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MESTYAN, Gy. 1949

(Med. Clinic & Inst. of Exp. Path. U. of Pecs.)

"The Thyroxine Sensitivity of Normal and Thyroidectimized Rats."

Experientia, Basle, 1949, 5/5(211-213)
Abst: Exc. Med. 111, Vol, No. 12, pp. 457-458)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1"

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MESTYAN, G.; BARKA, I.

Effect of methylthiouracil and methylsulfathiazol on the body temperature and oxygen consumption of the rat. Orv.hetil. 91 no.33:1010-1012 13 Aug 50. (CIML 20:5)

1. Of the Pathophysiological Institute, Pecs University.

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1"

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11 H

CA

/ **Acute action of goitrogenic ...ts on the body tempera-ture and oxygen consumption of the rat** Sz. Donhoffer, Gy. Mestyán, and L. Balogh (Univ., Pécs, Hung.). Na-

...re 166, 737-8(1950). --The acute action of aminothiazole on O_2 consumption involves a central nervous mechanism in which the hypothalamus plays an essential part and the effects on body temp. and O_2 consumption are not strictly linked as these may be abolished independently or together by lesions not severely impairing thermoregulation.

David B. Sabine

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

BALOGH, I.; BAKKA, L.; DONHOFFER, S.; JILLY, P.; KESTIAN, G.

The acute action of antithyroid agents on the body temperature and O_2 consumption of the rat and analysis of its mechanism. Acta physiol. hung. 2 no.3-4:343-362 1951. (CIML 22:1)

1. Of the Institute of Pathophysiology of Pecs University.

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NAGY L., HESTYAN G., BARKA I.

A pyramidon hatasa patkanyok O_2-fogyasztasara. [Effect of pyramidon on O_2 consumption of the rat] Kiserletes orvostud. 3:3 1951 p. 165-9.

1. Pathophysiological Institute, Pecs University.

CLML 20, 10, Oct. 51

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MESTIAN, G

JILLY P., BALOGH L., BARKA I., DONHOFFER S., MESTIAN G.

A hypothalamus szerepe az aminothiazolnak a testhőmérsékre es az O_2-fogyasztásra gyakorolt akut hatásában. [Role of the hypothalamus in the effect of aminothiazole on body temperature and on O_2 consumption] Kísérletes orvostud. 3:3 1951 p. 179-83.

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1. Of the Institute of Pathophysiology of Pecs University.

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11 26

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Effect of some sulfonamides on body temperature and oxygen consumption in rats. Gy. Mestyán, T. Pap, and L. Nagy (Univ. Pécs, Hung.). *Klin. Wochschr.* 29, 512-14 (1951); *Deut. Gesundheitsw.* 6, 735-9(1951).—Methylsulfathiazole or prontosil (0.03-0.05 g.), injected subcutaneously, markedly lowered body temp. and O consumption of thyroidectomized hypophysectomized rats. The effect started during the first hr. following injection and persisted for several hrs. Sulfapyridine (0.04-0.08 g.) did not alter body temp. or O consumption.

Richard F. Riley

1952

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

MESTYAN, Gy, 1951

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"Effects of Some Sulphonamides on Body Temperature and Oxygen Consumption in Rats."

Klin. Wschr, 1951 29/29(512-514)
Abst: Exc. Med. (No abstract given.)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

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The effect of environmental temperature on the O_2-consumption and body temperature of rats under the acute action of some drugs affecting energy exchange and body temperature. Acta physiol. hung. 3 no.2:367-375 1952. (CLML 24:3)

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BALOGH, L.; DONHOFFER, S.; MESTYAN, G.; TOTH, I.

The response of O_2-consumption of thyroidectomized, hypophysectomized and methylthiouracil treated rats to high environmental temperatures and the action of thyroxine thereon. Acta physiol. hung. 3 no.2:395-403 1952. (CLML 24:3)

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DONHOFFER, S.;MESTYAN, G.P.;OBRINCSAK, E.;PAP, T.;TOTH, I.

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1. Pathophysiology Institute, Pecs Medical University.

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MESTYAN, G. 1952

(Patho-physiol. Inst. U. of Pecs)

"Effects of Sodium Salts of Benzoic and Salicylic Acid, Their p-amino Derivatives and Salicylamide on the Oxygen Consumption and Body Temperature of the Rat."

Arch. Exp. Path Pharmak. 1952, 214/3 (299-307)
Abst: Exc. Med. 11. Vol. 6, No. 1, p. 94

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MESTYAN, GY.

Mestyan, Gy.; Toth, L.

"Increase in the Metabolic Rate Caused by the High Temperature of the Environment." p. 51. (Acta Physiologica, Supplement to v. 4, 1953, Budapest)

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

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The mechanism of the rise in O_2-consumption in hyperthermia. Acta physiol. hung. 4 no.1-2:63-69 1953. (CIML 25:1)

1. Of the Institute of Pathophysiology of Pecs University.

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MESTYAN, Gy. AND OTHERS.

" Effect of Narcotics on the Regulation of Energy Metabolism", p.275,
(KISERLETES ORVOSTUDOMANY. Vol.5, No.4, July 1953, Budapest, Hungary).

SO: Monthly List of East European Accessions, L. C., Vol2, No.11, Nov.1953
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MESTYAN, GY.

HUNG.

Adrenal ascorbic acid content of normal, thyroidectomized and methylthiouracil-treated rats exposed to high and low environmental temperatures. Gy. Mestyán and L. Nagy. *Acta Physiol. Acad. Sci. Hung.* 6, 403-7(1954).—In thyroid deficiency exposure to heat in contrast to cold fails to elicit a response in the pituitary-adrenocortical system as well as an increase in the metabolic rate. W. H. F.

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MESTYAN, Gyula

A simple barochamber for small laboratory animals. Kiserletes orvostud. 6 no.6:531-533 Nov 54.

1. Pecsi Orvostudomanyi Egyetem Korelettani Intezete.
(APPARATUS AND INSTRUMENTS
barochamber for determ. of oxygen consumption in laboratory animals)
(METABOLISM
oxygen consumption in laboratory animals, determ., barochamber)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

MESTYAN, Gyula; NAGY, Laszlo

Ascorbic acid content of adrenal glands in normal, thyroidectomized and methylthiouracil-treated rats in low and high environmental temperature. Kiserletes orvostud. 6 no.6:534-537 Nov 54.

1. Pecsi Orvostudomanyi Egyetem Korelettani Intezete.

(VITAMIN C, metab.
adrenal glands, eff. of low & high environmental temperature in normal, thyroidectomized & methylthiouracil-treated rats)
(THYROID GLAND, eff. of excis.
on vitamin C content of adrenal glands, eff. of low & high environmental temperature in rats)
(TEMPERATURE, eff.
on vitamin C in adrenal glands in normal, thyroidectomized & methylthiouracil-treated rats)
(THIOURACIL, deriv.
methylthiouracil, eff. on vitamin C in adrenal glands in rats in low or high environmental temperature)
(ADRENAL GLANDS, metab.
vitamin C, eff. of low or high temperature in normal, thyroidectomized & methylthiouracil-treated rats)

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

MESTYAN, Gyula; MESS, Bela; SZEGVARI, Gyula; DONHOFFER, Szilard

Effect of hypothalamic lesions on basal metabolism and body temperature. Magy. Tudom. Akad. Biol. Orv. Oszt. Kozl. 8 no.3:217-228 1957.

1. Pecsi Orvostudomanyi Egyetem Korellettani Intezete.
(HYPOTHALAMUS, physiol.
eff. of exper. lesions on basal metab. & body temperature in rats (Hun))
(BASAL METABOLISM
eff. of exper. hypothalamic lesions in rats, relation to body temperature (Hun))
(BODY TEMPERATURE
eff. of exper. hypothalamic lesions in rats, relation to basal metab. (Hun))

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

MESTYAN, Gyula, Dr.

