

TABLE DES MATIERES

CONTENTS

SECTION IV

INTERACTIONS AVEC LES SURFACES SOLIDES.

INTERACTION WITH A SOLID SURFACE.

A secondary emission cathode. - B.O. Baker.....	1
The influence of molecular ion mass on Townsend's secondary ionization coefficient. - A.E.D. Heylen.	7
Auger-type interaction of ions with solid surfaces at low energies. - H.D. Hagstrum, Y. Takeishi.....	11
The measurement of ranges and depth distribution of ions in the kiloelectronvolt energy region in metals by means of the radioactive tracer technique. - B. Perović, T. Jokić.....	15
Emission of ultraviolet radiation from metals under the impact of high energy positive ions. - Rafi Mohammed Chaudhri Mustafa Yar Khan, Munawar Chaudhri	21
Momentum accomodation above the sputtering threshold. - M. Bader, H.F. Savage	25
Atomic scattering from ionic bombardment of metallic surfaces. - S. Datz, C. Snoek	27
Sputtering of copper by ion bombardment at target temperatures between 40° and 900°K. - J.M. Fluit, J.B. Sanders, C. Snoek	31
Untersuchung der Kathodenzerstörung von Metalleinkristallen beim Beschuß mit Xenon-Ionen einer Energie zwischen 25 und 60 keV. - K. Kopitzki, H.E. Stier, O. Beer, H. Beuscher	33
Zur Massenabhängigkeit der Zerstörung bei Niedrigen Beschussenergien. - H. Fetz, H. Oechsner	39
Average energy and yield of sputtered atoms. - C.H. Weissenfeld.....	43
Velocity distribution of sputtered atoms. - G.K. Wehner, R.V. Stuart	49

SECTION V

DECHARGE DANS LES GAZ.

GAS DISCHARGES.

V.A - Basse pression. Low pressure.

Der Zeitliche Aufbau einer Neon-Niederdruckentladung mit positiver Säule. - B. Saggau	51
An inert-gas glow discharge with low maintaining potential (22-35 V). - R.F. Hall, B.J. Stocker	57

The second sheath at the cathode of a low-pressure arcdischarge and the interaction of an electronbeam with an inhomogeneous plasma. - N. Warmoltz, H. Bremmer	63
Some dynamic aspects of the cathode fall region in a D.C. glow discharge. - P.J. Severin	69
Theoretische Vorstellungen über die Natur der Schlauchglimmentladung. - Jiri Kracik.....	75
Positive ions in the carbon dioxide glow discharge. - P.H. Dawson, A. W. Tickner.....	79
The effect of active gases on inert-gas glow discharges. - G.F. Weston	83
Impedance characteristics of positive column. - Y. Hatta, S. Shibata	89
Sur une methode de mesure de la permittivité complexe d'un plasma en basse et haute fréquences. - F. Dubus	95
Mesure de l'impédance de décharges électriques à basse pression et détermination du circuit équivalent. P. Davy	99
Electrical breakdown between a sphere and a plane in vacuum. - K. W. Arnold, R. B. Britton, S. C. Zanon, A. S. Denholm	101
Cathode electron emission and vacuum breakdown. - W.D. Owen, F. Llewellyn-Jones.....	105
Mécanisme des décharges dans le vide. - C. Germain, F. Rohrbach	111
Spark conditioning of electrodes at pressures in the range 10^{-5} - 10^{-6} mm Hg. - A. Maitland	119
Sur la formation de l'arc électrique dans le vide poussé. - M. Goldman, A. Goldman	125
Emission processes at the cathodes of vacuum arcs. - K.W. Arnold, A.H. von Engel	129
The development of a pulse-disturbance in a d.c. discharge plasma. - L. Pekárek	133
Plasma disturbance following a short-duration current pulse. - R. Feinberg, M. E. Roberts	137
Constriction in the positive column. - G. A. Woolsey	141
The constriction of weak diffuse discharges by low frequency and d.c. radial electric fields. - C. Kenty.	145
Resonance radiation reflection by the walls of a discharge. - M.A. Cayless	151
Number density distributions at low pressures. - R.N. Franklin	157
Dissociation in a hydrogen low voltage arc. - A. G. Coulter, R. C. G. Leckey, G. S. Higginson	161
A model for the low pressure discharge near limiting current. - A. Caruso, A. Cavaliere	165

