neutrons from the stripping reaction $^{12}C(d,n)^{13}N$. Acta physica Pol 23 no.2:225-234 F '63.

1. Institute of Nuclear Physics, Krakow, and Institute of Physics, Jagellonian University, Krakow.

FREINDL, L.; NIEWODNICZANSKI, H.; NURZYNSKI, J.; SLAPA, M.; STRZALKOWSKI, A.

Elastic scattering of 12.8 MeV deuterons on some light nuclei.
Acta physica Pol 23 no.5:619-628 My '63.

1. Institute of Nuclear Physics, Krakow.

BOZEK,E.; LEBEDEV,N.A.; NIEWODNICZANSKI,H.; OGAZA,S.; RYBICKA,M.; STYCZEN,J.

Gamma-gamma directional correlations in ^{146}Eu. Acta physica Pol. 24 no.1:131-133 Jl'63.

1. Institute of Nuclear Physics, Krakow. 2. Joint Institute for Nuclear Research, Dubna, USSR (for Lebedev).

KORNALEWSKI, T.; NIEWODNICZANSKI, H.

Intensity ratios of spectral lines in the visible triplet of ZnI in the temperature of liquid nitrogen. Acta physica Pol 24 no.5:601-609 N'63.

1. Institute of Physics, Jagiellonian University, Krakow.

NIEWODNICZANSKI, Henryk, prof. dr

Five years of [illegible] in Krakow. [illegible]
no. 2:1.V-III [illegible].

1. Member of [illegible], Krakow.

BUDZANOWSKI, A.; GROTOWSKI, K.; MICEK, S.; NIEWODNICZANSKI, H.; SLIZ, J.; STRZALKOWSKI, A.; WOJCIECHOWSKI, H.

Elastic scattering of 24.7 MeV alpha particles. Inst fiz jadr report no.347:1-46 My '64.

1. Institute of Nuclear Physics, Krakow and Institute of Physics, Jagiellonian University, Krakow.

KOPTA, S. ; NIEWODNICZANSKI, H. ; PUDLOWSKA, B.

Coulomb excitation of rhodium nucleus. Acta physica Pol 26 no.6: 1133-1141 '64.

1. Institute of Nuclear Physics, Krakow. Submitted May 8, 1964.

HRYNKIEWICZ, A.Z.; MIEWOŃNICZAŃSKI, H.; POMORSKI, L.

Rapid identification of isobars by the large angle scattering of low energy alpha particles from the cyclotron. Inst fiz jadr report no.402:1-10 1965.

1. Institute of Nuclear Physics, Krakow.

BUDZANOWSKI, A., GROTOWSKI, K., JARCZYK, L., LAZARSKA, B., MICEK, I.
NIEWODNICZANSKI, H., STRZALKOWSKI, A.; WROBEL, J.

Energy dependence of the elastic scattering of alpha particles on ^{40}Ca (a nuclei up to ^{109}C. Inst fiz jadr reports no.460/I-C '65.

1. Institute of Nuclear Physics, Krakow, and Institute of Physics of the Jagiellonian University, Krakow.

L 8536-66 EWT(1)

ACCESSION NR: AP5018824 PO/0045/65/027/006/0807/0813

AUTHOR: Niewodniczański, H.; Pietruszka, J.

54
48
B

TITLE: Forbidden line in the atomic spectrum of Si I

SOURCE: Acta physica polonica, v. 27, no. 6, 1965, 807-813

TOPIC TAGS: silicon, forbidden transition, metastable state, atomic spectrum 21,44,55

ABSTRACT: Two new forbidden lines were obtained experimentally from Si I, 6526.9Å (M1) and 6589.7Å (E2). The existence of these lines was predicted from an analysis of the energy level diagram for Si I, and also from multipole radiation theory. These lines were obtained by a special method of excitation, in which the effect of metastable state quenching in collisions of the second kind was minimized. The method was first used to obtain forbidden lines in the spectrum of Pb I (Acta Phys. Polon. v. 2, 375, 1933), and consists of adding neutral gas to the discharge so as to increase the number of metastable atoms and thereby increase the intensity of the investigated forbidden lines. The apparatus employed is illustrated in Fig. 1 of the Enclosure and its construction is briefly described. The line intensity ratio was also measured and compared with the ratio of transition probabilities known from the p^2 configuration theory. The agreement between the theoretical predictions

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ACCESSION NR: AP5018824

and the experimental results was found to be satisfactory. Orig. art. has: 6 figures and 8 formulas.

ASSOCIATION: Instytut Fizyki, Uniwersytet Jagiellonski, Krakow (Institute of Physics, Jagiellonian University); Instytut Fizyki Jadrowej, Krakow (Institute of Nuclear Physics). 44,55 44,55

SUBMITTED: 23Oct64 ENC: 01 SUB CODE: OP

NR REF SOV: 000 OTHER: 008

Card 2/3

L 8536-66
ACCESSION NR: AP5018824 ENCLOSURE: 01

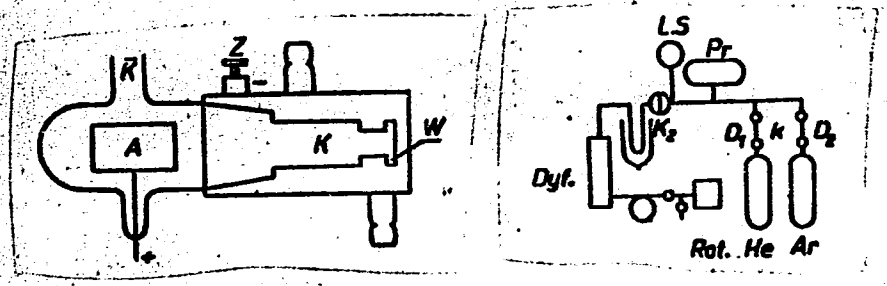


Fig. 1. Diagram of apparatus employed. Left - water-cooled hollow-cathode lamp, right - vacuum connections.