Salt and water requirements of the healthy infant. Gyermekgyogyaszat 9 no.4-6:111-113 Apr-June 58.

(INFANT NUTRITION
salt & water requirements (Hun))
(SALTS
requirements in inf. nutrition (Hun))
(WATER
same)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1"

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MESTYAN, Gy

SZEGVARI, Gy.; JARAI, I.; MESTYAN, Gy.

Effect of chlorpromazine on heat regulation and exchange. Acta med. hung. 11 no.3:351-357 1958.

1. Pathophysiologisches Institut der Medizinischen Universitat, Pecs.
(CHLORPROMAZINE, eff.
on heat regulation & energy exchange in rats (Ger))
(BODY TEMPERATURE, eff. of drugs on
chlorpromazine on heat regulation in rats (Ger))
(ENERGY
exchange, eff. of chlorpromazine in rats (Ger))

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

MESTYAN, Gy.; HESS, B.; SZEGVARI, Gy.; DOMHOFFER, Sz.

The behavior of metabolism and body temperature of rats in cold environment following bilateral hypothalamus lesions. Acta physiol. hung. 14 no.3:273-286 1958.

1. Pathophysiologisches Institut der Universitat, Pecs.

(COLD, eff.
on body temperature & oxygen consumption in rats following bilateral hypothalamus lesions (Ger))

(BODY TEMPERATURE
eff. of cold in rats following bilateral hypothalamus lesions (Ger))

(OXYGEN, metab.
eff. of cold on consumption in rats following bilateral hypothalamus lesions (Ger))

(HYPOTHALAMUS, physiol.
eff. of cold on body temperature & Oxygen consumption in rats following bilateral hypothalamus lesions (Ger))

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

EXCERPTA MEDICA Sec 3 Vol 13/9 Endocrinology Sept 59

1796. BMR AND BODY TEMPERATURE IN RATS WITH BILATERAL ELECTROLYTIC LESIONS IN THE HYPOTHALAMUS - Über das Verhalten des Grundumsatzes und der Körpertemperatur der Ratte nach bilateralen, elektrolytischen Hypothalamusläsionen - Mestyán G., Mess B., Szegvári G. and Donhoffer S. Pathophysiol. Inst., Univ. Pécs - ACTA NEUROVEG. (Wien) 1958, 19/3-4 (250-257) Graphs 5 Illus. 6

Bilateral electrolytic lesions of the hypothalamus were followed in 73 of 170 rats by a marked increase in the BMR, associated in 46 cases with a febrile increase in body temperature. In a few instances febrile temperatures were recorded in the absence of a rise in BMR. In other experiments basal O_2-consumption declined to a subnormal level after the lesions. This reduction in the BMR may or may not be preceded by a transient rise in heat production. A low BMR was usually, but by no means always, associated with hypothermia. The diencephalic mechanism responsible for the reduction in the BMR operates primarily not through the adenohypophysis and the thyroid, but through a more direct effector system. The existence of a central regulation of the BMR not strictly subservient to the thermoregulatory mechanism is considered an inevitable conclusion. (III, 2)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1"

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DONHOFFER, Sz.; MESTYAN, Gy.; SZEGVARI, Gy.; JARAI, I.

The thermoregulatory significance of hyperthermic metabolic acceleration; experiments on rats with lesions of the hypothalamus and epithalamus. Acta physiol. hung. 15 no.2:145-150 1959.

1. Pathophysiologisches Institut der Medizinischen Universitat, Pecs.

(HEAT, eff.
on body temperature in rats with & without increased metab. rate, eff. of lesions in epithalamus & hypothalamus (Ger))

(BODY TEMPERATURE, physiol.
eff. of heat on body temperature in rats with & without increased metab. rate, eff. of lesions of epithalamus & hypothalamus (Ger))

(METABOLISM
same)

(HYPOTHALAMUS, physiol.
eff. of lesions on influence of heat on body temperature in rats with & without increased metab. rate (Ger))

(DIENCEPHALON, physiol.
epithalamus, eff. of lesions on influence of heat on body temperature in rats with & without increased metab. rate(Ger))

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

DONHOFFER, Sz.; MESTYAN, Gy.; MESS, B.; SZEGVARI, Gy.; JARAI, I.

Effects of epithalamus lesions on metabolism and body temperature in the rat and their comparison with the behavior after lesions of the hypothalamus. Acta physiol. hung. 15 no.2:161-172, 1959.

1. Pathophysiologisches Institut der Medizinischen Universitat, Pecs.
(DIENCEPHALON, physiol.
epithalamus, eff. of lesions on metab. & body temperature in rats, comparison with eff. of hypothalamic lesions(Ger))
(HYPOTHALAMUS, physiol.
eff. of lesions on metab. & body temperature in rats, comparison with eff. of epithalamic lesions (Ger))
(BODY TEMPERATURE, physiol.
comparative eff. of epithalamic & hypothalamic lesions in rats (Ger))

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

KERPEL-FRONIUS, E.; VARGA, F.; MESTYAN, G.; BATA, G.

Comparative study of somatic stability in severe malnutrition and prematurity. Acta Pediat. Acad. Sci. Hung. 2 no.4:367-376 '61.

1. Department of Paediatrics (Director: Prof. E. Kerpel-Fronius), University Medical School, Pecs.
(INFANT NUTRITION DISORDERS)
(INFANT, PREMATURE nutrition & diet)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

MESTYAN, Gyula, dr.

Ileus in infancy and childhood. Orv. hetil. 103 no.16:735-740 22 Ap '62.

1. Pecsi Orvostudomanyi Egyetem, Gyermekklinika.

(INTESTINAL OBSTRUCTION in inf & child)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

MESTYAN, Gyula, dr.; VARGA, Ferenc, dr.; FOHL, Erzsebet, dr.; HEIM, Tibor, dr.

O_2 consumption by premature infants in hyper- and hypothermia. Orv. hetil. 103 no.15:677-681 15 Ap '62.

1. Pecsi Orvostudomanyi Egyetem, Gyermekklinika.

(INFANT PREMATURE physiol)
(RESPIRATION in inf & child)
(BODY TEMPERATURE in inf & child)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1"

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HEIM, Tibor; MESTYAN, Gyula; SZELENYI, Zoltan.

Effect of partial starvation on the thermoregulation in rats.
Acta morph. acad. sci. Hung. 12 no.4:239-246 '64

1. Pecsi Orvostudomanyi Egyetem Gyermekklinikaja.

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

HUNGARY

MESTYAN, Gyula, Dr, JARAI, Istvan, Dr, BATA, Geza, Dr, FEKETE, Miklos, Dr; Medical University of Pecs, Pediatric Clinic (director: KERPEL-FRONIUS, Odon, Dr) (Pecsi Orvostudomanyi Egyetem, Gyermekklinika).

"The Importance of Skin Temperature in Chemical Thermoregulation of Hypothermic, Immature Infants."

Budapest, Orvosi Hetilap, Vol 107, No 17, 24 Apr 66, pages 775-779.

Abstract: [Authors' Hungarian summary] The changes in and relationship between O_2 consumption and the temperature of the colon, abdomen, skin and forehead were studied at different environmental temperatures in 15 hypothermic, immature infants 1-14 days of age who weighed 1200-1700 g at birth. The observations led to the following conclusions: 1) Under the experimental conditions used, the hypothermic basal temperature is not a decisive factor in the elicitation and maintenance of chemical thermoregulation. 2) In the hypothermic immature infant, chemical thermoregulation proceeds at a considerably lower skin temperature level than in the normothermic newborn. It can be assumed that this change in regulation is produced by the hypothermy itself through functional changes either in the peripheral or in the central mechanism of thermoreception. 1 Hungarian, 3 Western references.

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

HEIM,T.; MESTYAN, J.

