

XXVth Symposium on Physics of Switching Arc

Program Schedule
SKI Hotel, September 8 - 12, 2025

Monday, September 8

9.00 - 15.00		Registration (at Ski Hotel)
12.30		Lunch at Ski Hotel
13.30 -15.00		Informal Discussions
15.00	Symposium Opening	
Chairman V. Aubrecht (CZ)		
Invited Lecture		
15.15 – 16.00	P. Robin-Jouan (FR)	High Voltage Interrupting Simulation: Analysis of Expectations and Resources for industrial applications
Topical Lectures		
16.00 – 16.15	S. Gortschakow (DE)	Modelling of switching arcs at short electrode distances
16.15 – 16.30	F. Mingers (DE)	Global sensitivity analysis of polymer ablation modeling for magnetohydrodynamic fault arc models
16.30 – 16.55	Coffee Break	
Topical Lectures		
16.55 – 17.10	C. Simonnet (FR)	Influence of radiation energy losses in a numerical simulation of subsonic vacuum arc in the presence of external axial magnetic field
17.10 – 17.25	S. V. Rohani (UK)	Efficient Arc Simulation in High-Voltage Circuit Breakers Using the Equal Emission Banding Method
17.25 – 17.40	R. Fuchs (CH)	Numerical simulation of Circuit Breaker using Overset and Morphing Methods
19.00 – 22.00	Welcome Reception	

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Tuesday, September 9

Chairman P. Robin-Jouan (FR)		
Invited Lectures		
9.00 – 9.45	Ch. Franck (CH)	Thermal current interruption in SF6-free gas mixtures
9.45 – 10.30	M. Anheuser (DE)	Some trends on the field of low voltage switching devices
10.30 – 10.55	Coffee Break	
Topical Lectures		
10.55 – 11.10	M. Seeger (CH)	Electric breakdown in CO ₂ /O ₂ gas mixture in weakly and strongly non-uniform electric field distributions at temperatures 300- 4000 K
11.10 – 11.25	N. S. Stoa-Aanensen (NO)	Ageing of C ₄ F ₇ N and CO ₂ -based insulating gas mixtures by free-burning arcs
11.25 – 11.40	V. Issartel (FR) S. Gortschakow (DE)	Dielectric withstand analysis for high voltage circuit-breakers using G3 and CO ₂ -O ₂ gas mixtures
12.00	Lunch	
13.30 – 15.00	Informal Discussions	
Chairman D. Uhrlandt (DE)		
Topical Lectures		
15.00 – 15.15	D. Kumari (CH)	Sensitivity of synthetic test circuit parameters on thermal interruption tests in CO ₂ gas mixtures
15.15 – 15.30	S. V. Rohani (UK)	Effect of Pressure on Nozzle Performance for Arc Interruption
15.30 – 15.45	T. Gfrörer (CH)	Free burning arc black-box modelling in CO ₂ /O ₂
15.45 – 16.00	K. Niayesh (NO)	Estimation of dielectric recovery of fast opening commutating switches after short time arcs
16.00 – 16.25	Coffee Break	
Topical Lectures		
16.25 – 16.40	S. Gortschakow (DE)	Study of correlation between voltage fluctuations and surface temperature during anode mode transitions in a model vacuum switch
16.40 – 16.55	M. Baeva (DE)	Modeling studies of arcs of short length between copper electrodes
16.55 – 17.10	A. Gatri (FR)	Numerical modeling of electric arc in a low voltage breaking chambre
18.00 – 19.00	Dinner	
19.00 – 21.00	Poster Session – Topic II	
20.00 – 21.00	Scientific Committee Meeting	

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Tuesday, September 9 (cont.)

Poster Session – Topic II	
P. Pietrzak (CH)	Arc conductance decay as a performance indicator for thermal interruption in CO ₂ -based mixtures
C. Pietri (FR)	Electric arc during contact opening at 540 VDC
A. Najam (DE)	Characterization of the switching arc in hydrogen under different pressure conditions
J. Ballentin (DE)	Experimental studies of microarcs between copper electrodes in atmospheric pressure air
A. Gatri (FR)	Integration of Current Limiting and Circuit Coupling in MHD Models for Low-Voltage Arc Simulation
P. Freton (FR)	Moving contact in a geometry – Applied to a simplified LVCB geometry
M. C. Suarez (DE)	Influence of closing speed, filling pressure and mixing ratio on pre-strike arc duration in a MV LBS using N ₂ /CO ₂ mixtures
P. Wienkamp (DE)	Characterizing the Diffuse Vacuum Arc Voltage for MVDC Circuit Breaker Applications: Experiment, Data, and Empirical Model
S. Jugelt (DE)	Medium voltage direct-current interruption by a high velocity flow of dielectric liquids
M. Ha (KR)	Hot Gas Behavior in Circuit Breakers with SF ₆ and a CO ₂ -Based Gas Using Microgap Measurement and Simulation

