



2019 5th International Conference
on Electric Power Equipment
- Switching Technology (ICEPE-ST)

*~ Frontiers of switching technology
for a future sustainable power system ~*

Tentative Program

A series of black, wavy, horizontal lines that sweep across the page, starting from the left and ending on the right, positioned below the 'Tentative Program' title.

Kitakyushu Japan, October 13-16, 2019

Forth edition issued on September 24, 2019

Schedule for ICEPE-ST 2019

Time table

13 Oct.	Registration											16:00	19:00	
												16:00	17:00	19:00
	Sub foyer											Welcome reception		

14 Oct.	Registration	8:00												17:30	
			9:00	9:45		10:00	12:00		13:30	15:00		15:30	17:30		
	Main Hall		Opening Ceremony			Plenary Lecture(China, Korea, Europe and Japan)			Oral session : Category B-1			Oral session : Category B-2			
	Event Hall			Break			Lunch			Break					
	International Conference Room								Oral session : Category G-1			Oral session : Category G-2			
	Conference Room 21 AB								Oral session : Category C-1			Oral session : Category C-2			
	Conference Room 21 CD								Oral session : Category H-1			Oral session : Category H-2			
	Conference Room 22								Oral session : Category J-1			Oral session : Category E-1			

*Note : A group photo will be taken after the plenary lecture.

15 Oct.	Registration	8:30												15:00	
			8:45	9:45		10:00	11:00	12:00		13:30	15:00		15:15	18:40	21:30
	Main Hall		Invited Lecture 1			DCCB Special session		Oral session : Category E-2		Oral session : Category E-3			Conference tour	Banquet	
	Event Hall			Break				Lunch							
	International Conference Room					Oral session : Category N-1		Oral session : Category K-1			Oral session : Category K-2				
	Conference Room 21 AB					Oral session : Category M-1 and F-1		Oral session : Category I-1			Oral session : Category I-2				
	Conference Room 21 CD					Oral session : Category H-3				Oral session : Category C-3					
	Conference Room 22					Oral session : Category J-2				Oral session : Category J-3					

16 Oct.	Registration	8:30												15:00		
			8:45	9:45		10:00	11:00	12:00		13:30	15:00		15:30	16:00	16:45	17:30
	Main Hall		Oral session : Category N-2			Oral session : Category N-3								Invited Lecture 2	Closing Ceremony	
	Event Hall						Preparation of the poster session		Poster session							
	International Conference Room		Oral session : Category E-4			Oral session : Category E-5										
	Conference Room 21 AB		Oral session : Category C-4			Oral session : Category L-1										
	Conference Room 21 CD		Oral session : Category A-1			Oral session : Category A-2										
	Conference Room 22					Oral session : Category D-1										
	Sub-entrance Hall			Break				Lunch : Every room					Break			

Category	Oral session titles
A	Switching phenomena in SF ₆ gas
B	SF ₆ alternative gases for switching applications
C	Switching phenomena in vacuum
D	Switching phenomena in air
E	DC switching technology
F	Semi-conductor switching technology
G	Fault current limiting technology
H	Fundamental physics and electrical insulation
I	Digital design and simulation in switchgear
J	Testing and measurement in switchgear
K	Operating mechanism in switchgear
L	Electrical contacts
M	Digital and IoT application in switchgear
N	Others

Location



Kitakyushu International Conference Center

Conference Location : Kitakyushu International Conference Center

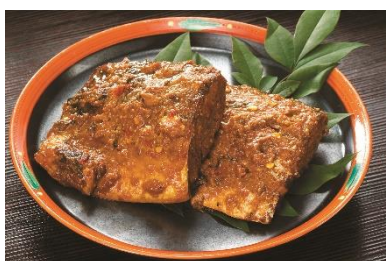
3-9-30 Asano, Kokurakita-ku, Kitakyushu-shi, Fukuoka 802-0001

Telephone : +81-93-541-5931

Facsimile : +81-93-541-5928

The ICEPE-ST 2019 will be held at Kitakyushu International Conference Center in Kitakyushu City, Fukuoka prefecture, Japan. Kitakyushu City is situated in the northernmost tip of the Kyushu. Apart from being a large government - ordinance - designated city, but also coexists with the nature. The city has a wonderful night view sight, many historical sights and delicious foods.

Please enjoy Kitakyushu City by all means.



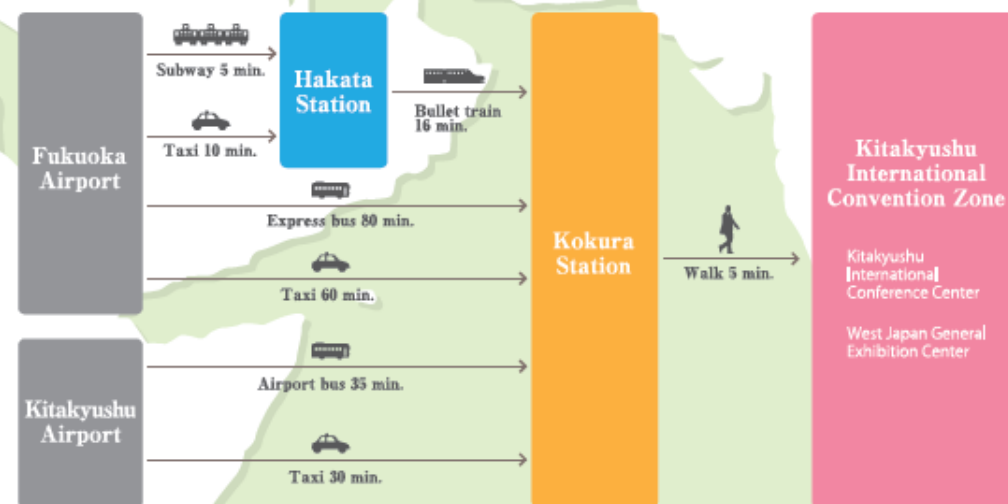
Connection to Kitakyushu

Fukuoka Airport (International)

Flight Time	Flight Time	Flight Time
Seoul1:15	Wuhan4:05	Bangkok.....5:10
Busan0:50	Chengdu5:45	Hanoi3:50
Daegu0:50	Taipei2:05	Ho Chi Minh City4:50
Beijing3:55	Kaohsiung2:50	Singapore6:15
Dalian1:50	Hong Kong3:25	Guam3:45
Shanghai1:30	Macau3:30	Honolulu.....7:57
Qingdao1:50	Manila3:35	Helsinki9:30
Nanjing2:20		



Required time



Fukuoka Airport (Domestic)

Flight Time
Tokyo (Haneda).....1:30
Narita1:45
Kansai International1:25
Chubu International1:00
Plus 22 more cities!

Kitakyushu Airport (International)

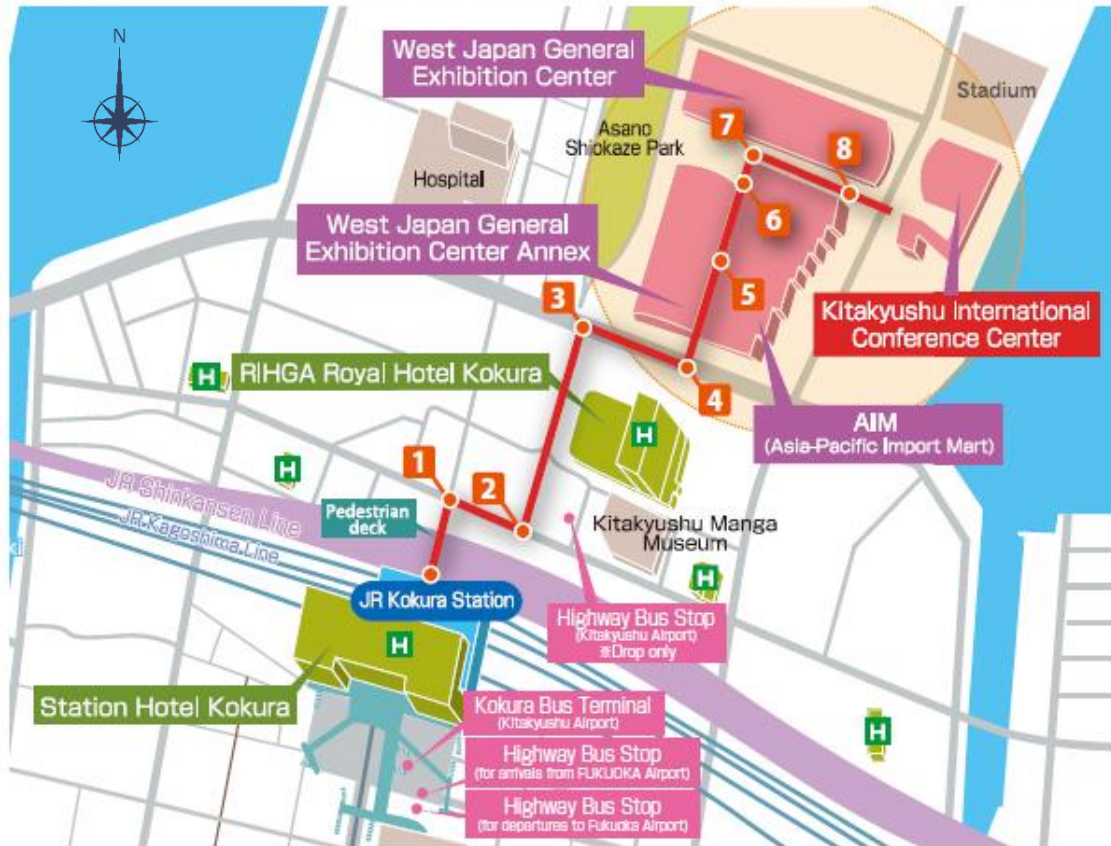
Flight Time
Seoul.....1:15
Busan0:50
Dalian1:50

Kitakyushu Airport (Domestic)

