Synthesis of α,β-dinitroketones

78286
SOV/79-30-3-40/69

of ω-nitroacetophenone and p-methoxy-ω-nitro-acetophenone.

$$C_6H_5-\overset{O}{\underset{}{C}}-\overset{NO_2}{\underset{CH_2NO_2}{CH}}-CH-\langle\bigcirc\rangle-CH-\overset{NO_2}{\underset{CH_2NO_2}{CH}}-\overset{O}{\underset{}{C}}-C_6H_5$$

(XIII)

$$CH_3O-C_6H_4-\overset{O}{\underset{}{C}}-\overset{NO_2}{\underset{CH_2NO_2}{CH}}-CH-\langle\bigcirc\rangle-CH-\overset{NO_2}{\underset{CH_2NO_2}{CH}}-\overset{O}{\underset{}{C}}-C_6H_4-OCH_3$$

(XIV)
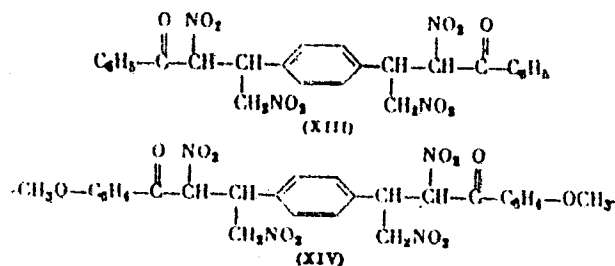
There is 1 table; and 7 references, 4 Soviet, 2 German, 1 U.K. The U.K. reference is: Arndt, F., Rose, J., J. Chem. Soc., 1935, 1.

ASSOCIATION: Gertsen Leningrad State Pedagogic Institute (Leningradskiy gosudarstvennyy pedagogicheskiy institut imeni Gertsena)

SUBMITTED: April 10, 1959

Card 5/5

L 31487-66

ACC NR: AP6023103   SOURCE CODE: CZ/0085/65/000/006/0158/0161

AUTHOR: Bayer, Karel

ORG: Meteorological Institute, MFF, UK, Prague (Met. ustav MFF UK)

TITLE: Investigation of climatic changes

SOURCE: Meteorologicke zpravy, no. 6, 1965, 158-161

TOPIC TAGS: weather forecasting, long range weather forecasting, climatic condition, solar activity

ABSTRACT: Short term, medium term, and long term meteorological forecasts are discussed. Differences between abnormal weather conditions and changes in local climate are evaluated. The methods for the investigation of changes in climate are described. The required series of observations, the relationship between various observatories and the theory of climatic changes are described. Individual steps in the investigation of climate variation are discussed; a special process for the investigation of the dynamics of the climate in Czechoslovakia is described. The application of statistical methods to the evaluation of the observed data, their comparison to meteorological elements found in the whole of Europe, and the influence of the solar activity upon the climate must always be considered. [JPRS]

SUB CODE: 04 / SUBM DATE: none / ORIG REF: 007 / SOV REF: 002
OTH REF: 034
Card 1/1   UDC: 001.8 : 551.583

L 31481-66

ACC NR: AP6023105   SOURCE CODE: CZ/0085/65/000/006/0167/0169

AUTHOR: Bayer, Karel

ORG: Meteorological Institute, MFF UK, Prague (Met. Ustav MFF UK)

TITLE: Long-term variation in the pressure field above Europe

SOURCE: Meteorologicke zpravy, no. 6, 1965, 167-169

TOPIC TAGS: atmospheric pressure, climatology, atmospheric circulation

ABSTRACT: Nonperiodic changes in pressure are considered to be an indication of the intensity of air circulation. The periodic nature of the time intervals of decreased and increased circulation in the Northern Hemisphere, and in Central Europe are discussed. Rhythms in the occurrence of the months with intensive air circulation in Europe are described. It seems that the periodic changes are repeated in a two year cycle. Orig. art. has: 3 figures. [JPRS]

SUB CODE: 04 / SUBM DATE: none / ORIG REF: 004 / OTH REF: 016

Card 1/1   UDC: 551.543.4

BOBEK, K., prof., dr.; BARCAL, J., MUDr.; HAVLICEK, V., inz.; KRECMER, V.,
inz., C.Sc.; MATOUSEK, J., p.l.; NOVAK, J., MUDr.; NOVAK, V., prof.,
inz., dr.; STIBOR, J., MUDr.; BAYER, K.

Commenting on K. Bayer's ideas on applied meteorology. Meteor spravy
15 no.6:179-180 D '62.

BAYER, Karel

Climatologic evaluation of circulation conditions over Europe.
Meteor zpravy 15 no.3/4:86-89 Ag '62.

1. Laborator meteorologie, Ceskoslovenska akademie ved.

BAYER, L. K. MERKULOV, I. A.

Aircraft Rockets (Reaction Aviation). Second Edition, Moscow, Gostekhizdat. 1953, 64 pages

Bayer, M.

Measuring consumption of fuel in boilers with a chain grate. p. 176.
ENERGFTIKA. (Ministerstvo paliv a energetiky. Hlavni sprava
elektraren) Praha. Vol. 6, no. 4, Apr. 1956.

Source: EEAL   LC   Vol. 5, No. 10   Oct. 1956

BAYER, M. Ya

334

AUTHOR: Bayer, M.Ya, Engineer.

TITLE: On the conformal method of profiling the blades of radial-
            axial turbines. (O konformnom metode profilirovaniya
            lopastey radialnoosevykh turbomashin.)

PERIODICAL: "Energomashinostroenie", (Power Machinery Construction), V. 3,
            1957, No. 4, pp. 18 - 19, (U.S.S.R.)

ABSTRACT: Analytical expression of the curve of the conformal diagram,
            which represents a transformation of the Bauersfeld equation,
            proves the incompatibility of arbitrary configurations of the
            blade edges since this contradicts the original theoretical
            premises. The author claims, therefore, that the method of
            conformal mapping is inapplicable for profiling the blades of
            radial-axial turbines. In spite of the theoretically incorrect
            assumptions, it is possible, on the basis of numerous experi-
            mental results, to select the most suitable variant which will
            fully satisfy practical requirements. 1 diagram. 2 Russian
            references.

BAYYER, from MLRA card.

BAYER, M.Ya., inzh.

Considering the effect of body thickness in designing and shaping blades of radial and axial flow hydraulic turbines. Energo-mashinostroenie 4 no.7:16-18 Jl '58.   (MIRA 11:10)
                    (Hydraulic turbines)

Bayer, N.1

... which were rich in given successful com...
... ...enty of concentrates was below the
... U.S. License

BAYER, D

1. The role of metal in the catal...

20

ACCESSION NR: AP5???1?95

669.046.54?

AUTHOR: Stomakhin, A. Ya. (Moscow); Bayer, P. (Moscow); Polyakov, A. Yu. (Moscow)

TITLE: Solubility of nitrogen in molten nickel and in alloys of nickel with chromium, molybdenum and tungsten

SOURCE: AN SSSR. Izvestiya. Metally, no. 4, 1965, 37-45

TOPIC TAGS: nitrogen, nickel, molten metal, nickel base alloy, chromium containing alloy, molybdenum containing alloy, tungsten containing alloy, solubility

ABSTRACT: The low solubility of nitrogen in molten nickel has caused discrepancies in the experimental data for this solubility in the literature. Since nitrogen is always present in metals and alloys, and data on the solubility and activity of nitrogen are important for elimination of nitrogen from a melt (or in some cases for saturating a melt with nitrogen), the authors studied the solubility of nitrogen both in molten nickel and in binary nickel-based alloys containing additions of technically important elements. The experimental setup is described in detail. N-O nickel of 99.987% purity was used in the experiments. Provisions were made to keep experimental errors to a minimum. The results are tabulated and graphed. The

