

Contents

This volume contains contributions included in the following sessions of the Conference:

ARC INTERRUPTION
CORONA
COMPRESSED GAS INSULATION

Part 2 contains contributions included in the following sessions of the Conference:

GLOWS AND PRE-BREAKDOWN PHENOMENA
PLASMA TECHNOLOGY
BREAKDOWN
TEST TECHNIQUES AND DIAGNOSTICS

Page No.	168	<i>M S Abou-Seada and Kh I M Ali</i> Negative corona thresholds of compressed SF ₆ in space charge modified nonuniform fields
	274	<i>T W Aitken</i> Construction of a 30 MV DC generator using 150 tonne SF ₆
	122	<i>N L Allen, D Dring and S Burger</i> The influence of humidity on positive impulse corona in a rod/plane gap
	150	<i>N L Allen, Y Teisseyre, P Ballereau and M Goldman</i> Electrical wind and ionic species formed by point-plane corona
	220	<i>H Anis and K D Srivastava</i> Generalized breakdown criteria for particle-contaminated sulphur hexafluoride under DC, AC and impulse voltages
	130	<i>I Arima and T Watanabe</i> Study of audible noise and radio noise using corona pulse distribution characteristics
	165	<i>A G Arson and I M Bortnik</i> Mobility of ions in SF ₆
	67	<i>E I Asinovsky, A A Afanasjev, E P Pakhomov and V K Roddatis</i> Application of screw quenching arc in high-voltage electromagnetic switchgear

Contents

Page No.	134	<i>P B Barber, D L V Couchman, A G Morris and D A Swift</i> Audible noise and electromagnetic radiation emitted by AC corona discharges from water droplets
	251	<i>M Beyer and R Brockmann</i> Flashover voltage of epoxy resin spacers with defined high resistive contaminations
	21	<i>J Blackett, J R Bagshaw and A G Hawkins</i> The effect of current on gas flow and performance of an experimental SF ₆ interrupter
	208	<i>V N Borin and I M Bortnik</i> Dielectric coatings for gas-insulated high-voltage equipment
	110	<i>A Boulloud and J Charrier</i> Current density on the plane electrode of a positive point-to-plane glow corona discharge
	158	<i>A Brunet and F Faure</i> Negative corona discharges upon electrodes made of carbon fibers materials
	17	<i>L C Campbell</i> Nozzle clogging and its effect on the current zero region
	266	<i>F Y Chu and C K Law</i> Effects of power arc in gas insulated equipment
	210	<i>G C Crichton and A Pedersen</i> Anomalous surface roughness effects in SF ₆
	138	<i>A J Davies and K E Donne</i> Trichel pulse corona in low pressure carbon dioxide
	71	<i>H Dienemann</i> SF ₆ high current discharge
	188	<i>G Dreger</i> The connection between breakdown-volume and statistical time lag at impulse voltage stress in SF ₆
	204	<i>J Dutton and W T Williams</i> Effect of the cathode surface on the electrical breakdown in SF ₆ at high pressures

Contents

Page No.	41	<i>M T C Fang, S Ramakrishnan and H K Messerle</i> Scaling laws for gas-blast circuit-breaker arcs
	114	<i>Y Goshō</i> Development of positive streamer corona in air due to nitrogen oxide produced by its own discharge
	255	<i>R Göss</i> Surface discharges in compressed SF ₆ at the state of condensation
	142	<i>D Graf</i> A simulation model of the negative corona discharge
	52	<i>B K Hasan and D M Grant</i> Arc interruption in SF ₆ mixtures
	98	<i>C Heuser and G Pietsch</i> Prebreakdown phenomena between glass-glass and glass-metal electrodes
	126	<i>F G Heymann</i> The effect of corona on travelling waves up to 450 kV on an 11 kV test power line
	161	<i>O E Ibrahim and O Farish</i> Negative-point breakdown and prebreakdown corona processes in SF ₆ and SF ₆ /N ₂ mixtures
	118	<i>K Kondo and N Ikuta</i> Fine structure of the positive streamer corona and its propagation mechanism
	91	<i>S K Kwan</i> The discharge process and efficiency of ozonizer
	240	<i>J R Laghari and A H Qureshi</i> Flashover voltages of cylindrical insulators in gas mixtures
	37	<i>J L Leclerc, M R Smith and G R Jones</i> Thermal area and pressure variations at extra high current levels in a model circuit breaker
	59	<i>A Lee and L S Frost</i> Arc interruption of pure CClF ₂ CF ₃ and its mixture with SF ₆

