GINETSINSKIY, A.G. [deceased]; ZAKS, M.G.; IOFFE, V.I.; KRESTINSKAYA, T.V.;
     SOKOLOVA, M.M.; KHAY, L.M.

Change in the hyaluronidase and hyaluronic acid system in the
rabbit kidney in experimental interstitial nephritis. Biul. eksp.
biol. i med. 57 no.3:30-34 Mr '64.

GINETSINSKIY, Aleksandr Grigor'yevich (1895-1962); ZAKS, M.G.,
        otv. red.

[Physiological mechanisms of water-salt balance] Fizio-
logicheskie mekhanizmy vodno-solevogo ravnovesiie I. 2
Moskva, Nauka, 1964.   426 p.   (MIRA 19:1)

ZAKS, M.G.; SOKOLOVA, M.M.

Mechanisms of the adaptation of some litoral organisms to desal-
ination of the environment. Zhur, evol. biokhim. i fiziol. 1
no. 6:538-542 N-D '65   (MIRA 19:1)

1. Laboratoriya razvitiya vydelitel'noy funktsii Instituta
evolyutsionnoy fiziologii i biokhimii imeni I.M. Sechenova AN
SSSR, Leningrad. Submitted April 3, 1964.

ZAKS, M.G.; MAZHBITS, I.A.

Paradoxal reaction of the breast to oxytocin in persistent
lactation. Biul. eksp. biol. i med. 59 no.6:53-55 Je '65.
(MIRA 18:6)
1. Institut evolyutsionnoy fiziologii i biokhimii imeni Sechenova
AN SSSR i Institut akusherstva i ginekologii AMN SSSR, Leningrad.

ZAKS, M.G.; MIKH..IN, I...

Development of capacitive function and the lactation reflex
in the course of lactation in women. Fiziol. zhur. 49 no.9:
1084-1088 S '63.   (MIRA 17:12)

1. Institut evolyutsionnoy fiziologii imeni I.M. Sechenova
AN SSSR i Institut akusherstva i ginekologii AMN SSSR, Leningrad.

ZAKS, M.G.; SOKOLOVA, M.M.

Effect of the antidiuretic hormone under conditions of osmotic
diuresis. Fiziol. zhur. 49 no.5:532-534 My '63.

(MIRA 17:11)

1. From the Laboratory for Research on Evolution of Excretory
Function Sechenov Institute of Evolutionary Physiology, Leningrad.

POLENOV, A.L., otv. red.; GERBIL'SKIY, N.L., otv. red.; ALESHIN,
    B.V., red.; BARANNIKOVA, I.A., red.; ZAKS, M.G., red.;
    YAKOVLEVA, I.V., red.

[Neurosecretory elements and their significance in the
body] Neirosekretornye elementy i ikh znachenie v orga-
nizme. Moskva, Nauka, 1964. 238 p.   (MIRA 17:11)

1. Vsesoyuznyy simpozium po problemam neyrosekretsii,
Leningrad, 1961. 2. Leningradskiy gosudarstvennyy uni-
versitet (for Gerbil'skiy, Barannikova). 3. Institut
tsitologii AN SSSR , Leningrad (for Polenov). 4. Khar'-
kovskiy meditsinskiy institut i Ukrainskiy institut
eksperimental'noy endokrinologii, Khar'kov (for Aleshin).

ZAKS, M.G.; KRESTINSKAYA, T.V.; SOKOLOVA, M.M.

Effect of an antidiuretic hormone in hypopotassemia in rats. Fiziol.
zhur. 50 no.12:1489-1495 D '64.   (MIRA 18:9)

1. Institut evolyutsionnoy fiziologii i biokhimii imeni I.M.
Sechenova AN SSSR, Leningrad.

ZAKS, M.G.; NATOCHIN, Yu.V.; SOKOLOVA, M.M.; TANASIYCHUK, O.F.; TVFRSKOY, G.B.

Transport of sodium and potassium in the secretion of milk.
Fiziol.zhur. 51 no.4:513-519 Ap '65.   (MIRA 18:6)

1. Institut evolyutsionnoy fiziologii i biokhimii imeni Sechenova
AN SSSR i Institut fiziologii imeni Pavlova AN SSSR, Leningrad.

LAPIDUS, Sh.I., kand. tekhn. nauk; ZAKS, M.I., inzh.

Design of welding transformers with magnetic shunt and partial
spread of the winding. Elektrotekhnika 35 no.11:49-52 N '64.

(MIRA 18:6)

88220

I. 5400

S/110/60/000/010/007/014
E194/E455

AUTHORS: D'yachkov, B.A., Candidate of Technical Sciences,
             Zaks, M.I., Engineer and Ryvkin, A.L., Engineer

TITLE: A Universal Welding Rectifier With a Wide Range of
             Control of Voltage and Current

PERIODICAL: Vestnik elektropromyshlennosti, 1960, No.10, pp.36-41

TEXT: The main technical requirements applicable to supply
sources for automatic welding in inert gas are formulated: the
volt-ampere characteristics must be flat in the working range;
smooth control of output voltage under load must be possible;
the output voltage must be automatically stabilized against load
variations and input voltage variations;   the no-load voltage
must be high enough to strike an arc reliably and the dynamic
characteristics must be satisfactory.   It is also generally
desirable that the supply should be able to provide a family of
drooping characteristics for manual arc welding.   Several methods
of obtaining flat volt-ampere characteristics are considered and

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A Universal Welding Rectifier With a Wide Range of Control of
Voltage and Current

dismissed in turn because of various defects,   A universal supply
having either level or drooping volt-ampere characteristics can be
obtained from a static supply source consisting of a step-down
three-phase transformer, a variable inductance and a rectifier unit,
The inductance is in series with the high- or low-voltage side of
the transformer and the load is supplied through the rectifier,
This gives a family of naturally drooping external characteristics,
each curve corresponding to a certain value of inductance,   Flat
volt-ampere characteristics are obtained by automatically altering
the inductance of the power circuit with the load,   The principles
underlying this idea are explained,   The most suitable form of
variable inductance is a saturating choke which can be used to
provide flat external characteristics by alteration in the
inductance of the choke,   A schematic circuit diagram of the
equipment is given and explained,   If it is necessary to improve
the dynamic characteristics of the equipment, a power magnetic
amplifier of suitable design may be used as a variable inductance.
Card 2/4

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S/110/60/000/010/007/014
E194/E455

A Universal Welding Rectifier With a Wide Range of Control of
Voltage and Current

There is a circuit diagram of a 300 A experimental equipment with
this feature. By throwing a switch, suitable flat characteristics
are obtained. The natural drooping external characteristics are
plotted. The technical and economic characteristics of welding
rectifiers built according to this circuit depend upon the desired
range of control of stabilized voltage and on the limits of
current control. If it is necessary to control voltage and
current over a wide range it is best to have two ranges of control
by altering the no-load voltage of the equipment. Technical data
of prototype equipment are given and, for example, the rated
voltage of 30 V may be altered from 17 to 34 V and the welding
current from 50 to 320 A. The prototype welding set was of good
performance with both automatic and manual welding. The set is a
little larger and less efficient than previous sets but this is
compensated by its universality. The weight could be appreciably
reduced if the control range were not so wide. There are

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S/110/60/000/010/007/014
E194/E455

A Universal Welding Rectifier With a Wide Range of Control of
Voltage and Current

7 figures and 1 table.

SUBMITTED: January 11, 1960

Card 4/4

S/125/61/000/006/009/010
D040/D112

AUTHORS: D'yachkov, B. A., Zaks, M. I., Ryvkin, A. L.

TITLE: Welding rectifier with elastive and falling characteristics

PERIODICAL: Avtomaticheskaya svarka, no. 6, 1961, 63-72

TEXT: VNIIESO has developed a new BCУ (VSU) type welding rectifier suit-
able for automatic gas-shielded as well as for manual arc welding. The first
VSU-300 and VSU-500 units have been completed, and production is planned to
start during 1961. The circuit diagram (Fig. 1) and photograph (Fig. 10)
(with removed casing) of the VSU-300 are given, and its operation is describ-
ed. The VSU represents an improvement, for the existing Soviet rectifiers do
not adjust the work voltage smoothly under load and work with other than
elastive characteristics. The VSU includes special saturation chokes. Its
universal, i.e. both elastive and steep falling characteristics are obtained
from a feed source consisting of a step-down transformer, saturation choke
and semiconductor rectifier unit. The output voltage of the rectifier re-
mains stable within 1 v at 5 to 10% voltage variations in the network. Two
graphs show the elastive and the steep falling characteristics (Fig. 2 and 3).
The technical data are (Table 3):

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Welding rectifier with elastive and ...