Card 1/4

I. 65050-65

ACCESSION NR: AP5021495

process for dissolution of nitrogen in nickel is given by the equation

$$\tfrac{1}{2}N_{2\,(gas)} = [N]; \quad K = \frac{f_{N}[\%N]}{p_{N_2}^{1/2}}$$
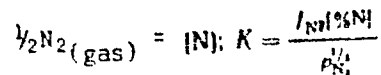
where [%N] is the concentration of nitrogen in the metal which is the equilibrium concentration at a given temperature with partial pressure of nitrogen in the gaseous phase p_{N_2}; f_N is the activity factor which takes account of deviations of solutions of nitrogen in liquid metal from Henry's law. Mathematical analysis of the results of this study gives the following equation for the equilibrium constant of this reaction as a function of temperature:

$$\lg K = \lg[\%N] = -\frac{3610}{T} - 0.973$$

$$\Delta F^\circ = 69000 + 18.6\,T, \text{ joules/g·at}$$
$$(\Delta F^\circ = 16500 + 4.45\,T, \text{ cal/g·at}$$

It was found that chromium, molybdenum and tungsten reduce the activity factor of nitrogen in nickel (see fig. 1 of the Enclosure). This is apparently due to the

Card 2/4

L 65050-65

ACCESSION NR: AP5021495

fact that these elements have more affinity for nitrogen than for nickel. The parameters of interaction for these elements are

$$e_N^{Cr} = -0.11, \quad e_N^{Nb} = -0.04, \quad e_N^{V} = -0.025$$

Orig. art. has: 6 figures, 4 tables, 5 formulas.

ASSOCIATION: none

SUBMITTED: 10Dec64   ENCL: 01   SUB CODE: MM, GC

NO REF SOV: 001   OTHER: 008

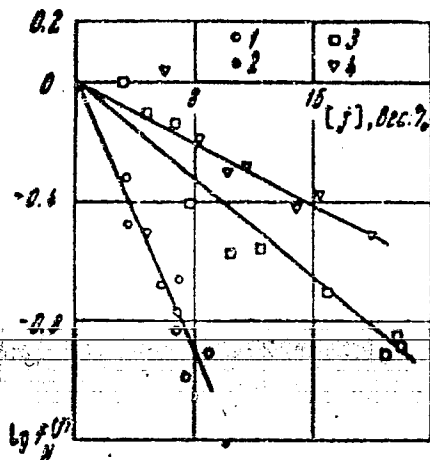Card 3/4

L 65050-65

ACCESSION NR: AP5021495

ENCLOSURE: 01

Fig. 1. Effect of chromium, molybdenum and tungsten on the activity factor of nitrogen in molten nickel at 1550°C and P_{N_2} = 760 mm Hg: 1--Ni-Cr alloys; 2--the same from data of Humbert and Elliott (Humbert, J. C., Elliott, J. F., "Solubility of Nitrogen in Liquid Fe-Cr-Ni Alloys," *Trans. Met. Soc. AIME,* 1960, 218, N 6, 1076-1088); 3--Ni-Mo alloys; 4--Ni-W alloys.

Card 4/4

LANSTIAK, Bohumil, inz.; BAYER, Rudolf, inz.

Use of universal control system in the automatic control of a
ball mill. Rudy 13 no.2:47-50 F '65.

1. Institute of Ore Research, Prague.

POL/46-4-1-8/15

28(1)

AUTHOR: Bayer, Ryzard, Chmielewski, Jerzy and Koba, Teresa

TITLE: A 14 Channel Pulse Amplitude Analyzer with Counting
            Attachment (14-kanalowy analizator amplitudy z przyst-
            awka liczaca)

PERIODICAL: Nukleonika, 1959, Vol 4, Nr 1, pp 87-91 (Poland)
            1958

ABSTRACT: A description of the equipment with a block-diagram
            (Fig. 1) of the analyzer and the counting attachment is
            given. Furthermore the equipment is illustrated with
            and without the case. The range of application is out-
            lined in brief. Analyzer - 14 channels; width of channel
            gate - 2,5,10 V; impulse amplitude - 16-171 V; width of
            impulse - 1-5 micr.; separation time - 2.5-5 micro-sec.;
            stability of discriminator - ± 50 mV; working conditions -
            220 V, 900 VA; size - 570 x 360 x 2300 mm. Specification
            of counting attachment: scaling factor total count stor-
            age 999999; resolving time - numerator about 0.1 sec;
            size - 560 x 340 x 840 mm. There are 1 layout and 2

Card 1/2   photographs.

POL/46-4-1-8/15

A 14 Channel Pulse Amplitude Analyzer with Counting Attachment

ASSOCIATION: Politechnika Warszawa zaklad konstrukcji telekomunika-
cyjnych i radiofonii (Polytechnical Institute Warszawa
Department of Construction, Telecommunications, and
Radiophony)

Card 2/2

30582
P/046/61/006/011/004/004
D256/D304

9.6000 (1013, 1089, 1159)

AUTHOR: Bayer, Ryszard

TITLE: A linear circuit for measuring amplitude ratios of two pul-
            ses

PERIODICAL: Nukleonika, v. 6, no. 11, 1961, 749 - 756

TEXT: The circuit was developed in order to analyze two incoming
pulses according to their pulse-height ratio by converting it first into
time so that a time of the flight analyzer could be used for sorting and
displaying the spectrum. Utilizing the available time of the flight analy-
zer was considered to be more economical than building a special analyzer
for the purpose. The conversion of the ratio of the two voltages into time
was performed in linearly by the Miller effect of a penthode tube working
in a monostable screen-coupled "phantastron" circuit. In such a circuit
the input signals applied to the plate and the first grid of the penthode
yield a pulse at the second grid, whose width is proportional to the ratio
of the two input pulses. The performance of the linear converter is dis-
cussed in comparison with that of a logarithmic circuit, and the latter is

Card 1/2

A linear circuit for ...

30582
P/046/61/006/011/004/004
D256/D304

shown to be inferior in particular by not being suitable for analysis at
the same time of pulse-height ratios < 1 and > 1 and by its rather poor
threshold stability. This paper was previously presented at the Internatio-
nal Conference on Nuclear Electronics, Belgrade, May, 1961. Advice by Doc-
tor J. Kosacki, Head of the Electronics Department, Institute of Nuclear
Research is acknowledged by the author. There are 8 figures and 2 referen-
ces: 1 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-lan-
guage publication reads as follows: Millman, J. and H. Taub, Pulse and Di-
gital Circuits. New York 1956 McGraw-Hill, p. 224.

ASSOCIATION: Instytut badań jądrowych PAN, Warszawa, Dział elektroniki
                (Institute of Nuclear Research, Polish Academy of Sciences,
                Warsaw, Electronic Department)

SUBMITTED: July, 1961

Card 2/2

P/046/62/007/001/006/006
D256/D304

AUTHOR: Bayer, Ryszard

TITLE: A modulated pulse generator

PERIODICAL: Nukleonika, v. 7, no. 1, 1962, 57-59

TEXT: A brief description is given of a pulse generator devised for the testing and calibrating of pulse-height analyzers. The generator produces pulses from 0 to 50 V manually adjustable amplitude at a rate of repetition from 0.7 to 255 cs/sec, 1.5μ sec rise-time and 100μ sec duration. A provision is made for symmetrical triangular amplitude modulation of the pulses, the amplitude and the slope of the modulation being adjustable. There are 3 figures.

ASSOCIATION: Instytut badań jadrowych PAN, Warszawa; zakład elektroniki
               i automatyki (Institute of Nuclear Research, Polish Academy
               of Sciences, Department of Electronics and Automation,
               Warsaw)
SUBMITTED: November, 1961
Card 1/1

BAYER, Ryszard

High-level linear 0.1 μsec. gate circuit for pulse-height analyzers.
Nukleonika 7 no.9:592-594 '62.

1. Polish Academy of Sciences, Institute of Nuclear Research,
Electronic Department, Warsaw.

BAYER, Ryszard

Logarithmic analyzer of the ratio of the amplitude of two pulses.
Nukleonika 8 no.2:143-145 '63.

1. Instytut Badan Jadrowych, Zaklad Elektroniki, Warszawa.

BAYER, Ryszard

      Triple pulse generator. Nukleonika 8 no.8:573-576 '63.