Undernutrition and temperature regulation in adult rats.
Acta physiol. acad. sci. Hung. 24 no.3:305-312 '64

1. Department of Paediatrics, Medical University, Pecs.

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

MESTYAN, Rezso, dr.; SZECSENYI-MAGY, Laszlo, dr.

Estrogen excretion in transient initial hypogalactia.
Magy. noorv. lap 18 no.5:292-297 Sept 55.

1. A Csongradmegyei Tanacs Korhaza, Szentes (Igazgato: Bugyo, Istvan dr., az orvostudomanyok kandidatusa) szuleszeti-nogyogyaszati osztalyanak. (Foorvos: Filep, Aladar dr.) es kozponti laboratoriumanak (Foorvos: Szecsenyi-Naby, Laszlo dr.) kozlemenye.

(LACTATION DISORDERS
hypogalactia, transient initial, determ. of estrogens in urine in normal & pathol. cond.)
(ESTROGENS, in urine
in hypogalactia, transient initial, determ. in normal & pathol. cond.)
(URINE
estrogens, determ. in transient initial hypogalactia, in normal & pathol. cond.)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

Mestyánek, E.

95. Approximative calculations for analyzing the vertical forces acting on rails and rail fastenings. E. Mestyánek. *Közlekedéstudományi Szemle*. Vol. 5, 1955, No. 12, pp. 468—474, 9 figs., 1 tab.

Fatigue tests do not yield absolute values however they are suitable for comparative analysis. If the frequency of fatiguing oscillations conforms to that of the natural oscillations, objectivity is enhanced. Fatigue and defects of the rail fastening are principally due to the moments acting from both sides and to the secondary forces acting upward. Rail fastenings can be considered partly as supports and partly as clamps, the moments and forces acting upward as a consequence of the passage of the wheels therefore being reproducible by sinusoidally alternating downward acting forces in the neighbouring and adjoining fields between sleepers. The effect of these forces on the fastenings — similarly to that of service — depends upon what percentage the latter may be considered as clamping or supporting. The effect of the downward acting sinusoidally alternating forces — that is $P(1 + \sin x)$ and $P[1 + \sin(x - \pi)]$ — on the fastenings is of the same magnitude as that of the actual forces, assuming identical magnitudes, but differs in frequency (even if the frequency of the experimental forces is the same as that of the natural forces) since the waves are distorted in the sense of time conforming to the degree of clamping. Let A be the ratio of positive to negative moments, then the zero points of the distorted wave may be expressed by the equation $-A[1 + \sin(x - \pi)] + 1 + \sin x = 0$. Conformingly two low-frequency apparatuses yielding downward acting forces only, arranged in the centres of two adjoining fields between sleepers, should be employed.

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

MESTYNA[illegible], E.

THE 2d CZECHOSLOVAK EXHIBITION OF THE MACHINERY I[illegible] BY A RAILROAD MAN.

p 9 (KOZLEDKE [illegible]) [illegible], [illegible] VOL 7 [illegible] JAN./MAR. 1957

SO: MONTHLY INDEX OF EAST EUROPAN ACCESSIONS (AEEI) VOL. [illegible] NOVEMBER 1957

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

MESTYNACH, E.

A NEW METHOD FOR DETERMINING THE RUN-IN TIME SWITCHING.

P 135 (KOZLEKEDESTUDOMANYI SZEMLE) BUDAPEST, HUNGARY MAR-APR 1957

SO: MONTHLY INDEX OF EAST EUROPEAN ACCESSIONS (AEEI) VOL 6 NO 11 NOVEMBER 1957

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

MESTYANEK, E.

A new graphic method for the determination of general vibrations of vehicles. p.269.

KOZLEKEDESTUDOMANYI SZEMLE. Budapest, Hungary. Vol. 8, no. 6, June 1958.

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

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

MESTYANEK, Ervin, dr., okleveles gepeszmernok, foeloado

Economy of loading machines in motor vehicle transportation.
Kozl tud sz 13 no.10:459-463 O '63.

1. Kozlekedes- es Postaugyi Miniszterium Autokozlekedesi Vezerigazgatosag.

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

MESTYANEK, Ervin, dr.

Freight transporation by trailers. Kozlekedes Kozl. [illegible]
183-185 22 Mr '64.

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

MESUS, W.

"Experimenting, inventing, and universalizing."

p. 19 (Budownictwo Przemyslowe) Vol. 6, no. 12, Dec. 1957
Warsaw, Poland

SO: Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 4, April 1958

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

MESYACHENKO, V. T.

Dissertation: "Effect of Mineral Oils on the Properties of Cotton Fabrics." Cand Tech Sci, Moscow Inst of National Economy, Moscow, 1953. Referativnyy Zhurnal—Khimiya, Moscow, No 7, Apr 54.

SO: SUM 284, 26 Nov 1954

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

MESYACHENKO, V.T., kand.tekhn.nauk

Improve tarring of hemp cables. Tekst.prom. 18 no.10: 58-59 O '58. (MIRA 11:11)
(Hemp) (Tar)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

MESYACHENKO, Vitaliy Tikhonovich; ARKHANGEL'SKIY, N.A., prof., red.; BORISOVA, G.A., red.; MAMONTOVA, N.I., tekhn.red.

[Textile fabrics made with synthetic fibers] Tkani s primeneniem sinteticheskikh volokon. Pod red. N.A.Arkhangel'skogo. Moskva, Gos.izd-vo torg.lit-ry, 1960. 70 p. (MIRA 13:5)
(Synthetic fabrics)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

MESYACHENKO, V.T., kand.tekhn.nauk

Modification of the properties of cotton fabrics under the effect of mineral oils. Tekst.prom. 20 no.5:51-52 My '60. (MIRA 13:8)
(Cotton fabrics—Testing)
(Mineral oils)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

BULGAKOV, Nikolay Vasil'yevich; KUTYANIN, Georgiy Isaakovich; SERGEYEV, M.Ye., prof., retsenzeng; MESYACHENKO, V.T., dots., retsenzent; MAKSIMOVICH, A.G., red.; SINEL'NIKOVA, TS.B., red.; MEDVISH, D.M., tekhn. red.

[Introduction, Plastics, Commercial Chemicals]Vvedenie, Plasticheskie massy, Khimiko-moskatel'nye tovary. Moskva, Gostorgizdat, 1962. 368 p. (MIRA 15:10)
(Commercial products) (Plastics) (Chemicals)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

MESYAGUTIN [illegible] SINEL'NIKOVA, TS.B., red.

[Synthetic fabrics] Sintaticheskie tkani. Moskva, Ekonomika, 1965. 257 p. (MIRA 18:8)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

MLSYACHNIKOV, M.A.

Attachment for bending the eyes of back-moving springs. [illegible] predl. na gor. elektrotransp. no.9:33-3[illegible] 164. [illegible]

1. Vagonoremontnyy zavod Tramvayno-trolleybusnogo upravleniya Leningrada.

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

SOV/109-4-8-5/35

AUTHORS: Vorob'yev, A.A., Vorob'yev, G.A., Mesyats, G.A. and Sonchik, K.K.