S/125/61/000/006/009/010
D040/D112

	VSU-300		VSU-500	
	Elastive	Falling	Elastive	Falling
Network voltage		220 /	380 v	
Rated welding current, amp	300	200	500	350
Operation time (%)	60	60	60	60
Rated work voltage, v	35	30	40	30
No-load voltage, v	53-65	65	52-68	68
Welding current range limits, amp....	50-330	25-240	90-550	50-350
Welding voltage range, v.......	17-35	-	20-40	-
Efficiency, %	68	63	70	66
No-load losses, w	600	500	900	700
Outer dimensions, mm	910 x 612 x 960		1186 x 593 x 1017	
Weight, kg	320		420	

The VSU rectifiers have aluminum windings, and their efficiency is higher
and the no-load losses lower than in analogous motor-generator units. There
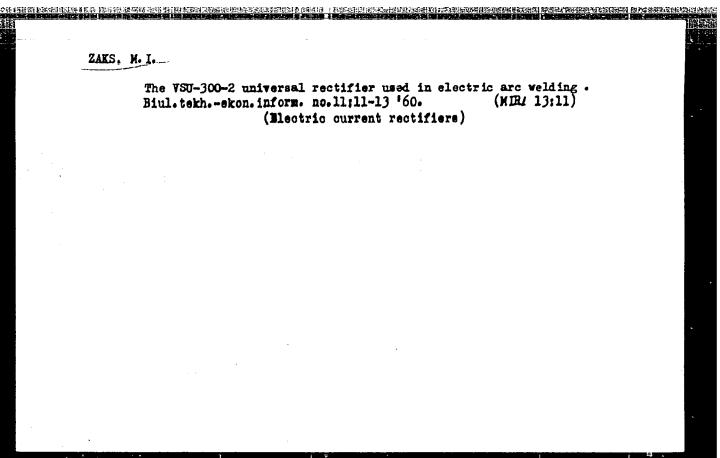are 10 figures, 3 tables and 4 Soviet references.
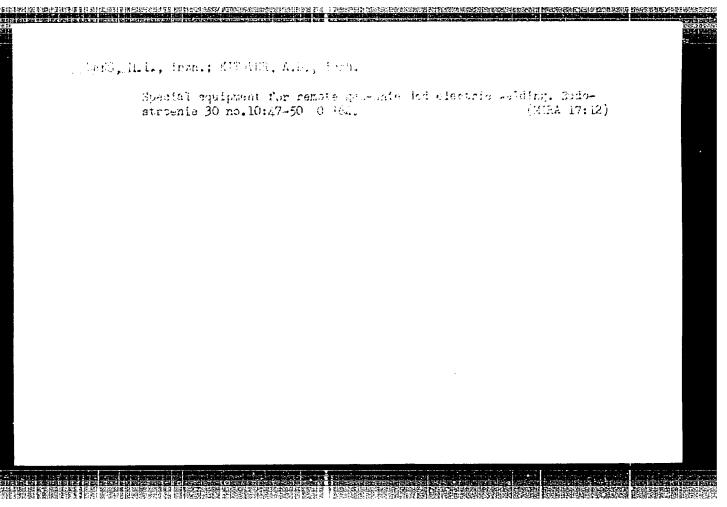
ASSOCIATION: VNIIESO

SUBMITTED: December 12, 1960

Card 2/5

ACC NR: AP6015642   (N)   SOURCE CODE: UR/0413/66/000/009/0053/0053

INVENTORS: Feder, Ye. S.; Zaks, M. I.; Lapidus, Sh. I.

ORG: none

TITLE: A universal welding rectifier. Class 21, No. 181212 /announced by All-Union Scientific Research Institute of Electric Welding Equipment (Vsesoyuznyy nauchno-issledovatel'skiy institut elektrosvarochnogo oborudovaniya)/

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 9, 1966, 53

TOPIC TAGS: welding equipment component, semiconductor rectifier, volt ampere characteristic

ABSTRACT: This Author Certificate presents a universal welding rectifier. The rectifier includes a power transformer, a regulation unit, and a saturation choke coil with control windings. The operating windings of the choke coil are joined in parallel and are connected in series with the rectifiers of the semiconductor power rectifier. The design simplifies the production of steep-dipping and flat-dipping external volt-ampere characteristics. One of the control windings of the saturation choke coil is connected to an unregulated voltage and serves as the bias winding in association with the flat-dipping external characteristics and as the preliminary magnetization winding in association with the steep-dipping characteristics. The

Card 1/2   —   UDC: 621.791.037-523

ACC NR: AP6015642

other control winding is connected to a regulated voltage, and provides the control
in association with the flat-dipping external characteristics. The other control
winding in association with the steep-dipping characteristics serves for producing
the welding current feedback.

SUB CODE: 09 13/   SUBM DATE: 12Apr65

Card 2/2

ZAKS, M. I.

The VSU-300-2 universal rectifier used in electric arc welding .
Biul.tekh.-ekon.inform. no.11;11-13 '60.   (MIRA 13:11)
(Electric current rectifiers)

D'YACHKOV, B.A.; ZAKS, M.I.; RYVKIN, A.L.

Welding rectifier with elastance and drooping characteristics.
Avtom. svar. 14 no.6:63-72 Je '61.   (MIRA 14:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut elektrosvarochnogo
oborudovaniya.
          (Electric welding—Equipment and supplies)

LASS, Il. I., Iran.; KIT MIR, A.L., Iran.

Special equipment for remote generated electric welding. Sudo-
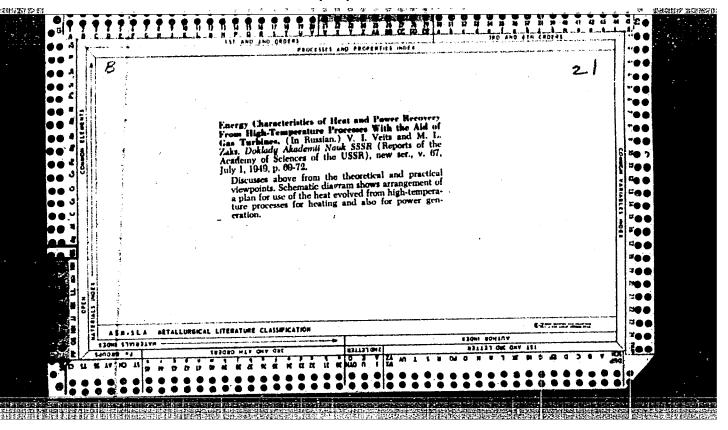stroenie 30 no.10:47-50 O '64.   (MIRA 17:12)
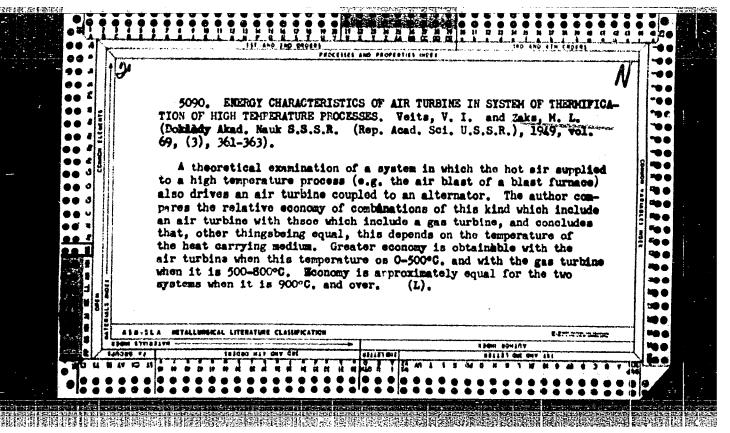
ZAKS, M. L.

"Use of Cooling Water of Metallurgical Furnaces for the Entire Heat Supply," Za
Ekon. Top., No.7, 1948.

Energetics Inst. im. Krzhizhanovskiy, AS USSR

ZAKS, M. L.