Card 3/3 pw

L 45051-65 EWT(m) Peb DIAAP

ACCESSION NR: AP5014457 PO/0046/64/009/11-/0871/0884 24 19 E

AUTHOR: Borowczyk, Marian (Borovchik, M.); Czubek, Jan A. (Chubek, B.); Zuber, A.; Dziunikowski, B. (Dzyunikovski, B.); Niewodniczanski, J. (Nevodnichan'skl, Ya.)

TITLE: Apparatus for the radiometric determination of bulk density and moisture content of soils under actual terrain conditions

SOURCE: Nukleonika, v. 9, no. 11-12, 1964, 871-884 19

TOPIC TAGS: geologic instrument, radiometer, radiation instrument, soil, soil property

Abstract: The article describes a few devices used for the determination of soil characteristics by the radiometric method. Included are here two densitometer models and one hydrometer model for measurements by insertion into holes drilled into the ground, also an absorption type densitometer and two surface-type meters, one for density, one for moisture. The construction and technical data are given for each; some of the instruments come in different sizes. They all contain a single-counter electric probe and they are based on the principle of measuring the absorption of scattered radiation: the densito-

Card 1/2

L 45051-65

ACCESSION NR: AP5014457

meters measure the gamma-radiation transmitted to the soil from a Cs-137 source specially installed, while the hydrometers measure the retardation of fast neutrons from a specially installed Po-Be source by hydrogen nuclei. All calibration is done against standard soil samples. The authors extend their thanks to Professor Dr. L. Jurkiewicz, from the Nuclear Engineering Institute AGH and Docant B. Rossinski from Lodz Politechnic for leading the works in the scientific research, which were the bases for construction and elaboration of the described devices." Orig. art. has 12 figures and 2 graphs.

ASSOCIATION: Zaklad Geologii Inzynierskiej Instytutu Geologicznego, Warsaw (Engineering Geology Department, Institute of Geology); Zaklad VI, Instytutu Badan Jadrowych, Krakow (Department VI, Institute of Nuclear Research); Instytut Techniki Jadrowej AGH, Krakow (Institute of Nuclear Engineering, AGH)

SUBMITTED: 28Dec63 ENCL: 00 SUB CODE: LS, NP

NO REF SOV: 000 OTHER: 006 JPRS

Card 2/2 mlf

NIEWODNICZANSKI, Jerzy

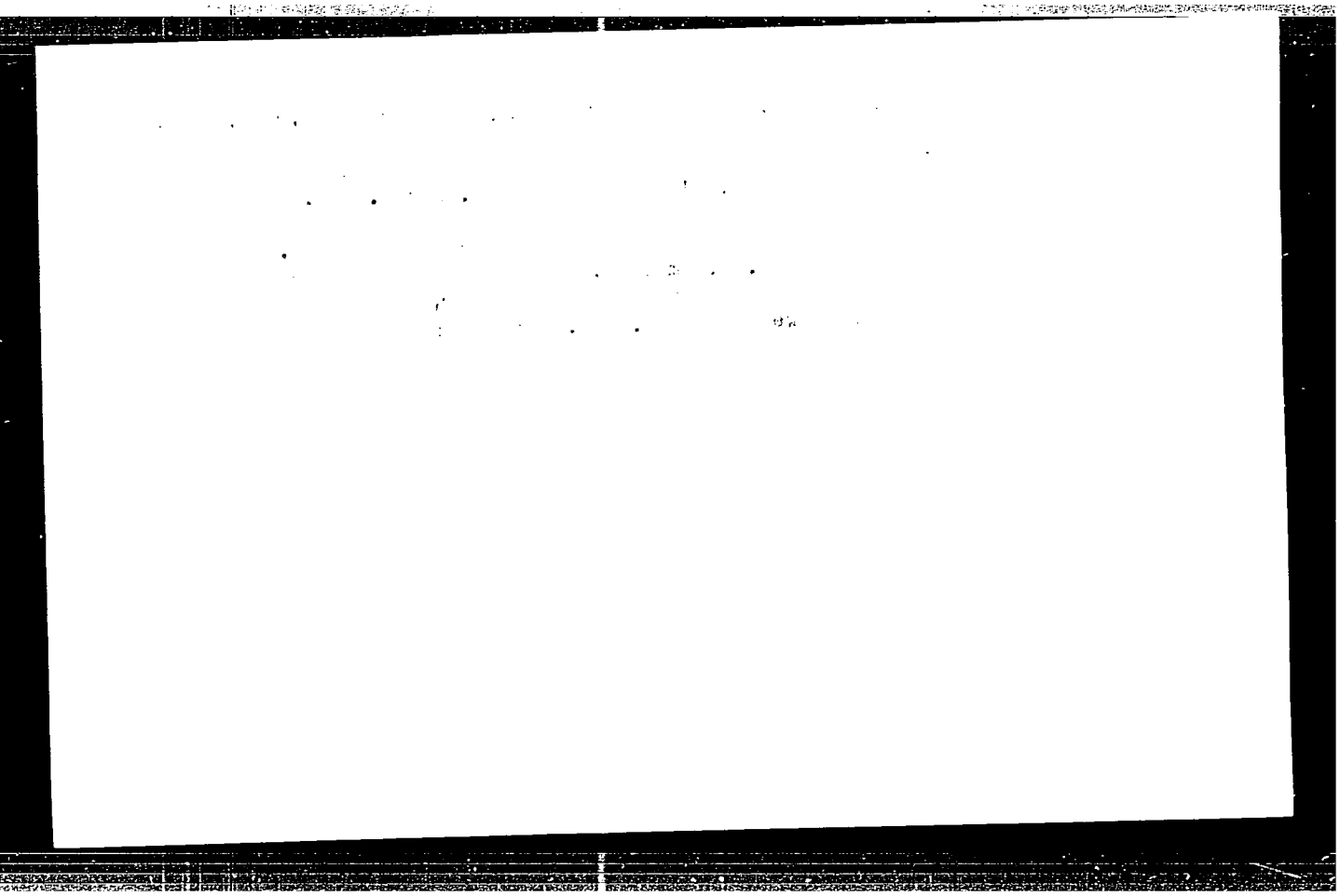
Congress of Nuclear Physicists, Krakow, September 24-30, [illegible].
Nukleonika 7 no.10:661-662 '62.