     1. Zaklad Elektroniki, Instytut Badan Jadrowych, Warszawa.

L 05152-67

ACC NR: AP7000446   SOURCE CODE: PO/0046/65/010/012/0811/0815

AUTHOR: Bayer, Ryszard

ORG: Department of Electronics, Institute of Nuclear Physics Swierk (Zaklad Elektroniki Instytut Badan Jadrowyck

TITLE: A 10-mhz linear window amplifier

SOURCE: Nukleonika, v. 10, no. 12, 1965, 811-815

TOPIC TAGS: feedback amplifier, pulse generator

ABSTRACT: The amplifier system consists of an initial gain-control switch (100:1), a 10 MHz gain-of-four hundred amplifier with two feedback sections, a 0-30 volt discriminator (lower-level cutoff), a pulse lengthener, and a 2 MHz variable gain amplifier. The fast amplifier produces the required initial amplification of pulses which often includes a very large fraction of small, unwanted pulses. The threshold circuit (discriminator or "rug Sweeper") pases only the upper part of the larger pulses, the part that rises above the discriminator circuit. Having thus rejected the smaller pulses, the truncated larger pulses are lengthened and amplified. They are now suitable as input to an analyzer which views a selected segment of the overall pulse-height spectrum. The selected segment is controlled by discriminator and gain settings. The instability of the discriminator setting was corrected with the use of a precision pulse generator. The amplifier gain stability was within 1 percent per week. The overall amplifier linearity is 1 percent. Orig. art. has 6 figures.

Card 1/2

L 05152-67

ACC NR: AP7000446

[NA]

SUB CODE: 09 / SUBM DATE: 12 Jun 64 / ORIG REF: 003 / SOV REF: 001
OTH REF: 001

Card 2/2 vmb

L 05150-67

ACC NR: AP7000445   SOURCE CODE: PO/0046/65/010/012/0807/0809

AUTHOR: Bayer, Ryszard

ORG: Department of Electronics, Institute of Nuclear Physics, Swierk (Zaklad Elektroniki, Instytut Badan Jadrawych)

TITLE: Coincidence circuit for x ray spectrometry

SOURCE: Nukleonika, v. 10, no. 12, 1965, 807-809

TOPIC TAGS: x ray spectrum, spectrometry, coincidence circuit

ABSTRACT: A 0.1 microsecond time resolution coincidence circuit is described, which consists of two parallel circuits that precede the coincidence function, and a pulse shaper and linear integrator (Cooke-Yarborough count rate circuit) with ranges of 1, 10, 100, 1000, 10,000, and 1000 counts per second. Each of the two parallel cir-cuits preceding the coincidence function has a pulse-height discriminator, a univibrator type delay generator (relative delay equal 2 microseconds), and a pulse shaper. A plot of coincidence counts versus relative delay time yields flat-topped "curve" with a full width at half macimum of 2t equal 0.2 microseconds. The work was carried out at the Institute of Physics, PAN. Orig. art. has: 3 figures. [NA]

SUB CODE: 18,09 / SUBM DATE: 12 Jun 64 / ORIG REF: 001 / SOV REF: 001
OTH REF: 001

Card 1/1   vmb

SMIRNOV, R.A., inzh.; BAYER, R.A., inzh.

A method of compiling short-term forecasts of a rise in the
ground water level. Gidr stroi.   32   no.7:37-39   Jl '62.
                                                    (MIRA 15:7)

(Water, Underground)

SMIRNOV, R.A.; BAYER, R.A.

Formation of Neogene water-bearing horizons under the effect of an artificial reservoir and irrigation system. Trudy Od. un. 152 Ser. geol. i geog. nauk no.8:123-140 '62.

(MIRA 17:9)

BAYER, Stanislaw

Case of so-clled spontaneous rupture of the spleen in pregnancy.
Polski przegl. chir. 28 no.1:83-85 Jan 56.

1. Z Oddzialu Chirurgicznego Szpitala Powiatowego w Jaworze
Ordynator dr. St. Bayer Jawor, ul, Kopernika 12.
        (SPLEEN, rupt.
             in pregn., surg., splenectomy. (Pol))
        (PREGNANCY, compl.
             spontaneous rupt. of spleen, surg., splenectomy.
             (Pol))

MARIN, St.

SURNAME (in caps); Given Names   /

Country: Rumania

Academic Degrees: Dr.   /

Affiliation: Institute of Pathology and Animal Hygiene (Institutul de
           Patologic si Igiena Animala).
Source: Bucharest, Probleme Zootehnice si Veterinare, No 7, Jul 61,
       pp 60-62.
Data:"New Data on the Prevention and Treatment of Non-Infectious
     Diseases in Calves."

BAYER, T. I., Cand of Chem Sci — (diss) "Isotope Exchange of Hydrogen and the Ability

of Methyl Producing Nitrogen-Containing Heterocycles to Enter into the Reaction of

Condensation," Leningrad, 1959, 11 pp (Leningrad State Pedagogical Institute im

A. I. Gertsen; Chair of Organic Chemistry) (KL, 4-60, 115)

BAYER, V.

Experiences with the new organization of the Pozorni stavby National
Enterprise in Usti nad Labem. p. 625

POZEMNI STAVBY. (Ministerstvo stavebnicty) Praha, Czechoslovakia, Vol.
7, no. 12, 1959

Monthly List of East European Accessions (EEAI), LC. Vol. 9, no. 2,
Feb. 1960

Uncl.

BAYER, V.

"High-frequency transmission on high-voltage lines" by H.K.
Podszek. Reviewed by V. Bayer. El tech cas 14 no.2:109-110
'63.

BAYER, Vilem, inz.

The new Czechoslovak standard 38 2520 : High-frequency communication on high-voltage and extra-high-voltage lines. Energetika Cs 11 no.8: 394 Ag '61.

BAYER, Vilem, inz., C.Sc.

High-frequency transmissions on 400 kV lines. Energetil, C;
12 no.7:340-344 Jl'62.

1. Vyzkumny ustav energeticky, Brno.

TEXL, Karel, inz.; KRENEK, Josef, inz.; BAYER, Vilem, inz.; PACAK, Slavoj, inz.; VYSKOCIL, Vaclav, inz.

The 1964 Meeting of the International Conference on Large Electric Systems. Energetika C: 14 no.12:622-644 D '64.

BAYER, Vilem, inz.

Research laboratories and test rooms in Fontenay. Energetika Cs
14 no.12:644-647 D '64.

BAYER, V. A., Prof.;   LAZAREV, N. V., Prof.;   FELISTOVICH, G. I.;   KHILOV, K. L., Prof

Pharmacology

Pentoxyl and its use in diseases accompanied by leukopenia.   Sov. med. 17, No. 2 1953.

Monthly List of Russian Accessions, Library of Congress, June 1953. Uncl.

BAYER, V.G.; MASINO, M.A.; MASLOV, N.N.; POPOVICHENKO, G.D.;
    SOBOLEV, N.N.; KALOSHIN, A.I., inzh., retsenzent;
    SAFRONOV, S.P., inzh., retsenzent; NAUMOV, V.I., kand.
    tekhn. nauk, red.; YURKEVICH, M.P., inzh., red. izd-va;
    SHCHETININA, L.V., tekhn. red.

[Mechanic for repairing motor vehicles and tractors]
Slesar' po remontu avtomobilei i traktorov. [By] B.G.
Baér i dr. Moskva, Mashgiz, 1963. 318 p. (MIRA 16:10)
    (Motor vehicles--Maintenance and repair)
        (Tractors--Maintenance and repair)

ALMAZOV, V.A.; K .AYEV, S.V.; BAYEV, V.I.; PETUKHCV, V.I.

Fur .tional activity of granulocytes in vitro. Med. rad. 8 no.11:
2C-24 N '63.   (MIRA 17:12)

1. Iz kafedry fakul'tetskoy terapii (zav. - zasluzhennyy deyatel'
nauki prof. T.S. Istamanova, nauchnyye rukovoditeli - prof. T.S.
Istmanova i starshiy nauchnyy sotrudnik, kand. med. nauk E.I.
Shcherban') I Leningradskogo meditsinskogo instituta imeni akade-
mika I.P. Pavlova.