USSR/Engineering   Jun 49
    Turbines
    Heating, Industrial

"Regulated Selection of Optimum Pressure for
Central-Heating Turbines and Temperature of the
Heating Medium," M. I. Zaks, Power Eng Inst
iment G. M. Krzhizhanovskiy, 8 pp

"Iz Ak Nauk SSSR, Otdel Tekh Nauk" No 6

Results showed efficiency of using turbines with a
regulated selection of 0.7 - 1.2 atm and a non-
regulated 6-atm selection for thermification
(central-heating) requirements. Such a change in
the range (present range 1.2 - 2.5 atm) will prove

52/49T40

USSR/Engineering (Contd)   Jun 49

especially efficient for turbines operating at
high thermification coefficients (ratio of maximum
hourly turbine heat output to maximum hourly heat
output of thermoelectric central) and those
serving large industrial enterprises. Optimal
temperatures of heating medium depend primarily
on the thermification coefficient and, in a majority
of cases, are considerably higher than temperatures
now used in thermal systems. Submitted by Acad
3. M. Krzhizhanovskiy, 5 Feb 49.

52/49T40

B

21

Energy Characteristics of Heat and Power Recovery From High-Temperature Processes With the Aid of Gas Turbines. (In Russian.) V. I. Veits and M. I. Zaks. *Doklady Akademii Nauk SSSR* (Reports of the Academy of Sciences of the USSR), new ser., v. 67, July 1, 1949, p. 60-72.

Discusses above from the theoretical and practical viewpoints. Schematic diagram shows arrangement of a plan for use of the heat evolved from high-temperature processes for heating and also for power generation.

5090. ENERGY CHARACTERISTICS OF AIR TURBINE IN SYSTEM OF THERMIFICA-
TION OF HIGH TEMPERATURE PROCESSES. Veits, V. I. and Zaks, M. L.
(Doklady Akad. Nauk S.S.S.R. (Rep. Acad. Sci. U.S.S.R.), 1949, vol.
69, (3), 361-363).

A theoretical examination of a system in which the hot air supplied
to a high temperature process (e.g. the air blast of a blast furnace)
also drives an air turbine coupled to an alternator. The author com-
pares the relative economy of combinations of this kind which include
an air turbine with those which include a gas turbine, and concludes
that, other things being equal, this depends on the temperature of
the heat carrying medium. Greater economy is obtainable with the
air turbine when this temperature os 0-500°C. and with the gas turbine
when it is 500-800°C. Economy is approximately equal for the two
systems when it is 900°C. and over.   (L).

USSR/Engineering - Power Engineering   Feb 51

"Power Characteristics of Heat-Producing Systems for Industrial High-Temperature Processes," M. I. Zaks, Power Eng Inst imeni G. M. Krzhizhanovskiy, Acad Sci USSR

"Iz Ak Nauk, Otdel Tekh Nauk" No 2, pp 224-237

Deduced power characteristics permitting detn of optimum parameters, comparison of combined and sep systems and evaluation of power efficiency of installations in respect to conditions of usage. Studied 2 systems: combination syst with gas turbine, and combination installation with air

USSR/Engineering - Power Engineering   Feb 51
                   (Contd)

turbine. Data discussed represent one of the steps toward solving problem of selecting optimum para- meters and types of combined installations. Sub- mitted by Acad A. V. Vinter.

185T42

185T42

ZAKS, M. L.

USSR/Electricity - Turbines, Mercury   1 Aug 51

"Energy Characteristics of a Combined Unit Having a
Mercury Turbine for the Production of High-Potential
Heat," M. L. Zaks

"Dok Ak Nauk SSSR" Vol LXXIX, No 4, pp 595-599

Evaluates the mercury boiler-turbine unit from the
energy standpoint and compares its efficiency when
operating alone with that obtained in combined
operation with a gas turbine. Outlines areas of
application of both systems. Submitted by Acad
A. V. Vinter 7 Jun 51.

211T51

ZAKS, M. L.

PERIODICAL ABSTRACTS

Sub.: USSR/Engineering

AID 4170 - P

ZAKS, M. L.
RASCHETNAYA POTERYA DAVLENIYA V VODYANYKH TEPLOVYKH SETYAKH
(Rated pressure loss in water heating networks (district
heating). Teploenergetika, no. 2, F 1955: 34-37.

The method of determining unit pressure losses in district
heating conduits, is explained. By means of theoretical
analysis it is possible to compute formulae to be used in
the design and calculation of new networks. Six diagrams.

ZAKs, M.L.

1945. ESTIMATED PRESSURE LOSSES IN WATER-HEATING SYSTEMS. Zaks, M.L.
(Teplcenergetika (Heat Pwr Engng, Moscow), Feb. 1955, vol. 3, 34-37). A
method of determining the specific loss of pressure in water-heating systems
is outlined. Formulae are presented which permit determination of the
optimum parameter in relation to the accepted standard of economic efficiency.
Those formulae can be usefully applied when planning heating systems. (L).

ZAKS, M.L.

770.   REDUCING STEAM PARAMETERS FOR AN INDUSTRIAL DISTRICT HEATING

ZAKS, M.L.

Technical and economic indexes for calculating hot-water heating systems. Nauch.dokl.vys.shkoly; stroi. no.1:301-308 '59.
(MIRA 12:10)

1. Rekomendovana kafedroy teplotekhniki i teplofikatsii Moskovskogo inzhenerno-stroitel'nogo instituta im. V.V.Kuybysheva.
(Hot-water heating)

ZAKS, M.L., kand.tekhn.nauk

Design flow rates in heat networks and the conditions of heating
systems. Vod. i san. tekh. no.11:14-19 N '64.

(MIRA 18:2)

ZAKS, M.L., kand. tekhn. nauk

Method of calculating and simplified formulas for designing
a two-stage system of heat intake. Vod. i san. tekh. no.11:
23-28 N '63.   (MIRA 17:1)

ZAKS, M. L., kand. tekhn. nauk; KAPLINSKIY, Ya. I., inzh.

Operation of an open heat supply system and methodology for
calculating its central control. Teploenergetika 10 no.3:
46-51 Mr '63.   (MIRA 16:4)

1. Moskovskiy inzhenerno-stroitel'nyy institut im. V. V.
Kuybysheva i Gosudarstvennyy trest po organizatsii i
ratsionalizatsii rayonnykh elektrostantsiy i setey.

(Heat engineering)

ZAKS, M.L., kand.tekhn.nauk; KAPLINSKIY, Ya.I., inzh.

> Accumulator tanks for water system district heating stations.
> Teploenergetika 8 no.11:61-67 N '61.   (MIRA 14:10)

> 1. Moskovskiy inzhenerno-stroitel'nyy institut.
>   (Heating from central stations)

ZAKS, M.L., kand.tekhn.nauk; STOLYAROV, A.V., inzh.

Condensation power plants equipped with steam and gas turbines
and their comparative thermal efficiency [with summary in Eng-
lish]. Teploenergetika 6 no.3:19-25 Mr '59.   (MIRA 12:4)

1. Moskovskiy inzhenerno-stroitel'nyy institut i Energeticheskiy
institut AN SSSR.
     (Electric power plants) (Steam turbines) (Gas turbines)

AUTHORS: Zaks, M.L., Candidate of Technical Sciences
              Stolyarov, A.V., Engineer

TITLE: Steam-Gas Condensing Power Stations and Their Comparative
              Thermal Efficiencies (Parogazovyye kondensatsionnyye
              elektrostantsii i ikh sravnitel'naya teplovaya
              effektivnost')

PERIODICAL: Teploenergetika, 1959, Nr 3, pp 19-25 (USSR)

ABSTRACT: It is timely to consider the most efficient way of using
              gas as a power-station fuel. Stations may operate with
              gas turbines, with steam turbines or with a combination
              of the two. So far a procedure for comparing these
              types of power station has not been formulated.
              Fundamentally, the combined station consists of a steam
              boiler and gas-turbine combustion chamber as a single
              unit: a high-pressure steam generator operates on the
              gas side under a pressure set up by the compressors of
              the gas-turbine set. With this method of operation, the
              heating surfaces are small and much less than the normal
              amount of metal is required. In the steam generator the
              amount may be only 0.55 - 0.70 kg/kg steam, i.e. a quarter
Card 1/5   of that in an ordinary boiler. In comparing a gas-fired

Steam-Gas Condensing Power Stations and Their Comparative Thermal
Efficiencies

steam station and a combined station (without inter-
mediate cooling of the compressors in the gas-turbine
group), it is assumed that with equal excess air factors
and equal initial steam conditions an equal quantity of
fuel is consumed in both stations. Then if the outlet
gas temperatures are equal, the associated losses are
also equal. A comparison is then made between the thermal
efficiencies of a gas-fired steam station, a gas-turbine
installation and a combined steam-gas installation, the
schematic diagram of which is given in Fig.1. This
installation consists of a gas-turbine group, a condensing-
type steam turbine, a high-pressure steam generator and
regenerators. The gas and air are compressed in the
compressors of the gas-turbine stage and after heating in
the regenerators are delivered to the steam generator,
which serves also as the combustion chamber of the gas
turbine. The combustion products are used successively
as heat-transfer medium for steam raising and as working
Card 2/5   substance for the gas-turbine installation. The steam