CZARNECKI, Jozef; NIEZABITOWSKI, Aleksander

Leukemic infiltration of the central nervous system during the course of acute myelocytic leukemia. Pol. tyg.lek. 18 no.50:1892-1894 9 D'63

1. Z III Kliniki Chorob Wewnetrznych AM w Krakowie (kierownik: prof.dr.med. J. Aleksandrowicz) i z Zakladu Anatomii Patologicznej AM w Krakowie (kierownik: prof.dr.med. J. Kowalczykowa).

*



CZARNECKI, Jozef; NIEZABITOWSKI, Aleksander

Leukemic infiltrations in the central nervous system. Acta med. Pol. 5 no.4:453-462 '64

1. IIIrd Clinic of Internal Medicine, Medical Academy, Cracow (Director: prof. dr. J. Aleksandrowica); Department of Pathologic Anatomy, Medical Academy, Cracow (Director: Prof. dr. J. Kowalczykowa).

ZEBRO, Tadeusz; JURASZ, Elzbieta; SZCZEPKOWSKI, Tadeusz; STACHURA, Jerzy; NIEMABITOWSKI, Aleksander

Studies on chemical protection from ionizing radiation. Pt. 4. Acta med. Pol. 6 no.2:171-177 '65.

1. Department of Pathological Anatomy, Medical Academy, Cracow (Director: Prof. Dr. J. Kowalczykowa); Department of Physiological Chemistry, Medical Academy, Cracow (Director: Assoc. Prof. Dr. W. Ostrowski), and The Radiological Clinic, Medical Academy, Cracow (Director: Prof. Dr. St. Januszkiewicz).

KOWALCZYKOWA, Janina; NIEZABITOWSKI, Aleksander; SZCZUDRAWA, Jerzy; TOMASIK, Bronislaw

Morphological and clinical picture of tumors of paraganglionic bodies of the parasympathetic system. Nowotwory 15 no.2:115-122 Ap-Je '65.

1. Z Zakladu Anatomii Patologicznej AM w Krakowie (Kierownik: prof. dr. med. J. Kowalczykowa) i z Pracowni Anatomopatologicznej Miejskiego Szpitala Socjalistycznego im. dr. Anki w Krakowie (Kierownik: dr. B. Tomasik).

NOWAK, Jan; NIEZABITOWSKI, Aleksander; MIERTWA, Kazimierz

Value of radiologic examination in the detection of hepatoblastoma. Pol. przegl. radiol. [illegible]

1. Z Zakładu Anatomii Patologicznej AM w Krakowie (Kierownik: prof. dr. J. Kowalczykowa) i z wojew. Specjalist. Szpitala Dziecięcego w Kielcach (Dyrektor: dr. A. Paszkiewicz).

FAFROWICZ, Biruta; NIEZABITOWSKI, Kazimierz

Bronchial cancer co-existing with pulmonary tuberculosis. Roczn. pom. akad. med. Swierczewski. 8:351-361 '62.

1. Z Kliniki Ftyzjatrycznej Pomorskiej Akademii Medycznej Kierownik: prof. dr med. Zbigniew Garnuszewski i Zakladu Radiologii Pomorskiej Akademii Medycznej Kierownik: prof. dr n. med. Czeslaw Murczynski.
(TUBERCULOSIS PULMONARY) (BRONCHIAL NEOPLASMS)

NIEZABITOWSKI, Kazimierz

Retrospective analysis of the fate of patients before establishing the diagnosis of bronchial cancer. Pol. tyg. lek. 17 no.1:13-17 1 Ja '62.

1. Z Zakladu Radiologii PAM w Szczecinie; kierownik: prof. dr. n. med. Czeslaw Murczynski.
(BRONCHI neopl)

NIEZBORALA, H.; [illegible]ITTNER, W.

The use of reinforced concrete in the construction of flour mills. p. 69

PRZEGLAD ZBOZOWO-MLYNARSKI (Polskie Wydawnictwo Gospodarcze) Warszawa, Poland
Vol. 3, no. 3, Mar 1959

Monthly List of East European Accessions (EEAI) LC, Vol. 8, no. 9, September 1959.
Uncl.

POLAND / Farm Animals. Poultry. Q-6

Abs Jour : Ref Zhur - Bi l., No 14, 1958, No 64555

Author : Gorski, L.; Niewiarowicz, A.; Hojan, U.; Niezgoda, A.
Inst : Not given
Title : Experiments in the Utilization of Vitamin B_{12} (APF) and Penicillin for the Industrial Fattening of Chickens.

Orig Pub : Przegl. jajcz.-drob., 1957, 5, No. 3, 17-18; No. 5, 20-21.

Abstract : Chicks receiving vitamin B_{12} in their rations, when aged 1 to 2 months, showed a higher increase of live weight than the control ones, but at the age of 3-4 months, yielded to the latter as regards weight gain. The combination of B_{12} with penicillin increased the gains of chicks even at the age of 5-6 months. A higher food conversion was observed both when B_{12} was fed alone or in combination with penicillin, especially when the rations were lacking in animal protein.

Card 1/1

NIEZGODA, Jerzy

Experimental testing of the Gaussian distribution of certain basic parameters of receiving tubes. Przegl elektroniki 3 no.8:478-480 Ag '62.

1. Przemyslowy Instytut Elektroniki, Warszawa.

FIRKOWICZ, S.; NIEZGODA, J.

Distribution of basic parameters in receiving tubes. Archiw elektrotech 11 no.2:285-297 '62.

1. Przemyslowy Instytut Elektroniki, Warszawa.

KOSMOWSKA, Alina; NIEZGODA, Jerzy

Practical utilization of the equivalent failure rate method. Przegl elektroniki 4 no. 10/11:639-641 O-N '63.

1. Przemyslowy Instytut Elektroniki, Warszawa.

KRZECZKOWSKA, Irena; NIEZGODA, Tadeusz

Investigations on carbohydrate metabolism in liquid culture of the tetanus bacillus. I. Ann. Univ., Lublin sect.D 16:323-339 '61.