BAYER; VITEK

"What you do not know about meteorﬂogy" by Ql. Sebek, S. Cernava.
Reviewed by Bayer, Vitek. Meteor zpravy 15 no.2:52 '62.

ACC NR: AP603655   SOURCE CODE: UR/0056/66/051/004/1135/1142

AUTHOR: Bayer, V. N.; Fadin, V. S.; Khoze, V. A.

ORG: Novosibirsk State University (Novosibirskiy gosudarstvennyy universitet)

TITLE: Bremsstrahlung in high energy electron collisions

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 51, no. 4, 1966, 1135-1142

TOPIC TAGS: bremsstrahlung, electron collision, photon emission, center of mass, ~~center of~~ mass system, ~~laboratory system~~

ABSTRACT: Single bremsstrahlung in high electron collisions is considered. The angular distribution and spectrum of the emitted photons in the center of mass system and the laboratory system are calculated. Radiation due to the incident particle and recoil particle is considered in the l. s. case. The classical current and Weizsacker—Williams methods are analyzed and it is shown that the latter method is not valid for calculating the spectrum of photons emitted by recoil

Card 1/2

ACC NR: AP6036055

particles if $\omega > m/2$. The authors are very grateful to V. M. Galitskiy and Ye. M. Lifshits for discussions. Orig. art. has: 3 figures and 28 formulas. [Authors' abstract]

SUB CODE: 20/SUBM DATE: 09Apr66/ORIG REF: 005/OTH REF: 005/

Card 2/2

L 7364-65   ENT(m)/EWA(m)-2
ACCESSION NR: AP5002565   S 1056/65 048 003 094 095

AUTHOR: Bayer, V. N.; Khoze, V. A.

TITLE: Photon emission during muon pair production by electron-positron collision

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 48, no. 3, 1965, 946-951

TOPIC TAGS: photon emission, muon pair production, electron positron collision, colliding beam experiment, differential cross section, total cross section

ABSTRACT: The paper deals with the emission of a photon in the production of a muon pair by electron-positron collision ($e^+ + e^- \to \mu^+ + \mu^- + \gamma$). Such processes are expected to be important in the near future in colliding beam experiments. A method is proposed for calculating in a simple manner the total cross section of this process, integrated over the final muon states. The idea of the method is to integrate the separate parts of the diagrams by using the properties of relativistic, gauge, and charge invariants. It is then unnecessary to make the very cumbersome calculation of the differential cross section, since the traces of the electron and muon parts of the diagrams are integrated directly. This is a universal

Card 1/2

L 47364-65
ACCESSION NR: AP5008755

method and can be used for the calculation of the cross section for various pro-
cesses of the same type. The exact formula is then derived for the total cross
section of emission of a photon in the production of a muon pair. The formula is
then analyzed and the behavior of the cross section determined for two limiting
cases, near and far from the threshold. The difference between the behavior of
the obtained formulas and those for bremsstrahlung in electron scattering is
pointed out. "The authors thank V. M. Galitskiy for a discussion." Orig. art.
has: 1 figure and 45 formulas.

ASSOCIATION: Novosibirskiy gosudarstvennyy universitet (Novosibirsk State Univer-
sity)

SUBMITTED: 05Oct64   ENCL: 00   SUB CODE: NP

NR REF SOV: 000   OTHER: 003

Card 2/2

L 46327-65   EWT(m)/T/EWA(m)-2

ACCESSION NR: AP5009215

S/0020/65/161/001/0074/0077

AUTHOR: Bayer, V. R.; Fadin, V. S.

TITLE: Polarization effects in the production of particles in colliding beam experiments

SOURCE: AN SSSR. Doklady, v. 161, no. 1, 1965, 74-77

TOPIC TAGS: colliding beam experiment, electron polarization, electron positron annihilation, pair production

ABSTRACT: To estimate the influence of electron polarization on the fundamental two-particle processes occurring during annihilation of an electron-positron pair, the authors calculated the cross sections for the production of pairs of pions, muons, nucleons, and vectons by polarized electrons and positrons. The polarization is produced when the electrons move in a magnetic field and radiate. The calculations show that polarization of the initial electrons and positrons causes the cross sections of two-particle annihilation to be appreciably deformed compared with the cross sections of the process for nonpolarized particles. Such a formation must be taken into account in experiments with colliding beams. On the

Card 1/2

L 46327-65

ACCESSION NR: AP5009215

other hand, experiments with initially polarized particles yield no new information on the form factors, compared with experiments with unpolarized particles. To obtain new information on the form factors it is essential to measure the polarization of the final particles. This report was presented by G. I. Budker. Orig. art. has: 12 formulas.

ASSOCIATION: Novosibirskiy gosudarstvennyy universitet (Novosibirsk State University)

SUBMITTED: 05Oct64   ENCL: 00   SUB CODE: NP

NR REF SOV: 003   OTHER: 000

Card 2/2

L 60322-65   EWT(m)/EWA(m)-2   Feb

ACCESSION NR: AP5016564   UR/0056/65/048/006/1708/1716

AUTHOR: Bayer, V. N.; Khoze, V. A.

TITLE: Radiation in two-particle electron-positron annihilation

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 48, no. 6, 1965, 1708-1716

TOPIC TAGS: electron positron annihilation, photon emission, emission cross section, integral cross section, form factor

ABSTRACT: The authors use a procedure proposed in an earlier paper (ZhETF v. 48, 946, 1965) to calculate the cross sections for the emission of a photon in several annihilation processes. The first process investigated is the formation of a pair of scalar particles upon annihilation of an electron-positron pair. To take into account the influence of strong interactions, form factors of the final particles are introduced and it is shown that by making use of relativistic, gauge, and charge invariance properties, it is possible, by summing over the spins of the final particles, to write down a universal formula for the integral cross section of the emission by the initial particles. To take account of the influence of strong interaction on the emission by the final particles, the contributions of Compton-type diagrams are taken into account. This is done by expanding the am-

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ACCESSION NR: AP5016564

plitude of the photon emission in a series and retaining the first two terms. A
universal formula is written out for the first term and the method of F. Low
(Phys. Rev. v. 110, 974, 1958) is used to calculate the second term. The emission
produced upon creation of a pair of pions is calculated as an example. It is
shown that in all the cross sections in question the interference term vanishes.
"The authors thank V. N. Galitskiy for numerous discussions." Orig. art. has:
2 figures and 58 formulas.

ASSOCIATION: Novosibirskiy gosudarstvennyy universitet (Novosibirsk State University)

SUBMITTED: 11Jan65   ENCL: 00   SUB CODE: NP

NR REF SOV: 003   OTHER: 004

Card 2/2

L 9809-66   EWT(1)   GG

ACC NR: AP5027996   SOURCE CODE: UR/0386/65/002/007/0330/0333

AUTHOR: Bayer, V. N.

ORG: Novosibirsk State University (Novosibirskiy gosudarstvennyy universitet)

TITLE: Possible verification of nonconservation of time parity in colliding beam experiments

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. (Prilozheniye), v. 2, no. 7, 1965, 330-333

TOPIC TAGS: parity principle, electron collision, collision cross section, electron positron pair

ABSTRACT: It is pointed out that the hypothesis of J. Bernstein, G. Feinberg, and T. D. Lee (Preprint, 1965) that electromagnetic interactions of strongly interacting particles are C- and T(CP)-invariant can be verified in a series of experiments with colliding positron-electron beams, for which installations are now under construction in several laboratories. It is shown that although in the single photon approximation C-invariance forbids many processes in the annihilation of a positron-electron pair into a pair of strongly interacting particles, the processes

$$\text{a)} \quad e^+ + e^- \to \gamma \to \pi^0 + \eta^0, \qquad\qquad \text{b)} \quad e^+ + e^- \to \gamma \to \phi^0 + \rho^0,$$

$$\text{c)} \quad e^+ + e^- \to \gamma \to \omega^0 + \rho^0, \qquad\qquad \text{d)} \quad e^+ + e^- \to \gamma \to \phi^0 + \omega^0,$$

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ACC NR: AP5027996   *12*

can occur if the transition current of the strongly interacting particles contains a C-odd term. The most realistic in colliding-beam experiments would apparently be an investigation of the asymmetries of the products of reactions of the type

$$\text{e) } e^+ + e^- \to \pi^+ + \pi^- + \gamma, \qquad \text{f) } e^+ + e^- \to K^+ + K^- + \gamma.$$

In the case of reaction (e), which was considered in detail by the author earlier (with V. A. Khoze, ZhETF v. 48, 1708, 1965), the cross section of the process has a peak near the ρ-meson peak (E = 380 Mev), where it is sufficiently large to be measurable with modern techniques, but the main difficulty lies apparently in the identification of the events. Author is deeply grateful to V. M. Galitskiy, V. A. Sidorov, and A. N. Skrinskiy for a discussion, and to B. M. Pontecorvo for acquainting him with the work of Lee and his co-workers. Orig. art. has: 5 formulas.