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Steam-Gas Condensing Power Stations and Their Comparative Thermal
Efficiencies

generator reduces the temperature of the combustion
product to a value suitable for the gas turbine. After
the combustion products have expanded in the gas turbine
and passed through the regenerators they are discharged
to atmosphere. The thermal circuit of the steam stage
is normal. Comparative thermal efficiencies of the
three types of station are then calculated. The ratio
between the outputs of the gas turbine and the steam
turbine affects the thermal efficiency in the manner
plotted in Fig.2. A general comparison of the thermal
efficiencies of the three types of station for different
conditions is seen in Tables 1 and 2. Table 2 compares
a combined and a gas-turbine station for different
ratios of heat consumption in the steam- and gas-turbines.
The procedure described above was used to make a general
evaluation of the thermal efficiency of a combined station.
The influence of individual parameters of the cycle on the
efficiency were considered. The particular factors
discussed included: the excess-air factor; the use of
Card 3/5   higher steam conditions and the use of a more efficient

SOV/96-59-3-4/21

Steam-Gas Condensing Power Stations and Their Comparative Thermal
Efficiencies

gas stage. Calculated values of efficiency for
combined steam-gas stations are plotted in Figures 6 and
7. The calculations relate to gas obtained by underground
gasification of coal. The conditions assumed in the
calculation are stated. The graphs may be used to
compare the efficiencies of steam, gas and combined
stations for different steam conditions and gas-turbine
operating conditions. The curves in Fig.8 show the
range of efficiency of combined and gas-turbine stations.
It is concluded that in the combined station, the greatest
fuel economy results from the use of medium and high
initial steam conditions; also that the thermal
efficiency of the combined steam-gas systems is then
higher than that of a gas-fired steam station. The range
in which the combined station is most efficient is
somewhat extended when heat is delivered to the gas
stage in two steps. Combined installations give higher
fuel economy than gas turbines having low inlet
Card 4/5   temperatures. The output of combined stations is

SOV/96-59-3-4/21

Steam-Gas Condensing Power Stations and Their Comparative Thermal
Efficiencies

        governed by the unit output of the steam stage and their
use will be most effective in power stations of small
and medium output. There are 8 figures, 2 tables and
1 Soviet reference.

ASSOCIATION: Moskovskiy inzhenerno-stroitel'nyy institut (Moscow
        Civil Engineering   Institute); Energeticheskiy
Institut AN SSSR (Power Institute Ac.Sc. USSR)

Card 5/5

KOBRIN, M.M., kand. tekhn. nauk; ZAKS, M.N., inzh.; BELOKUROV, V.N.

Studying the joints of the frames of farm trailers. Trakt. i sel'khozmash.
no.7:15-17 Jl '65.
(MIRA 18:7)

1. TSentral'nyy nauchno-issledovatel'skiy institut stroitel'nykh kon-
struktsiy (for Kobrin). 2. Mytishchinskiy mashinostroitel'nyy zavod
(for Zaks, Belokurov).

AKIMOV, A.G., inzh.; TARS, K.N., inzh.; MELIK-SARKIS'YANTS, A.S.,
inzh.; EZROKHI, Kh.L., inzh.; retsenzent

[Self-unloading vehicles in automotive transportation;
the design and construction of dump trucks] Samorazgru-
zhaiushchiiasia avtotransport; konstruktsiia i raschet
avtomobilei-samosvalov. Moskva, Mashinostroenie, 1965.
230 p.   (MIRA 18:8)

ZAKS, M.N.

Transverse stability of dump trucks at a side dumping of the
load. Avt. prom. 30 no.12:23-28 D '64.   (MIRA 18:2)

1. Mytishchinskiy mashinostroitel'nyy zavod.

ZAKS, M.N.; LEL'CHUK, L.M.

Characteristics of the torsion of a motor-vehicle frame in case
of a shift of the axis of rotation from the plane of the frame.
Avt.prom. 31 no.5:33-35 My '65.   (MIRA 18:5)

1. Mytishchinskiy mashinostroitel'nyy zavod i Gosudarstvennyy
vsesoyuznyy nauchno-issledovatel'skiy tekhnologicheskiy institut
remonta i ekspluatatsii mashinno-traktornogo parka.

ZAKS, M.N.

    Lateral stability of a tractor train on a slope. Avt.prom.
28 no.1:25-29 Ja '62.   (MIRA 15:2)

    1. Mytishchinskiy mashinostroitel'nyy zavod.
                     (Tractor trains)

ZAKS, M. N.

Determining stresses in rivets caused by the torsion of motortruck frames. Avt. prom. 29 no.5:29-31 My '63.

(MIRA 16:4)

1. Mytishchinskiy mashinostroitel'nyy zavod.

(Motortrucks—Frames)

ZAKS, N. A.

Visual methods of studying the flow of a current around objects. Moskva? Izd
VVIA, 1949. Mic 52-806. Collation of the original: 62 p.

Microfilm TL-9

MARTYNOV, A.K.; OSTOSLAVSKIY, I.V., prof., retsenzent; BURAGO, G.F., prof.,
     retsenzent; ZAKS, N.A., dotsent, retsenzent; STRIZHEVSKIY, S.Ya.,
     dotsent, retsenzent; KOTLYAR, Ya.M., red.; ZUDAKIN, I.M., tekhn.red.

[Experimental aerodynamics] Eksperimental'naia aerodinamika.
Moskva, Gos.izd-vo obor.promyshl., 1950. 475 p.

(MIRA 13:7)

(Aerodynamics)

ZAKS, N. A.

PHASE I   TREASURE ISLAND BIBLIOGRAPHICAL REPORT   AID 271 - I

BOOK   Call No.: AF~~616837~~ 610837

   Author: ZAKS, N. A.
   Full Title: PRINCIPLES OF EXPERIMENTAL AERODYNAMICS
   Transliterated Title: Osnovy eksperimental'noy aerodinamiki
Publishing Data
   Originating Agency: None
   Publishing House: State Publishing House of the Defense Industry
                      (Oborongiz)
   Date: 1953   No. pp.: 371   No. of copies: Not given
   Editorial Staff
      Editor: None   Tech. Ed.: None
      Editor-in-Chief: None   Appraiser: None
      Others: Gratitude for assistance expressed to Professors:
               Kamenkov, G. V., Mel'nikov, A. P., Zhuravchenko, A. N.
               and to Dotsents: Timchenko, Ya. Ye., Putyata, V. I.
               and Grumondz, T. A.

Text Data
   Coverage: This is a textbook for a university course in experimental
              aerodynamics. It contains the description of the following
              topics: Aerodynamic similarity, aerodynamic research,
              experimental aerodynamic research on the wing and other
              aircraft, components, calculation of aircraft characteristics.
                                  1/8

Translation (brig) - D496446

Osnovy eksperimental'noy aerodinamiki   AID 271 - I

Due attention is also given to aerodynamics of high velocities. Diagrams, graphs, photos, etc.

A modern and very well-compiled textbook, comparable to Fluid Dynamics by Prandtl, 1952 edition, or to the Introduction to Aeronautical Dynamics by M. Rauscher, 1953, though less theoretical, and shorter.

TABLE OF CONTENTS   PAGE

            centers of pressure; Examples of utilization of
            experimental aerodynamics diagrams; Special tunnels
            and instruments intended for securing aerodynamic
            similarity according to paramenters R, F, S, and £;
            High velocity aerodynamic tunnels; Formulas for the
            calculation of aerodynamic coefficients by means of
            experiments with models in high velocity tunnels;
            Practical possibilities of obtaining similarity to
            standards R and M in aerodynamic tunnels; Ballistic
            method of research of resistance; Some other methods
            of aerodynamic research; Optical research methods;
            Shadow method, and wave or "Schlieren-shadow" method;
            Optical research methods, interference method.