Flight Time
Tokyo (Haneda)1:25
Nagoya (Komaki)1:15

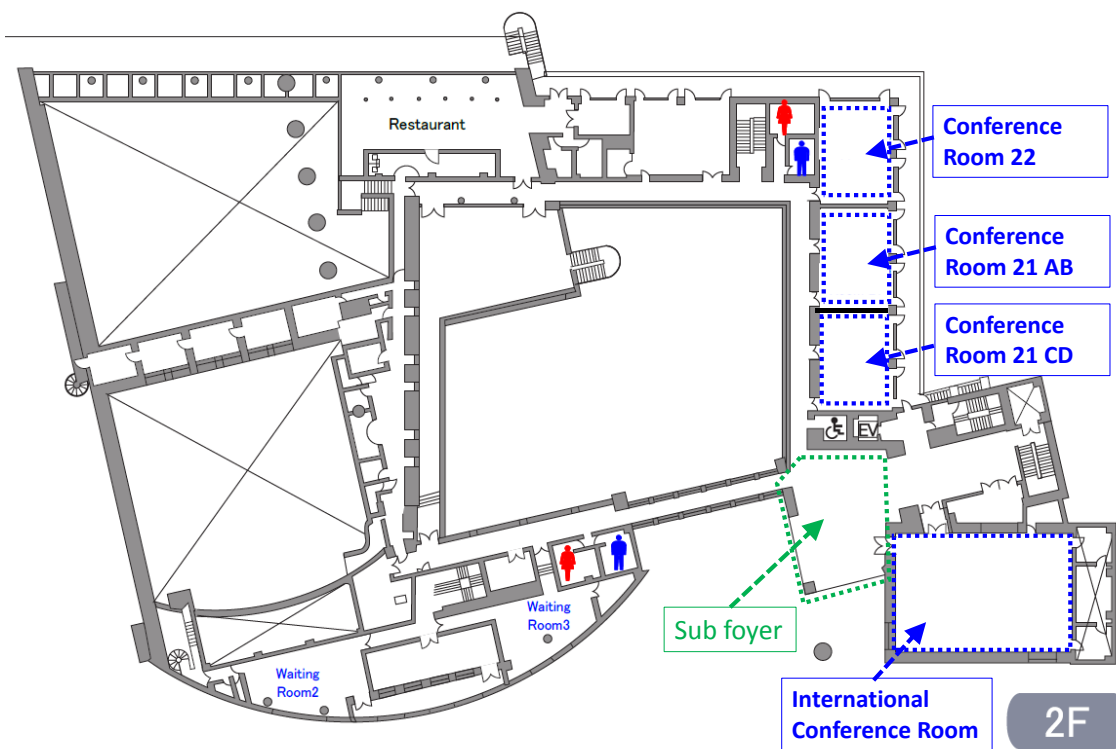
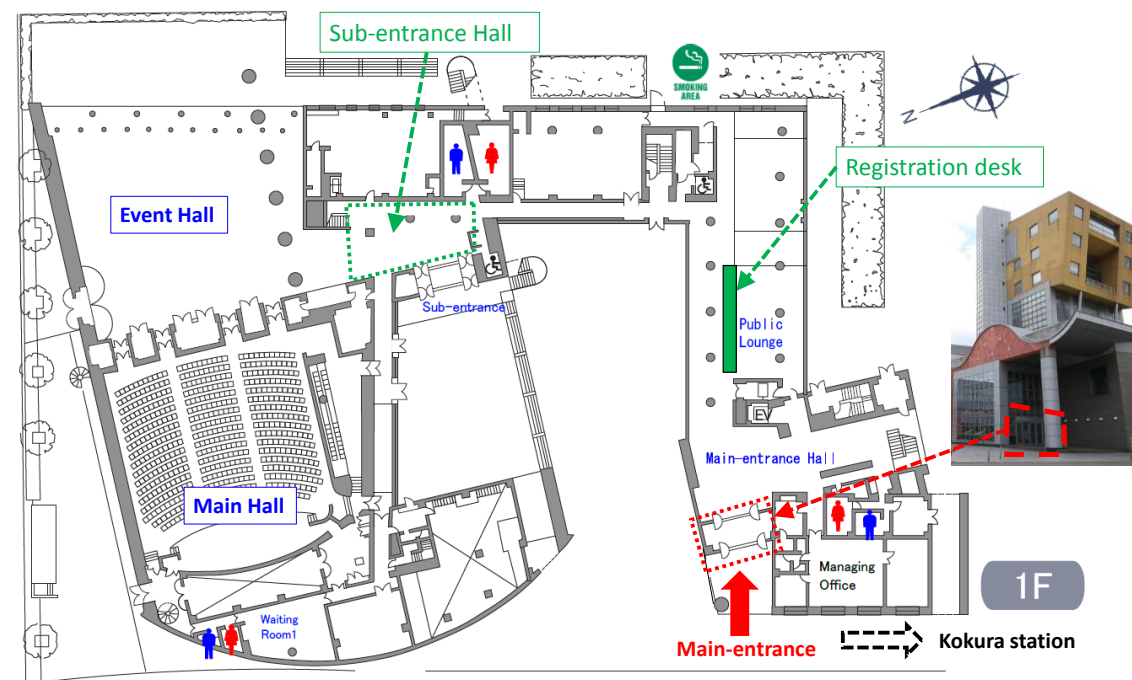


Getting to Kitakyushu International Conference Center(KICC)



Conference Rooms

Kitakyushu International Conference Center(KICC)



Registration & Reception

Registration desk will be located in the “Public Lounge” of Kitakyushu International Conference Center, and will be opened as below.

Day	Date	Registration hour
Sunday	October 13 th , 2019	16:00 - 19:00
Monday	October 14 th , 2019	08:00 - 17:30
Tuesday	October 15 th , 2019	08:30 - 15:00
Wednesday	October 16 th , 2019	08:30 - 15:00

At registration, a participant will receive a conference kit including USB memory of conference proceeding; the hard copy of papers will not be provided.

Local Organizing Committee

LOC members stay at the registration desk. In case of any kind of troubles or inconvenient matters, you are welcome to consult the LOC there.

Conference welcome reception will be taken place at the “Sub foyer” of Kitakyushu International Conference Center. It will start from 17:00 to 19:00 on October 13th, 2019. LOC sincerely welcome all participants there.

Accommodation

Participants will be able to reserve through the web site :

<https://amarys-jtb.jp/icepe-st/>

But in terms of participants those who wish other accommodation, please use another web site. All bookings have to be done with the responsibility of individual participants. ICEPE-ST 2019 will not bear the cost of cancellations and non-appearances.

Lunch & Banquet

On October 14th and 15th, all participants and accompanying persons can have buffet lunch at the "Event Hall" of the Kitakyushu International Conference Center. On 16th, a lunch box will be provided to all participants and accompanying persons and can be taken it at each conference room. Additionally, the banquet and conference tour (Banquet tour) are included in registration fee.

Coffee Break

Coffee, tea and refreshments will be provided during the coffee breaks at the “Event Hall” and the “Sub foyer”.

Instructions for Speakers

Oral Presentation

Presentations of contributed papers must be made in 15 minutes:

10 minutes for the presentation, 4 minutes for questions and 1 minute for the change of the presenters.

The presenter can use a Windows PC (laptop) equipped in the room or your OWN PC.

If you use the PC equipped in the room, you should arrive in the session room at least 5 minutes prior to the start of the session to load your presentation onto the PC using your USB memory stick. Note that “Microsoft Power Point 2019” or “Adobe PDF” is available for the presentation that is installed in the PC, and we cannot guarantee the quality of Macintosh-based presentations.

In case of using your OWN PC, you should arrive in the session room at least 5 minutes prior to the start of the session to ensure the connection to the projector. A VGA cable with a male connector will be provided for hooking up your PC. A HDMI to VGA adapter is available on site.

In addition, a micro-phone, a laser pointer and a lectern will be provided for the presentation.

Also, photography and video recording are prohibited during the presentation.

Poster Session

A poster session will be held from 13:30 on October 16 for those who have applied for Wang Jimei Best Investigator Award. Please prepare for the session between 11:00 and 13:30 on October 16 if you are planning a poster session. The materials such as some scissors and tapes will be provided in Poster Session Place.

Venue : Event Hall

Preparation Guideline :

- Each poster will be assigned a panel, which has its own paper's number, at the conference.
- We do not specify the poster format, but each poster should include the paper title, authors, affiliation, and paper number and must fit within a 0.9m × 1.2m space.
- The poster text including the paper title should be printed and enlarged, so that it can be read from a distance of at least 2 meters.

Awards

In the International Conference of Electrical Power Equipment-Switching Technolgy (ICEPE-ST), there are following two Wang Jimei Awards. The award prize is provided by the WANG JIMEI funding.

- 1) The first Wang Jimei Award is named “Wang Jimei Best Paper Award”.
- 2) The second Wang Jimei Award is named “Wang Jimei Best Young Investigator Award”.

The Wang Jimei Award is established in ICEPE-ST 2011 in honor of Professor Wang Jimei. The award will be given for the best, most significant presentation during the International Conference on Electric Power Equipment (ICEPE). The recipient is selected by a vote of the International Scientific Committee of the ICEPE-ST.

The Wang Jimei Best Paper Award will be given at the Banquet.

The Wang Jimei Best Young Investigator Award will be given at the closing ceremony.

Wang Jimei Best Paper Award

Eligibility:

The potential candidates of "Wang Jimei Best Paper Award" will be the authors of ICEPE-ST2017 who have published their extended conference papers in international Journals.

Wang Jimei Best Young Investigator Award

Eligibility:

The first author of a candidate paper should be less and equal to 35 years old for a man and less and equal to 40 years old for a woman in the year of conference held.

Process:

1. Potential awardees should apply the award when submitting full paper.
2. The first authors of all potential awarded papers should present his/her papers in oral sessions. The session chairs will grade these presentation with a score sheet.
3. The candidate authors will be re-scored in the poster session, which will be held on October 16, 2019. The members of International Scientific Committee vote for the final awardees through Q&A with the candidate authors. 3-5 candidates can be awarded "Wang Jimei Best Young Investigator Award".

Scientific Program

Date : Sunday, October 13th, 2019

16:00 - 19:00 **Registration**

< Public Lounge of Kitakyushu International Conference Center >

*Note : At registration, a participant will receive a conference kit including USB memory of conference proceeding; the hard copy of papers will not be provided.

17:00 - 19:00 **Welcome Reception**

<Sub foyer of Kitakyushu International Conference Center >

Date : Monday, October 14th, 2019

08:00 - 17:30 **Registration**

< Public Lounge of Kitakyushu International Conference Center >

09:00 - 9:45 **Opening Ceremony**

< Main Hall >
Chairperson : Yasunori Tanaka (Kanazawa University) Opening Address from Local Organizing Committee and Chairperson of International Scientific Committee

09:45 - 10:00 **Coffee Break < Event Hall >**

10:00 - 12:00 **Plenary Lecture**

< Main Hall >
Chairperson : Yasunobu Yokomizu (Nagoya University), Hajime Urai (Hitachi, Ltd.)
PL-1 Innovation of switching technologies for future power systems <i>(Dr. Hiroki Ito : Mitsubishi Electric Corporation, Japan)</i>
PL-2 Computation for Electrical Switching Equipment <i>(Prof. Mingzhe Rong : Xi'an Jiaotong University, China)</i>
PL-3 SF ₆ free power equipment development for environmentally friendly policy <i>(Dr. Jaeseop Ryu : LSIS Co. Ltd., Republic of Korea)</i>
PL-4 Vacuum Switchgear; Past, Present, and Future <i>(Prof. Leslie T Falkingham : Vacuum Interrupters Limited, UK)</i>

*Note : A group photo will be taken after the Plenary Lecture.

12:00 - 13:30 **Lunch < Event Hall >**

13:30 - 15:00 **Oral Sessions** (*Note : 5 sessions will be held simultaneously)

Main Hall : SF₆ alternative gases for switching applications

Chairperson : Jaeseop Ryu (LSIS Co., Ltd.)