SUB CODE: 20/   SUBM DATE: 02Aug65/   ORIG REF: 003/   OTH REF: 003

Card 2/2

L 14850-66   EWT(1)   IJP(c)   AT

ACC NR: AP6001721   SOURCE CODE: UR/0020/65/165/004/0783/0785

AUTHOR: Bayer, V. N.; Orlov, Yu. F.

ORG: Novosibirsk State University (Novosibirskiy gosudarstvennyy universitet)

TITLE: Quantum depolarization of electrons in a magnetic field

SOURCE: AN SSSR. Doklady, v. 165, no. 4, 1965, 783-785

TOPIC TAGS: depolarization, cyclic acceleration, electron polarization

ABSTRACT: The authors show that depolarization of electrons and positrons in modern storage rings can be caused not only by resonance due to radial and azimuthal components of the magnetic field on the particle trajectories, but also by the quantum nature of the radiation. The latter depolarization occurs also only in the presence of perturbing radial and azimuthal field components, but is produced by harmonics which cannot be eliminated by suitable choice of the energy. Calculations show that the effect depends very strongly on the particle energy and on the number of closest harmonic of the radiation, the distance between the harmonic and the resonance, and on the vertical displacement of the particle in the orbit. It is shown by way of an example that in a typical storage ring the characteristic depolarization time is one order of magnitude lower than the polarization time, so that in this case the beam can become readily depolarized unless special measures are adopted to maintain the beam polarization. This report was presented by Academician G. I. Budker. Orig. art. has: 17 formulas.

SUB CODE: 20/   SUBM DATE: 05Apr65/   ORIG REF: 001/   OTH REF: 001

Card 1/1   UDC: 539.121.85

L 22136-66   EWT(1)   GG

ACC NR: AP6004934

SOURCE CODE: UR/0056/66/050/001/0156/0163

AUTHOR: Bayer, V. N.; Fadin, V. S.; Khoze, V. A.   57

ORG: Novosibirsk State University (Novosibirskiy gosudarstvenny universitet) B

TITLE: Electromagnetic particle pair production

TOPIC TAGS: pair production, particle collision, photon emission, fermion, collision cross section, electromagnetic interaction, nuclear spin, charged particle, differential cross section, integral cross section, quantum electrodynamics, bremsstrahlung

ABSTRACT: This is a continuation of a series of earlier papers (ZhETF v. 48, 1708, 1965 and elsewhere) dealing with bremsstrahlung occurring upon collision of two charged particles, and the emission of a photon following two-particle annihilation of a pair of particles. The method used in these investigations consisted of integrating individual parts of the diagrams and using the properties of relativistic, gauge, and charge invariance. In the present article this method is used to calculate the cross sections for electromagnetic pair production under the simplifying assumption that all the charged particles are distinguishable.

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L 22136-66

ACC NR: AP6004934

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The cross sections for the creation of pairs of fermions with spin 1/2 or of scalar particles upon collision of a photon with a charged particle are calculated. Exact expressions are obtained for the differential cross sections in terms of the invariant mass of the pair of charged particles. The obtained cross sections are discussed from the point of view of the study of the form factors of the particles and the check on the validity of quantum electrodynamics at small distances. This is followed by an analysis of the annihilation of a pair of particles into two pairs of charged particles. The exact value of the differential cross section is obtained in terms of the invariant masses of the produced pairs, and the properties of these cross sections are discussed. Approximate expressions are also obtained for the integral cross section. The calculation takes into account the recoil and the contribution of the dispersion, and the Compton tensor of the fourth rank is integrated over the final states of the fermion pair. Orig. art. has: 4 figures and 3 formulas.

SUB CODE: 20/   SUBM DATE: 09Jul65/   ORIG REF: 008/   OTH REF: 004

Card 2/2 BK

L 29295-66   EWT(l)/EWT(m)   LJP(c)   AT/GD

ACC NR: AT6012262   SOURCE CODE: UR/0000/65/000/000/0001/0006

AUTHORS: Bayer, V. N.; Orlov, Yu. F.

ORG: Institute of Nuclear Physics, Siberian Department AN SSSR
(Institut yadernoy fiziki Sibirskogo otdeleniya AN SSSR)

TITLE: Quantum depolarization of electrons in a magnetic field

SOURCE: AN SSSR. Sibirskoye otdeleniye. Institut yadernoy fiziki.
Doklady, 1965. Kvantovaya depolyarizatsiya elektronov v magnitnom
pole, 1-6

TOPIC TAGS: depolarization, electron polarization, quantum resonance
phenomenon, transverse magnetic field, circular accelerator.

ABSTRACT: The authors show by theoretical calculation that the polariza-
tion of electrons and positrons which they acquire in storage rings may
be lost not only as a result of depolarizing resonances due to the
radial and azimuthal components of the magnetic field on the particle
trajectory, but also under the influence of the quantum character of the
radiation. The quantum depolarization, like the resonance depolariza-
tion, is also realized only in the presence of perturbing radial and
azimuthal components of the magnetic field, but the satisfaction of
resonance conditions is not essential in the quantum case. The resonance

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L 29295-66

ACC NR: AT6012262

required for the depolarization is produced in the quantum case by the Fourier components of the energy jumps connected with the quantum character of the radiation. Although this quantum depolarization, unlike the resonance depolarization, cannot be reduced by suitable choice of the particle energy, it can be reduced by minimizing the magnetic-field perturbations. Estimates for typical storage ring parameters show that the possible depolarization time (in the case of a 6 Bev storage ring with field 8×10^3 Oe) can reach 25 seconds as against a polarization time of 190 seconds. Orig. art. has: 18 formulas.

SUB CODE: 20/ ORIG REF: 001/ OTH REF: 001

Card   2/2 BK

L 30030-66

ACC NR: AP6020115   SOURCE CODE: UR/0367/66/003/002/0327/0331

AUTHOR: Bayer, V. N.; Fadin, V. S.; Khoze, V. A.

ORG: Novosibirsk State University (Novosibirskiy gosudarstvennyy universitet)

TITLE: Elastic and inelastic formfactors in the cross-sections of electromagnetic processes

SOURCE: Yadernaya fizika, v. 3, no. 2, 1966, 327-331

TOPIC TAGS: photon, elastic scattering, inelastic scattering, particle annihilation, particle cross section, electromagnetic interaction

ABSTRACT: General formulae for the cross-sections of elastic scattering and the two- and three-particle annihilation of a pair of arbitrary particles are derived in a one-photon approximation. The creation of a pair of particles in interactions of photons with charged particles and in the inelastic electromagnetic annihilation of a pair is considered. Orig. art. has: 3 figures and 26 formulas. [Based on authors' Eng. abst.] [JPRS]

SUB CODE: 20 / SUBM DATE: 23Jun65 / ORIG REF: 004 / OTH REF: 005

Card 1/1

L 37056-66   EWT(m)   IJP(c)

ACC NR: AP6016810   SOURCE CODE: UR/0367/66/003/001/0081/0088

AUTHORS: Bayer, V. N.; Katkov, V. M.