            Manometers and pressure intakes; Flow velocity
            measurement; Determination of the dynamic pressure
            field in the working section of a wind tunnel;
            Pressure in the critical point at high subsonic
            flight velocities; Measurement of high subsonic
            velocities, corrections for air compressibility
            and for flight altitude, calibration of the

                            3/8

PAGE

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boundary layer, and the position of the transition
point; Determination by calculation of the transi-
tion point over a wing; Separation of the boundary
layer; Turbulence of the stream; Determination of
the stream turbulence by means of a thermo-electro-
anemometer; Head resistance of a sphere in
relation to the R number and to the turbulence of
the stream; Sphere as a measure of turbulence; The
scale of turbulence; The influence of turbulence on
aerodynamic characteristics of some bodies; Reducing
experimental results to the atmospherical turbulence;
Means of changing the initial turbulence of the stream
in aerodynamic tunnels.

Ch.   V   The Influence of Geometrical Parameters and of the R
Number on the Aerodynamical Characteristics of the Pro-
file and of the Wing. Maximum Lifting Force of the
Wing   191-254
Basic geometrical characteristics of a profile, and
the formation of series of profiles; The influence
of geometrical parameters of the profile on its
aerodynamic characteristics; Geometrical parameters

5/8

                          7/8

Osnovy eksperimental'noy aerodinamiki

AID 271 - I

Ch. VIII   Aerodynamic Characteristics of the Stability and   PAGE
            Controllability of the Aircraft
                Conceptions of aircraft stability and control-   342-366
                lability; Diagrams of aircraft longitudinal
                static stability; Diagrams of aircraft trans-
                versal static stability; Hinge moment of the
                rudder and pressure on the control stick or
                the rudder bar; Horn, axial, and internal
                balances; Servocompensators and trimmers.

Purpose: Approved by the Main Board of Higher Education of the Minis-
            try of Culture, USSR, as a textbook for students of advanced
            courses in aviation institutes of higher learning. This
            book may be also useful to engineering and technical staffs
            of aviation plants, design bureaus, and research laboratories.
Facilities: A large number of names of Russian scientists appear in
            the text.
No. of Russian and Slavic References: 3 before 1940, and 5 after that
                                       date
Available: A.I.D., Library of Congress.

8/8

BURGESS, Eric; KUZNETSOV, S.I. [translator]; ZAKS, N.A. [translator];
    TIMROT, D.L., red.

[Frontier to space] K granitsam prostranstva. [Translated from
the English] Perevod s angliiskogo S.I.Kuznetsova i N.A.Zaksa.
Pod red. D.L.Timrota. Moskva, Izd-vo inostrannoi lit-ry, 1957.
221 p.   (MIRA 12:3)
           (Atmosphere, Upper--Rocket observation)

ꟼ 23ＰD   also 1573

23279
S/135/61/000/007/002/012
A006/A106

AUTHOR: Zaks, N. A., Engineer

TITLE: The effect of heat treatment and extended heating on ferrite-austenite
welds

PERIODICAL: Svarochnoye proizvodstvo, no. 7, 1961, 6-9

TEXT: An investigation was made of the dependences of the mechanical
properties of 25-5 type ferrite-austenite metal. Tests were carried out with
multi-layer built-up specimens using ЭИ-905 (EI905) wire electrodes with НИИ-48
(NII-48) coatings. Building-up was performed on the edges of a rolled ЭИ-954
(EI-954), 16 mm thick steel plate, in 8-10 layers with d-c of reverse polarity.
The electrode diameter was 5 mm; current intensity 210-220 amps; arc voltage
18-22 v and welding speed 10-12 m/hr. Subsequent layers were built-up after
cooling the preceding layer to below $100^{\circ}C$. The compositions of the base metal,
the electrode wire, and the built-up metal are given in a table. Stabilizing and
austenization were carried out at 850, and $1000^{\circ}C$ for 50, 500 and 1,500 hours.
It was found that heat treatment did practically not affect the strength proper-
ties of built-up ferrite-austenite metal of the 25-5 type. Homogenization raised

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23279
S/135/61/000/007/002/012
A006/A106

The effect of heat treatment ...

the ductile properties of the metal and, in particular, its toughness. Maximum
toughness is shown by metal in austenized state. Stabilization at $850^\circ C$, which is
necessary to reestablish corrosion immunity or to remove residual stresses after
welding, does not cause considerable embrittlement of the built-up metal of the
25-5 type, as of 18-8 or 18-11-3 (Mo) austenite-ferrite metal, containing up to
10% ferrite. This is caused by the shifting of the δ-phase range to the side of
lower temperatures and by its accelerated formation at $600-650^\circ C$. Sigmatization
of 25-5 type built-up metal occurs most effectively at $650^\circ C$; as a result, temper-
ing and extended holding at the given temperature cause considerably reduced
toughness. The 25-5 type built up metal is prone to brittleness at $475^\circ C$, which
begins to manifest itself during tempering within $400-500^\circ C$ and also after extended
holding above $300^\circ C$. Therefore 25-5 type weld joints can be recommended for long-
lasting operation at not over $300^\circ C$ in the after-welding state and up to $340^\circ C$
in stabilized or austenized condition. The causes of embrittlement at $475^\circ C$ were
studied by a number of authors (Ref. 9-14: Imai, Y., Kumada K., Science Reports of
the Iohoku University (Japan), June, 1953; Josso, E., Interpretation of brittle-
ness at $475^\circ C$ of alloys, Comptes Rendus de l'Academie des Sciences, Paris, v. 240,
no. 7, 2955; Ardentov, V. V., New electrodes for welding stainless austenite
steels, Collected volume "Svarochnoye proizvodstvo", Lenizdat, 1957; Fischer, R. M.,

Card 2/4

23279
S/135/61/000/007/002/012
A006/A106

The effect of heat treatment ...

Dulis, E. J. and Carrol, K. G. "Journal of Metals", no. 6, 1954; Lena, A. J. and Hawkens, M. F. Embrittlement of stainless steels at $475^{\circ}C$, "Journal of Metals" no. 2, 1952 and no. 6, 1954; Dyatlov, V. I., Kopersak, N. I. "On the nature of embrittlement at $475^{\circ}C$ of chrome-nickel stainless steels "Avtomaticheskaya svarka" no. 5, 1959). The investigation performed by the author shows that brittleness at $475^{\circ}C$ is a reversible process, since, after brief-lasting tempering at $550^{\circ}C$ and more, the toughness is reestablished up to values approaching the initial ones. Considering that this is caused by the dissolving of the singled-out phase, it is not clear why extended holding at $550 - 650^{\circ}C$ entail the formation of δ' and ξ-phases, but brief-lasting holding at the indicated temperatures cause their dissolving. Based on these concepts the authors of Ref. 14 advanced a hypothesis on the inter-phase distribution of chromium in the α-phase without the singling-out of excessive phases. They confirm that the concentration of atoms on certain areas of the iron crystal lattice distorts this lattice, causing "interphase case-hardening". The interphase redistribution of chromium entails the formation of two types of complex: zones enriched with chromium (the Guinier-Preston zone) and zones impoverished in chromium. These complexes are coherently connected between each other and with the mother liquor, i. e. decomposition of the solid solution does not take place. The interphase heterogeneity explains the loss in strength

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The effeot of heat treatment ...
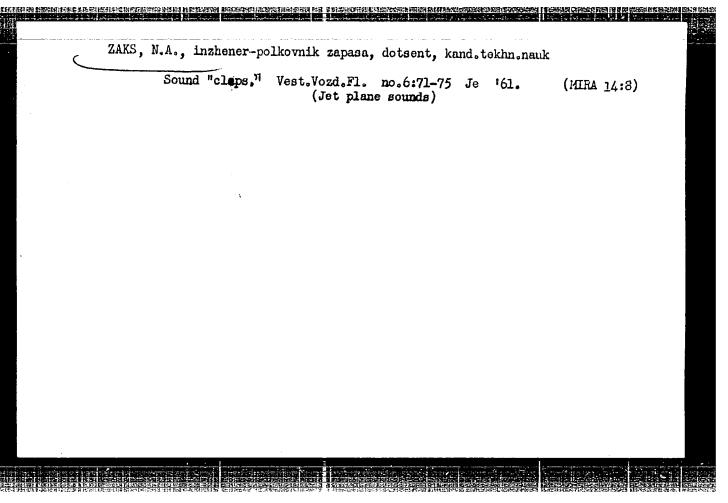
S/135/61/000/007/002/012
A006/A106

of embrittled metal against corrosion; case-hardness reduces toughness and increases hardness and strength. Welding of ferrite-austenite 25-5 type steels with electrodes mahufactured on 18-11-3 (Mo) base wire is permissible under the condition that the articles after welding will not be exposed to stabilization or tempering for removing stresses within a range of 600-850°C. This treatment causes strong embrittlement of the weld metal as a result of sigmatization.