13:30 - 15:00, Oct. 14 (Mon)	
B-1-1	Calculation of Thermodynamic Physical Parameters of C ₅ F ₁₀ O/CO ₂ and C ₆ F ₁₂ O/CO ₂ Mixtures
	Xin Lin (School of Electric Engineering, Shenyang University of Technology), Zhaoxuan CUI (School of Electric Engineering, Shenyang University of Technology), Zhenxin GENG (School of Electric Engineering, Shenyang University of Technology), Jia ZHANG (School of Electric Engineering, Shenyang University of Technology), Zhen ZHANG (School of Electric Engineering, Shenyang University of Technology), Jianyuan XU (School of Electric Engineering, Shenyang University of Technology)
B-1-2	Numerical Thermofluid Simulation of Decaying Arc Behavior in CO ₂ /O ₂ /C ₅ F ₁₀ O(C5-PFK) and CO ₂ /C ₄ F ₇ N(C4-PFN) Considering More Than Nona-atomic Molecules
	Yuki Demura (Kanazawa University), Yasunori Tanaka (Kanazawa University), Yusuke Nakano (Kanazawa University), Yoshihiko Uesugi (Kanazawa University), Tatsuo Ishijima (Kanazawa University)
B-1-3	Simulation and comparison of arc characteristics in C ₄ F ₇ N,CO ₂ and SF ₆
	Jianying Zhong (Pinggao Group Co. Ltd.), Sumin Pang (Pinggao Group Co. Ltd.), Yanwei Nan (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Hao Sun (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Wenkui Liu (Pinggao Group Co. Ltd.)
B-1-4	Introduction and Test Analysis of the Disconnecter and Earthing Switches of SF ₆ /N ₂ Mixed Gas in GIS
	Guangwei Fan (Xi'an High Voltage Apparatus Research Institute Co., Ltd.), Shi Huang (Xi'an High Voltage Apparatus Research Institute Co., Ltd.), Gang Li (Xi'an High Voltage Apparatus Research Institute Co., Ltd.), Sili Yao (Xi'an High Voltage Apparatus Research Institute Co., Ltd.), Haojun Liu (Xi'an High Voltage Apparatus Research Institute Co., Ltd.)
B-1-5	Experimental Study on the Insulation Performance of the Application of Fluoronitrile Mixture in 24kV RMU
	Chenguang Han (Xi'an XD Electric Research Institute Co. LTD), Lili Guo (Xi'an XD Electric Research Institute Co. LTD), Shuai Wang (Xi'an XD Electric Research Institute Co. LTD), Ping Wang (Xi'an XD Electric Research Institute Co. LTD)
B-1-6	Comparison of decomposition by-products of C ₄ F ₇ N/CO ₂ mixed gas under AC discharge breakdown and partial discharge
	Yongyan Zhou (Electric Power Research Institute of Guangdong Power Grid Co. Ltd), Chenwei Li (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Nian Tang (Electric Power Research Institute of Guangdong Power Grid Co. Ltd), Boya Zhang (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Li Li (Electric Power Research Institute of Guangdong Power Grid Co. Ltd), Xingwen Li (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), X.D. Li (Electric Power Research Institute of Guangdong Power Grid Co. Ltd)

International Conference Room : Fault current limiting technology

Chairperson : Yoshimitsu Niwa (Toshiba Infrastructure Systems & Solutions Corporation)

13:30 - 15:00, Oct. 14 (Mon)	
G-1-1	Research on Pressure Control Material Based on Granular System in Current Transfer
	Yu Zhu (School of Electrical Engineering, Dalian University of Technology), Enyuan Dong (School of Electrical Engineering, Dalian University of Technology), Mingjie Li (School of Electrical Engineering, Dalian University of Technology), Huan He (Anshan Power Supply Company, State Grid Liaoning Electric Power Co., Ltd.), Zirong Zhang (Anshan Power Supply Company, State Grid Liaoning Electric Power Co., Ltd.), Xinghai Guo (Anshan Power Supply Company, State Grid Liaoning Electric Power Co., Ltd.)

G-1-2	A new DC Current Limiting Device Based on Medium Frequency Transformer
	Lin Zou (Electric Power Research Institute, CSG), Zhihui Huang (School of Electrical Engineering, Dalian University of Technology), Daizhong Zhu (Anhui Electric Power Egrid Equipment Co., LTD.), Yongxing Wang (School of Electrical Engineering, Dalian University of Technology), Jiyan Zou (School of Electrical Engineering, Dalian University of Technology)
G-1-3	Research on Voltage Sag Control Scheme Based on Fast Vacuum Switch
	Jianghua Yu (Anhui Electric Power Egrid Equipment Co., LTD), Zhu Liu (School of electrical engineering, Dalian University of Technology), Lin Zou (Electric Power Research Institute, CSG), Zhihui Huang (School of electrical engineering, Dalian University of Technology), Yongxing Wang (School of electrical engineering, Dalian University of Technology)
G-1-4	Barrier Effect on the DC Breakdown Characteristics of Cryogenic Nitrogen Gas for the Designing of the Superconducting Fault Current Limiter
	Lei Gao (State Key laboratory of Electrical Insulation and Power Equipment), Bin Xiang (State Key laboratory of Electrical Insulation and Power Equipment), Jinhui Luo (State Key laboratory of Electrical Insulation and Power Equipment), Zhiyuan Liu (State Key laboratory of Electrical Insulation and Power Equipment), Yingsan Geng (State Key laboratory of Electrical Insulation and Power Equipment), Jianhua Wang (State Key laboratory of Electrical Insulation and Power Equipment), Satoru Yanabu (State Key laboratory of Electrical Insulation and Power Equipment)
G-1-5	Study on Dynamic Current Distribution Characteristics of non-uniform Superconducting Types in parallel connection
	Mingqian Wen (State Key Laboratory of Power Transmission Equipment & System Security and New Technology, School of Electrical Engineering, Chongqing University), Quan Zhou (State Key Laboratory of Power Transmission Equipment & System Security and New Technology, School of Electrical Engineering, Chongqing University), Yaxiong Tan (State Key Laboratory of Power Transmission Equipment & System Security and New Technology, School of Electrical Engineering, Chongqing University), Shushan Luo (State Key Laboratory of Power Transmission Equipment & System Security and New Technology, School of Electrical Engineering, Chongqing University), Jiajun Pan (State Key Laboratory of Power Transmission Equipment & System Security and New Technology, School of Electrical Engineering, Chongqing University)
G-1-6	Numerical Thermofluid Simulation on 10 kA-class High Current Fault Arcs in Air Contaminated with Metal Vapor from Evaporation of Metal Electrodes in Open Air
	Toru Takeshima (Kanazawa University), Yasunori Tanaka (Kanazawa University), Yusuke Nakano (Kanazawa University), Yoshihiko Uesugi (Kanazawa University), Tatsuo Ishijima (Kanazawa University)

Conference Room 21 AB : Switching phenomena in vacuum

Chairperson : Erik D Tayler (Siemens AG)

13:30 - 15:00, Oct. 14 (Mon)	
C-1-1	Transition process of vacuum arc to diffusion stage under transverse magnetic field
	Shixin Xiu (Xi'an Jiaotong University), Zixi Liu (Xi'an Jiaotong University), Tao Liu (Xi'an Jiaotong University), Rui Li (Xi'an Jiaotong University), Dingyu Feng (Xi'an Jiaotong University)
C-1-2	Research on the Interruption Characteristics of Wan-type Transverse Magnetic Field Contacts
	Li Zhao (Xi'an Jiaotong University), Shixin Xiu (Xi'an Jiaotong University), Jiashuo Cui (Xi'an Jiaotong University), Zepeng Chen (Xi'an Jiaotong University), Mengru Li (Xi'an Jiaotong University), Bo Yuan (Xi'an Jiaotong University)
C-1-3	Feasibility of Time-Resolved Integral Field Spectroscopy for Vacuum Arc Observation
	Yoshihiko Matsui (MEIDENSHA CORPORATION), Akihiko Suwa (MEIDENSHA CORPORATION), Kazuya Kato (MEIDENSHA CORPORATION)
C-1-4	Investigation on the influence of the dynamic characteristics on the DC vacuum arc
	Xingyu Guo (School of Electrical Engineering, Dalian University of Technology), Deshi Liang (School of Electrical Engineering, Dalian University of Technology), Jiyan Zou (School of Electrical Engineering, Dalian University of Technology), Huang Zhihui (School of Electrical Engineering, Dalian University of Technology), Liu Ruitong (State Grid Liaoning Electric Power Research Institute)

C-1-5	Suitability of Vacuum Circuit Breakers for Generator Switching Applications according to Dual Logo standard IEC/IEEE 62271-37-013
	Karthik Reddy Venna (Siemens AG), Andreas Lawall (ABB AG), Martin Leusenkamp (EATON Electrical Ltd)
C-1-6	Experimental Investigation of Vacuum Arc Characteristics under Various Cathode Materials Subject to Axial Magnetic Field
	Hui Ma (Xi'an Jiaotong University), Zhiyuan Liu (Xi'an Jiaotong University), Yingsan Geng (Xi'an Jiaotong University), Jianhua Wang (Xi'an Jiaotong University), Qiming Li (Xi'an Jiaotong University)

Conference Room 21 CD : Fundamental physics and electrical insulation

Chairperson : Masayuki Hikita (Kyushu Institute of Technology)

13:30 - 15:00, Oct. 14 (Mon)	
H-1-1	Fundamental Study on Charging Potential of Floating Electrode Modeled on Vacuum Interrupter under AC Voltage Application
	Hideaki Fukuda (MEIDENSHA CORPORATION), Kenta Yamamura (MEIDENSHA CORPORATION), Ryutaro Kusa (Saitama University), Issei Fujita (Saitama University), Yasushi Yamano (Saitama University)
H-1-2	Impulse Breakdown Characteristics of Double Vacuum Gaps in Series with Asymmetric Distribution
	Jingyu Shen (Xi'an Jiaotong University), Hui Ma (Xi'an Jiaotong University), Xiangwen Xiao (Xi'an Jiaotong University), Yingsan Geng (Xi'an Jiaotong University), Zhiyuan Liu (Xi'an Jiaotong University), Jianhua Wang (Xi'an Jiaotong University)
H-1-3	3-D Hybrid Simulation of Low-current Vacuum Plasma Jets under Axial Magnetic Fields
	Zhiyuan Cao (State Key Laboratory of Electrical Insulation and Power Equipment Xi'an Jiaotong University Xi'an), Yuwei Du (State Key Laboratory of Electrical Insulation and Power Equipment Xi'an Jiaotong University Xi'an), Zhenxing Wang (State Key Laboratory of Electrical Insulation and Power Equipment Xi'an Jiaotong University Xi'an), Yudong Xu (State Key Laboratory of Electrical Insulation and Power Equipment Xi'an Jiaotong University Xi'an), Feng Chen (State Key Laboratory of Electrical Insulation and Power Equipment Xi'an Jiaotong University Xi'an), Yingsan Geng (State Key Laboratory of Electrical Insulation and Power Equipment Xi'an Jiaotong University Xi'an), Jianhua Wang (State Key Laboratory of Electrical Insulation and Power Equipment Xi'an Jiaotong University Xi'an), Zhiyuan Liu (State Key Laboratory of Electrical Insulation and Power Equipment Xi'an Jiaotong University Xi'an)
H-1-4	Study on Breakdown Stability of Gas Spark Switches
	Wenlong Yan (State Key Laboratory of Electrical Insulation and Power Equipment Xi'an Jiaotong University), Boyang Chen (State Key Laboratory of Electrical Insulation and Power Equipment Xi'an Jiaotong University), Zhenxing Wang (State Key Laboratory of Electrical Insulation and Power Equipment Xi'an Jiaotong University), Liqiong Sun (State Key Laboratory of Electrical Insulation and Power Equipment Xi'an Jiaotong University), Zhiyuan Liu (State Key Laboratory of Electrical Insulation and Power Equipment Xi'an Jiaotong University), Yingsan Geng (State Key Laboratory of Electrical Insulation and Power Equipment Xi'an Jiaotong University), Jianhua Wang (State Key Laboratory of Electrical Insulation and Power Equipment Xi'an Jiaotong University)
H-1-5	Research on radiation model for fault arc in an enclosed air container
	Mei Li (Xi'an University of Technology), Peng, Gong (Henan Electric Power Transmission and Transformation Construction Co., Ltd.)
H-1-6	Relationship between Morphology Feature of Contact Surfaces and Impulse Breakdown Voltage in Vacuum Gap under a Non-uniform Electric Field
	Guoqin Li (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University, Xi'an), Hui Ma (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University, Xi'an), Jiangang Ding (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University, Xi'an), Zhiyuan Liu (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University, Xi'an), Jianhua Wang (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University, Xi'an), Yingsan Geng (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University, Xi'an)

Conference Room 22 : Testing and measurement in switchgear

Chairperson : Junzo Kida (Hitachi, Ltd.)