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Wednesday, September 10

Chairman M. Anheuser (DE)		
Invited Lectures		
9:00 – 9.45	Y. Tanaka (JP)	A Review of Numerical Approaches on Decaying Arc Plasmas in Polyatomic C-F-O Molecular Gas Flow with Chemical Non-equilibrium Considerations
9.45 – 10.30	J. Čech (CZ)	Glow Discharge in Hydrodynamic Cavitation - CaviPlasma: Diagnostics and High-Volume Applications
10.30 – 10.50	Coffee Break	
Topical Lectures		
10.50 – 11.05	S. Gortschakow (DE)	Use of optical methods for temperature evaluation of switching CuCr contacts in vacuum
11.05 – 11.20	J. Engelbrecht (CH)	Optical emission spectroscopy evaluation of exhaust gas temperatures after high current interruption in CO ₂ /O ₂
11.20 – 11.35	D. Gonzalez (DE)	How reliable are line intensities for temperature calculation using the Boltzmann plot method
11.45	Lunch	
13.00 – 18.00	Social program – Excursion in Lysice chateau and chateau’s terraced garden	
18.30 – 19.30	Dinner	
19.30 – 21.30	Poster Session – Topics I + III+ IV+V	
M. Baeva (DE)	Modelling of microdischarges in metal vapour of cadmium in comparison with electrical measurements	
M. Buffoni (CH)	Numerical Characterization of Arc-induced Turbulence in the vicinity of Current Zero	
Y. Qiao (UK)	Performance evaluation of modified turbulent models in simulating arc quenching process in circuit breakers	
V. Mazánková (CZ)	Study of ozone destruction reaction at higher temperatures	
R. Methling (DE)	Optical investigation of microdischarges in zinc metal vapour	
O. Nedybaliuk (UA)	Peculiarities of spectroscopy of thermal plasma with copper and molybdenum vapour admixtures	
P. Slavíček (CZ)	OES diagnostics of plasma nozzle with larger diameter	
T. Zhu (DE)	Bidirectional coupling of jet plume and particles in a plasma spraying process	
Z. Kozáková (CZ)	Ecotoxicological assessment of silver and gold nanoparticles prepared from liquid precursors by non-thermal plasma	
A. Veklich (UA)	Spectroscopy of plasma of electric arc discharge between Cu-Mo composites electrodes	
J. Čech (CZ)	CaviPlasma: High-throughput plasma treatment of liquids in horticulture	
J. Ráhel (CZ)	Arc-discharge assisted surface wood surface carbonization	

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Thursday, September 11

Chairman J. Yan (UK)		
Invited Lectures		
9:00 – 9.45	J. Pawlat (PL)	Non-thermal plasmas for biological materials
9.45 -10.30	L. Zajickova (CZ)	Versatility of material processing with plasma jets: from gliding arc to cold atmospheric plasma
10.30 – 10.55	Coffee Break	
Topical lectures		
10.55 – 11.10	J. Jánský (CZ)	Conditions for Streamer Ignition in the System of Two Approaching Hydrometeors
11.10 – 11.25	D. Uhrlandt (DE)	Towards plasma-enhanced gasification: investigating free-burning carbon arcs in molecular gas mixtures
11.25 – 11.40	S. Schmausser (DE)	Experimental Validation of MHD Arc Simulation for Encapsulated Horn Spark Gaps
11.40 – 11.55	A. Monnoyer (FR)	Modelling the heating and erosion of a non-refractory cathode in a plasma torch
12.00	Lunch	
13.30 – 15.00	Informal Discussions	
Chairman K. Niayesh (NO)		
Topical Lectures		
15.00 – 15.15	S. Kimpeler (DE)	Magnetohydrodynamic modeling of direct current arc interruption in a low-voltage switch
15.15 – 15.30	B. Barbu (DE)	Simulation of contactor for regional hybrid-electric aircraft
15.30 – 15.45	M. Iwata (JP)	Investigation of detecting DC series arcs with short gaps to simulate failure conditions in actual low-voltage DC facilities
15.45 – 16.00	S. M. Gerhard (NO)	Experimental Characterization of Rapidly Elongating and Fast Commutating Arcs in DC Circuit Breakers: Test Setup and Preliminary Results
16.00 – 16.25	Coffee Break	
16.25 – 16.40	O. M. D. Razafindrasata (FR)	Study of the behavior of an electric arc during the passage of an 8/20 μ s current wave and a follow current in a Spark Gap
16.40 – 16.55	P. Corfdir (CH)	Dielectric recovery of electric arcs confined between PTFE and PA66 walls
17.15	Symposium Closing	
18.00 – 19.00	Dinner	

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Friday, September 12

9.00 – 10.00	Informal Discussions
Departure from the Hotel Ski	

Rem.: Board size for poster: 80 cm (width) x 150 cm (height), white colour