Table 1

Object of research	Content of components in %										
	C	Si	Mn	Cr	Ni	Mo	V	Ti	N	S	P
Base (rolled) metal 954 (EI954) (25 5)(Kh25N5TMF)	0,09	0,63	0,44	24,3	5,35	0,10	0,11	0,10	0,044	0,024	0,028
Electrode wire 905(EI905) (-08 25 5)(Sv-08Kh25N5TMF)	0,07	0,33	0,40	24,2	4,92	0,11	0,11	0,10	0,20	0,009	0,007
Metal built-up with electrodes made of EI905 wire with NII-48 ooatings	0,10	0,57	1,18	23,4	5,03	0,08	0,09	0,01	0,18	0,016	0,019

There are 2 tables, 6 figures and 14 references: 10 Soviet-bloo and 4 non-Soviet-bloc.

ASSOCIATION: Leningradskiy Kirovskiy zavod (Leningrad Kirov Plant)

Card 4/4

ZAKS, N.A., inzhener-polkovnik zapasa, dotsent, kand.tekhn.nauk

Sound "claps," Vest.Vozd.Fl. no.6:71-75 Je '61. (MIRA 14:8)
(Jet plane sounds)

ZAKS, N.A.

Pneumatic collecting cotton distributor. Tekst. prom. 24
no.8:30-33 Ag '64.   (MIRA 17:10)

1. Nachal'nik laboratorii Vsesoyuznogo nauchno-issledovatel'-
skogo instituta legkogo i tekstil'nogo mashinostroyeniya
(VNIILTekmash).

KLYUCHAREVA, G.G.; ZAKS, O.P.

Method for determining the radioactive phosphorus isotope in bacteriophage retained on a glycerol-collodion filter. Trudy LSGMI 46:263-269 '59.   (MIRA 13:11)

1. Kafedra mikrobiologii Leningradskogo sanitarno-gigiyenicheskogo meditsinskogo instituta (zav. kafedroy - prof. M.N.Fisher) i Kafedra fiziki (zav. kafedroy - prof. S.S.Prilezhayev).
              (PHOSPHORUS—ISOTOPES)   (BACTERIOPHAGE)
                        (STAPHYLOCOCCUS)

ZAKS, O. V.; MUCHNIK, M. I.[Muchnyk, M. I.]

Some theoretical dependences in the process of two-stage saponification. Khar. prom. no.1:18-22 Ja-Mr '63.
(MIRA 16:4)

1. Odesskiy proyektno-konstruktorskiy institut kompleksnoy avtomatizatsii proizvodstvennykh protsessov pishchevoy promysh-lennosti.

(Saponification)   (Oils and fats)

L 34128-66   EWT(m)/EWP(j)   RM

ACC NR: AP6025527   SOURCE CODE: UR/0079/66/036/001/0044/0046

AUTHOR: Mandel'baum, Ya. A.; Zaks, P. G.; Mel'nikov, N. N.

ORG: All-Union Scientific Research Institute of Chemical Means of Plant Protection (Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh sredstv zashchity rasteniy)

TITLE: New method for producing mixed dialkyl phosphites

SOURCE: Zhurnal obshchey khimii, v. 36, no. 1, 1966, 44-46

TOPIC TAGS: chemistry technique, alcohol, water, phosphorus chloride

ABSTRACT: A new one-step method has been developed for producing dialkyl phosphites with various radicals. A mixture consisting of two different alcohols and water, taken in equimolar tations, is treated with phosphorus trichloride. Constants are cited for 11 dialkyl phosphites synthesized by this method. Orig. art. has: 1 table. [JPRS: 35,998]

SUB CODE: 07 / SUBM DATE: 04Nov64 / ORIG REF: 008 / OTH REF: 003

Card 1/1   UDC: 661.718.1

MANDELBAUM, YA.A., ZAKS, P.G., MELNIKOV, N.N.

New method of synthesizing esters of thiophosphoric acid.

Khimiya i Primeneniye Fosfororganicheskikh Soyedineniy (Chemistry and
application of organophosphorus compounds) A. YE. ARBUZOV, Ed.
Publ. by Kazan Affil. Acad. Sci. USSR, Moscow 1962, 632 pp.

Collection of complete papers presented at the 1959 Kazan Conference on
Chemistry of Organophosphorus Compounds.

MANDEL'BAUM, Ya.A.; MEL'NIKOV, N.N.; BAKANOVA, Z.M.; ZAKS, P.G.

Organic insecticide-fungicides. Part 61: Synthesis of some
mixed ethyl mercaptoethyl thiophosphates. Zhur.ob.khim. 31
no.12:3947-3949 D '61.
(MIRA 15:2)

1. Nauchnyy institut po udobreniyam i insektofungitsidam im.
Ya.V.Samoylova, Moskva.
(Phosphothioic acid)
(Insecticides)

SOV/79-29-1-59/74

AUTHORS: Mandel'baum, Ya. A., Mel'nikov, N. N., Zaks, P. G.

TITLE: On the Field of Organic Insecticides(Iz oblasti organicheskikh insektofungitsidov) XXXVII. Synthesis of Several Mixed Thio- and Dithiophosphoric Acids (XXXVII. Sintez nekotorykh smeshannykh efirov tio- i ditiofosfornykh kislot)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 1, pp 283-285 (USSR)

ABSTRACT: Besides thio- and dithiophosphates of the general formula

$$(RO)_2P \overset{X}{\diagup} X(CH_2)_n SR'\ (I)$$ used   against plant pests, compounds

of the general formula

$$(RO)_2P \overset{S}{\diagup} SCH_2CON \overset{R'}{\diagdown} R''$$

have come into use during the last years (Refs 1, 2). The so-called "acetyl urea" (Refs 3, 4) may serve as an example for the compounds of this kind investigated in the USSR. While investigating how insecticide activity of organo-phosphorus compounds depended on their structure, and in the search for new insecticides, harmless to warm-blooded animals and humans,

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On the Field of Organic Insecticides.   ·   SOV/79-29-1-59/74
.XXXVII. Synthesis of Several Mixed Thio- and Dithiophosphoric Acids

the authors particularly directed their efforts towards the
synthesis of the mixed esters of thio- and dithiophosphoric
acids of the general formulas (III),(IV), and (V). It was
carried out by the reaction of diethyl-thio- and diethyl-
dithiophosphates with the corresponding monochloro acetic and
monochloro thioacetic acid on heating the reaction solution.
As expected, the thionic isomers of the thiophosphates were
obtained (Refs 5, 6)(Table). Activity against insects did not
quite come up to expectations compared to
0,0-diethyl-0,4-nitro-phenyl thiophosphate.
There are 1 table and 6 references, 4 of which are Soviet.

ASSOCIATION: Nauchnyy institut po udobreniyam i insektofungitsidam
               (Scientific Institute for Fertilizers and Insectifungicides)

SUBMITTED: November 20, 1957

Card 2/2

SOV/79-29-2-35/71

AUTHORS: Mel'nikov, N. N., Mandel'baum, Ya. A., Zaks, P. G.

TITLE: On the Field of Organic Insectofungicides (Iz oblasti organi-checkikh insektofungitsidov). XXXVIII. On the Reaction of Thiophosphorus Trichloride and the Alkyl Dichloro Thiophosphates With Alcohols (XXXVIII. O vzaimodeystvii tiotrekhkhloristogo fosfora i alkildikhlortiofosfatov so spirtami)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 2, pp 522-526 (USSR)

ABSTRACT: In continuation of previous papers published by Mel'nikov and coworkers (Refs 1-11) the authors investigated the reaction of thiophosphorus trichloride and the alkyl dichloro thio-phosphates with alcohols under various conditions. They obtained various products according to the conditions of reaction and the ratio of the reacting compounds. On the reaction of 2 mols ethyl alcohol with 1 mol thiophosphorus trichloride the ethyl-dichloro thiophosphate (45-50%) and ethyl thiophosphoric acids (20%) are obtained at 40-50°. The reaction of 1 mol thio-phosphorus trichloride with 4 mols ethyl alcohol at 50-60° leads to a mixture of esters (46-48%) which consists of 80% ethyl-dichloro thiophosphate and 20% diethyl-chloro thiophosphate,