Contents

Page No.	86	<i>J L Linsley Hood</i> The corona discharge treatment of plastics films
	270	<i>F Lutz and G Pietsch</i> Investigation on the pressure rise in the surroundings of a high-current fault arc
	236	<i>N H Malik, A H Qureshi and T Szwiecer</i> Electrode surface roughness and SF ₆ – gas mixtures
	213	<i>C Masetti, A Pigini and B Parmigiani</i> Influence of electrode characteristics on SF ₆ corona inception conditions
	153	<i>J W Mason and B Young</i> Statistical properties of negative corona pulse sequences
	180	<i>R J Meats</i> Long times to breakdown in SF ₆
	63	<i>J Mentel and H G Hülsmann</i> Theoretical investigations of the interaction between gas flow and arc in a double nozzle system
	33	<i>K G Mnatsakanian, V P Kuritsin, K I Seryakov and V S Chemeris</i> Behaviour of arc in between nozzle and downstream electrode in SF ₆ puffer circuit-breaker
	13	<i>R Moll and E Schade</i> Dielectric recovery of axially blown SF ₆ -arcs
	78	<i>M Nagata, I Miyachi, Y Yokoi and K Isaka</i> Breakdown characteristics of high temperature air and SF ₆ gas
	29	<i>Y Nakagawa, M Tsukushi, K Hirasawa and Y Yoshioka</i> Nozzle clogging phenomena and interrupting ability of puffer type gas blast circuit breakers
	192	<i>K Nakanishi, A Yoshioka and Y Shibuya</i> Statistical breakdown characteristics of a gas insulated bus
	55	<i>L Niemeyer and A Plessl</i> The influence of flow geometry on gas blast arc interruption

Contents

Page No.	176	<i>N Okumura and Y Inuishi</i> Characteristics of electrical breakdown in SF ₆ gas in short gaps by sharp rise pulses
	232	<i>R Y Pai, L G Christophorou, I Sauers and A Fatheddin</i> Measurement of properties of perfluorocarbon/SF ₆ mixtures relevant to applications
	243	<i>W Pfeiffer and P Völker</i> DC and AC voltage strength of thermoplastic spacers in SF ₆
	217	<i>W Pfeiffer and P Völker</i> Discharge formation in SF ₆ for impulse voltage stress
	49	<i>L W Rothhardt</i> Peculiarities of electrical breakdown tests behind the reflected shock wave in a shock tube (in hot air and nitrogen)
	184	<i>H M Ryan, T Harris and J Nixon</i> Further breakdown characteristics in SF ₆ and SF ₆ /N ₂ mixtures
	196	<i>B B Saha and J M K Pratt</i> The effect of regular electrode surface roughness on the breakdown strength of compressed SF ₆
	94	<i>J Salge, H Kärner, M Labrenz, K Scheibe and P Braumann</i> Characteristics of ozonisers supplied by fast rising voltages
	146	<i>E O Selim and R T Waters</i> Electrical characteristics of negative rod/plane corona in air at atmospheric pressure and below
	82	<i>R S Sigmond, A Goldman and D Brenna</i> Corona corrosion of aluminium in air: electrochemical interaction between electrical coronas and metal surfaces
	25	<i>C E Sölver</i> Thermal limiting curves of full size puffer interrupters. Pure SF ₆ and mixture SF ₆ /N ₂
	102	<i>E Steinort, A Leschanz[†] and G Malin</i> Investigations on the inception and the discharge ranges of external partial discharges (corona) in air

Contents

Page No.	1	<i>A D Stokes</i> Gas blast arc interruption and low current arc behaviour in SF ₆
	5	<i>K Suzuki, A Kobayashi, S Yanabu and H Ikeda</i> Post-arc performance of gas blast circuit breaker for air and SF ₆
	172	<i>W Taschner</i> Dependency of V-T-curves on the front steepness of testing voltage in SF ₆ , measuring method and definitions
	45	<i>H G Thiel and J Wagner</i> Physical mechanisms affecting the transient response of SF ₆ and air blast arcs
	263	<i>V N Varivodov, A A Panov, V M Kochetygov and I G Tripoten</i> New developments in 500 kV gas insulated cables
	106	<i>I P Vereshchagin, G T Golovin, V E Litvinov and A F Artamonov</i> Numerical method of field calculation at a unipolar corona discharge
	259	<i>V P Vertikov and A A Panov</i> Flashovers over the surface of insulators in SF ₆ DC apparatus
	278	<i>S Vibholm and J Mollerup</i> On the compressibility factor for SF ₆
	224	<i>A L Vilenchuk, I V Pankratova and V G Titkova</i> Investigation of interaction of electromagnetic field with conducting particles in SF ₆ filled apparatus
	200	<i>A E Vlastós and S Rusck</i> Influence of the electrode surface state on the breakdown of pressurized SF ₆
	247	<i>H-J Voss</i> The flashover of spacer surfaces in SF ₆ caused by conducting particles under oscillating switching impulse voltage
	75	<i>H A Woods and P R Smy</i> The arc-supported boundary layer
	228	<i>R E Wootton and S J Dale</i> 60 Hz breakdown characteristics of SF ₆ and its mixtures with CF ₃ SF ₅ , CF ₃ CFCF ₂ and He in non-uniform fields
	9	<i>S Yanabu, S Nishiwaki, H Ikeda and T Horiuchi</i> Small DC current breaking phenomena of air blast circuit breaker