1. Z Katedry i Zakladu Chemii Ogolnej Wydzialu Lekarskiego Akademii Medycznej w Lublinie Kierownik: doc. dr Irena Krzeczkowska.
(CARBOHYDRATES) (CLOSTRIDIUM TETANI)

ANDRZEJEWSKI, J.; DOMZAL,T.; FUCHS, R.; LACINSKI, S.; NIEZGODA, T.; SWIETLIK, M.; SILKA, S.; STRAMSKI, A.; ZELUDZIEWICZ, J.; TERAJEWICZ, A.

Amputations in hospitals of the Olszytn Region during the decade of 1950-1059. Chir. narz. ruchu ortop. polska 26 no.6:797-799 '61.

1. Z Oddzialow Chirurgicznych Szpitali w Olsztynie oraz Szpitali Powiatowych w Gizycku, Ketrzynie Nowym Miescie, Ostrodzie, Szczytnie. (AMPUTATION statist)

NIEZGODZINSKI, K.

Making use of some by-products of slaughtering for the production of enzymes.
p. 12.
Vol 7, no. 1[illegible], Dec.1955. GOSPODA KA MIESNA. Warsaw, Poland.

So: Eastern European Accession. Vol 5, no. 4, April 1956

PHASE I BOOK EXPLOITATION POL/3626

Kurowski, R., and M. E. Niezgodziński

Wytrzymałość materiałów (Resistance of Materials) 4th ed., rev. and enl. Warszawa, Państwowe wyd-wo naukowe, 1959. 503 p. 5,200 copies printed.

Ed.: Zbigniew Brzoska.

PURPOSE: This textbook is intended for students at polytechnic institutes.

COVERAGE: This is the fourth edition of a textbook on the strength of materials used in polytechnic institutes. The text covers simple cases of stresses in bars, composite stresses, the study of the deflection line, statically indeterminate systems, and the dynamics of elastic systems. The author thanks Professor Z. Brzczka. There are 8 references: 2 Soviet, 2 German, 2 Polish, and 2 English.

Card 1/15

NIEZGODZINSKI, Michal Edward

Influence of the dimensions of the specimen upon the tensile strength of low carbon steel. Archiw hutn 7 no.2:197-214 '62.

NIEZGODZINSKI, Michal-Edward

Micromechanical tensile strength testing of plastic aluminum alloys. Archiw hutn 8 no. 2: 141-153 '63.

NIEZ:OD?INSKI, Michal Edward, dr inz., adiunkt

Quasi-nondestroying metal strength tests. Przegl mech 23 no. 12:335-338 25 Je '64.

1. Department of Material Strength, Technical University, Lodz.

COUNTRY : Poland P
CATEGORY : GENERAL&SPEC.ZOOLOGY.INSECTS
Insect and Mite Pests.
ABS. JOUR.: Ref Zhur -Biologiya, No. 4, 1959, No. [illegible]

Author : Niezgodzinski, Piotr
INST. : --
TITLE : Observations on an Outbreak of Massive Multiplication of the Cherry Fly.

ORIG. PUB.: Polskie pismo entomol., 1958, B, No.5, 13-22

ABSTRACT : In the course of the last few years in Lower Silesia the endocarp damage to the sweet cherry trees by Vh. cerasi has been remarked; especially noticeable is the damage borne by the later bearing varieties. In many localities the cherry was also markedly affected. Oftentimes when a cherry tree revealed drastic injury, a sweet cherry tree growing some distance away remained untouched, which explains the weak mobility of the cherry moth. In addition to

CARD : 1 /2

MANIKOWSKI, Witold, dr; NIEZGODZKI, Lech

Helpful pneumatic micropipette for quantitative measuring of solutions in chromatography. Farmacja Pol 19 no.7:126 10 Ap '63.

1. Zaklad Chemii Toksykologicznej i Sadowej, Akademia Medyczna, Poznan. Kierownik Zakladu: dr Witold Manikowski.

NIEZIELINSKI, Bernard; RZADKOWSKI, Stanislaw, mgr., ins.

Development conditions for the sawmill treatment of foliage timber. Przem drzew 12 no.12:4-9 '61.

1. Redaktor działu miesiecznika "Przemysl Drzewny" (for Rzadkowski)

(Poland—Sawmills)

BORISENKO, V.G.; NIFAGINA, A.A.

Physical and mechanical properties of limestones of the Vysokopol'ye and Belokrinitskoye bauxite deposits. Sbor. nauch. trud. NIGRI no.7:77-79 '60. (MIRA 14:12)

1. Nauchno-issledovatel'skiy gornorudnyy institut (for Borisenko).
2. Mekhanobrchermet (for Nifagina).
(Dnepropetrovsk Province—Limestone)

BUSHUYEV, V.P.; GUBIN, G.V.; GONCHARENKO, Yu.I.; KARMAZIN, V.I.; MARGULIS, V.S.; MITROV, V.A.; NIKOLAYENKO, N.O.; BOBRUSHKIN, L.G.; BUROV, A.I.; RYBAKOV, V.N.; SOSHIN, A.P.; TATSIYENKO, P.A.; TOVSTANOVSKIY, O.D.; YUROV, P.P.; Prinimali uchastiye: NIFAGINA, A.A.; CHERNYY, I.I.; GERSHOYG, Yu.G.; KOSTIKOV, A.G.; DOLGIKH, M.A.; MOVSKOVICH, S.A.; STUPIN, D.D.; NEVOYSA, G.G.

Magnetization roasting of Kerch ores in the experimental factory of Kamysh-Burun Combine. Gor. zhur. no.12:30-37 D '62. (MIRA 15:11)

1. Institut Mekhanobrchermet, Krivoy Rog (for Bushuyev, Gubin, Goncharenko, Karmazin, Margulis, Mitrov, Nikolayenko, Nifagina, Chernyy, Gershoyg, Kostikov). 2. Kamyshburunskiy zhelezorudnyy kombinat, Kerch' (for Bobrushkin, Burov, Rybakov, Soshin, Tatsiyenko, Tovstanovskiy, Yurov, Dolgikh, M.A.; Movskovich, S.A.; Stupin, D.D.; Nevoysa).
(Kerch Peninsula—Ore dressing)
(Iron ores)

NIFANTOV, A. P.