TITLE: Pulse and Oscillographic Techniques for the Measurement of Discharge Lags in Dielectrics

PERIODICAL: Radiotekhnika i elektronika, 1959, Vol 4, Nr 8, pp 1257 - 1259 (USSR)

ABSTRACT: The discharge lags in the dielectrics, subjected to action of rectangular voltage pulses, can be determined by using the circuit of Figure 1. In this, the capacitances C_1 and C_2 are discharged, while the thyratron T is triggered. A voltage pulse is thus produced across the resistance R_1; this can be used for the investigation of dielectrics. The voltage pulse appearing at the capacitance C_n, which is connected in parallel with the vertical plates of the oscillograph, is used as the time base. In this manner, a synchronism is achieved between the investigated phenomenon and the time base so that the pulse always appears at the same spot of the

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SOV/109-4-8-5/35

Pulse and Oscillographic Techniques for the Measurement of Discharge Lags in Dielectrics

screen. The resistances R_2, R_2' and R_g and capacitance C_n can be determined from the condition of the required writing speed for the tube. The deficiency of the circuit lies in the absence of a horizontal portion in the time base preceding the leading edge of the pulse. The circuit of Figure 1 can produce pulses having a rise time of 3×10^{-8} sec. If it is necessary to obtain faster pulses, having amplitudes of the order of 20 kV, a different technique is used. A suitable pulse generator, which can give rise times of the order of 10^{-9} sec is illustrated in Figure 2. In this, the resistances $R_1, R_2, \ldots, R_n$ divide the voltages over the switching gaps $P_1, P_2, \ldots, P_n$. When the gap P_1 discharges the capacitance C_1, a larger voltage is applied to the gap P_2, which is rapidly broken down. The last gap, P_n, receives the highest over-voltage.

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SOV/109-4-8-5/35

Pulse and Oscillographic Techniques for the Measurement of Discharge Lags in Dielectrics

The rise time of the pulse produced by the circuit of Figure 2 is plotted in Figure 4 as a function of the over-voltage. An application of the circuit of Figure 2 is illustrated in Figure 5; the system is employed for discharging several circuits having different voltages. There are 5 figures and 3 references, of which 1 is Soviet, 1 German and 1 English.

SUBMITTED: March 5, 1959

Card 3/3

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

MESYATS, G.A.

PHASE I BOOK EXPLOITATION SOV/4809

Vorob'yev, A.A., G.A. Vorob'yev, N.I. Vorob'yev, A.F. Kalganov, I.I. Kalyatskiy, V.D. Kuchin, G.A. Mesyats, S.F. Pokrovskiy, K.K. Sonchik, and A.T. Chepikov

Vysokovol'tnoye ispytatel'noye oborudovaniye i izmereniya (High-Voltage Testing Equipment and Measurements) Moscow, Gosenergoizdat, 1960. 483 p. Errata slip inserted. 10,500 copies printed.

Ed. (Title page): A.A. Vorob'yev, Professor; Ed. (Inside book): A.I. Dolginov; Tech. Ed.: E.P. Voronin

PURPOSE: This book is intended as a textbook for students taking courses dealing with high-voltage technique and high-voltage testing equipment. It may also be of use to the personnel in high-voltage laboratories and scientific institutions. New data contained in the book may be of interest to electricians.

COVERAGE: The book describes methods and installations used for generating and measuring high and superhigh constant, alternating, and pulse voltages used in laboratory work and in charged-particle acceleration processes. Some data contained in the book could be used in designing and computing high-voltage installations. The book was written by the staff members of the Department of High-Voltage Technique of the Tomsk Polytechnic Institute. Chapters I and II were written by A.A. Vorob'yev, with paragraphs I-1 and I-2 written jointly with

Card 2/6

I.I. Kalyatskiy, paragraph I-6 with N.I. Vorob'yev, paragraphs II-1 to II-6 and II-10 to II-13 with A.F. Kalganov, and paragraphs II-7 to II-9 with V.D. Kuchin. Ch. III was written by A.A. Vorob'yev, with the exception of paragraph III-4, written by S.F. Pokrovskiy and paragraph III-6, written jointly by A.A. Vorob'yev and the latter. Ch. IV: paragraphs IV-1 to IV-3 were written by I.I. Kalyatskiy; paragraphs IV-5 and IV-6 by A.A. Vorob'yev; paragraph IV-4 by A.A. Vorob'yev and I.I. Kalyatskiy jointly; paragraph IV-7 by K.K. Sonchik; paragraph IV-8 by G.A. Mesyats; and paragraphs IV-9 and IV-10 by N.I. Vorob'yev. Ch. V: paragraphs V-1, V-2 and V-12 were written by A.A. Vorob'yev; paragraphs V-3, V-4 and V-8 by A.A. Vorob'yev and G.A. Vorob'yev jointly; paragraphs V-5 to V-7 by A.A. Vorob'yev and A.T. Chepikov jointly; paragraphs V-9 to V-11 by A.A. Vorob'yev; and paragraph V-13 by K.K. Sonchik. The authors thank Engineer L.T. Murashko for his assistance. References accompany each chapter.

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

S/144/60/000/010/010/010
E194/E355

9,3220

AUTHOR: Mesyats, G.A., Aspirant

TITLE: The Influence of Spark-gap Capacitance on the Operation of High-voltage Impulse Generator Circuits with Steep Wavefront

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Elektromekhanika, 1960, No. 10, pp. 128 - 132

TEXT: A typical impulse generator circuit is described and its operation explained. This explanation is simplified in that it makes no allowance for changes in spark-gap electrode potentials whilst the circuit is operating. The electrodes have their self-capacitance in addition to their capacitance to earth, and these capacitances are charged before the circuit is triggered. During breakdown of the spark gaps there is a redistribution of potentials in the capacitances which has the effect of reducing the potential of successive electrodes. In order to determine the reduction in electrode potential during operation of the circuit it is necessary to calculate the transient process in the circuit consisting

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E194/E355

The Influence of Spark-gap Capacitance on the Operation of High-voltage Impulse Generator Circuits with Steep Wavefront

of a chain of capacitances. For simplicity it is assumed that all the spark gaps have the same self-capacitance and the same capacitance to earth and that the capacitance to earth is much greater than the self-capacitance, as is usually the case in practice. The method of calculation is to relate the calculations for transient processes to zero initial conditions. For the purpose of the calculation of the transient process the active two-terminal network is replaced by a passive one to which is applied an e.m.f. equal to the input voltage of the two-terminal network. In this way it is possible to determine the drop in potential on the electrode of a spark gap after breakdown of the preceding gap. The equations are derived and graphs are plotted in Fig. 3 for the changes in electrode potential as the circuit operates. Eq. (7) may be used to determine the distribution of potentials over the spark gap electrodes during the operation of the circuit. It is shown

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E194/E355

The Influence of Spark-gap Capacitance on the Operation of High-voltage Impulse Generator Circuits with Steep Wavefront

that under certain circumstances the spark gaps may break down prematurely. In the calculation no allowance is made for charging of the electrode capacitance through the resistance of the voltage divider and it is shown that in practice this is permissible .
It is concluded that to avoid excessive potential drop of spark-gap electrodes as the circuit operates, the capacitance of the electrodes to earth must be many times greater than the self-capacitance. If this ratio is not great enough, in adjusting the circuit allowance must be made for possible premature breakdown of some spark gaps. To prevent this the flashover distance should be increased appropriately. The drop in electrode potential increases as the potential on the preceding electrode increased.

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E194/E355

The Influence of Spark-gap Capacitance on the Operation of High-voltage Impulse Generator Circuits with Steep Wavefront

There are 3 figures and 7 references: 5 Soviet and 2 non-Soviet.

/B

ASSOCIATION: Nauchno-issledovatel'skiy institut pri Tomskom politekhnicheskom institute (Scientific Research Institute at Tomsk Polytechnical Institute)

Card 4/4

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

MESYATS, Gennadiy Andreyevich, aspirant

Effect of the capacity of dischargers on the operation of a circuit for obtaining high-voltage pulses with a steep front. Izv. vys. ucheb. zav.; elektromekh. 3 no.10:128-132 '60. (MIRA 14:4)

1. Nauchno-issledovatel'skiy institut pri Tomskom politekhnicheskom institute.

(Pulse techniques (Electronics)) (Electric discharges)

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

S/139/60/000/004/028/033
E073/E535

AUTHOR: Mesyats, G.A.