Die räumliche Verteilung der Elektronentemperatur in einem Niederdruckplasma im Magnetfeld . - L. Schott.....	171
Die thermisch inhomogene Plasmasäule. - G. Ecker, W. Kröll, O. Zöller	175
The determination of ionization and attachment coefficients from measurements of ionization currents.- J. Dutton, F. M. Harris, F. Llewellyn-Jones.....	179
Critique and extension of the Maier-Leibnitz experiment. - R. J. Fleming, G. S. Higginson	183
Ionization in helium. - D. Kenneth Davies, F. Llewellyn-Jones, C. G. Morgan.....	187
On the emission of $H\alpha$ radiation from selfsustained Townsend discharges in hydrogen.- K. J. Nygaard	191
Absorption of photons from a gas discharge. - G. R. Govinda Raju, J. A. Harrison, J. M. Meek	197
Photoelectrons and their back diffusion in self-quenching Geiger Muller counters. - Rafi Mohammed Chaudhri, M. Munawar Chaudhri	203
A microwave investigation of self-quenching cylindrical discharges. - P. R. Caron, R. D. Kodis	207
Ionization phenomena in mercury vapour. - D. Smith, D. E. Davies.....	213
Ionization coefficients in hydrogen, helium and neon. - J. Fletcher, D. E. Davies	217
Ionization striations in the discharge positive column. - A. V. Nedospasov, Yu. B. Ponomarenko	223
Etude de certaines instabilités dans les décharges en courant continu sous faible pression de gaz rare.- J. Favalier	229
V. B - <u>Décharges à haute pression.</u>	<u>High pressure discharges.</u>
High voltage and high pressure discharges. - L. B. Loeb	239
A study of the interferometric determination of gas discharge temperatures. - K. R. Hearne, H. Edels, G. Howarth	253
Courants intenses dans un canal ionisé de faible section. - M. Skowronek.....	261
Calculation of pressure variation and of heat conductivity in an arc column with superposed magnetic field. - R. Wienecke	265
Measurements on a stationary d. c. helium arc with flow in an axial magnetic field. - C. Mahn, H. Ringler, R. Wienecke, S. Witkowski.....	269
A.C.Arc movement in a transverse magnetic field. - J. Pratl, W. Rieder.....	273
Plasma jets in magnetic fields. - V. Hermoch, J. Teichmann	275

Magnetic deflection of high-current arcs in air. - A. E. Guile, H. C. Spink	279
The emission mechanism and retrograde and forward motion of cold-cathode arcs. - A. E. Guile, T. J. Lewis, P. E. Secker.....	283
Some observations on the forward and retrograde motion of electric arcs in transverse magnetic fields. - W. C. Roman	287
The relation between impulse corona and breakdown. - J. J. Kitzinger.....	295
Contribution à l'étude de la décharge prédisruptive entre pointe et plan. - G. Hartmann, A. Goldman, G. Buchet, A. Zeitoun	301
The effect of eigen space charge of an electron avalanche on its development. - H. Raether	305
The development of an electron avalanche investigated by means of a high gain image intensifier. - K. H. Wagner	309
Townsend or streamer breakdown ? - A. L. Ward	313
Chemical effects of d. c. discharges. - F. D. A. Boylett	317
Some factors affecting the static breakdown voltage of uniform-field spark gaps. - D. T. A. Blair, F. M. Bruce, D. J. Tedford	321
Formation stage of spark breakdown in point-to-plane gap in air. (Negative point). - Y. Miyoshi, T. Hosokawa, M. Hayashi	327
Pressurized trigatrons with a 10 kV - 50 kV low jitter operating range. - G. Goldenbaum, E. Hintz	331
Formative time lags in a pressurised spark gap. - D. H. J. Goodall, R. Hancox	337
The breakdown of thin wire-plane gaps and point-plane gaps in electron attaching gases and non-attaching gases. - E. Kuffel, N. Singh	343
Triggering of undervolted spark gaps by a microsecond pulse of fast electrons. - J. D. Clarke, P. J. Hutton	347
Negative impulse breakdown of large sphere-plane gaps. - G. R. Govinda Raju, D. J. Badkas	353
Contribution à l'étude de la formation de la décharge disruptive dans les gaz. - J. Reinhardt, M. Goldman, J. Mazeau, J. Bernard de Courville	359
Sur le mécanisme de l'amorçage contrôlé d'un éclateur. - A. Goldman, M. Goldman, J. Reinhardt.....	361
On the mechanism of vortex stabilization of an arc. - W. G. Braun	365
Generation of an almost fully ionized, spectrally clean, high density hydrogen plasma. - E. Pfender....	369