ORG: Novosibirsk State University (Novosibirskiy gosudarstvennyy universitet)

TITLE: Quantum depolarization of electrons in a magnetic field

SOURCE: Yadernaya fizika v. 3, no. 1, 1966, 81-88

TOPIC TAGS: depolarization, electron polarization, quantum resonance phenomenon, transverse magnetic field, circular accelerator

ABSTRACT: Theoretical calculation are presented to show that the polarization acquired by electrons and positrons in storage rings may be lost not through depolarizing resonances due to the radial and azimuthal components of the magnetic field on the particle trajectory, but also because of the quantum character of the radiation. Quantum depolarization, like resonance depolarization, also occurs in the presence of perturbing radial and azimuthal magnetic field components, but fulfillment of the resonance conditions is not essential in the quantum case. The resonance required for quantum depolarization is produced by the Fourier components of the energy jumps connected with the quantum character of the radiation. Although quantum depolarization, unlike resonance depolarization, cannot be suppressed by suitable choice of the particle energy, it can be reduced by minimizing the magnetic-field perturbations. Estimates for typical storage ring parameters show that a 6 Bev storage ring with field

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L 37000-66

ACC NR: AP6016810

8×10^3 Oe in the depolarization time can reach 25 seconds as against a polarization time of 190 seconds. Orig. art. has: 18 formulas.

SUB CODE: 20/ SUBM DATE: 22May65/ ORIG REF: 006/ OTH REF: 004/

Card 2/2

L 41742-66   EWT(l)/T   LJP(c)   AT

ACC NR: AP6020217   SOURCE CODE: UR/0056/66/050/006/1611/1616

AUTHOR: Bayer, V. N.; Fadin, V. S.; Khoze, V. A.

ORG: Novosibirsk State University (Novosibirskiy gosudarstvenny universitet)

TITLE: Emission of two photons in a specified angle during electron collisions

SOURCE: Zh eksper i teor fiz, v. 50, no. 6, 1966, 1611-1616

TOPIC TAGS: photon emission, electron collision, radiation detector, scattering cross section

ABSTRACT: This is a continuation of earlier work by one of the authors (Bayer, with V. M. Galitskiy, ZhETF Pis'ma v. 2, 259, 1965 and earlier) dealing with the emission of two photons of arbitrary energy as a result of electron collisions. In view of the great interest that attaches to this process in connection with colliding-beam experiments, and in view of the fact that earlier calculations were based on the assumption that the angular dimensions of the photon detectors greatly exceed the characteristic emission angle, the authors calculate in this article the cross section for the emission of two photons into a specified angle, which is shown to be only a fraction of the cross section of the radiation integrated over all the angles. The final expression, obtained by a combination of analytic and computer techniques, is in the form of a polynomial in the powers of the frequencies of the two photons. The numerical values of the coefficients of the powers of the frequencies are obtained in the case when the detector dimensions are of the order of magnitude of the characteristic

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L 41742-66

ACC NR: AP6020217

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emission angle. An analytic expression for the cross section is obtained when the detector dimensions are much larger than the characteristic angle. The results of this analytic expression agree well with the numerical calculations. The authors thank A. P. Omuchin for a discussion of questions connected with the experiment, and G. I. Rusova and E. Z. Borovskaya for help with the numerical calculations. Orig. art. has: 1 figure, 14 formulas, and 2 tables.

SUB CODE: 20/   SUBM DATE: 10Jan66/   ORIG REF: 003/   OTH REF: 001

Card 2/2

BAYER, Ye.

Modifying the planning with regard to hide deliveries. Mias. ind.
SSSR 29 no.6:44 '58.   (MIRA 11:12)

1.Gosplan Kazakhskoy SSR.
          (Kazakhstan--Hides and skins)

BAYER, Y. G.

BAER, J. G.

"The Origin of Human Tapeworms" (Translation) (p. 324) by Baer, J. G.

SO: Advances in Modern Biology, (Uspekhi Sovremennoi Biologii), Vol. XIII, No. 2, 1940

BAYER, Ye.Ye., inzhener.

Mechanization of plastering work in building the Moscow University. Mekh.
stroi. 10 no.11:23-29 N '53.   (MIRA 6:11)
                                                                (Plastering)

BAYER, Ye. Ya.

AID P - 218

Subject   :   USSR/Engineering

Card   :   1/1

Author   :   Bayer, Ye. Ya., Engineer, Moscow.

Title   :   Organization and Mechanization of Stone and
                 Brickwork

Periodical   :   Sbor. mat. o nov. tekh. v stroi., 1, 4-7, 1954

Abstract   :   The organization of bricklaying work on the construc-
                 tion job of the new Moscow State University is
                 described: the 5-man bricklaying teams, the machinery
                 and equipment used, the electric power required, etc.
                 One chart, 1 photo.

Institution :   Moscow State University

Submitted   :   No date

AID P - 367

Subject   : USSR/Engineering

Card   : 1/1

Author   : Bayer, Ye. Ya., Engineer

Title   : Interior wall face tiles finishing works

Periodical   : Sbor. mat. o nov. tekh. v stroi., 5, 16-23, 1954

Abstract   : Describes methods used in placing face tiles on floors
                and walls in the newly erected building of the Moscow
                State University. Detailed schemes were applied showing
                all openings to be left (for pipes and other installations).
                A bench to cut tiles for smaller areas is shown. 10 graphs.

Institution : None

Submitted   : No date

ØAYER YE. YA.

AID P - 529

Subject   : USSR/Engineering

Card 1/1   Pub. 93 - 4/9

Author   : Bayer, Ye. Ya., Engineer

Title   : Ceramic face lining of facades

Periodical   : Sbor. mat. o nov. tekh. v stroi., 7,   12-16,   1954

Abstract   : Description of how reinforced concrete panels with
                ceramic face linings were prepared and placed on the
                facades of the new state university building in Moscow.
                2 photos, 2 diagrams.

Institution : None

Submitted   : No date

BAYYER, Ye.Ya., inzhener.

Mechanization of smaller operations in construction of the Moscow
State University. Mekh.stroi. 11 no.6:15-22 Je '54.   (MIRA 7:6)
     (Building) (Moscow University)

BAYYER, Ye.Ya., inzhener.

Organization and mechanization of stonework. Sbor.mat.o nov.
tekh.v stroi.16 no.1:4-7 '54.   (MLRA 7:2)
                                        (Building, Stone)

PROSKURNIN, Valentin, inzhener; BAYYER, Yevgeniy, inzhener.

Builders' practices. Tekh.mol.22 no.2:13-15 F '54.   (MLRA 7:2)
(Moscow University) (Building)

BAYER, Ye.Ya., inzhener.

Stand for making large-dimension reinforced concrete hollow beam
floors. Mekh.stroi. 12 no.1:14-18 Ja'55.   (MLRA 8:3)
        (Floors, Concrete)

TSYURUPA,A.L., inzhener; BAYYER,Ye.Ya, inzhener

Mechanizing the production and installation of large sized
gypsumstag-concrete partitions. Mekh. stroi. 12 no.4:6-14
Ap. '55.   (MLRA 8:6)
                  (Precast concrete construction)

BAYER,Ye.Ya., inzhener

Laying parquet flooring without waste. Sbor. mat. o nov. tekh.
v stroi. 17 no.4:23-24 '55.   (MLRA 8:6)
                    (Parquet floors)

BAYYER, Yevgeniy Yakovlevich

BAYYER, Yevgeniy Yakovlevich, inzh.; KULIGIN, Nikolay Nikolayevich, inzh.;
UDAL'TSOV, A.N., glavnyy red.; ARSEN'YEV, L.B., inzh.red.

[Mechanized circular building yard for manufactureing reinforced
concrete parts] Mekhanizirovannyi kol'tsevoi poligon dlia izgo-
tovleniia zhelezobetonnykh izdelii. Moskva, In-t tekhniko-ekon.
inform. 1956. 16 p. (Peredovoi proizvodstvenno-tekhnicheskii opyt.
Seriia 33, no.T-56-183/12)   (MIRA 11:2)
         (Precast concrete)

BAYYER, Yevgeniy Yakovlevich, inzh.; FILATOV, A.I., inzh.,ved.red.; CHAPLYGIN, D.V., inzh., red;; SOROKINA, T.M., tekhn.red.