13:30 - 15:00, Oct. 14 (Mon)	
J-1-1	<p>Mechanical Condition Monitoring of On-load Tap Changer Based on Textural Features of Recurrence Plots of Vibration Signals</p> <p>Fenghua Wang (Key Laboratory of Control of Power Transmission and Conversion (Shanghai Jiao Tong University), Ministry of Education), Dongxu Zhou (Key Laboratory of Control of Power Transmission and Conversion (Shanghai Jiao Tong University), Ministry of Education), S Zhang (Logistics Department, Shanghai Jiaotong University)</p>
J-1-2	<p>Study on Gas Decomposition Characteristics of SF₆ with Moisture After Current Interruption</p> <p>Xianhai Pang (State Grid Hebei Electric Power Research Institute), Li Zhen (State Grid Hebei Electric Power Supply Co., Ltd), Yuyou Long (Stage Key Laboratory of Electrical Insulation and Power Equipment, Department of Electrical of Engineering, Xi'an Jiaotong University), Kun Yu (Stage Key Laboratory of Electrical Insulation and Power Equipment, Department of Electrical of Engineering, Xi'an Jiaotong University), Shixin Xiu (Stage Key Laboratory of Electrical Insulation and Power Equipment, Department of Electrical of Engineering, Xi'an Jiaotong University)</p>
J-1-3	<p>Influence of Grease on Characteristics of Gas Decomposition Product After Breaking Current of SF₆ Circuit Breaker</p> <p>Xianhai Pang (State Grid Hebei Electric Power Research Institute), Boyan Jia (State Grid Hebei Electric Power Research Institute), Zhiheng Sun (Southern Power Supply Company), Yuyou Long (Stage Key Laboratory of Electrical Insulation and Power Equipment, Department of Electrical of Engineering, Xi'an Jiaotong University), Shixin Xiu (Stage Key Laboratory of Electrical Insulation and Power Equipment, Department of Electrical of Engineering, Xi'an Jiaotong University), Tao Liu (Stage Key Laboratory of Electrical Insulation and Power Equipment, Department of Electrical of Engineering, Xi'an Jiaotong University)</p>
J-1-4	<p>Reliability Prediction of Permanent Magnetic Actuator Under the Influence of Multi-factors</p> <p>Yongxing Wang (School of Electrical Engineering, Dalian University of Technology), Fangyuan Lv (School of Electrical Engineering, Dalian University of Technology), Enyuan Dong (School of Electrical Engineering, Dalian University of Technology), Jiyan Zou (School of Electrical Engineering, Dalian University of Technology), Ying Zhang (College of Information Science and Technology, Nanjing Forestry University), Huan He (Anshan Power Supply Company, State Grid Liaoning Electric Power Co., Ltd.)</p>
J-1-5	<p>±535kV High Voltage DC Circuit Breaker Insulation Test Analysis</p> <p>Chen Liu (Xi'an High Voltage Apparatus Research Institute Co., Ltd), Qiang Li (Xi'an High Voltage Apparatus Research Institute Co., Ltd), Chunqiang Su (Sieyuan Electric Co., Ltd.), Meng Shen (Xi'an High Voltage Apparatus Research Institute Co., Ltd), Yongcheng Wang (Xi'an High Voltage Apparatus Research Institute Co., Ltd), Xingping Gou (Xi'an High Voltage Apparatus Research Institute Co., Ltd), Xiaoyan Guo (Xi'an High Voltage Apparatus Research Institute Co., Ltd)</p>
J-1-6	<p>Research on Suppression Methods of Overshoot and Power-frequency Voltage Drop During Lightning Impulse Test of UHV Switchgear</p> <p>Meng Shen (Xi'an High Voltage Apparatus Research Institute Co., Ltd.), Chunmin Zhang (Xi'an High Voltage Apparatus Research Institute Co., Ltd.), Bo Wang (Xi'an High Voltage Apparatus Research Institute Co., Ltd.), Chen Liu (Xi'an High Voltage Apparatus Research Institute Co., Ltd.), Lei Zhong (Xi'an High Voltage Apparatus Research Institute Co., Ltd.), Xiaoyan Guo (Xi'an High Voltage Apparatus Research Institute Co., Ltd.)</p>

15:00 - 15:30 **Coffee Break < Event Hall, Sub foyer >**

15:30 - 17:30 **Oral Sessions** (*Note : 5 sessions will be held simultaneously)

Main Hall : SF₆ alternative gases for switching applications

Chairperson : Yasunori Tanaka (Kanazawa University)

15:30 - 17:15, Oct. 14 (Mon)	
B-2-1	<p>A New Prediction Model of SF₆ Alternative Gases in Electrical Strength</p> <p>Luqi Liang (State Key Laboratory of Electrical Insulation and Power Equipment), Yi Wu (State Key Laboratory of Electrical Insulation and Power Equipment), Hao Sun (State Key Laboratory of Electrical Insulation and Power Equipment), Mingzhe Rong (State Key Laboratory of Electrical Insulation and Power Equipment), Chunlin Wang (State Key Laboratory of Electrical Insulation and Power Equipment), Haodong Chang (State Key Laboratory of Electrical Insulation and Power Equipment)</p>
B-2-2	<p>SF₆ Alternative Gas Lightning Impulse Insulation Breakdown Characteristic in Medium Voltage</p> <p>Ryul Hwang (HANYANG UNIVERSITY), In-Seok Choi (HANYANG UNIVERSITY), Jae-Hong Koo (HANYANG UNIVERSITY), Yu-Min Kim (Hyundai Electric & Energy Systems), Bang-Wook Lee (HANYANG UNIVERSITY)</p>
B-2-3	<p>Theoretical determination of total electron-impact ionization cross sections of dichlorodifluoromethane R12 and tetrafluoroethane (R134)</p> <p>Feng Tang (Shenzhen Power Supply Bureau Co., Ltd.), Jiayu Xiong (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Boya Zhang (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Qishen Lv (Shenzhen Power Supply Bureau Co., Ltd.), Xingwen Li (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University)</p>
B-2-4	<p>Dependence of Critical Electric Field Strength in High Temperature CO₂ Gas on Contamination of PTFE Vapor</p> <p>Toshiya Yokoi (Aichi Institute of Technology), Akihiro Tsusaka (Aichi Institute of Technology), Toshiro Matsumura (Aichi Institute of Technology), Kazuto Yukita (Aichi Institute of Technology), Yasuyuki Goto (Aichi Institute of Technology), Yasunobu Yokomizu (Nagoya University)</p>
B-2-5	<p>Breaking and Switching Performance with Fluoronitile (C₄F₇N) Mixtures on 170kV 50kA 60Hz GIS</p> <p>Hae-Eun Jung (LSIS Co., Ltd), Je-Uk Je-Uk (LSIS Co., Ltd), Hee-Sub Ahn (LSIS Co., Ltd), Jong-Ung Choi (LSIS Co., Ltd), Yong-Geun Kim (LSIS Co., Ltd), Maxime Perret (GE Grid Solutions, France), Karim Bousoltane (GE Grid Solutions, France)</p>
B-2-6	<p>Post-arc Dielectric Recovery Characteristics of Free-burning Ultrahigh-Pressure Nitrogen Arc</p> <p>Fahim Abid (Norwegian University of Science and Technology, Trondheim, Norway), Kaveh Niayesh (Norwegian University of Science and Technology, Trondheim, Norway), Nina Stoa-Aanensen (SINTEF Energy Research, Trondheim, Norway)</p>
B-2-7	<p>Experiment Study on the Influence of Gas Humidity and Purity on the Property of 40.5 kV N₂ Insulated Switchgear</p> <p>Yuyou Long (Stage Key Laboratory of Electrical Insulation and Power Equipment, Department of Electrical of Engineering, Xi'an Jiaotong University), Feng Zhu (State Grid Anhui Electric Power Research Institute), Shixin Xiu (Stage Key Laboratory of Electrical Insulation and Power Equipment, Department of Electrical of Engineering, Xi'an Jiaotong University), Fengxiang Ma (State Grid Anhui Electric Power Research Institute), Zepeng Chen (Stage Key Laboratory of Electrical Insulation and Power Equipment, Department of Electrical of Engineering, Xi'an Jiaotong University), Zhenxi Su (State Grid Anhui Electric Power Research Institute)</p>

International Conference Room : Fault current limiting technology

Chairperson : Takeshi Shinkai (Tokyo University of Technology)

15:30 - 16:30, Oct. 14 (Mon)	
G-2-1	<p>Introduction of an Active Triggered Liquid Metal Fault Current-limiting Method</p> <p>Hailong He (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Jiase Li (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Yi Wu (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Peng Zhao (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Lingxiao Li (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University)</p>

G-2-2	Investigation of a Liquid Metal Fault Current Limiter Based on Current Injection Method
	Beibei Wang (Xi'an Jiaotong University), Hailong He (Xi'an Jiaotong University), Yi Wu (Xi'an Jiaotong University), Chunping Niu (Xi'an Jiaotong University), Mingzhe Rong (Xi'an Jiaotong University), Longlong Wang (Xi'an Jiaotong University)
G-2-3	Investigation of Liquid Metal Current Limiter for MVDC Power System
	Mingzhe Rong (State Key Lab of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Zhuo Yang (State Key Lab of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Qing Wan (State Grid Shaanxi Electric Power Research Institute), Hailong He (State Key Lab of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Yi Wu (State Key Lab of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Longlong Wang (State Key Lab of Electrical Insulation and Power Equipment, Xi'an Jiaotong University)
G-2-4	Investigation on Fault Characteristics and Intelligent Diagnosis of a DC Superconducting Fault Current Limiter
	Yaxiong Tan (State Key Laboratory of Power Transmission Equipment & System Security and New Technology, School of Electrical Engineering, Chongqing University), Jiajun Pan (State Key Laboratory of Power Transmission Equipment & System Security and New Technology, School of Electrical Engineering, Chongqing University), Chao Sheng (Electric Power Research Institute of Guangdong Power Grid Corporation, China Southern Power Grid), Leishi Xiao (Electric Power Research Institute of Guangdong Power Grid Corporation, China Southern Power Grid), Quan Zhou (State Key Laboratory of Power Transmission Equipment & System Security and New Technology, School of Electrical Engineering, Chongqing University), Jian Li (State Key Laboratory of Power Transmission Equipment & System Security and New Technology, School of Electrical Engineering, Chongqing University)

Conference Room 21 AB : Switching phenomena in vacuum

Chairperson : Leslie T. Falkingham (Vacuum Interrupters Limited)

15:30 - 17:00, Oct. 14 (Mon)	
C-2-1	Influence of Opening Velocity on Arcing Time Windows of Fast Vacuum Circuit Breaker in Duties of Terminal Fault Test T100s
	Wen Shi (State Key Laboratory of Electrical Insulation and Power Equipment, Department of Electrical Engineering, Xi'an Jiaotong University), Bojian Zhang (State Key Laboratory of Electrical Insulation and Power Equipment, Department of Electrical Engineering, Xi'an Jiaotong University), Chen Guan (State Key Laboratory of Electrical Insulation and Power Equipment, Department of Electrical Engineering, Xi'an Jiaotong University), Jian' gang Ding (State Key Laboratory of Electrical Insulation and Power Equipment, Department of Electrical Engineering, Xi'an Jiaotong University), Xiaofei Yao (State Key Laboratory of Electrical Insulation and Power Equipment, Department of Electrical Engineering, Xi'an Jiaotong University), Zhiyuan Liu (State Key Laboratory of Electrical Insulation and Power Equipment, Department of Electrical Engineering, Xi'an Jiaotong University), Jianhua Wang (State Key Laboratory of Electrical Insulation and Power Equipment, Department of Electrical Engineering, Xi'an Jiaotong University), Yingsan Geng (State Key Laboratory of Electrical Insulation and Power Equipment, Department of Electrical Engineering, Xi'an Jiaotong University)
C-2-2	Two dimensional distribution diagnostic of copper vapor in a vacuum arc by laser-induced fluorescence
	Jiankun Liu (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Ziru Zha (State Key Laboratory of Electrical Insulation and Power Equipment , Xi'an Jiaotong University), Zhenxing Wang (State Key Laboratory of Electrical Insulation and Power Equipment , Xi'an Jiaotong University), Liqiong Sun (State Key Laboratory of Electrical Insulation and Power Equipment , Xi'an Jiaotong University), Jianhua Wang , Yingsan Geng , Zhiyuan Liu
C-2-3	Three-Dimensional Reconstruction of Vacuum Arc Motion under Transverse Magnetic Field
	Yi Li (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Guan Wang (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Jiankun Liu (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Zhenxing Wang (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Jianhua Wang (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Yingsan Geng (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Zhiyuan Liu (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University)
C-2-4	Evaluation of the Impact of Out-Of-Phase faults on Generators and Generator Circuit-Breakers implementing Vacuum Interruption Technology
	Fabian Rademacher (Siemens AG), Karthik Reddy Venna (Siemens AG)