TITLE: Delay of Breakdowns in a Spark Gap at High Over-Voltages

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika, 1960, No.4, pp.229-231

TEXT: The time lag of a breakdown is composed of the following two parts: the static time lag, required for the appearance of at least one free electron which can initiate the discharge formation, and the time of formation of the discharge. In the case of intensive ultraviolet irradiation of the cathode of the gap, the first time lag is eliminated. In determining very small time lags (of the order of 10^{-9} sec) it is necessary that the time of rise of the voltage applied to the gap should be small compared to the discharge delay time. This condition was fulfilled in the experiments of Fletcher (Ref.2) who used for this purpose voltage pulses of 20 kV amplitude with wave fronts lasting less than 10^{-9} sec. Wilson (Ref.5) investigated the time lag using a voltage which consisted of two components: the main voltage applied permanently and an additional voltage which was applied only on closing of a

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E073/E535

Delay of Breakdowns in a Spark Gap at High Over-Voltages

vacuum tube switch. It is obvious that the switching time must be shorter than the time lag of the breakdown of the gap, this is unlikely in the case of large over-voltages. If the applied voltage is considerably higher than the breakdown voltage, the breakdown of a gap of a few millimetres is likely to be 10^{-9} sec, see R. C. Fletcher (Ref.7) and H. Heard (Ref.8). In the present investigations the additional voltage was applied after breakdown of two supplementary gaps which were series-connected to the gap under investigation. The voltage of 15 kV was divided among the gaps by means of a voltage divider R_1, R_2, R_3, whereby the length of the gaps was made slightly larger than the breakdown length so that under normal conditions there was no breakdown. The speed of rise of the supplementary voltage across the investigated gap P_3 was achieved after the successive breakdowns of the series-connected auxiliary gaps. The discharge of the capacitances C_3 and C_2 produced voltage impulses across appropriate resistances r_3 and r_2 which were fed by means of a coaxial cable onto the appropriate plates of the cathode-ray tubes. The time lag in the

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Delay of Breakdowns in a Spark Gap at High Over-Voltages

discharge across the gap P_3 is the time from the beginning of the time scanning (voltage impulse from the resistance r_2) to the appearance of a pulse from the resistance r_3, which is connected via the condenser C_3 to the other electrode of the gap P_3. Gaps 2 and 3 could be adjusted by means of verniers with an accuracy of 0.01 mm. The electrodes were flat, of 20 mm diameter with rounded-off edges and made of duralumin with a carefully polished surface. The length of the gap was changed between 1-3 and 5 mm. Phenomena of 10^{-9} sec duration were reliably recorded. Fig.2 shows an oscillogram which elucidates the process of determination of the time lag of the discharge; the frequency of the time base oscillations was 440 Mc/s. The obtained results, with and without ultraviolet irradiation, are plotted in Fig.3, which also gives, for comparison, the results of M. Newman (Ref.4). The obtained results are useful for investigating the functioning of surge generators with series-connection of the individual spark gaps. Acknowledgments are expressed to A. A. Vorob'yev for his scientific direction and to Candidate of Technical Sciences

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E073/E535

Delay of Breakdowns in a Spark Gap at High Over-Voltages

G. A. Vorob'yev for his assistance and advice. There are 3 figures and 13 references: 6 Soviet and 7 English.

ASSOCIATION: NII Tomskogo politekhnicheskogo instituta imeni S. M. Kirova (NII Tomsk Polytechnical Institute imeni S. M. Kirov)

SUBMITTED: September 30, 1959

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

MESYATS, G. A.

Cand Tech Sci - (diss) "Development and study of high-voltage nanosecond impulse equipment with spark gaps." Tomsk, 1961. 18 pp; (Ministry of Higher and Secondary Specialist Education RSFSR, Tomsk Order of Labor Red Banner Inst imeni S. M. Kirov); 150 copies; price not given; (KL, 10-61 sup, 216)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1"

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27715
S/120/61/000/003/028/041
E095/E135

9.6000 (1040, 1159)

AUTHORS: Vorob'yev, G.A., Mesyats, G.A., and Usov, Yu.P.

TITLE: Generator of single high voltage pulses of nanosecond duration

PERIODICAL: Pribory i tekhnika eksperimenta, 1961, No.3, pp.165-166

TEXT: 20 kV pulses of nanosecond duration are produced by discharging 5μF capacitor through a 1.5 m of coaxial cable when three spark gaps break down in succession, the last breakdown occurring at an overvoltage of three times. According to earlier work of the authors this over-voltage gives a pulse with fast rise-time. The described instrument produces pulses with a rise-time of 6 nanoseconds. Pulse length can be continuously varied between 15 and 45 nanoseconds. Produced pulses are displayed on a CRT, the time-base voltage of which is derived by the same method as the pulses, the leading edge being used for deflection. Synchronisation is achieved by illumination of the time-base spark gap by discharge arc of one of the gaps in the pulse producing circuit. A second generator of pulse voltages supplies 30 kV pulses to a CRT; these pulses are locked to the main pulse.

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Generator of single high voltage ....

The generator is supplied from voltage doubler rectifying circuit producing 20 kV, only half of which is used for the display circuits. The pulse producing part of the instrument is supplied with the full 20 kV.
There are 2 figures and 3 Soviet references.

ASSOCIATION: Nauchno-issledovatel'skiy institut yadernykh issledovaniy elektroniki i avtomatiki, Tomskogo politekhnicheskogo instituta (Scientific Research Institute for Nuclear Researches of Electronics and Automatics, Tomsk Polytechnical Institute)

SUBMITTED: June 28, 1960

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APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

VOROB'YEV, A.A.; VOROB'YEV, G.A.; MESYATS, G.A.; USOV, Yu.P.

Spark gap commutation time. Izv.vys.ucheb.zav.; fiz. no.5:174-175 '61. (MIRA 14:10)

1. Nauchno-issledovatel'skiy institut pri Tomskom politekhnicheskom institute imeni S.M.Kirova.
(Commutation (Electricity))

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

33330
S/143/61/000/012/002/005
D299/D305

26.2312

AUTHORS: Mesyats, G.A., and Usov, Yu.P., Engineers

TITLE: Influence of air pressure in the spark gap on the parameters of a high-voltage pulse front

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Energetika, no. 12, 1961, 39 - 44

TEXT: The results are given of an investigation of the effect of air pressure on the parameters of the pulse front during static breakdown. The Weizel-Rompe formula for spark resistance is used (Ref. 3: Theorie der elektrischen Lichtbögen und Funken, Leipzig, 1949). After transformations, one obtains the formula

$$t_{\phi} = 21 \frac{s_0^2}{a\ p\ U_0^2} + 2.2 \frac{L}{R_H} \qquad (6)$$

where s_0 is the static breakdown distance for a voltage U_0 and pressure p; t_{ϕ} is the length of the pulse front. For the maximum

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curvature of the pulse front one obtains

$$\left(\frac{dU}{dt}\right)_{max} = \frac{27}{256} \cdot \frac{aU_0^3}{s_0^2} \cdot p \cdot [1 - \varphi(A)] \qquad (8)$$

The values of the function $\varphi(A)$ are listed in a table. From Eqs (6) and (8) it is evident that with constant voltage U_0 and fixed parameters L and R_H (the load resistance) of the discharge circuit, it is possible to reduce the pulse front and increase its curvature, by increasing the pressure in the spark gap. The experimental setup is shown in a diagram. The discharger, placed in a chamber of organic glass, had spherical brass-electrodes of 20 mm diameter. All the experiments were conducted in air. It was found that t_ϕ depends largely on the magnitude of the undervoltage Δ at the spark gap. The coefficient a was found to be a = 1 cm²·ata/v²·sec. A comparison of experimental and theoretical curves showed that Eqs. (6) and (8) give a more or less accurate description of the behavior of the pulse front parameters as a function of pressure, voltage, and inductivity of the circuit. The value of a = 3 cm²·ata/v²·sec. can

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

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Influence of air pressure on the ...

be used for calculating the pressure in spark gaps with voltages from several- to several tens of kilovolts. For other gases and higher voltages, further experiments are required to determine a. The formula for the pulse-front length is derived on the basis of Weizel-Rompe's theory. A method has been developed for study of the parameters of the nanosecond (10^{-9} sec) pulse front as a function of pressure. With increasing pressure, the length of the pulse front decreases and the maximum curvature increases to a limit, bounded by the time constant L/R_H of the discharge circuit. With $L = 0.07 \cdot 10^{-6}$ H., $R_H = 75$ ohm, p = 3 ata, one obtains a pulse with t_p ≈ 2 nsec. for U = 15 kilovolt. With a change in voltage from 7 to 23 kilovolt, t_ϕ changes only insignificantly. With spark-gap undervoltage the length of the pulse front is larger than with static breakdown. The formulas for the parameters obtained by the Weizel-Rompe theory for $a = 3$ cm^2·ata/v^2·sec, can be used for approximate computation of high-voltage nanosecond installations with spark-gap dischargers in compressed air. There are 6 figures, 2 tables and 11 references: 4 Soviet-bloc and 7 non-Soviet-bloc (including 6 translations).