[Experience in the manufacture and use of prestressed reinforced concrete elements] Opyt izgotovleniia i primeneniia napriazhenno-armirovannykh zhelezobetonnykh konstruktsii. Moskva, Filial Vses.in-ta nauchn. i tekhn. informatsii, 1957. 68 p. (Peredovoi nauchno-tekhnicheskii i proizvodstvennyi opyt. Tema 55, no.S-57-66/9)   (MIRA 11:12)

              (Prestressed concrete)

AUTHOR: Bayer, E.Ya, (Engineer)   100-5-8/10

. TITLE: Practical tackles for the assembly of precast reinforced
         concrete constructions. (Ratsional'nye prisposobleniya
         dlya montazha sbornykh zhelezobetonnykh konstruktsiy).

ABSTRACT: According to the time-studies of the YuzhNIIMinmetallurg-
         khimstroy (ЮкНИИМинметаллургхимстрой) the assembly of
         one column of 12 t weight, 8 - 12 m high, takes 30 - 50 min.
         and 5 - 6 operatives are required. The above column can
         be placed in position in 5 - 10 min. by using the des-
         cribed and illustrated tackle which is shaped like an
         elongated "U". This lifting arrangement comprises a pivot
         which can be positioned along the arms. It is widely used
         in the East German Republic for lifting 10 - 20 t. heavy
         columns. The advantages lie in the ease of lifting from
         the horizontal position and that the column is in a verti-
         cal position during the jointing (Fig.1). Fig.2 illustrates
         the process of securing the upper part of a suspended column
         whilst the lower part is correctly positioned on the head
         of the lower column. The tackle was designed by I.K.Kovtun,
Card 1/6 an assembly operative of the Glavmosstroy factory. For

Practical tackles for the assembly of precast reinforced
concrete constructions. (Cont.)   100-5-8/10

this operation the head of the lower column is provided
with steel square sleeve with 8 short steel rods welded to
the same which serve as positioning guides for the base of
the upper column. The suspended top column is provided
with a sleeve formed of angle-irons to which 4 cables with
rectifying screws are attached. Fig.3 indicates an effect-
ive arrangement of the "montage" beams. Two-arm double-
lifting hooks (used in East Germany)can also be used for
assembling small partitions and panels. This comprises a
ring which is attached to the hook of the crane. Two ropes
ending in hooks are attached. A "U" shaped loop is formed.
The advantage lies in the small weight, low cost and uni-
versal use.

Device for the Assembly of Large Wall Panels: (Fig.4)
This comprises 3 joists: the top joist is fixed in a hori-
zontal position through 2 loops and the cable of the lifting
ring. On both ends of this joist are 2 freely hinged steel
joists. This American device is used for lifting medium
sized panels from the horizontal to the vertical position.

Balancing Traverse: (Fig.5)
This is used for the assembly of wall panels and beams and
Card 2/6 consists of rolled steel joists with holes drilled along the

Practical tackles for the assembly of precast reinforced
concrete constructions. (Cont.)   100-5-8/10

web. An attachment for suspension from the crane is fixed
through the centre hole. Cables with lifting hooks are
fixed on both ends. It is used for lifting panels with vary-
ing centres of gravity. The holes in the horizontal joist
are used for adjusting the position of the middle hanger to
suit the centres of gravity of various panels.
Lifting Device: (Fig.6)
Used abroad for lifting large wall panels. It comprises 2
frames which are fixed together with horizontal members.
There are 2 base cantilevered supports and 2 pairs of hori-
zontal gripping arms. The slabs lie in a vertical position
and the frame can be used as a scaffold for welding and
fixing.
Self-Balancing Lifting Device: (Fig.7)
This comprises a horizontal beam with a triangular welded
plate with a centre lifting hole. Both ends of the beam
are perforated and the holes are interconnected. A simple
pulley arrangement is fixed through the holes and the cable
running over the pulley has rings attached to both ends.
This is a Canadian invention, the advantage of the device
consisting in the self-balancing of the load in any required
Card 3/6 position.

Practical tackles for the assembly of precast reinforced
concrete constructions. (Cont.)   100-5-8/10

Tube-Lifting Device: (Fig.8)
2 steel channels are suspended on 2 cables, the channels
being provided with 2 freely fixed loops which secure the
lifted tube. This is used for reinforced concrete tubes
(diameter 300 - 600 mm) of up to 2 t weight.

Device for Lifting Reinforced Concrete Tubes: (Fig.9)
Tubes of 900 - 1500 mm diameter, 1-1.35 m long and up to
2 t in weight can be lifted by this device. It comprises
a clamp which is suspended from a cable. The tubes are
hooked at the ends and a safe grip is obtained by lifting
the weight.

Implement for Lifting Concrete Piles: (Fig.10)
The piles can be 8 - 11 m long and of 3.5 t weight. It
comprises 2 steel channels which are welded together. It
has 2 lifting cables which terminate in hooks which engage
the eye concreted into the pile. 2 lifting rods are sec-
ured to the top of the channel which are joined in a ring
so that the implement can be lifted by a crane.

Universal Lifting Tackle: (Fig.11)
This was designed by S.N.Arsen'ev and is manufactured in the
Card 4/6   Mosgrazhdamuglezhilstroy of Glavmostroy. It serves for the

Practical tackles for the assembly of precast reinforced
concrete constructions. (Cont.)   100-5-8/10

assembly of large building construction units. It consists
of a suspendable steel joist with 2 cables (4.6 m long)
with attached steel rings at 1.2 m centres.
Figure 12:
This illustrates an ancillary attachment to the previous
tackle for lifting large loads.
Figure 13:
This shows the universal tackle with the special attachment
and the way of lifting large slabs in the horizontal posit-
ion.
Figure 14:
Illustrates the above tackle and the way of lifting a pre-
cast concrete flight of stairs.
Implement for Lifting and Assembling Reinforced Concrete
Slabs up to 4 tons: (Fig.15)
This comprises a horizontal steel consisting of 2 channels
separated by a space in which 2 clamps are fixed which can
be adjusted. These clamps perform the lifting.
Implement for Lifting "Collector" Plate: (Fig.16)
The rectangular plate weighs 27 tons. The implement has 4
Card 5/6 steel cables of 15.5 m diameter which terminate in lifting

Practical tackles for the assembly of precast reinforced
concrete constructions. (Cont.)   100-5-8/10

rings. The upper end of the cables are connected to one
ring for attaching to the crane.
Figure 17:
An alternative detail of the top ring of the previous tackle
which is more suitable as it allows for quick exchange of
cables of various lengths.

There are 17 figures.

AVAILABLE:

Card 6/6

BAYER, Ye.Ya., inzhener.

Making architectural reinforced concrete elements. Nov.tekh.i
pered.op.v stroi. 19 no.1:18-20 Ja '57.   (MLRA 10:2)
        (Decoration and ornament, Architectural)
              (Reinforced concrete)

BAYYER, Ye., inzh.

Constructing buildings of the embassy of the Chinese People's Republic. Na stroi. Mosk. 2 no.12:11-13 D '59   (MIRA 13:3)
(Moscow--Chinese embassy)

STEKOL'NIKOV, B.A., prof.; BAYYER, Z.N., assistent

Treating peptic ulcer exacerbations with a vagosympathetic block.
Med.zhur.Uzb. no.10:34-37 O '58.   (MIRA 13:6)
        (VAGUS NERVE)   (PEPTIC ULCER) (NOVOCAINE)

OVSYANNIKOV, Karp L'vovich; BAYYER, Yevgeniy Yakovlevich; ZOLOTNITSKIY,
    N.D., prof., doktor-tekhn.nauk, red.; KOMILOVA, M.I., red.;
    RAKOV, S.I., tekhn.red.

[Precast reinforced concrete at the construction site] Sbornyi
zhelezobeton na poligonakh. Pod red. N.D.Zolotnitskogo. Moskva,
Izd-vo VTsSPS Profizdat, 1960. 327 p.
                                            (MIRA 14:4)
        (Precast concrete)

BAYYER, Ye.Ya., inzh.