C-2-5	Vacuum breakdown voltage distributions between different contact arrangements and materials
	Erik D. Taylor (Siemens AG), Jorg Genzmer (Siemens AG), Andreas Schulz (Siemens AG)
C-2-6	An arc-less DC Vacuum Circuit Breaker Technology Based On Capacitor Absorbing Energy
	Kun Yang (State Key laboratory of Electrical Insulation and Power Equipment), Lei Gao (State Key laboratory of Electrical Insulation and Power Equipment), Bin Xiang (State Key laboratory of Electrical Insulation and Power Equipment), Zhiyuan Liu (State Key laboratory of Electrical Insulation and Power Equipment), Yingsan Geng (State Key laboratory of Electrical Insulation and Power Equipment), Jianhua Wang (State Key laboratory of Electrical Insulation and Power Equipment)

Conference Room 21 CD : Fundamental physics and electrical insulation

Chairperson : Akiko Kumada (the University of Tokyo), Yusuke Nakano (Kanazawa University)

15:30 - 17:45, Oct. 14 (Mon)	
H-2-1	Analysis of Ferromagnetic Resonance in 550 kV GIS Electromagnetic Voltage Transformer
	Shuang LENG (School of Electrical Engineering Shenyang University of Technology), Sha HAO (School of Electrical Engineering Shenyang University of Technology), Xin LIN (School of Electrical Engineering Shenyang University of Technology), Chen CAO (School of Electrical Engineering Shenyang University of Technology), Xiaolong LI (School of Electrical Engineering Shenyang University of Technology)
H-2-2	Two-Dimensional Observation of Single Cathode Spot Copper Vapor in Vacuum Arcs by Laser-Induced Fluorescence
	Liqiong Sun (Xi'an Jiaotong University), Yuecheng Li (Xi'an Jiaotong University), Jiankung Liu (Xi'an Jiaotong University), Yi Li (Xi'an Jiaotong University), Zhenxing Wang (Xi'an Jiaotong University), Jianhua Wang (Xi'an Jiaotong University), Yingsan Geng (Xi'an Jiaotong University), Zhiyuan Liu (Xi'an Jiaotong University)
H-2-3	Particle-In-Cell Monte Carlo Collision Simulation of the Breakdown Initiating Process in Vacuum
	Haruki Ejiri (The University of Tokyo), Takashi Fujii (The University of Tokyo), Akiko Kumada (The University of Tokyo), Kunihiro Hidaka (The University of Tokyo)
H-2-4	Discharge Path Measurement of A Vacuum Interrupter with Fixed Break after Suffering High Inrush Current
	Jian'gang Ding (State Key Laboratory of Electrical Insulation and Power Equipment), Xiaofei Yao (State Key Laboratory of Electrical Insulation and Power Equipment), Hui Ma (State Key Laboratory of Electrical Insulation and Power Equipment), Jiali Chen (State Key Laboratory of Electrical Insulation and Power Equipment), Guoqin Li (State Key Laboratory of Electrical Insulation and Power Equipment), Xue Liu (State Key Laboratory of Electrical Insulation and Power Equipment), Wen Shi (State Key Laboratory of Electrical Insulation and Power Equipment), Xiaojun Wang (Shaanxi Sirui Advanced Materials CO., LTD), Kai Liu (Shaanxi Sirui Advanced Materials CO., LTD), Zhiyuan Liu (State Key Laboratory of Electrical Insulation and Power Equipment), Yingsan Geng (State Key Laboratory of Electrical Insulation and Power Equipment), Jianhua Wang (State Key Laboratory of Electrical Insulation and Power Equipment)
H-2-5	Characteristics of Field Emission Phenomena of Single Micro-protrusion on Vacuum Gap Cathode Based on Fractal Theory
	Yingyao Zhang (Tongji University), Chen Shaojie (Tongji University), Ma Manman (Tongji University), Yang He (Electrical Sector APAC Eaton), Hu Biao (Electrical Sector APAC Eaton), Wang Xiaojun (Shaanxi Sirui Advanced Material Co., Ltd)
H-2-6	Comparison of non-chemical equilibrium effects in the decaying arc in different gases and conditions
	Hao Sun (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Yi Wu (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Yasunori Tanaka (Faculty of Electrical and Computer Engineering, Kanazawa University), Kentaro Tomita (Interdisciplinary Graduate School of Engineering Sciences, Kyushu University), Mingzhe Rong (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University)
H-2-7	Suppression of Conditioning Effect in Vacuum by Micro-protrusions from Anode
	Fuminori Kondo (Nagoya University), Hiroki Kojima (Nagoya University), Hideaki Fukuda (MEIDENSHA CORPORATION), Masayuki Sakaki (MEIDENSHA CORPORATION), Naoki Hayakawa (Nagoya University)

H-2-8	Prediction of dielectric strength of Nitrogen by coupling Boltzmann analysis and transport calculation at room temperature
	Yanwei Nan (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Minzhe Rong (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Yi Wu (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Hao Sun (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Luqi Liang (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University)
H-2-9	Development of Thermoplastic Materials for the Application of Eco-friendly
	Donghoon Jeong (Hyosung Haeavy industries Corporation), Jung Woo Park (Hyosung Haeavy industries Corporation), Young Jun Jeon (Hyosung Haeavy industries Corporation), Joo Hyun Lee (Hyosung Haeavy industries Corporation)

Conference Room 22 : DC switching technology

Chairperson : Nadew Adisu Belda(DNV GL KEMA Laboratories)

15:30 - 17:00, Oct. 14 (Mon)	
E-1-1	Approach to Mechanism Interpretation of Arc Voltage Rise by Polymer Cylinder Installation in Silica-Sand
	Naoto Kodama (Nagoya University), Yasunobu Yokomizu (Nagoya University), Koya Nakamura (Nagoya University), Asato Takahashi (Nagoya University), Yusuke Kondo (Pacific Engineering Corporation)
E-1-2	Influence of Oscillating Frequency of External Transverse Magnetic Field on DC Vacuum Arc Evolution
	Jingyi Wang (Xi'an Jiaotong University), Hui Ma (Xi'an Jiaotong University), Shaowei Liu (Xi'an Jiaotong University), Feiliang Hu (Xi'an Jiaotong University), Zhiyuan Liu (Xi'an Jiaotong University), Yingsan Geng (Xi'an Jiaotong University), Jianhua Wang (Xi'an Jiaotong University)
E-1-3	Current Injection Circuit Breakers for HVDC: Overview on Improved Injection Circuits
	Tim Schultz (High Voltage Laboratory, ETH Zurich), Patrik Herzog (High Voltage Laboratory, ETH Zurich), Christian M. Franck (High Voltage Laboratory, ETH Zurich)
E-1-4	Investigation on the High-Speed Interruption Strategy of the Medium-voltage Hybrid DC Circuit Breaker
	Huaqing Wang (Zhengzhou University , Henan Engineering Research Center of Power Transmission & Distribution Equipment and Electrical Insulation), Guowei Ge (Zhengzhou University , Henan Engineering Research Center of Power Transmission & Distribution Equipment and Electrical Insulation), Xian Cheng (Zhengzhou University , Henan Engineering Research Center of Power Transmission & Distribution Equipment and Electrical Insulation), Senlin Shen (Zhengzhou University , Henan Engineering Research Center of Power Transmission & Distribution Equipment and Electrical Insulation)
E-1-5	Synthesis Test Control of HVDC Circuit Breaker
	Shijia Wang (School of Electrical Engineering, Dalian University of Technology), Yongxing Wang (School of Electrical Engineering, Dalian University of Technology), Enyuan Dong (School of Electrical Engineering, Dalian University of Technology), Jiyan Zou (School of Electrical Engineering, Dalian University of Technology), Chao Sun (School of Electrical Engineering, Dalian University of Technology), Lu Jiang (Hydropower Branch Maintenance Center, State Grid Hunan Electric Power Co., Ltd., China)
E-1-6	Research on the Factors Influencing the Post-arc Current in Vacuum DC Interruption
	Enyuan Dong (School of Electrical Engineering, Dalian University of Technology), Yuxuan Dai (School of Electrical Engineering, Dalian University of Technology), Taotao Qin (the National Key Laboratory of Transient Physics, Nanjing University of Science and Technology), Yongxing Wang (School of Electrical Engineering, Dalian University of Technology), Bo Shao (Anshan Power Supply Company State Grid Liaoning Electric Power Co., Ltd.), Kai Liang (Anshan Power Supply Company State Grid Liaoning Electric Power Co., Ltd.)

Date : Tuesday, October 15th, 2019

08:30 - 15:00 **Registration**

< Public Lounge of Kitakyushu International Conference Center >

08:45 - 9:45 **Invited Lecture 1**

< Main Hall >	
Chairperson : Mikimasa Iwata (Central Research Institute of Electric Power Industry)	
IL-1	HVDC circuit breaker technology (<i>Dr. René Peter Paul Smeets, KEMA Laboratories of DNV GL, the Netherlands</i>)

09:45 - 10:00 **Coffee Break < Event Hall >**

10:00 - 11:00 **Oral Sessions** (*Note : 5 sessions will be held simultaneously)

Main Hall : DCCB Special session

Chairperson : René Peter Paul Smeets (DNV GL KEMA Laboratories)

Technical Panel on "HVDC circuit breaker Technology"

Convener: Dr. René Peter Paul Smeets, KEMA Laboratories of DNV GL, the Netherlands

This panel aims to present the HVDC circuit breaker development, testing and field demonstration. 4-5 speakers are invited.

International Conference Room : Others

Chairperson : Chae-Yoon Bae (LSIS Co., Ltd.)