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APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

32330

Influence of air pressure in the ... S/143/61/000/012/[illegible]
D299/D305

ASSOCIATION: Nauchno issledovatel'skiy institut yadernoy fiziki, elektroniki i avtomatiki pri Tomskom ordena Trudovogo Krasnogo Znameni politekhnicheskom institut imeni S.M. Kirova (Scientific Research Institute of Nuclear Physics, Electronics and Automation at the Tomsk Order of the Red Banner of Labor Polytechnic Institute imeni S.M. Kirov)

PRESENTED: by Nauchnyy seminar sektora vysokovol'tnykh apparatov (Scientific Seminar of the High-Voltage Apparatus Department)

SUBMITTED: January 16, 1961

Card 4/4

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

S/120/62/000/001/021/061
E140/E463

21 6600

AUTHORS: Vorob'yev, A.A., Vorob'yev, G.A., Mesyats, G.A., Golynskiy, A.I.

TITLE: High-voltage nanosecond pulse generator

PERIODICAL: Pribory i tekhnika eksperimenta, no.1, 1962, 96-98

TEXT: A generator based on two spark gaps is described, for obtaining isolated 15 kV pulses with rise-times less than 1 ns and durations between 10 and 40 ns. A pulse-shaping cable, coaxial multielectrode switching gap, transmission line and coaxial pulse sharpening gap comprise the generator. The generator is triggered by a pushbutton. There are 4 figures.

B

ASSOCIATION: Nauchno-issledovatel'skiy-institut yadernoy fiziki, elektroniki i avtomatiki Tomskogo politekhnicheskogo instituta (Scientific Research Institute of Nuclear Physics, Electronics and Automation of the Tomsk Polytechnical Institute)

SUBMITTED: May 27, 1961

Card 1/1

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

S/147/[illegible]
D2[illegible]/D/02

AUTHORS: [illegible], Candidate of Technical Sciences, and Predneks, U. Ya., Engineer

TITLE: Investigating the time characteristics of a series surge diverter

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Energetika, no. 3, [illegible], 17-23

TEXT: In the event of impulse breakdown of a spark gap the delay and spark-voltage variation period after breakdown with heavy surges diminish to a millimicrosecond and less if the statistical delay time is removed. By reason of the heavy overvoltages obtainable across the spark gap in the series spark diverter it is used successfully in high-voltage millimicrosecond impulse circuits. Results of an investigation of time characteristics are set out, starting from the standard diverter arrangement comprising n series diverters. A system of four diverters was employed, with 16 mm brass-sphere electrodes, applying 15 kV to the diverter. It

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[illegible]

Investigating the time ...

was demonstrated that with a diverter arrangement providing mutual irradiation of the gaps on breakdown, together with appropriate capacitances and low resistance in the capacitor discharge circuits, the interval between breakdown of adjacent arrestors is of the order of millimicroseconds, affording continuous regulation, by varying the electrode separation, from one to some tens of millimicroseconds, Maximum instability is not more than [illegible] of the breakdown-time difference of adjacent electrodes. This time-difference is the smaller, the nearer is the initial potential difference at the diverter gap to the break-down potential. The overall diverter operating time with voltage [illegible] kV [illegible] uniform voltage distribution is 20 μ sec. The length of the impulse wave front with overvoltage at the trigger gap increased to the limit governed by the L and R parameters of the discharge circuit is also some millimicroseconds. Recommended applications include short impulse voltage chains for high-speed [illegible], impulse-generator and oscillograph synchronization and similar functions. There are 5 figures, 3 tables and 14 references: 9 Soviet-bloc and 5 non-Soviet-bloc. The 4 most recent references to

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

S/143/62/[illegible]/003/[illegible]/007
D23[illegible]/D[illegible]

Investigating the time ...

the English-language publications read as follows: R. C. Fletcher, Phys. Rev. 76, no. 10, 1[illegible]; R. C. Fletcher, Rev. Sci. Instr. 20, no. 12, 1949; H. Neard, Rev. Sci. Instr., 25, no. [illegible], 1[illegible]; I. Craggs and I. Meek, High-voltage Laboratory Technique, [illegible], 1954.

ASSOCIATION: [illegible] elektroniki i avtomatiki pri [illegible] Institut imeni S. M. Kirova (Scientific [illegible] Institute for Nuclear Physics, Electronics and Automation of the Tomsk Polytechnic Institute imeni S. M. Kirov)

SUBMITTED: March 10, 1961

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APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

S/139/62/000/003/003/021
E194/E435

AUTHORS: Mesyats, G.A., Vorob'yev, G.A.

TITLE: The use of liquid immersed spark gaps in high-voltage nanosecond impulse circuits

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Fizika. no.3, 1962, 21-23

TEXT: When a spark gap is used as the switching device in a high voltage impulse generator with steep wave front, the speed of switching is most important in determining the steepness of the wave front. Simple theoretical considerations indicate that the shorter the spark gap the greater the speed, which suggests the use in the gap of a medium of high electric strength such as oil. Tests were made on a rig in which a capacitor is slowly charged through a resistor until it reaches the gap breakdown voltage, when an oscillogram of the breakdown current is recorded. Sphere-sphere and point-point with air and oil were used; in each case the gap was adjusted to break down at a set voltage. The times were indeed shorter with the gap in oil, for example with a

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S/139/62/000/003/003/021
E194/E435

The use of liquid immersed ...

15 kV sphere gap the time for oil was 4.2 nsec and for air 7.5 nsec. It was thought that contamination of the oil in service, by reducing the electric strength, might increase the switching time. However, this was not so and it was found that under impulse conditions both moist oil and distilled water, being of higher electric strength than of pure oil, gave shorter switching times. There are 2 figures and 1 table.

ASSOCIATION: Tomskiy politekhnicheskiy institut imeni S.M.Kirova (Tomsk Polytechnical Institute imeni S.M.Kirov)

SUBMITTED: March 10, 1961

Card 2/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

MESYATS, G.A. (Tomsk)

Capacitive compensation of the fronts of nanosecond impulses in a circuit containing a spark discharger. Izv. AN SSSR. Otd. tekh. nauk. Energ. i avtom. no.4:68-70 Jl-Ag '62. (MIRA 15:8)
(Pulse circuits) (Radio lines)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

S/144/62/000/005/005/005
D289/D308

AUTHORS: Golynskiy, A.I., Assistant, Vorovyev, G.A., Candidate of Technical Sciences, and Mesyats, G.A., Candidate of Technical Sciences

TITLE: High voltage spark discharger with quick commutation

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Elektromekhanika, no. 5, 1962, 560 - 562

TEXT: Basically the device consists of a 3 electrode arrangement in carbon dioxide medium where one electrode is situated underneath the other two. The breakdown of the trigger electrode produces a pulse of ultraviolet light on to the main spark gap and triggers it extremly quickly (10-9 sec). The stability of the discharger is maintained by a potential divider network. Allowable voltage relationships between the electrodes are fully analyzed. The discharger described has a working voltage of 15 kV, trigger electrode at 10.2 kV, trigger impulse of 4 kV, breakdown voltage factor (ratio of working voltage to breakdown voltage between electrodes 2 and 3) of 2.5 - 3.2. As a load 5 meter long coaxial cable was used. Time con-

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

stant of 2.54 x 10^{-9} sec was obtained and the breakdown between the main electrodes occurred in 8 x 10^{-9} sec. There are 4 figures.