Distribution of narrow band spectral emission in the optical region over a vortex stabilized arc plasma. W. Rambauske	375
Recherche des propriétés électriques et optiques de l'argon dans l'arc stabilisé. - A. E. Sheindlin, E. I. Asinovskii.....	379
Field emission from semi-conductors. - W. F. Gunn, P. G. Davies, W. Macdonald	383
V. C - <u>Décharges dans des champs électriques et magnétiques croisés.</u>	<u>Discharges in crossed electric and magnetic fields</u>
Décharge reflex à basse pression en champ magnétique croissant vers la périphérie. - H. Doucet	387
Breakdown in crossed electric and magnetic fields at low pressure. - C. F. Gozna.....	389
Measurements on a rotating plasma. - J. G. Bannenberg, F. G. Insinger, C. E. Rasmussen, J. Kistemaker	393
Impulse discharges in crossed electric and magnetic fields. - P. B. Barber, M. L. Pilcher, D. A. Swift, B. A. Tozer.....	395
Rayons X émis par bombardement électronique de l'anode, dans une décharge gazeuse haute tension, à configuration de Penning. - M. C. Ayphassorho, M. P. Loup	401
Über die Penning-Entladung mit heißer Kathode und ihre Verwendung als Ionenquelle. - S. v. Göler, H. Wagner.....	405
Source d'ions annulaire à champs croisés. - A. Bariaud, J. Coutant, J. Druaux, F. Prévot	411
Instabilités dans les décharges réflex. - G. Briffod, M. Grégoire, S. Gruber	423
Fluctuations et rotations d'une colonne de plasma. - F. Bottiglioni, M. Fumelli, F. Prévot	427
Low-frequency instabilities of a fully ionized gas. - Francis F. Chen	435
Fluctuations in a gyro-dominated plasma. - E. C. Lary, R. G. Meyerand, Jr, F. Salz	441
Interaction of plasma oscillations with conduction in a Penning gauge. - F. R. Crownfield, Jr.....	451
V. D - <u>Décharges haute fréquence.</u>	<u>High frequency discharges.</u>
Récentes études sur les décharges H.F. non contrôlées par le régime de diffusion. - T. Consoli	455
Formation and decay times of diffusion controlled electrodeless ring discharges. - H. U. Eckert	465
Electron ionization frequency in deuterium. - W. B. Cottingham, S. J. Buchsbaum	471
Progression d'une décharge U.H.F. dans un gaz raréfié. - J. Collomby	473
Interferometric study of a R.F. discharge. - U. Ascoli-Bartoli, A. De Angelis	475

Gas breakdown at optical frequencies. - R.G. Meyerand, Jr., A.F. Haught.....	479
A study of the R.F. discharge in a single-turn coil. - B.A. Aničin, B.S. Maršicanin.....	491
Mise en évidence de l'effet de la résonance dipolaire sur le régime permanent d'une décharge à haute fréquence. - J. Taillet	497
Helical structures in R.F. Plasmas. - C.J. Ransom, H. Schlüter	501
Experimental study of an R.F. argon torch. - M. Clément, T. Consoli, C. Gormezano, P. Ricateau, M. Weill	505
The compression of the plasma column by the H.F. electric field. - K.S. Golovanivsky, A.A. Kuzovnikov.	509
The frequency properties of the H.F. quasi-potential in the low temperature plasma. - K.S. Golovanivsky, A.A. Kuzovnikov	511
The motion of electrons in a radiofrequency field. - M.F. Romig	513
Energy gain of charged particles after reflection from an R.F. field near cyclotron resonance. - R.B. Hall	519
Particles orbit studies. - T. Fessenden	523

V. E - Décharges en impulsions.

Pulsed discharges.

Transient discharges across vortex stabilized arcs. - K.H. Höcker	527
Electrode sheath effects in pulsed, high current discharges. - C.W. Hartman	539
The compression of a plasma in a hard-core pinch experiment by shock-waves. - W. Köppendörfer.....	545
Transformation d'une poudre en plasma par photolyse. - M. Haegi	549
Breakdown in a Theta-pinch apparatus. - E. Bertolini, B. Brunelli, R. Gratton, S.E. Segre	553
Microwave investigation of a Theta-pinch pre-ionization system. - A.A. Newton, G.B.F. Niblett	559
Electron temperature and density in a Theta-pinch discharge with low trapped magnetic field. - P. Bogen, J. Schlüter	561
Three-fluid model for a partially-ionized plasma in θ - pinch discharges. - D. Düchs	567
Radial and time-resolved measurements of the emission from neutral hydrogen in a θ - pinch. - A. Eberhagen, M. Keilhacker.....	573

Time - and space - resolved measurements of electron densities from the continuum emission of a Theta-pinch . - A.Eberhagen, M.Keilhacker	577
Experiments on breakdown phenomena in θ -pinch. - G.Malesani.....	581
Axial streamers in the Z-pinch. - R.J.Churchill, F.L.Curzon.....	589
Spectroscopic studies on the thermal energy-density in confined plasmas. - H.Zwicker, U.Schumacher .	593
Runaway electrons in toroidal discharges. - F.Brouillard, S.I.Herlitz, N.R.Nilsson.....	599
A linear high-current discharge at atmospheric pressure. - R.B.Johansson, E.A.Smårs, B'E.Wilner.	611
Shock-waves in a pinched discharge. - A.Folkierski, R.Latham.....	617

V.F - Explosions de fil.

Exploding wire.

Relation of conductor configuration to vaporization in exploding wires. - W.G.Chace, M.A.Levine.....	621
Shunting mechanisms in exploding wires at reduced pressures. - T.Korneff, W.Chace, E.Edelson.....	627
Collapsing cylindrical metallic foils. - G.Schenk, J.G.Linhart	633