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On the Field of Organic Insectofungicides. XXXVIII. On the Reaction of Thio-
phosphorus Trichloride and the Alkyl Dichloro Thiophosphates With Alcohols

however, it is possible to synthesize an almost pure diethyl-
chloro thiophosphate in a yield of only 10% if it is heated
for a while in a boiling water bath. Besides chloro thio-
phosphates also ethyl thiophosphoric acids and ethyl chloride
are formed under the above-mentioned conditions. The reactions
of thiophosphorus trichloride with alcohols and their succes-
sion can be represented by the schemes (3)-(7) mentioned.
According to these schemes the authors arrived at the con-
clusion that good yields of dialkyl chloro thiophosphates can
be obtained on sufficient dilution of the reaction medium with
alcohol. This assumption was fully confirmed by experiments
(Table 1). Much better yields of dialkyl chloro thiophosphates
are obtained by reaction of alcohols with alkyl dichloro thio-
phosphates, in the course of which methyl alcohol offers the
highest yield (Table 2). The reaction of methyl alcohol with
thiophosphorus trichloride or alkyl dichloro thiophosphate
leads to trialkyl thiophosphates, however only with small
yields (Table 3). Therefore, thiophosphorus trichloride and
alkyl dichloro thiophosphates react like typical chloric an-
Card 2/3   hydrides, similar to acid halides of the other inorganic and

On the Field of Organic Insectofungicides. XXXVIII. On the Reaction of Thio-- phosphorus Trichloride and the Alkyl Dichloro Thiophosphates With Alcohols

SOV/79-29-2-35/71

organic acids. There are 3 tables and 12 references, 9 of which are Soviet.

ASSOCIATION: Nauchnyy institut po udobreniyam i insektofungitsidam (Scientific Institute of Fertilizers and Insectofungicides)

SUBMITTED: December 24, 1957

Card 3/3

ZEN'KEVICH, A.G.; ZAKS, P.G.; MANDEL'BAUM, Ya.A.; MEL'NIKOV, N.N.

Organic insectofungicides. Part 55: Synthesis of some
alkylarylthiophosphoric acid hydrazides. Zhur.ob.khim.
30 no.7:2317-2319 Jl '60.   (MIRA 13:7)

1. Nauchnyy institut po udobreniyam i insektofungitsidam, Moscow.
                 (Hydrazides) (Phosphorothioic acid)

MEL'NIKOV, N.N.; MANDEL'BAUM, Ya.A.; SHVETSOVA, K.D.; BAKANOVA, Z.M.
     LOMAKINA, V.I.; ZAKS, P.G.; MIL'SHTEYN, I.M.; POPOV, P.V.;
     POKROVSKIY, Ye.A.; BOCHAROVA, L.P.; SEDYKH, A.S.; UKRAINETS, N.S.

Improved technology for producing thiophos, metaphos, chlorophos
and other phosphorus organic insecticides and investigation of
new insecticides and fungicides derived from the esters of
phosphoric acids. [Trudy] NIUIF no.164:11-14 '59.   (MIRA 15:5)
               (Insecticides) (Fungicides)

L 38696-66   EWT(1)/EWT(m)/EWP(j)   RO/RM

ACC NR: AP6021413   SOURCE CODE: UR/0413/66/000/011/0018/0018

INVENTOR: Mandel'baum, Ya. A.; Mel'nikov, N. N.; Zaks, P. G.; Roslavtseva, S. A.

ORG: none

TITLE: Organophosphorus insecticides with increased activity. Class 12, No. 182138
[announced by All-Union Scientific Research Institute of Chemicals for Plant
Protection (Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh sredstv
zashchity rasteniy)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 11, 1966, 18

TOPIC TAGS: insecticide, organophosphorus compound, synergist, insect control

ABSTRACT: An Author Certificate has been issued for a method of increasing the
insecticide activity of organophosphorus preparations by addition of synergists.
The method involves the use of trialkyl thiolphosphates [sic] as the synergist.   [BO]

SUB CODE: 06/ SUBM DATE: 17Jul64

Card 1/1   UDC: 632.951.2.547.419.1

L 05185-67   EWT(m)/EWP(j)   RM

ZAKS, P. G., MANDEL'BAUM, Ya. A., MEL'NIKOV, N. N., IVANOV, V. V.,
All-Union Scientific Research Institute of Chemical Means of Plant Protection
(Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh sredstv zashchity
rastehiy)

"Interaction of Trialkylthiolphosphates with Salts of O,O-Dialkylthiophosphoric
Acid"

Abstract: Trialkylthiolphosphates were found to alkylate ammonium salts of
O,O-dialkylthiophosphoric acids, forming the corresponding trialkylthiolphos-
phates and salts of O,S-dialkylthiophosphoric acids. The alkylation can be
carried out with catalytic amounts of the trialkylthiolphosphates. In the
alkylation of salts of dimethylthiophosphoric acid by various alkylating agents,
such as esters, amides, and sulfamides of chloroacetic acid, the yield of
alkylation products was very low in comparison with derivatives of other dial-
kylthiophosphoric acids. The cause of the low yield was found to be the high
methylating ability of the products of this reaction, O,O-dimethyl-S-alkyl
esters of thiophosphoric acid. The salts obtained are compared with the cor-
responding thione salts. Orig. art. has: 1 figure. [JPRS: 37,023]

TOPIC TAGS: alkylation, phosphate, organic phosphorus compound
SUB CODE: 07 / SUBM DATE: 07Apr65 / ORIG REF: 005 / OTH REF: 004

Card 1/1   vmb

VIGDORCHIK, N.A., zasluzhennyy deyatel' nauki, professor; ZAKS, R.A., nauchnyy sotrudnik

[Analysis of the incidence of disabling illnesses at Leningrad industrial interprises during recent years] Analis zabolevaemosti s poterei trudosposobnosti na promyshlennykh predpriiatiiakh Leningrada zaposlednie gody. Leningrad, Leningradskii institut gigieny turda i professional'nykh zabolevanii, 1946. 48 p.
[Microfilm]   (MIRA 9:12)
            (LENINGRAD--MEDICAL STATISTICS)

ZAKS, R.A.

KOYRANSKIY, B.B., prof.; ZAKS, R.A.

Role of meteorological conditions of industrial premises in the
etiology of tonsillitis. Gig. i san. 23 no.2:34-39 F '58.
(MIRA 11:4)

1. Iz Leningradskogo nauchno-issledovatel'skogo instituta gigiyeny
truda i professional'nykh zabolevaniy.
(TONSILLITIS, etiol. & pathogen.
meteorol. cond. in indust. (Rus))
(CLIMATE, eff.
on tonsillitis in indust. (Rus))

KARPENKO, B.V.; BERDYSHEV, A.A.; ZAKS, R.B.; NOSKOVA, L.M.

Effect of indirect exchange interaction in the magnetism theory
of transition metals and rare earths. Part 2. Antiferromagnetism.
Fiz. met. i metalloved. 9 no. 4:481-487 Ap '60.   (MIRA 14:5)

1. Ural'skiy gosudarstvennyy universitet im. A.M. Gor'kogo.
                      (Ferromagnetism)

24.2200

80211
S/126/60/009/04/001/033
E032/E435

AUTHORS: Karpenko, B.V., Berdyshev, A.A., Zaks, R.B. and Noskova, L.M.

TITLE: The Role of Indirect Exchange Interaction in the Theory of the Magnetism of Transition Metals and Rare Earths II. Antiferromagnetism

PERIODICAL: Fizika metallov i metallovedeniye, 1960, Vol 9, Nr 4, pp 481-487 (USSR)

ABSTRACT: In the previous paper (Ref 1) a study was made of the indirect interaction between d-electrons in the ferromagnetic problem. It was shown that the indirect interaction between electrons in inner and incompletely filled shells, in the atoms of transition metals and rare earths, favours the formation of a ferromagnetic state. In the present paper an estimate is made of the role of indirect interaction in setting up antiferro-magnetic order. The Hamiltonian for an antiferromagnetic, according to the s-d exchange model put forward by Vonsovskiy (Ref 2), is of the form shown on p 481 where a_k and $a_k(-)$ are the Fermi second quantization operators for electrons with the momentum k and right