ASSOCIATION: Tomskiy politekhnicheskiy institut (Tomsk Polytechnic Institute)

SUBMITTED: April 6, 1960

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

MESYATS, G.A., kand.tekhn.nauk; PREDNEKS, U.Ya., inzh.

Study of the time characteristics of a series discharger. Izv. vys. ucheb. zav.; energ. 5 no.3:17-23 Mr '62. (MIRA 15:4)

1. Nauchno-issledovatel'skiy institut yadernoy fiziki, elektroniki i avtomatiki pri Tomskom politekhnicheskom institute imeni S.M.Kirova. Predstavlena nauchnym seminarom kafedry tekhniki vysokikh napryazheniy.

(Electric protection)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

GOLYNSKIY, Anatoliy Ivanovich, aspirant; VOROB'YEV, Grigoriy Abramovich, kand.tekhn.nauk, starshiy nauchnyy sotrudnik; MESYATS, Gennadiy Andreyevich, kand.tekhn.nauk, starshiy nauchnyy sotrudnik

High-voltage spark discharger with high-speed commutation. Izv. vys. ucheb. zav.; elektromekh. 5 no.5:560-562 '62. (MIRA 15:5)

1. Tomskiy politekhnicheskiy institut.
(Electric switchgear) (Electric discharges)
(Electric testing)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

VOROB'YEV, A.A.; VOROB'YEV, G.A.; MESYATS, G.A.; GOLYNSKIY, A.I.

Generator of high-voltage pulses with millimicrosecond duration, Prib.i tekh.eksp. 7 no.1:96-98 Ja-F '62. (MIRA 15:3)

1. Nauchno-issledovatel'skiy institut yadernoy fiziki, elektroniki i avtomatiki Tomskogo politekhnicheskogo instituta.
(Pulse techniques(Electronics))

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

MESYATS, G.A.

Divider for recording high-voltage nanosecond pulses.
Izv. TPI 122:145-149 '62. (MIRA 17:9)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

AM4027874 BOOK EXPLOITATION S/

Vorob'yev, Grigoriy Abramovich; Mesyats, Gennadiy Andreyevich

Technique of high-voltage millimicrosecond pulse shaping (Tekhnika formirovaniye vy*sokovol'tny*kh nanosekundny*kh impul'sov). Moscow, Gosatomizdat, 63. 0166 p. illus., biblio. 2,900 copies printed.

TOPIC TAGS: millimicrosecond pulses, nanosecond pulses, nanosecond pulse generation, nanosecond pulse shaping, discharges in gases, high voltage discharge, transient in discharge circuit, high voltage pulse front, high voltage pulse duration, nanosecond pulse generator, nanosecond pulse measurement

PURPOSE AND COVERAGE: This monograph is a first attempt at a systematic treatment of high-voltage nanosecond pulse shaping. A considerable portion of the book is based on original work by the authors, initiated in the High-voltage Laboratory of Tomskiy poli-

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tekhnicheskiy institut (Tomsk Polytechnic Institute) in 1957. The description of apparatus for production and transformation of high-voltage nanosecond pulses is preceded by an analysis of the main processes which occur in a spark, with inclusion of the theories of Weizel and Rompe and the theory of streamer discharge and transients in the discharge circuit. The book is intended for scientific workers and engineers of suitable specialization, and to students of higher educational institutions. Chs. I and V were written by the authors jointly, except for Sec. 1.2, which was written by Yu. P. Usov, and Sec. 5.8, which was written by G. A. Mesyats and V. V. Kremnev. Chs. II, III, and IV were written by G. A. Mesyats and Ch. VI by G. A. Vorob'yev.

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Ch. II. Analysis of processes in a discharge circuit with a switching discharge gap - - 29
Ch. III. Methods of decreasing the duration of the front of a high-voltage pulse - - 38
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SUB CODE: GE, SP SUBMITTED: 08Oct63 NR REF SOV: 082

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

S/120/63/000/001/019/072
E140/E135

AUTHOR: Mesyats, G.A.

TITLE: The generation of short impulses using doubled lines

PERIODICAL: Pribory i tekhnika eksperimenta, no.1, 1963, 89-92

TEXT: Nanosecond 15 kV impulses can be generated in circuits using doubled coaxial lines. As a function of the duration of the initial triggering impulse, the impulse across the load will be rectangular, trapezoidal or triangular. Multiple loads may be connected such that a series of impulses can be obtained across them shifted in time by an amount proportional to the distances between the loads along the lines. Pulses of duration 10^{-8} have rise times of 10^{-9} sec.
There are 6 figures.

ASSOCIATION: Nauchno-issledovatel'skiy institut yadernoy fiziki, elektroniki i avtomatiki TPI (Scientific Research Institute for Nuclear Physics, Electronics and Automation, TPI)

SUBMITTED: April 1, 1962

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APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

MESYATS, G.A. (Tomsk); KREMNEV, V.V. (Tomsk)

Maximum pulse front steepness in a RLC network with a spark gap. Izv. AN SSSR. Otd. tekh. nauk Energ. i transp. no.1:53-57 Ja-F '63. (MIRA 16:5)

(Pulse circuits)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

MESYATS, G.A.

Theory of a "narrowing" spark gap. Izv. vys. ucheb. zav; fiz. no.1:137-141 '63. (MIRA 16:5)

1. Tomskiy politekhnicheskiy institut imeni S.M.Kirova.
(Pulse circuits)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

MESYATS, G.A.; USOV, Yu.P.; GOLYNSKIY, A.I.

Some data concerning the effect of electrode shapes and breakdown voltage on the commutation time of a spark gap. Izv.vys.ucheb.zav.;fiz. no.2:38-41 '63.

(MIRA 16:5)

1. Tomskiy politekhnicheskiy institut imeni S.M.Kirova.
(Electric switchgear) (Breakdown, Electric)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

AID Nr. 990-12 14 June MESYATS, G.A.

HIGH-VOLTAGE PULSE GENERATOR IN THE NANOSECOND RANGE (USSR)

Vorob'yev, G. A., ~~G. A. Mesyats~~, and G. C. Korshunov. Pribory i tekhnika eksperimenta, no. 2, Mar-Apr 1963, 98-101. S/120/63/000/002/023/041

A recently developed spark-gap pulse generator is described which was designed to deliver clean high-voltage pulses of the order of a nanosecond in duration. The discharge electrodes and pulse-forming capacitance were enclosed in a chamber which could be pressurized up to several atmospheres; the electrodes were 1.4-cm spheres of stainless steel capped with molybdenum. The distance between them was adjustable. The charge circuitry was conventional, but care was taken to optimize output pulse shape, including the use of a ceramic discharge capacitor and parallelled output cables of 75-ohm impedance each. The effective inductance of the latter

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

AID Nr. 990-12 14 June

HIGH-VOLTAGE PULSE GENERATOR [Cont'd] S/120/63/000/002/023/041

was minimal ($L \approx 5 \times 10^{-9}$ h). With a pulse-forming capacitor of 1000 μμf and an output line distributed capacitance of approximately 10 μμf, 16-kv pulses were achieved of approximately 3 nanosec in width and not over 1 nanosec in rise time at repetition rates from 1 to 50 cps and a spark-chamber pressure of 9.5 atm. Other tests included: varying the pulse width both by adding charging capacitance and by altering output transmission line length. Various studies of pulse shape behavior with change in pressure and discharge capacitance values were also conducted. [SH]