Pycnometric Method of Analysis of the Mechanical Composition of Clayey Suspensions

Vopr. gidrogeol. i inzh. geologii, 1953, pp 127-129

The author discusses the deficiencies of the existing pipette method of Robinson. He indicates the expediency of taking samples of the suspension in a picnometer with capillary stopper, since this permits one to determine the quantity of solid substances without regard to evaporation and drying. (RZhGeol, No 3, 1955)

SO: Sum. No. 639, 2 Sep 55

NIFANTOV, A.P.

Rapid methods for granulometric analysis of clay soils. Vop. gidrogeol. i inzh. geol. no.17:130-137 '59. (MIRA 14:1)
(Soils--Analysis)

NIFANTOV, A.P.

Preparation of clay soils for granulometric analysis. Vop. gidrogeol. i inzh. geol. no. 18:93-105 '59. (MIRA 14:5)
(Soils—Analysis)

NIFANTOV, A.P.

Granulometric analysis of clay soils by means of a separatory funnel. Vop. gidrogeol. i inzh. geol. no. 18:106-109 '59. (MIRA 14:5)
(Soils—Analysis)

NIFANTOV, F.P.

Determingin the sagging of constructions built on loess loams in the Kuznetsk Basin. Izv. TPI 90:165-173 '58. (MIRA 12:2)

1. Predstavleno nauchnoy konferentsiyey geologorazvedochnogo fakul'teta.

(Kuznetsk Basin--Soil physics) (Foundations)

NIFANTOV, N.V.; MOROZOV, V.M.

Grader attachements for the D-179A heavy trailer. Stroi. i dor. mashinostr. 2 no.6:18 Je '57. (MLRA 10:6)
(Road machinery)

NIFANT'YEV, A.

Authoritative agency. NTO 3 no.8:34-35 Ag '61. (MIRA 14:9)

1. Zamestitel' predsedatelya soveta Nauchno-tekhnicheskogo obshchestva shakhty No.47 "Kopeyskugol'".
(Kopeysk--Coal mines and mining)

PARFENOV, A.P., inzh.; [illegible]

Efficient method of [illegible] assembly in horizontal [illegible] workings. Shakht. stroi. 4 no.9:23 Ag '60.

1. Korkinskoye stroitel'no-montazhnoye upravleniye tresta [illegible] spetsmontazh (for Parfenov). 2. Shakhta No.47 tresta [illegible] (for Nifant'yev, Veretennikov).

PARFENOV, A.P., inzh., VIPANT'YEV, [illegible], inzh., [illegible]

Using pipe-laying machinery in assembling mine hoisting equipment. [illegible]

1. Kopkinskoye stroitel'no-montazhnoye upravleniye tresta Soyuzshakhtospetsmontazh (for Parfenov, Vipant'yev, [illegible]). 2. [illegible] tresta Kopeyskugol' (for Vipant'yev, Yeremenkov).

KOCHESHKOV, N.K.; NIFANT'YEV, E.Ye.; NESMEYANOV, A.N., akademik.

New synthesis of substituted naphthalenes. Dokl. AN SSSR 104 no.3: 422-426 S '55. (MLRA 9:2)

1.Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova.
(Naphtalene)

ACC NR: AP6025989 SOURCE CODE: UR/0079/66/036/007/1244/1246

AUTHOR: Divinskaya, L. P.; Limanov, V. Ye.; Skvortsova, Ye. K.; Putyatina, G. M.; Starkov, A. V.; Grinshteyn, M. I.; Nifant'yev, E.Ye.

ORG: Central Scientific Research Disinfectant Institute (Tsentral'nyy nauchno-issledovatel'skiy dezinfektsionnyy institut)

TITLE: Search for bactericidal preparations among organophosphorus compounds

SOURCE: Zhurnal obshchey khimii, v. 36, no. 7, 1966, 1244-1246

TOPIC TAGS: bactericide, organic phosphorus compound, organophosphonous chloride, alkylaminophosphonate chloride

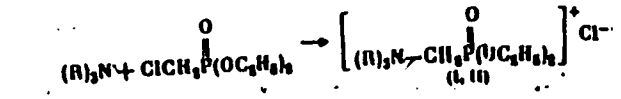
ABSTRACT:

In a search for new bactericides, eight new organophosphorus compounds were synthesized and their bactericidal properties studied. The reaction of

Card 1/3 UDC: 547.271

ACC NR: AP6025939

diethyl chloromethylphosphonate with tertiary amines at 120—150° yielded diethyl dimethylaminomethylphosphonate ethochloride (I), mp 179°C, and diethyl dimethylaminomethylphosphonate ethochloride (II), mp 178°C:



At 130°, decyl chloride reacts with phosphorous hexaethyltriamide to form phosphonium salt III, mp 217°C (see table). Compounds IV and V were obtained under similar conditions. At 160° in nitrogen atmosphere, tri(hydroxymethyl)phosphine reacts with cetylphosphonium bromide or octadecyl phosphonium bromide to form the corresponding bromides (VI). The reaction of tri(hydroxymethyl)phosphine with decyl chloride at 180°C gave VII and with octadecyl chloride under similar conditions yielded VIII. Composition and bactericidal activity of the new compounds are shown in the table.