10:00 - 11:00, Oct. 15 (Tue)	
N-1-1	Preparation and properties of polystyrene deposited with TiN film using atmospheric-pressure plasma jet Fei Kong (Key Laboratory of Power Electronics and Electric Drive, Institute of Electrical Engineering, Chinese Academy of Sciences), Penghao Zhang (Key Laboratory of Power Electronics and Electric Drive, Institute of Electrical Engineering, Chinese Academy of Sciences), Chengyan Ren (Key Laboratory of Power Electronics and Electric Drive, Institute of Electrical Engineering, Chinese Academy of Sciences, University of Chinese Academy of Sciences), Cheng Zhang (Key Laboratory of Power Electronics and Electric Drive, Institute of Electrical Engineering, Chinese Academy of Sciences, University of Chinese Academy of Sciences), Tao Shao (Key Laboratory of Power Electronics and Electric Drive, Institute of Electrical Engineering, Chinese Academy of Sciences, University of Chinese Academy of Sciences)
N-1-2	Influence of Moisture on Dielectric Responses of Oil -Impregnated Paper Condenser Bushings Chao Wei (Jiangsu Electric Power Company Research Institute , State Key Laboratory of Power Transmission Equipment & System Security and New Technology,Chongqing University), Caibo Liao (Jiangsu Electric Power Company Research Institute), Yuncai Lu (Jiangsu Electric Power Company Research Institute), Lin Du (State Key Laboratory of Power Transmission Equipment & System Security and New Technology,Chongqing University), Xiangxiang Chen (State Key Laboratory of Power Transmission Equipment & System Security and New Technology,Chongqing University)
N-1-3	Algebra of Fractal Vector as a Tool for Mapping two Different Mashs Amer Smajkic (Faculty of Electrical Engineering, University of Sarajevo), Sead Delic (EnergoBos ILJIN d.o.o. Sarajevo), Dejan Beslija (Faculty of Electrical Engineering, University of Sarajevo), Kyong Hoe Kim (ILJIN Electric Co. Ltd.), Mirsad Kapetanovic (Faculty of Electrical Engineering, University of Sarajevo , EnergoBos ILJIN d.o.o. Sarajevo)

N-1-4	DC Transformer Detection of Power Transformer Based on Characteristic Analysis of Vibration Signal
	Jinlong WANG (School of Electrical Engineering ,Shenyang University of Technology), Jianyuan XU (School of Electrical Engineering ,Shenyang University of Technology), Chen CAO (School of Electrical Engineering ,Shenyang University of Technology), Xin LIN (School of Electrical Engineering ,Shenyang University of Technology), Sha HAO (School of Electrical Engineering ,Shenyang University of Technology)

Conference Room 21 AB : Digital and IoT application in switchgear, Semi-conductor switching technology

Chairperson : Yasunobu Yokomizu (Nagoya University)

10:00 - 11:00, Oct. 15 (Tue)	
M-1-1	Controlled Breaking Strategy of Shunt Reactor Based on Fast Vacuum Switch
	Zhihui Huang (School of electrical engineering, Dalian University of Technology , Pearl Electric Co., Ltd.), Wei Tan (School of electrical engineering, Dalian University of Technology), Qiwu Mao (Pearl Electric Co., Ltd.), Lin Zou (Electric Power Research Institute, CSG), Jiyan Zou (School of electrical engineering, Dalian University of Technology)
M-1-2	A Digital Controller for Series of AC Contactors
	Changkun Zhang (College of Electrical Engineering and Automation, Fuzhou University , Fujian Province Key Laboratory of New Energy Generation and Power Conversion), Zhihong Xu (College of Electrical Engineering and Automation, Fuzhou University , Fujian Province Key Laboratory of New Energy Generation and Power Conversion , IEEE PES China Women in Engineering Committee)
F-1-1	Study on Performance Optimization of IGCT Device for DC Circuit Breaker
	Fanglin Chen (Zhuzhou CRRC Times Electric Co., Ltd.), Xuejun Pan (Zhuzhou CRRC Times Electric Co., Ltd.), Hong Zeng (Zhuzhou CRRC Times Electric Co., Ltd.), Yongmin Chen (Zhuzhou CRRC Times Electric Co., Ltd.), Yi Wu (Xi'an Jiaotong University), Yifei Wu (Xi'an Jiaotong University), Yi Jiang (Zhuzhou CRRC Times Electric Co., Ltd.)
F-1-2	Asynchronous Control Method of Parallel IGCT Components in Hybrid DC Circuit Breakers
	Qiang Yi (Xi'an Jiaotong University), Fei Yang (Xi'an Jiaotong University), Yifei Wu (Xi'an Jiaotong University), Yi Wu (Xi'an Jiaotong University), Mingzhe Rong (Xi'an Jiaotong University), Shijun Bai (Xi'an XD High Voltage Apparatus Co., Ltd.)

11:00 – 12:00

Mail Hall : DC switching technology

Chairperson : Kaveh Niayesh (Norwegian University of Science and Technology)

11:00 - 12:00, Oct. 15 (Tue)	
E-2-1	Experimental Study on Commutation Parameter of HVDC Vacuum Circuit Breaker
	ZIYING ZHANG (School of electrical engineering, Dalian University of Technology), MIAOZHONG CAI (School of electrical engineering, Dalian University of Technology), JIYAN ZOU (School of electrical engineering, Dalian University of Technology), ZHIHUI HUANG (School of electrical engineering, Dalian University of Technology), RUITONG LIU (State Grid Liaoning Electric Power Research Institute)
E-2-2	Research on Composite Magnetic Field Contact of DC Vacuum Circuit Breaker and Its Arc Behavior
	MIAOZHONG CAI (School of electrical engineering, Dalian University of Technology), ZIYING ZHANG (School of electrical engineering, Dalian University of Technology), JIYAN ZOU (School of electrical engineering, Dalian University of Technology), Zhihui Huang (School of electrical engineering, Dalian University of Technology), Ruitong Liu (State Grid Liaoning Electric Power Research Institute)
E-2-3	A Miniature DC switch Based on Liquid Metal Droplets
	Xiaonan Zhu (State Key Laboratory of Electrical Insulation and Power Equipment , Xi' an Jiaotong University), Hang Lei (State Key Laboratory of Electrical Insulation and Power Equipment , Xi' an Jiaotong University), Fei Yang (State Key Laboratory of Electrical Insulation and Power Equipment , Xi' an Jiaotong University), Yifei Wu (State Key Laboratory of Electrical Insulation and Power Equipment , Xi' an Jiaotong University), Yi Wu (State Key Laboratory of Electrical Insulation and Power Equipment , Xi' an Jiaotong University), Mingzhe Rong (State Key Laboratory of Electrical Insulation and Power Equipment , Xi' an Jiaotong University)

E-2-4	Current Limiting with Liquid arc for HVDC Circuit Breker
	Xiuyang Ou (Tokyo university of technology, Electrical and electronics department), Tomoya Fujita (Tokyo university of technology, Electrical and electronics department), Takumi Yokoyama (Tokyo university of technology, Electrical and electronics department), Yosuke Baba (Tokyo university of technology, Electrical and electronics department), Shota Tenjin (Tokyo university of technology, Electrical and electronics department), Minoru Hara (Tokyo university of technology, Electrical and electronics department), Takeshi Shinkai (Tokyo university of technology, Electrical and electronics department), Tadashi Koshizuka (Tokyo denki university)

International Conference Room : Operating mechanism in switchgear

Chairperson : Hitoshi Saito (Meidensha Corporation)

11:00 - 12:00, Oct. 15 (Tue)	
K-1-1	Simulation Research on Driving Technology and Influence Factors of Double-layer Coil Type Rapid Repulsive Mechanism of 40.5kV Vacuum Circuit Breaker
	Lijun Wang (Xi'an Jiaotong University), Jinwei Ma (Xi'an Jiaotong University), Jing Jiang (Xi'an Jiaotong University), Shenli Jia (Xi'an Jiaotong University), Shengbin Wu (Xi'an Xidian Electrical Research Institute Co., Ltd.), Feng Pan (Xi'an Xidian Electrical Research Institute Co., Ltd.), Haibo Su (Electric power test and Research Institute, Guangzhou Power Supply Bureau Co., Ltd.), Yong Wang (Electric power test and Research Institute, Guangzhou Power Supply Bureau Co., Ltd.)
K-1-2	Design Method of Electromagnetic Mechanism for Vacuum Contactors by Using Twice Orthogonal Analyses with Multi-Physical Simulation
	Shaowei Liu (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Liqiong Sun (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Hui Ma (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Yingsan Geng (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Zhiyuan Liu (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Jianhua Wang (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University)
K-1-3	A New Type Electromagnetic Repulsive Mechanism for 40.5 kV Vacuum Circuit Breaker
	Kai Wang (School of electrical engineering, Dalian University of Technology), Xiang Zheng (School of electrical and information engineering, Dalian Jiaotong University), Lin Zou (Electric Power Research Institute, CSG), Zhihui Huang (School of electrical engineering, Dalian University of Technology), Jiyan Zou (School of electrical engineering, Dalian University of Technology)
K-1-4	Development of VCB based on flexible multibody dynamics analysis
	Jun Yeon Jo (LSIS Co., Ltd.), W. J. Park (LSIS Co., Ltd.), K.Y.Ahn (LSIS Co., Ltd.), Y.G.Kim (LSIS Co., Ltd.)

Conference Room 21 AB : Digital design and simulation in switchgear

Chairperson : Hajime Urai (Hitachi, Ltd.)

11:00 - 12:00, Oct. 15 (Tue)	
I-1-1	Three-dimensional modeling and optimization analysis of internal electric field in 40.5 kV switchgear
	Yanzhe Zhang (Xi'an Jiaotong University), Shixin Xiu (Xi'an Jiaotong University), Rui Li (Xi'an Jiaotong University), Tao Liu (Xi'an Jiaotong University), Min Zhang (Xi'an Jiaotong University), Quan Li (Xi'an Jiaotong University)
I-1-2	Heat Dissipation Improvement of Medium-Voltage Switch-gear: Simulation Study and Experimental Validation
	Zengbin Wang (1. Electric Power Research Institute, Guangdong Power Grid Co. Ltd.), Rui Wang (2. State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Chao Yan (2. State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Lijun Wang (2. State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Ji Wu (1. Electric Power Research Institute, Guangdong Power Grid Co. Ltd.)

I-1-3	Simulation Study on Wind Load and Mechanical Characteristics of High Voltage Dis-Connector
	Liuhuo Wang (Guangdong Power Grid Co. Ltd.), Jinwei Ma (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Xiaofeng Pang (Electric Power Research Institute, Guangdong Power Grid Co. Ltd.), Tong Jiang (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Lijun Wang (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Zengbin Wang (Electric Power Research Institute, Guangdong Power Grid Co. Ltd)
I-1-4	Analysis of the Characteristics of Pressure Rise and Exhausted Hot Gas due to Internal Arc Faults in SF ₆ -Insulated Power Equipment
	Masashi Kotari (Central Research Institute of Electric Power Industry , Nagoya University), Tomo Tadokoro (Central Research Institute of Electric Power Industry), Shin-ichi Tanaka (Central Research Institute of Electric Power Industry), Mikimasa Iwata (Central Research Institute of Electric Power Industry), Hiroki Kojima (Nagoya University), Naoki Hayakawa (Nagoya University)

10:00 – 12:00

Conference Room 21 CD : Fundamental physics and electrical insulation

Chairperson : Hiroki Kojima (Nagoya University), Yasunori Tanaka (Kanazawa University)

10:00 - 12:00, Oct. 15 (Tue)	
H-3-1	Breakdown Mechanism of Double Breaks in Air Under Lightning Impulse Voltage
	Jiali Chen (Xi'an Jiaotong University), Jian'gang Ding (Xi'an Jiaotong University), Zhiyuan Liu (Xi'an Jiaotong University), Xiaofei Yao (Xi'an Jiaotong University), Liqiong Sun (Xi'an Jiaotong University), Xue Liu (Xi'an Jiaotong University), Xiuguang Li (Ningxia Electric Power Research Institute), Feiyue Ma (Ningxia Electric Power Research Institute), Xiu Zhou (Ningxia Electric Power Research Institute), Jianhua Wang (Xi'an Jiaotong University)
H-3-2	External Dielectric Performance of Various Vacuum Interrupter Envelope Constructions
	Wangpei Li (Eaton Co.), Louis G Campbell (Eaton Co.), Daniel J Pruden (Eaton Co.), Xin Zhou (Eaton Co.)
H-3-3	Influence of Field Relaxation Ring Length on Vacuum Flashover Voltage in Model Sample of Vacuum Interrupter
	Ryutaro Kusa (Saitama University), Issei Fujita (Saitama University), Yasushi Yamano (Saitama University), Hideaki Fukuda (MEIDENSHA CORPORATION), Kenta Yamamura (MEIDENSHA CORPORATION)
H-3-4	Experimental Investigation of Dielectric Strength and Thermal Stability of Micro-arc Oxidation Ceramic Coating on Aluminum Winding
	Lianke Wang (Xi'an Jiaotong University), Zehua Gao (Xi'an Jiaotong University), Li Lei (Xi'an Jiaotong University), Hui Ma (Xi'an Jiaotong University), Yingsan Geng (Xi'an Jiaotong University), Zhiyuan Liu (Xi'an Jiaotong University), Jianhua Wang (Xi'an Jiaotong University)
H-3-5	Evaluation of Creeping Flashover Characteristics of Dielectric-coated Vacuum Interrupter in Air
	Chihiro Tateyama (Toshiba Infrastructure Systems & Solutions Corporation), Naoki Asari (Toshiba Infrastructure Systems & Solutions Corporation), Akira Daibo (Toshiba Infrastructure Systems & Solutions Corporation), Hiromitsu Hirai (Toshiba Infrastructure Systems & Solutions Corporation), Takeshi Yoshida (Toshiba Infrastructure Systems & Solutions Corporation)
H-3-6	Microscopic Electric Field Enhancement on Contact Surface in Vacuum Interrupters with Contact Gap 10-60mm
	Yingyao Zhang (Tongji University), Wang Haoyu (Tongji University), Xu Xinye (Tongji University), Xu Xinye (Tongji University), Ma Manman (Tongji University), Yang He (Electrical Sector APAC Eaton), Hu Biao (Electrical Sector APAC Eaton), Wang Xiaojun (Shaanxi Sirui Advanced Material Co., Ltd)
H-3-7	Simulation on the coupled Fluid-Mechanical Dynamic Analysis of High-voltage Self-blast circuit breakers
	Jee-yong Park (LSIS Co., Ltd), Ming Cui (LSIS Co., Ltd), Chae-yoon Bae (LSIS Co., Ltd), Young-geun Kim (LSIS Co., Ltd)