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80211
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The Role of Indirect Exchange Interaction in the Theory of the
Magnetism of Transition Metals and Rare Earths   II. Antiferromagnetism

and left spin orientations respectively, S_n is the spin
operator for the n-th lattice site, J is the d-b
exchange integral for two nearest neighbors, I is the
s-d exchange integral (assumed independent of the
momentum of conduction electrons), V is the volume of
the system, $E_k = Ak^2$ is the energy of a conduction
electron, A is the transport integral (Ref 3) and
S = 1/2. The spin operators can be related to the Bose
operators by the two equations at the bottom of p 481
and top of p 482. The Hamiltonian obtained in this way
is shown at the top of p 482 where z is the number of
nearest neighbors for a given atom,

$$\gamma_\lambda = \frac{1}{z} \sum_\rho e^{i\rho\lambda} \quad,$$

and ρ is the radius vector from the atom to its
nearest neighbor atom. After diagonalization, the
Hamiltonian can be thrown into the form shown at the
bottom of p 482 where ϵ_λ and $g(\lambda)$ are defined by the

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relations at the bottom of p 482. The energy of the
system in an external magnetic field, the free energy
and the magnetization are then calculated in a way
similar to that employed in the previous paper (Ref 1).
It is shown that if the interaction of spin waves with
conduction electrons is taken into account, then the
interaction between d-electrons is characterized not by
the d-d exchange integral but by a certain effective
exchange integral J_{eff} which is given by Eq (6), in
which ζ is the chemical potential of the conduction
electrons. It follows from this equation that in the
absence of direct d-d exchange interaction, the
integral J_{eff} is negative, which means that the energy
of the spin wave also becomes negative and an
antiferromagnetic state cannot be reached. It is
concluded that indirect exchange interaction in general
favours ferromagnetism and this agrees with Zener's
hypothesis. The electronic specific heat of transition
metals is also affected by indirect interaction. The
Card 3/4   interaction of conduction electrons with spin waves in

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ferro and antiferromagnetics introduces an extra turn
into the specific heat equation. It is suggested that
by separating out the linear term in the experimental
determination of the specific heat of a dilute alloy
and by comparing it with the corresponding linear term
in the specific heat equation for a pure metal, it may
be possible to estimate the magnitude of the exchange
integral I.   There are 8 references, 2 of which are
Soviet, 1 German in Russian translation and 5 English.

ASSOCIATION: Ural'skiy gosudarstvennyy universitet im. A.M.Gor'kogo
(Ural State University imeni A.M.Gor'kiy)

SUBMITTED: January 25, 1959

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[Technology of electric welding] Tekhnologiia elektri-
cheskoi svarki. Moskva, TSentr. nauchno-issl. in-t
patentnoi informatsii i tekhniko-ekon. issl., 1964. 43 p.
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ZAKS, S. L.

"Influence of Temperature on Petroleum Extraction
from Loose Sands During Gravitational Flow."

Iz. Ak. Nauk. SSSR. Otdel. Tekl. Nauk.
Nos. 10-11, 1944.

BR-52059019

ZAKS, C. L.

PA 9T69

USSR/Water, Underground   Apr 1947
    Petroleum - Well drilling

"Underground Water and Its Significance for Oil
Recovery," C. L. Zaks, 5 pp

"Neftyanoye Khozyaystvo" Vol 25, No 4

Discusses the effectiveness of artificial flooding
in certain cases where there is subterranean water.

9T69

ZAKS, S. L.

PA 9T90

USSR/Petroleum - Prospecting
Water, Underground

Jun 1947

"The Selection and Testing of Core Samples on Water and Oil Saturation," S. L. Zaks, 7 pp

"Neftyanoye Khozyaystvo" Vol 25, No 6

Methods for determining indirectly the quantity of buried water. Methods of selecting core samples. Determination of aqueous and oily constituents in the laboratory (schematic diagrams of apparatus), formulas.

9T90

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USSR/Engineering - Petroleum Deposits, Physical Processes

Nov 52

Physical State of Petroleum, Gas and Water Under Conditions of a Petroleum Bed," M. A. Kapelyushnikov, Corr Mem, Acad Sci USSR, T. P. Zhuze, S. L. Zaks

"Iz Ak Nauk SSSR Otdel Tekh Nauk" No 11, pp 1700-1710

Experimentally studies physical state of petroleum, gas and water under conditions of high pressures and comparatively low temps, and effect of petroleum-bearing rocks on this state, corroborating possibility of occureence of petroleum and water in single-phase gaseous state. Discusses process of formation of bitumens in petroleum deposits.

PA 244T62

1. ZAKS, S. L.

2. USSR (600)

4. Petroleum - Geology

7. Effect of rock and combined water on the intensity of pressure in the transition of the system petroleum - gas into a uniphase gasious state. Dokl. AN SSSR 86 no. 5. '52.

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ZAKS, S.L.; KREMS, A.Ya, redaktor; MURATOVA, V.M., redaktor; POLO-
SINA, A.S., tekhnicheskiy redaktor.

[Principles of mining and of mine extraction of oil] Osnovy
gornogo dela i shakhtnoi dobychi nefti. Moskva, Gos. nauchno-
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Trudy Inst. nefti 3:240-247 '54.   (MLRA 8:6)
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USSR/Engineering - Petroleum   FD-3017

Card 1/1   Pub. 41 - 1/15

Author   : Zaks, S. L., Moscow

Title   : Increasing petroleum extraction in a partially depleted reservoir by
              the high-pressure gas injection method

Periodical :· Izv. AN SSSR, Otd. Tekh. Nauk 9, 3-13, Sep 55

Abstract   :· Examines the proposed method of injecting hydrocarbon gases under
              high pressure into partially depleted oil wells and then pumping out
              the resultant gaseous mixture. Describes experiments performed to
              determine if the petroleum strata and the water therein have any
              effect on the conversion of the petroleum - gas mixture to a single-
              phase gaseous state. Describes experimental set-up. Studies gaseous
              conversion for different types of petroleum. Diagrams, tables,
              graphs. Five references, 3 USSR.

Institution: Institute of Petroleum, Academy of Sciences USSR

Submitted : April 27, 1955

ZAKS   S.L

Investigation of liquid hydrocarbon filtration through porous medium containing water. S. L. Zaks and M. M. Kusakov. *Izvest. Akad. Nauk S.S.S.R., Otdel. Tekh. Nauk* 1955, No. 11, 87-94.—An attempt is made to det. the effects of bound water in the porous medium on the filtration rates of mixts. of medicinal mineral oil and nonpolar ligroine, with addns. of naphthenic acids. The bound water occupied a total of 20-25% of the pore vol. and was bound by mol. forces with the solid phase surface, remaining stationary during the migration of the oil through the pores. The higher the naphthenic acid concn., the greater was the reduction of filtration rate of the hydrocarbon oils. The relative permeability through a porous medium is reduced by the water present, and with low naphthenic acid content is reduced chiefly because of the existence of the stationary water. The effect of the bound water must be taken into consideration in the hydrodynamic computations of the oil recovery when the water content exceeds 10% of the total pore space. W. M. Sternberg

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Akad. Nauk SSSR (Rep. Acad. Sci. U.S.S.R.), 11 Nov. 1955. Vol. 105, (2). 332-
359). Experiments are recorded in which sand moistened with 0.5 to 6%
petroleum was placed in a vessel and compressed carbon dioxide was pumped
through it. The gas was circulated in to a separation
. The lighter fractions were extracted from the sand in this way first, and the
containing 7 to 10% of heavier petroleum. The results were similar, but the
percentage extraction run only 40 to 60 against 70 to 80. The experiments

ZAKS, T.

GRIGORYAN, Grigoriy Markovich, doktor tekhnicheskikh nauk; ALEKSIN, Aleksandr
Georgiyevich, inzhener; ZAKS, Saveliy L'vovich, kandidat tekhnicheskikh
nauk; KUZIN, Mikhail Ivanovich, inzhener; POLOZKOV, Vladimir Tikhono-
vich, kandidat tekhnicheskikh nauk; SUKHANOV, Vasiliy Pavlovich,
inzhener; SULTANOV, D.K., inzhener; STREL'CHUK, Nikolay Antonovich,
inzhener; CHERNYAK, Il'ya L'vovich, inzhener; KUSHELEV, V.P., retsen-
zent; ROYZEN, I.S., otvetstvennyy redaktor; ZAMARAYEVA, K.M., vedu-
shchiy redaktor; KOVALEVA, A.A., vedushchiy redaktor; SAVINA, Z.A.,
vedushchiy redaktor; TROFIMOV, A.V., tekhnicheskiy redaktor

[Safety engineering and fire prevention in the petroleum industry]
Tekhnika bezopasnosti i protivopozharnaia tekhnika v neftianoi
promyshlennosti. Moskva, Gos. nauchno-tekhn. izd-vo neftianoi i gorno-
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Kapelyus ...