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ACC NR: AP6025989

Table 1. Antibacterial activities of tertiary salts

No.*	Compound	Toward e. coli	Toward staph. aureus
I	$[(C_2H_5)_3N{-}CH_2PO(OC_2H_5)_2]Cl$	0.1% 20 min.	0.5% 15 min.
II	$[(CH_3)_3N{-}CH_2PO(OC_2H_5)_2]Cl$	0.1% 40 min.	0.25% 20 min.
III	$[(C_2H_5)_2N(CH_3)PC_{16}H_{33}]Cl$	1% not active	1% not active
IV*	$[(CH_3)_2N(CH_3)P(H)]Br$	1% not active	1% not active
V*	$[(C_2H_5)_2N(CH_3)P(H)]Br$	1% not active	1% not active
VI*	$[(HOCH_2)_2N(CH_3)P(H)]Br$	1% not active	1% not active
VII	$[(HOCH_2)_2PC_{16}H_{33}]Cl$	1% 45 min.	1% 20 min.
VIII*	$[(HOCH_2)_2P(H)]Cl$	1% 30 min.	1% 45 min.
IX	$[(HOCH_2)_4P]Cl$		1% not active

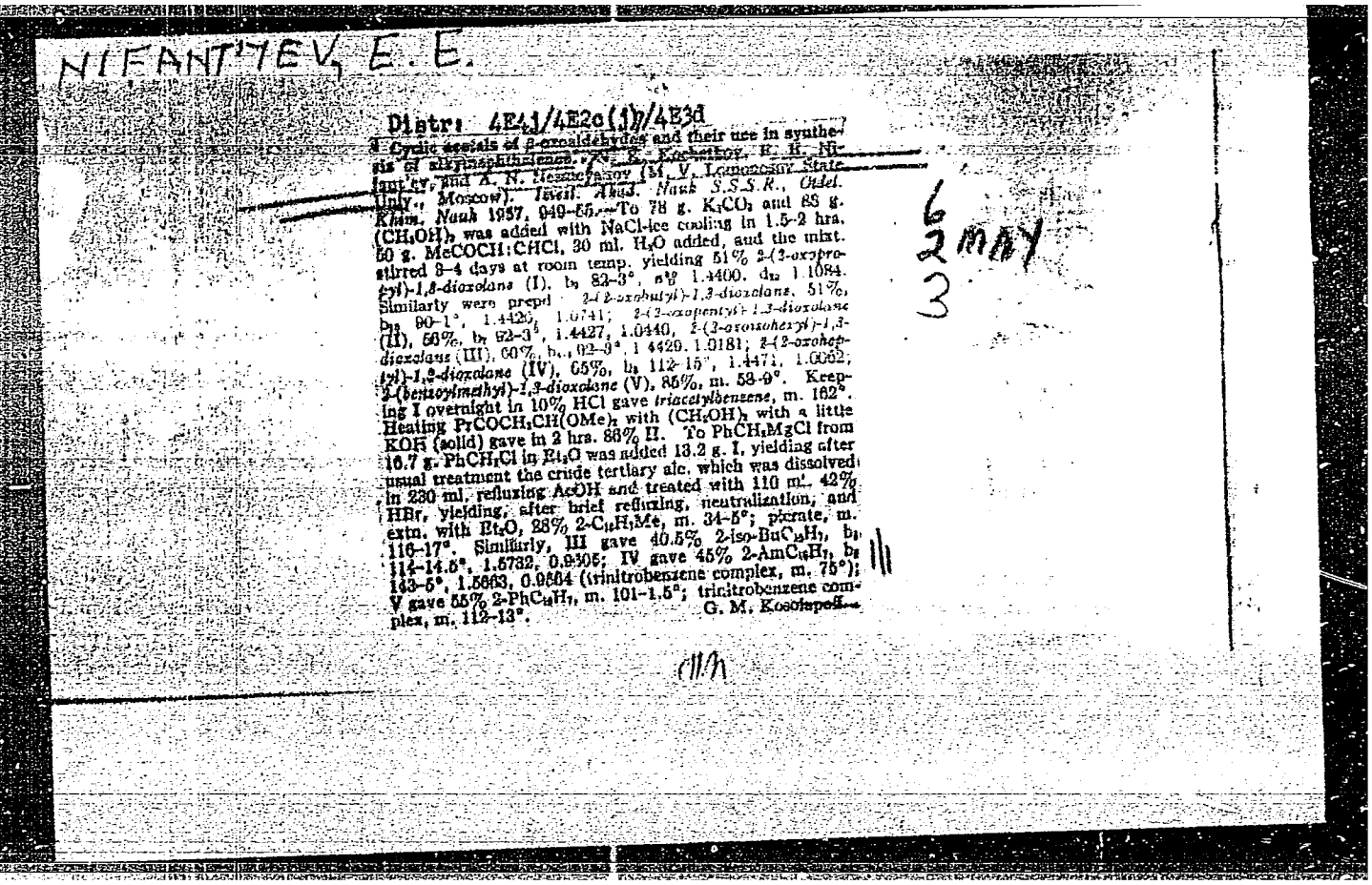
* R is a mixture of $C_{16}H_{33}$, $C_{17}H_{35}$, $C_{18}H_{37}$.

[W.A. 50; CBE No. 10]

Orig. art. has: 1 table.

SUB CODE: 07,06/SUBM DATE: 29May65/ ORIG REF: 005/ OTH REF: 001

Card 3/3



NIFANT'EV, E. E.