H-3-8	Study on Thermo-Oxygen Aging Characteristics of Epoxy Resin Material
	Xian Cheng (Zhengzhou University , Henan Engineering Research Center of Power Transmission & Distribution Equipment and Electrical Insulation), Shuo Chen (Zhengzhou University , Henan Engineering Research Center of Power Transmission & Distribution Equipment and Electrical Insulation), Guo Wei Ge (Zhengzhou University , Henan Engineering Research Center of Power Transmission & Distribution Equipment and Electrical Insulation)

Conference Room 22 : Testing and measurement in switchgear

Chairperson : Tadashi Koshizuka (Tokyo Denki University)

10:00 - 11:30, Oct. 15 (Tue)	
J-2-1	Development and Test of a 252 kV Multi-breaks Bus-tie Fast Vacuum Circuit Breaker
	Kui Ma (State Key Laboratory of Electrical Insulation and Power Equipment), Xiaofei Yao (State Key Laboratory of Electrical Insulation and Power Equipment), Shaogui Ai (State Grid Ningxia Electric Power Co., Ltd.), Shuhong Wang (State Key Laboratory of Electrical Insulation and Power Equipment), Zhiyuan Liu (State Key Laboratory of Electrical Insulation and Power Equipment), Jianhua Wang (State Key Laboratory of Electrical Insulation and Power Equipment), Bojian Zhang (State Key Laboratory of Electrical Insulation and Power Equipment)
J-2-2	Intermediate-frequency External Axial Magnetic Field for Current Interruption Experiment
	Yuan Jiang (University of Science and Technology Beijing), Jianwen Wu (Beihang University), Bowen Jia (Beihang University), Ziang Tong (Beihang University), Xiaowu Luo (Beihang University), Chao Xin (ABB (China) Ltd.)
J-2-3	Feature extraction of UHF PD signals based on diode envelope detection and linear discriminant analysis
	Luyao Han (State Key Laboratory of Electrical Insulation and Power Equipment), Jing Yan (State Key Laboratory of Electrical Insulation and Power Equipment), Shishi Fan (State Key Laboratory of Electrical Insulation and Power Equipment), Mengyuan Xu (State Key Laboratory of Electrical Insulation and Power Equipment), Zhiyuan Liu (State Key Laboratory of Electrical Insulation and Power Equipment), Yingsan Geng (State Key Laboratory of Electrical Insulation and Power Equipment), Chen Guan (State Key Laboratory of Electrical Insulation and Power Equipment)
J-2-4	Mechanical Condition Assessment of High Voltage Circuit Breakers Based on Improved Dempster-Shafer Theory
	Shishi Fan (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Jing Yan (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Luyao Han (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Mengyuan Xu (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Zhiyuan Liu (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Yingsan Geng (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Chen Guan (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University)
J-2-5	Location of Breakdown Discharge of GIS Using Acoustic Signals
	Wenjia Ma (Shanghai Jiaotong University), Fenghua Wang (Shanghai Jiaotong University), Song Zhang (Shanghai Jiaotong University)
J-2-6	DC Interruption of the Resistive Superconducting Current-limiting with Self-excited Oscillation Mechanical Gas Circuit Breaker
	Bin Xiang (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Lei Gao (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Zhiyuan Liu (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Yingsan Geng (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Jianhua Wang (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Satoru Yanabu (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University)

12:00 - 13:30 **Lunch < Event Hall >**

13:30 - 15:00 **Oral Sessions**

(*Note : 5 sessions will be held simultaneously)

Main Hall : DC switching technology

Chairperson : **Yi Wu (Xi'an Jiaotong University)**

13:30 - 15:00, Oct. 15 (Tue)	
E-3-1	High-Frequency Current Interruption of Vacuum Interrupters in an Experimental DC Circuit Breaker
	Nadew Adisu Belda (KEMA Laboratories, Technische Universitat Darmstadt), René Smeets (KEMA Laboratories), Roy Nijman (KEMA Laboratories), Michalis Poikilidis (DNV GL -Energy), Cornelis Plet (DNV GL -Energy)
E-3-2	Dielectric Recovery of Ultrafast-Commutating Switches used for HVDC and Fault Current Limiting Applications
	Ali Kadivar (Norwegian University of Science and Technology), Kaveh Niayesh (Norwegian University of Science and Technology)
E-3-3	Rise Effect of DC Arc Voltage in Silica Sand: Various Interelectrode Distances and Arrangement of PA66-Cylinder
	Asato Takahashi (Nagoya University), Naoto Kodama (Nagoya University), Yasunobu Yokomizu (Nagoya University), Yusuke Kondo (Pacific Engineering Corporation)
E-3-4	Numerical Analysis of Electrical Discharge in DC Switches Under External Circuit Parameter Variations
	Kyung Sik Seo (Sungkyunkwan University), Myung Ki Baek (Korea Electrotechnology Research Institute), Il Han Park (Sungkyunkwan University)
E-3-5	Arc Conductance and Contact Erosion in Liquid Nitrogen under DC Current Interruption
	Hongxu Li (Xi'an Jiaotong University), Bin Xiang (Xi'an Jiaotong University), Junaid Muhammd (Xi'an Jiaotong University), Yingsan Geng (Xi'an Jiaotong University), Zhiyuan Liu (Xi'an Jiaotong University), Jianhua Wang (Xi'an Jiaotong University)
E-3-6	Effects of Current Limiting Characteristics of Resistive Type Superconducting Fault Current Limiter on Flexible DC Transmission System of Offshore Oil Production Platform
	Jinkun Tu (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Bin Xiang (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Lei Gao (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Jianhua Wang (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Zhiyuan Liu (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Yingsan Geng (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University)

International Conference Room : Operating mechanism in switchgear

Chairperson : **Yoshihiko Matsui (Meidensha Corporation)**

13:30 - 14:45, Oct. 15 (Tue)	
K-2-1	Research on the Coordination of 40.5kV Fast Vacuum Switch Driven by Electromagnetic Repulsion Mechanism and Oil Damper
	Jing Jiang (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Lijun Wang (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Jinwei Ma (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Shenli Jia (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Shengbin Wu (Xi'an Xidian Electrical Research Institute Co., Ltd), Feng pan (Xi'an Xidian Electrical Research Institute Co., Ltd), Haibo Su (Electric power test and Research Institute, Guangzhou Power Supply Bureau Co., Ltd), Shengya Qiao (Electric power test and Research Institute, Guangzhou Power Supply Bureau Co., Ltd)

K-2-2	Influence of Moveable Mass on the Opening Velocity and Buffering Characteristics of Fast Vacuum Circuit Breaker with a Gas Pressure Buffer
	Chen Guan (Xi'an Jiaotong University), Dingyuan Peng (Xi'an Jiaotong University), Wen Shi (Xi'an Jiaotong University), Jiali Chen (Xi'an Jiaotong University), Bojian Zhang (Xi'an Jiaotong University), Jing Yan (Xi'an Jiaotong University), Xiaofei Yao (Xi'an Jiaotong University), Zhiyuan Liu (Xi'an Jiaotong University), Yingsan Geng (Xi'an Jiaotong University), Jianhua Wang (Xi'an Jiaotong University)
K-2-3	DC contactor energy conversion research
	Jiahuan Gu (Shenyang University of Technology, Shenyang), Zhiyuan Cai (Shenyang University of Technology, Shenyang), Shaohua Ma (Shenyang University of Technology, Shenyang), Yahong Zhang (Shenyang Equipment Manufacturing Engineering School)
K-2-4	Monitoring of Operating Speed of Electromagnetic Linear Actuator for Vacuum Circuit Breaker by using Search Coil
	Takayuki Kai (Mitsubishi Electric Corporation), Tomoko Tanabe (Mitsubishi Electric Corporation), Shintaro Yamada (Mitsubishi Electric Corporation), Toshihiro Matsunaga (Mitsubishi Electric Corporation)
K-2-5	Optimization design of permanent magnet mechanism based on 6 Sigma design method
	Qin Hao (Xi'an Jiaotong University), Guogang Zhang (Xi'an Jiaotong University), Lu Qi (State Grid Jiangsu Power Company Nanjing Power Supply Company), Yakui Liu (Xi'an Jiaotong University), Jianhua Wang (Xi'an Jiaotong University), Yingsan Geng (Xi'an Jiaotong University)

Conference Room 21 AB : Digital design and simulation in switchgear

Chairperson : Hao Sun (Xi'an Jiaotong University)

13:30 - 15:00, Oct. 15 (Tue)	
I-2-1	A Novel Method for Calculating Residual Magnetic Flux of DC Contactors
	Baiqiang Li (Shenyang University of Technology), Shaohua Ma (Shenyang University of Technology), Zhiyuan Cai (Shenyang University of Technology), Yahong Zheng (Shenyang Equipment Manufacturing Engineering School)
I-2-2	Relationship between arc behavior and parameters of the arc root model in the arc gas flow analysis
	Misato Shibata (Digital Platform Center, Digital Innovation Laboratory, Corporate R&D Headquarters, Fuji Electric Co., Ltd.), Yoshiaki Enami (Digital Platform Center, Digital Innovation Laboratory, Corporate R&D Headquarters, Fuji Electric Co., Ltd.), Masayoshi Sakata (Analysis Sec., Core Technology Dept., Development Group, Fuji Electric FA Components & Systems Co., Ltd.)
I-2-3	Simulation Study on Current-zero Period Phenomenon and Analyse of High Voltage Gas Circuit Breakerh
	Yuanjing Lu (Xi'an XD Switchgear Electric Co., LTD), Jin Guo (Xi'an XD Switchgear Electric Co., LTD), Xu Jiang (China XD Group Co., LTD)
I-2-4	Fatigue evaluation and flexible multibody dynamic analysis of 550kV high voltage circuit breaker
	Hyunwoo Kim (Hyuundai electric & energy systems Co., LTD.)
I-2-5	Evaluation of Dielectric Interruption Performance in Gas Circuit Breaker with Ablated PTFE/BN Vapor
	Mami Kuroda (Hitachi, Ltd.), Hajime Urai (Hitachi, Ltd.), Masanao Terada (Hitachi, Ltd.), Tatsuya Ishii (Nagoya University), Yuki Kojima (Nagoya University), Yasunobu Yokomizu (Nagoya University)
I-2-6	Numerical Simulation of Residual Voltage Monitoring Device for 220 kV Metal Oxide Arresters
	Guanghui Yu (School of Electrical Engineering, Dalian University of Technology), Yongxing Wang (School of Electrical Engineering, Dalian University of Technology), Hao Zhu (School of Electrical Engineering, Dalian University of Technology), Enyuan Dong (School of Electrical Engineering, Dalian University of Technology), Hanbing Li (Anshan Power Supply Company State Grid Liaoning Electric Power Co., Ltd.), Guannan Liu (Anshan Power Supply Company State Grid Liaoning Electric Power Co., Ltd.), Renhan Liu (Anshan Power Supply Company State Grid Liaoning Electric Power Co., Ltd.)