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

S/281/63/000/002/001/003
E192/E382

AUTHORS: Mesyats, G.A. and Kremnev, V.V. (Tomsk)

TITLE: Reduction in the rise time of the high-voltage surge produced by the voltage-surge generator

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye tekhnicheskikh nauk. Energetika i transport. no. 2, 1963, 199 - 204

TEXT: The surge generator considered is of the type represented by the equivalent circuit of Fig. 1a, where C_1 is the surge capacitance, R_K the resistance of the switch, R_H the load, C and L are the parasitic parameters of the discharge circuit and R_g is the damping resistance. The rise time of the surge produced by the generator is dependent on the stray inductance. Now, the rise rate can be increased by adopting the solution shown in Fig. 1б, where an additional capacitance C_2, such that $C_1 \gg C_2 \gg C$ is connected before the switch. The capacitance C_2 should have a very small inductance. In Fig. 1б L_1 is the inductance whose effect on the rise time can be eliminated and L_2 is the remaining stray inductance. The rise time

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

t_ϕ of the pulse generated by the circuit of Fig. 16 is dependent only on L_2. However, the top of the pulse contains an oscillatory component which is due to L_1 and C_2. The capacitance C_2 should therefore be determined from the permissible value of the overshoot of the pulse. The principle of compensation shown in Fig. 16 can be employed in a multistage surge generator and in this case the capacitor is connected directly in front of the last spark gap of the system. Here, it is also possible to choose C_2 so that the overshoot in the surge is negligible. This method of increasing the rise rate was investigated experimentally on a three-stage generator with an input voltage of 4 kV and $C_1 = 0.15$ μF. Rise times of 6 μs could be achieved, this figure being about ten times lower than that of a standard non-compensated generator. The method also permits doubling of the amplitude of the output pulse. There are 9 figures.

SUBMITTED: November 25, 1962

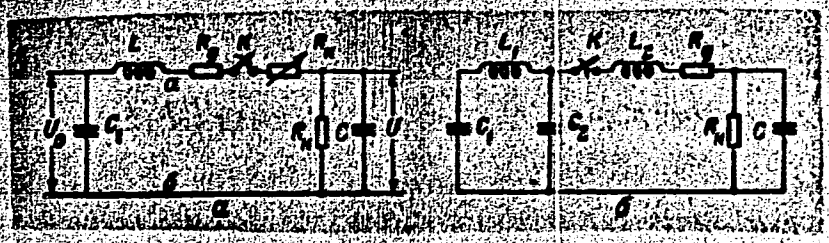
APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

Reduction in the rise time ...

S/281/63/000/002/001/003
E192/E382

Fig. 1:



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ACCESSION NR: AP3004902 S/0120/63/000/004/0115/0117

60
59

AUTHOR: Mesyats, G. A.; Korshunov, G. S.

TITLE: Investigating the operation of a 3-electrode spark gap with nanosecond stability of discharge

SOURCE: Pribory*i tekhnika eksperimenta, no. 4, 1963, 115-117

TOPIC TAGS: spark gap, 3-electrode spark gap

ABSTRACT: Some theoretical considerations are set forth and experiments are briefly described with a spark gap whose third electrode is used as a peaking and pre-ionizing device. Breakdown time vs. spark-gap length characteristics were experimentally investigated at 14 and 30 kv. The best results were obtained with 14 kv and 0.1 mm third-electrode gap; error of operating time was ±1 nanosecond. Orig. art. has: 3 figures and 5 formulas.

Card 1/1 TOMSK POLYTECHNIC INSTITUTE

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

ACCESSION NR: AP4006824 S/0120/63/000/006/0093/0094

AUTHOR: Vorob'yev, G. A.; Mesyats, G. A.; Rudenko, N. S.; Smirnov, V. A.

TITLE: Pulse generator of steep 150 kv pulses

SOURCE: Pribory* i tekhnika eksperimenta, no. 6, 1963, 93-94

TOPIC TAGS: pulse generator, hv pulse generator, steep pulse generator, pulse structure

ABSTRACT: An improvement in the Arkad'yev-Marks surge generator circuit is described which permits shortening the impulse front from the ordinary 10^{-7} to 10^{-9} sec. Parasitic inductance of the surge generator is compensated by a non-inductive (type KOB-3) capacitor in each stage and by a special 150-pf noninductive capacitor connected across the test piece. The latter capacitor is briefly described and its design sketch is given. The conventional output sphere gap is replaced by a needle gap to suppress oscillations; the most stable switching is

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

ACCESSION NR: AP4006824

found to occur when the discharge takes place over a surface of a solid dielectric. Three oscillograms illustrate the operation of the surge generator. Orig. art. has: 4 figures and 2 formulas.

ASSOCIATION: Tomskiy politekhnicheskiy institut (Tomsk Polytechnic Institute)

SUBMITTED: 11Jan63 DATE ACQ: 24Jan64 ENCL: 00

SUB CODE: SD NO REF SOV: 004 OTHER: 000

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APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1

ACCESSION NR: AP4006825 S/0120/63/000/006/0095/0097

AUTHOR: Mesyats, G. A.

TITLE: Method of multiplying a steep pulse voltage

SOURCE: Pribory* i tekhnika eksperimenta, no. 6, 1963, 95-97

TOPIC TAGS: pulse voltage multiplication, pulse multiplying circuit, steep voltage pulse, pulse voltage, pulse multiplication

ABSTRACT: A surge-generator scheme is considered which consists of a number of ladder-connected (through spark gaps) LC circuits; the capacitance and inductance of each circuit are smaller by one order of magnitude than those of the preceding circuit. Under these conditions, theoretically, the crest voltage of the output surge will be $U_s = 2^n U_o$, where U_o is the voltage applied to the first of n stages. Practically, the crest voltage can be determined from:

$$U_s = U_0 \frac{2^n C_0}{C_1 + C_0} \prod_{j=1}^{n} a_j, \qquad (11)$$

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APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001033710014-1"

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ACCESSION NR: AP4006825

where $a_j = 1/2\,(1 + A_j^{-1}) - A_j^{2}\pi^2/4A_j^{2}$ and $A_j = L_jC_j/(L_{j-1}C_{j-1})$, $A_j^{2} = A_j + C_j/C_{j-1} + 1$. A three-stage experimental hookup with inductances of 8, 0.67, and 0.055 millihenries and capacitances of 0.9, 0.1, 0.0075, and 0.68×10^{-3} microfarads developed these crest voltages on the capacitors:

C_0	C_1	C_2	C_3	
8	16	32	64	theoretical
8	14.4	27.1	51	formula (11)
8	14.4	26.7	49.6	experimental

with a wavefront of about 10^{-8} sec. "The author wishes to thank A. A. Vorob'yev for his perusal of the article and valuable advice." Orig. art. has: 3 figures, 13 formulas, and 1 table.

ASSOCIATION: Tomskiy politekhnicheskiy institut (Tomsk Polytechnic Institute)

SUBMITTED: 13Dec62 DATE ACQ: 24Jan64 ENCL: 00

SUB CODE: SD NO REF SOV: 002 OTHER: 001

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TITLE: Circuits using ferrites for obtaining high-voltage nanosecond pulses

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ABSTRACT: A device for obtaining short pulses with amplitudes up to 20 kv by means of a nonlinear circuit equipped with ferrite rings is described. The basic diagrams of the pulse-shaping element and the experimental unit are shown. The nonlinear element consists of a brass rod (30 mm in diameter and 40 mm long) with a ferrite ring (inside diameter, 30 mm; outside diameter, 50 mm; height, 10 mm). The unit is fixed inside a coaxial duralumin chamber. Input pulses (10^{-9} sec — 20 kv) are supplied from the generator. It is shown that the amplitude of the output pulse increases proportionally to that of the input pulse and to the number of rings. It increases

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