Distr: 4E4j/4E2c(1)/4E3d

3 Cyclic acetals of β-oxoaldehydes and their use in synthesis of alkylnaphthalenes. / V. E. Kochetkov, E. E. Nifant'ev, and A. N. Nesmeyanov (M. V. Lomonosov State Univ., Moscow). Izvest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk 1957, 949–55.—To 78 g. K_2CO_3 and 88 g. $(CH_2OH)_2$ was added with NaCl-ice cooling in 1.5–2 hrs. 50 g. MeCOCH:CHCl, 30 ml. H_2O added, and the mixt. stirred 3–4 days at room temp. yielding 51% *2-(2-oxopropyl)-1,3-dioxolane* (I), b_3 82–3°, $n^{20}D$ 1.4400, d_{20} 1.1084. Similarly were prepd *2-(2-oxobutyl)-1,3-dioxolane*, 51%, b_3 90–1°, 1.4425, 1.0741; *2-(2-oxopentyl)-1,3-dioxolane* (II), 56%, b_7 92–3°, 1.4427, 1.0440, *2-(2-oxoisohexyl)-1,3-dioxolane* (III), 60%, b_{11} 92–3°, 1.4429, 1.0181; *2-(2-oxoheptyl)-1,3-dioxolane* (IV), 65%, b_3 112–15°, 1.4471, 1.0062; *2-(benzoylmethyl)-1,3-dioxolane* (V), 85%, m. 58–9°. Keeping I overnight in 10% HCl gave *triacetylbenzene*, m. 162°. Heating $PrCOCH_2CH(OMe)_2$ with $(CH_2OH)_2$ with a little KOH (solid) gave in 2 hrs. 88% II. To $PhCH_2MgCl$ from 16.7 g. $PhCH_2Cl$ in Et_2O was added 13.2 g. I, yielding after usual treatment the crude tertiary alc. which was dissolved in 230 ml. refluxing AcOH and treated with 110 ml. 42% HBr, yielding, after brief refluxing, neutralization, and extn. with Et_2O, 28% 2-C_6H_3Me, m. 34–5°; picrate, m. 116–17°. Similarly, III gave 40.5% 2-iso-BuC_6H_4, b_3 114–14.5°, 1.5732, 0.9305; IV gave 45% 2-AmC_6H_4, b_3 143–5°, 1.5663, 0.9504 (trinitrobenzene complex, m. 75°); V gave 55% 2-PhC_6H_4, m. 101–1.5°; trinitrobenzene complex, m. 112–13°. G. M. Kosolapoff

6 2 MAY 3

KOCHETKOV, N.K.; NIFANT'YEV, E.Ye.; SHIBAYEV, V.N.

Synthesis of acetyl-2-chloro-cycloalkenes. Dokl. AN SSSR 117 no.2: 241-244 N '57. (MIRA 11:3)

1. Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova. Predstavleno akademikom A.N. Nesmeyanovym.
(Cycloalkenes)

5(3)
AUTHORS: Kochetkov, N.K., and Nifant'yev, E.Ye. SOV/55-58-5-18/34

TITLE: On 5-Haloidpyromucic Acid (O 5-galoidpiroslizevykh kislotakh)

PERIODICAL: Vestnik Moskovskogo universiteta,Seriya matematiki, mekhaniki, astronomii, fiziki, khimii , 1958,Nr 5,pp 119 - 122 (USSR)

ABSTRACT: In the synthesis of a natural combination with furancycle it became necessary to produce 5-halogenpyromucic acid and to investigate the possibility of replacing the halogen atom in these acids. The following results connected with these questions were obtained : By oxidation of 5-halogen-furfurol by sodium hypobromide the authors obtained an easy method for the synthesis of 5-bromine- and 5 iodine-pyromucic acids (outlet more than 50 %). It was stated that under influence of sodium methylate on the ether of 5-bromine-pyromucic acid there results the ether of 5-methoxy-pyromucic acid. Results of Z.N. Nazarova were used. - There are 12 references, 3 of which are Soviet,4 German,3 American,and 2 English.

ASSOCIATION:Kafedra organicheskoy khimii (Chair of Organic Chemistry)
SUBMITTED: September 5, 1957

Card 1/1

AUTHORS: [illegible] Tiftanyev, B. Ye.

TITLE: Substitution Reactions in the Methylene Group of β Keto-acetals (Reaktsiyakh zameshcheniya v metilenovom zvene β-ketatsetaley)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol. 121, Nr 3, pp. 462-465 (USSR)

ABSTRACT: In recent times β ketoacetals have been more and more widely applied in organic synthesis. It is true that they are easily accessible (Refs 1-3). Cyclic β-ketoacetals recently produced in the laboratory of the authors turned out to be particularly advantageous because of their high stability (Ref 4). Hitherto only the condensations with respect to the keto group of acetals have been used for purposes of synthesis (Refs 2, 4-6) or their transformations according to the type of reactions of β-dicarbonyl compounds. This was done mainly for purposes of synthesis of heterocyclic compounds (e.g. Refs 1, 7). The reaction of replacement of β-ketoacetals in the methylene group is of particular interest since it will render possible their application in a completely new

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Substitution R[illegible]

[illegible] formation of [illegible] methylene member can be easily brominated [illegible] the [illegible] medium in the presence of barium carbonate. The reaction becomes, however, complicated by the cleavage of the acetal group. Thus meso-substituted β-ketoaldehydes [illegible] formed. A more interesting result was obtained in the [illegible] bromination of [illegible] acetals in ether in the presence [illegible] calcium carbonate. The same bromination takes place; the acetal group, however, is maintained. The obtained bromo acetals can be further used for different purposes. One of the most interesting possibilities is, however, the [illegible] bromination in benzene under the action of caustic alkali. In the case of action of an excess quantity of alcoholic alkali upon meso-bromine-ketoacetals [illegible]-keto-acid-ether formed as a result of a further transformation of [illegible]-acetyl keton acetal [illegible] further reaction is being investigated by the authors: oxidation by means of lead tetraacetate. In the case of heating [illegible] aceto acetaldehyde dimethyl acetal with this reagent in benzene- or acetous solution acetal is oxidized on the methylene group. The reaction becomes [illegible]

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SOV/20-121-3-19/47

Substitution [illegible] in the Methylene Group of β-Ketoacetals

[illegible]ted by replacing one of the alkoxy radicals by the [illegible]. 1) Furthermore the condensation of the cyclic benzoyl acetaldehyde acetal with benzaldehyde was investigated. There are 12 references, 4 of which are Soviet.