Mechanization of finishing operations in the Main Administration for Housing and Public Construction in the City of Moscow. Mekh. stroi. 18 no.12:3-5 D '61.   (MIRA 16:7)

1. Glavnoye upravleniye po zhilishchnomu i grazhdanskomu stroitel'stvu v g. Moskve.
        (Moscow—Finishes and finishing)

BAYYER, Ye.Ya., inzh.

Industrilization and mechanization of finishing work in fully
prefabricated construction. Mekh. stroi. 20 no.10:4-6 O '63.
(MIRA 16:10)

1. Nachal'nik stroitel'stva No.10-S eksperimental'nogo kvartala
v Novykh Cheremushkakh, Moskva.

BAYER, Z.   PHASE I BOOK EXPLOITATION   JUN 25 1963284   42

Jerie, Jan, ed., Engineer, Doctor, Corresponding Member of the Czecho-
    slovak Academy of Sciences

Základní problémy ve stavbě spalovacích turbin (Basic Problems in the
    Construction of Gas Turbines [collection of articles]). Prague,
    Nakl. ČAV, 1962. 627 p. 1600 copies printed.

·Sponsoring Agency: Československá akademie věd.

Ed. of Publishing House: Marie Moravcová; Tech. Ed.: František
    Konóický.

PURPOSE: The book is intended to familiarize turbine designers with
    recent developments in the design of gas turbines and to present
    some research results which may be helpful in designing more ef-
    ficient turbines.

COVERAGE: The book comprises articles by leading Czechoslovak turbine
    experts on thermodynamic cycles, flow research in turbine components,

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Basic Problems in the Construction (Cont.)   Z/6284

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RAYER, Z.

"Terephthalic fibers."

CHEMICKY PRUMYSL, Praha, Czechoslovakia, Vol. 5, No. 10, October 1955.

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

Unclassified.

COUNTRY   : YUGOSLAVIA   H
CATEGORY   : Chemical Technology. Chemical Products and Their
                  Applications. Leather. Fur. Gelatine. Tanning *
ABS. JOUR.   : RZhKhim., No 17, 1959, No. 63215

AUTHOR   : Bayer, Z.; Ludviger, E.; Jahanides, V.
INSTITUTE   : -
TITLE   : Economical Advantages of Preserving Hides by Em-
                  ploying Salt,Containing Antibiotics.
ORIG. PUB.   : Koza i obuca, 1958, 7, No 12, 449-453

ABSTRACT   : Based on many years' experience the results per-
                  taining to the preservation of hides, employing
                  salt to which antibiotics are added, are presen-
                  ted. This method results in the salt economy up
                  to 50% with the improvement of physico-chemical
                  properties of finished leather.

                  *Materials. Industrial Proteins.
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BAYER, Z.

Research work in the field of production of moire-type furs. p. 11

LEKA PROMISHLENOST. (Ministerstvo na lekata promishlenist) Sofia, Bulgaria.
Vol. 8, no. 7, 1959.

Monthly List of East European Accessions (EEAI), LC, Vol. 8, no. 11, Nov. 1959
Uncl.

BAYER, Z.

Method for measuring electrostatic charges in textiles. p. 11.

TEXTIL. (Ministerstvo lehkeho prumyslu) Praha, Czechoslovakia. Vol. 14, no. 1, January 1959.

Monthly List of East European Accessions (EEAI) LC, Vol. 8, No. 11, November 1959.

Uncl.

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Z/032/61/011/010/001/007
E197/E535

26.2124

AUTHOR: Bayer, Z., Engineer

TITLE: Thermodynamic characteristics of gas turbines with blades cooled by air

PERIODICAL: Strojírenství, 1961, Vol.11, No.10, pp.723-730

TEXT: The purpose of the article is to asses the combined effect of increased working temperature and the consequent necessity of cooling and aims at optimal overall efficiency. Calculations refer to cooling by air, using data in literature, but for future projects the author suggests steam as the cooling medium. At first, a schematic description is given of a single cycle gas turbine with an open loop cooling system. While it is recognised that in any particular case the lowest price per kWh should be the deciding factor, in the absence of the necessary data, only the overall thermal efficiency, the specific performance and the pressure ratio of the cycle were taken into consideration for arriving at an optimum solution. The author differentiates between two types of losses due to cooling: firstly, the temperature of the working medium will drop faster than without

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cooling; secondly, power is needed to provide cooling. The first
is called thermodynamic loss, the second circulation loss. Losses
due to a worsening of aerodynamic conditions are included for
calculation purposes in the above two.   The original analysis of
the author is given in a works report (Ref.2: Zpráva ÚVS-ČSAV,
No.113-61) from which abridged fragments are quoted in the article.
Thermal losses in the cooling channels are calculated from known
heat transfer equations and the amount of thermodynamic losses
are discussed with reference to literature. It is stated that
those calculated by the reheat factor appear to be too low and
that substantial differences exist between the results obtained
by using various assumptions but, up to 1200°C, the differences
are comparatively small. The author states that circulation losses
are difficult to express by formulae. However, from considerations
of geometry, the ratio of length to radius of channels is more
favourable for large turbines than for small ones and the losses
would be proportionally smaller in the former. In the numerical
evaluation the polytropical efficiency of expansion and compression
was taken as 0.88, the useful work per step as 40 kcal/kg, the

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inlet temperature of cooling air as 100°C, the temperature at the
tip of the blade as 800°C and at the root as 630°C.   Diagrams are
plotted in the paper for single cycles and these deal with the
following: heat transferred to the cooling air dependent on maximum
temperature of the cycle and on pressure ratio; thermodynamic
losses which appear independent of pressure; circulating losses
which increase both with temperature and with the pressure ratio;
the ratio of circulation losses to thermodynamic losses; the sum
of circulation loss and thermodynamic loss in relation to heat
transferred; the amount of air needed, which appears excessive
over 1100°C, and the dependence of thermal efficiency on pressure
ratio for temperatures between 600°C and 1350°C.   The article
contains plots of the thermal efficiencies of various combinations
of cycles, dependent on maximum temperature and on pressure ratios.
In conclusion, the author states that for high specific loads the
thermal losses due to cooling are not too serious.   Above about
1100°C circulation losses will rise faster than thermodynamic
losses.   For best overall thermal efficiency the temperature should
be about 1200°C, but there will be only a 0.5% gain over about
1100°C.   On the whole, in the range from 6 to 25 MW a thermal

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efficiency of 33 to 36% is obtainable, amounting to a specific
performance of 230 to 340 kW/kg/s, equivalent to an air consumption
of 16 to 11 kg/kWh.   In comparison with an inlet temperature of
700°C the specific performance would now be doubled.   The author
attaches significance to the fact that actual measurements yielded
a performance as calculated by assuming that c_p is constant.
Since c_p cannot be constant, the author suggests further investi-
gation into the cause of concordance and believe that research in
that direction would be of practical importance. Finally, the
author advocates the use of water, respectively water transformed
into steam as a means of cooling, since steam has better heat
transfer characteristics than air and would substantially reduce
circulation losses. A disadvantage would be that the steam used
would have to be free of impurities. There are 13 figures and
18 references: 6 Czech, 4 Soviet and 8 non-Soviet-bloc. The
four latest English-language references read as follows: Ref.1:
Ainley, D.G., Internal Air-Cooling for Turbine Blades. A General
Design Survey. Aeronautical Research Council, Reports and
Memoranda, London, 1957; Ref.3: Burke, J.C., Buteau, B.L.,
Rohsenow, M.W., Analysis of the Effect of Blade Cooling on Gas-

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Thermodynamic characteristics ...   Z/032/61/011/010/001/007
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Turbine Performance, 1956, XI, Transaction of the ASME;
Ref.6: Esgar, J.B., Turbine Cooling. Transaction of the ASME,
1959, VII, Series A, p.81; Ref.8: Hawthorne, W.R., The Thermo-
dynamics of Cooled Turbines. Part I - The Turbine Stage, Part 2 -
The Multistage Turbine, 1956, XI, Transactions of the ASME.

ASSOCIATION: Ústav pro výzkum strojů ČSAV
            (Engineering Research Institute, ČSAV)

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BAYER, Zdenek, inz.

Chemical fibers and their use in the textile industry. Tech
praca 14 no.8:636-637 Ag '62.