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

PRESENTED: March 10, 1958, by A. N. Nesmeyanov, Member, Academy of Sciences USSR

SUBMITTED: March 8, 1958

Card 3/3

NIFANT'YEV, E. Ye., Candidate Chem Sci (diss) -- "The synthesis and chemical properties of beta-ketoacetals". Moscow, 1959. 9 pp (Moscow Order of Lenin and Order of Labor Red Banner State U im M. V. Lomonosov, Chem Faculty), 100 copies (KL, No 24, 1959, 128)

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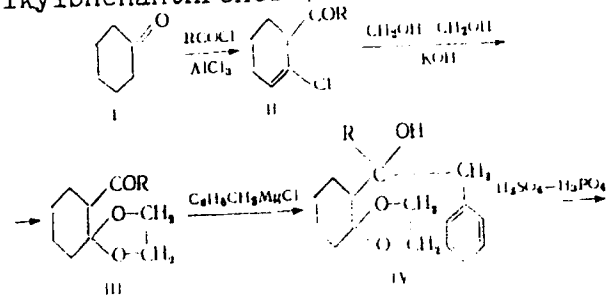
SOV/63-4-6-31/37

AUTHORS: Kochetkov, N. K., Nifant'yev, E. Ye., Shibayev, V. N.

TITLE: Brief Communications. New Synthesis of Phenanthrene

PERIODICAL: Khimicheskaya nauka i promyshlennost', 1959, Vol 4, Nr 6, p 808 (USSR)

ABSTRACT: A new method of synthesis of the phenanthrene ring system was developed. The above method allows obtaining 10-alkyl-1,2,3,4-tetrahydrophenanthrene, and 9-alkylphenanthrenes (new products) according to:



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Brief Communications. New Synthesis of Phenanthrene

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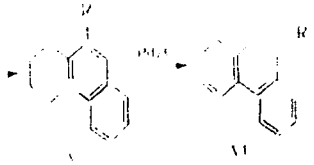

Cyclohexanone was condensed with acid chlorides in the presence of $AlCl_3$ forming acyl-2-chlorocyclohex-2-enes (II), R = CH_3, bp 108-109°/15 mm n_D^{20} 1.4985, d_4^{20} 1.1232, in 82% yield; R = C_2H_5, bp 102-103°/9 mm. n_D^{20} 1.4929, d_4^{20} 1.0903, in 59% yield. R = iso-C_4H_9, bp 70-71°/0.4, n_D^{20} 1.4859, d_4^{20} 1.0420, in 45% yield. The above compounds II were converted with ethylene glycol and with alkali into monoethyleneketals of 2-acylcyclohexanones (III).

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Brief Communications. New Synthesis of Phenanthrene

R	bp in °C (pr. in mm)	n_D^{20}	d_4^{20}	Yield in %
CH_3	121-122/1	[illegible]	[illegible]	[illegible]
C_2H_5	123-124/3	[illegible]	[illegible]	[illegible]
iso-C_4H_9	96-97/0.[illegible]	[illegible]	[illegible]	[illegible]

Compounds III with benzylmagnesium bromide form hydroxyacetals (IV):

CH_3	67-68	–	–	[illegible]

Aromatic cyclodehydration of IV forms 9-alkyl-1,2,3,4-tetrahydrophenanthrenes (V):

CH_3	42.5-43	–	–	32.0
C_2H_5	–	–	–	[illegible]
iso-C_4H_9	75	–	–	[illegible]

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Brief Communications. New Synthesis of Phenanthrene

Dehydration [illegible] threnes (VI): R = CH_3, picrate, [illegible], R = C_2H_5, picrate, mp 122-12[illegible]

ASSOCIATION: Lomonosov M[illegible] gosudarstvennyy universitet imeni M[illegible] Lomonosova)

SUBMITTED: June 9, 1959

Card 4/4

5 (3)
AUTHORS: Kochetkov, N. K., Nifant'yev, E. Ye., Shibayev, V. N. SOV/79-29-7-48/83

TITLE: Synthesis of the 1-Acyl-2-chlorocyclopentene-1 and Ethylene Ketals of 2-Acylcyclopentanones (Sintez 1-atsil-2-khlortsiklopentenov-1 i etilenketaley 2-atsiltsiklopentanonov)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 7, pp 2324 - 2329 (USSR)

ABSTRACT: Up to the present date only open chain derivatives of the important β-chlorovinylketones have been investigated in detail (Refs 1,2,3,4,5). Alicyclic representatives of this class have practically been unknown up to the present. Two contradictory reports have been given concerning the synthesis of 1-acyl-2-chlorocyclohexenes by the condensation of cyclohexanone with acetyl chloride in the presence of $AlCl_3$ (Refs 6,7). In extension of a previous thorough investigation (Ref 8) of this reaction, which up to date presents the only possible way of synthesizing the hitherto unknown compounds of the afore-mentioned type, the authors carried out further extensive studies. The reaction of cyclopentanone with acid halides in the presence of

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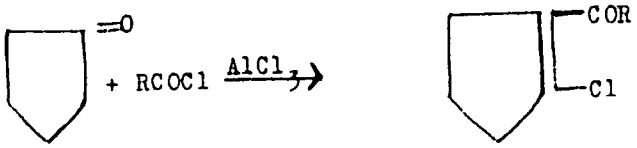
Synthesis of the 1-Acyl-2-chlorocyclopentene-1 and Ethylene Ketals of 2-Acylcyclopentanones

SOV/79-29-7-48/83

$AlCl_3$ was of a general nature and yielded the hitherto unknown 1-acyl-2-chlorocyclopentenes-1:



where R=CH_3, C_2H_5, C_3H_7, iso-C_4H_9.

The reaction proceeded most favorably when cyclopentanone was added to a previously prepared mixture of the acid chloride and $AlCl_3$ in dichloro ethane. The reaction mechanism is given in scheme 2. The 1-acyl-2-chlorocyclopentenes obtained were rather instable oily liquids. Besides spectroscopic data the ozonization of 1-acetyl-2-chlorocyclopentene-1 was decisive for the verification of the structure (Scheme 3). Thus, the experimental results showed that in the cyclopentanone series the above reaction yields α,β-unsaturated ketones, cyclic analogs of β-chlorovinylketone, whereas in the cyclohexanone series the

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same reaction gives β,γ-unsaturated ketones as main products. It was shown that the halogen in 1-acyl-2-chlorocyclopentenes-1 is less mobile than in β-chlorovinyl ketones. By the reaction of the above pentenes-1 with ethylene glycol in the presence of KOH the hitherto unknown ethylene ketals of 2-acylcyclopentanones were prepared. There are 19 references, 16 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: June 5, 1958