Conference Room 21 CD : Switching phenomena in vacuum

Chairperson : Yasushi Yamano (Saitama University)

13:30 - 15:00, Oct. 15 (Tue)	
C-3-1	<p>Experimental study on the influence of different opening speed on post-arc current in DCCB</p> <p>Fengfeng Jiang (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Hao Sun (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Yi Wu (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Fei Yang (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Chunping Niu (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University)</p>
C-3-2	<p>Comparison of Vacuum Arc Current Transfer Characteristics of a Novel AMF-TMF Contact under Different Opening Velocities</p> <p>Zihan Wang (Xi'an Jiaotong University), Yuanzhao Li (Xi'an Jiaotong University), Qifeng Zhang (Xi'an Jiaotong University), Hui Ma (Xi'an Jiaotong University), Jianhua Wang (Xi'an Jiaotong University), Yingsan Geng (Xi'an Jiaotong University), Zhiyuan Liu (Xi'an Jiaotong University)</p>
C-3-3	<p>Vacuum Arc Characteristics of a Novel Contact Consists of Arcing Contact and Main Contact</p> <p>Yuanzhao Li (Xi'an Jiaotong University), Zihan Wang (Xi'an Jiaotong University), Qiming Li (Xi'an Jiaotong University), Yingsan Geng (Xi'an Jiaotong University), Jianhua Wang (Xi'an Jiaotong University), Zhiyuan Liu (Xi'an Jiaotong University), Xiaomin Zhao (Pinggao Group Co., Ltd.), Yinghua Bi (Pinggao Group Co., Ltd.)</p>
C-3-4	<p>Evaluation of DC Interruption Performance of VCB in Various Electrode Materials</p> <p>Akihiro Suwa (MEIDENSHA CORPORATION), Kazuya Kato (MEIDENSHA CORPORATION), Yoshihiko Matsui (MEIDENSHA CORPORATION), Masayuki Sakaki (MEIDENSHA CORPORATION)</p>
C-3-5	<p>Numerical Modelling of Vapor Dynamics in Vacuum Arcs between Electrodes with Metal Shield Wall using Moving Particle Method</p> <p>Takamitsu Miyazaki (Kanazawa University), Yasunori Tanaka (Kanazawa University), Yusuke Nakano (Kanazawa University), Yoshihiko Uesugi (Kanazawa University), Tatsuo Ishijima (Kanazawa University), Gaku Asanuma (Fuji Electric Co., Ltd.), Toshiyuki Onchi (Fuji Electric Co., Ltd.)</p>
C-3-6	<p>Investigation on the Influence of Non-Synchronous Magnetic Field Control on the Dynamic Voltage Distribution of Vacuum Circuit Breakers in Series</p> <p>Yifan Fu (School of Electrical Engineering, Dalian University of Technology,China), Minfu Liao (School of Electrical Engineering, Dalian University of Technology,China), Hao Zhang (School of Electrical Engineering, Dalian University of Technology,China), Huaqing Dong (School of Electrical Engineering, Dalian University of Technology,China), Xiaoli Zhang (State Grid Dalian Power Supply Company, China), Lu Jiang (Hydropower Branch Maintenance Center, State Grid Hunan Electric Power Co. Ltd., China)</p>

Conference Room 22 : Testing and measurement in switchgear

Chairperson : Yongxing Wang (Dalian University of Technology)

13:30 - 14:30, Oct. 15 (Tue)	
J-3-1	<p>The formation mechanism and reaction pathways of SOF₂, SO₂F₂, SO₂ and HF under local overheating fault in SF₆ insulated power equipment</p> <p>Mengyuan Xu (State Key Laboratory of Electrical Insulation and Power Equipment), Luyao Han (State Key Laboratory of Electrical Insulation and Power Equipment), Jing Yan (State Key Laboratory of Electrical Insulation and Power Equipment), Yingsan Geng (State Key Laboratory of Electrical Insulation and Power Equipment), Chen Guan (State Key Laboratory of Electrical Insulation and Power Equipment)</p>
J-3-2	<p>Study of Condition Monitoring by Operating Sound Diagnosis for Circuit Breaker in Substation</p> <p>Toshifumi Sugimoto (Chubu Electric Power Co.,Inc., Electric Power Research & Development Center), Masahito Shimizu (Chubu Electric Power Co.,Inc., Electric Power Research & Development Center)</p>

J-3-3	Investigation of TRV Measurement for SLF Artificial Line
	Kyoya Nonaka (Tokyo Denki University), Tadashi Koshizuka (Tokyo Denki University), Takeshi Shinkai (Tokyo University of Technology), Eiichi Haginomori (The University of Tokyo), Hisatoshi Ikeda (The EPRI International)
J-3-4	Principles and Parameter Calculation of 1200 kV UHV Synthetic Test Circuit
	Delin Hu (Suzhou Electrical Apparatus Science Research Institute Co, Ltd), Min Zhang (Suzhou Electrical Apparatus Science Research Institute Co, Ltd)

15:15 - 18:00 **Conference Tour**

<(A):YASKAWA ELECTRIC CORPORATION factory tour, (B):Kitakyushu city tour>

Bus departure time : 15:15

18:40 - 21:30 **Banquet < Art Hotel Kokura New Tagawa >**

Welcome drink will be served from 18:00

Date : Wednesday, October 16th, 2019

08:30 - 15:00 **Registration**

< Public Lounge of Kitakyushu International Conference Center >

08:45 - 09:45 **Oral Sessions** (*Note : 4 sessions will be held simultaneously)

Main Hall : Others

Chairperson : Eiji Kaneko (University of the Ryukyus)

8:45 - 9:45, Oct. 16 (Wed)	
N-2-1	Experimental Study on the Mechanical Endurance of Vacuum Interrupter Bellows Subjected to High Gas Pressure and High Opening Velocity
	Xue Liu (State Key Laboratory of Electrical Insulation and Power Equipment), Lixin Hong (State Key Laboratory of Electrical Insulation and Power Equipment), Xiaofei Yao (State Key Laboratory of Electrical Insulation and Power Equipment), Liqiong Sun (State Key Laboratory of Electrical Insulation and Power Equipment), Zhiyuan Liu (State Key Laboratory of Electrical Insulation and Power Equipment), Jianhua Wang (State Key Laboratory of Electrical Insulation and Power Equipment), Yingsan Geng (State Key Laboratory of Electrical Insulation and Power Equipment)
N-2-2	The influence of the thickness of the insulation paper to the Oil-paper electrical strength in the high altitude area
	Yufeng Shen (Qinghai University), Bing Luo (The Company of South Gird of China), Tingting Wang (The Company of South Gird of China), Chao Gao (The Company of South Gird of China)
N-2-3	Novel and Necessary Applications of Plasma and Terahertz Technology in Electric Power System
	Yang Liu (Shaanxi Electric Power Research Institute of SGCC)
N-2-4	Influence of Metallic Particles on Flashover Characteristics of Basin-type Insulator Under DC Voltage in GIS/GIL
	Wei LI (School of Electrical Engineering, Shenyang University of Technology), Wenjie WANG (School of Electrical Engineering, Shenyang University of Technology), Xin LIN (School of Electrical Engineering, Shenyang University of Technology), Liucheng HAO (PingGao Group Co., Ltd, Pingdingshan), Fan GE (School of Electrical Engineering, Shenyang University of Technology), Xiaolong LI (School of Electrical Engineering, Shenyang University of Technology)

International Conference Room : DC switching technology

Chairperson : Tadashi Koshizuka (Tokyo Denki University)

8:45 - 9:45, Oct. 16 (Wed)	
E-4-1	Arc extinction structure of air circuit breaker for DC system
	IlHyun Kim (LSIS Co., Ltd.), S. C. Lee (LSIS Co., Ltd.), W. J. Park (LSIS Co., Ltd.), K. Y. Ahn (LSIS Co., Ltd.), G. Kim (LSIS Co., Ltd.)
E-4-2	Axial Magnetic Field in Coil Type Vacuum Interrupter at High Frequency Breaking Current
	Shuheng Dan (Shanghai University of electric power), Ruchun Li (Shanghai University of electric power)
E-4-3	Current Sharing Characteristics Study of Parallel IGCTs Module in a DC Circuit Breaker
	Yifei Wu (State Key Laboratory of Electrical Insulation and Power Equipment, School of Electrical Engineering, Xi'an Jiaotong University), Zhihui Zhang (State Key Laboratory of Electrical Insulation and Power Equipment, School of Electrical Engineering, Xi'an Jiaotong University), Yi Wu (State Key Laboratory of Electrical Insulation and Power Equipment, School of Electrical Engineering, Xi'an Jiaotong University), Mingzhe Rong (State Key Laboratory of Electrical Insulation and Power Equipment, School of Electrical Engineering, Xi'an Jiaotong University), Fei Yang (State Key Laboratory of Electrical Insulation and Power Equipment, School of Electrical Engineering, Xi'an Jiaotong University), Nan Shi (Xi'an XD High Voltage Apparatus Co., Ltd), Lincui Zeng (Xi'an XD High Voltage Apparatus Co., Ltd)
E-4-4	Development and testing of EHV mechanical DC circuit breaker
	Sho Tokoyoda (Mitsubishi Electric Corporation), Takashi Inagaki (Mitsubishi Electric Corporation), Hitoshi Sadakuni (Mitsubishi Electric Corporation), Tadao Minagawa (Mitsubishi Electric Corporation), Daisuke Yoshida (Mitsubishi Electric Corporation), Hiroki Ito (Mitsubishi Electric Corporation)

Conference Room 21 AB : Switching phenomena in vacuum

Chairperson : Zhiynan Liu (Xi'an Jiaotong University)

8:45 - 9:45, Oct. 16 (Wed)	
C-4-1	Detecting Vacuum Degree Condition of Vacuum Interrupter by Partial Discharge Measurement
	Achmad Syerif Habibie (PT PLN (Persero)), M. Hikita (Kyushu Institute of Technology), M. Kozako (Kyushu Institute of Technology), Y. Nakano (Kyushu Institute of Technology), Suwarno (Institut Teknologi Bandung), U. Khayam (Institut Teknologi Bandung), M. Kobayashi (Hitachi Industrial Equipment Systems Co. Ltd.)
C-4-2	Study on Dielectric Recovery Characteristic of Vacuum Interrupter after High Frequency Interruption
	Yu Xiao (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Yi Wu (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Yifei Wu (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Fei Yang (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Mingzhe Rong (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Yuan Wei (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Sunhonghao Peng (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University)
C-4-3	Interruption Characteristics of a 40.5 kV Vacuum Circuit Breaker Used for the Current Limiter
	Zhe Yang (Xi'an XD Electric Research Institute Co., Ltd.), Xu Jiang (Xi'an XD Electric Research Institute Co., Ltd.), Shengbin Wu (Xi'an XD Electric Research Institute Co., Ltd.), Haojun Liu (Xi'an XD Electric Research Institute Co., Ltd.), Liing Yan (Xi'an XD Electric Research Institute Co., Ltd.)
C-4-4	Research on Intermediate-frequency Vacuum Arc and Voltage Characteristics of Sinusoidal Curved Contact
	Ziang Tong (School of Automation Science and Electrical Engineering, Beihang University), Jianwen Wu (School of Automation Science and Electrical Engineering, Beihang University), Miao Cheng (School of Automation Science and Electrical Engineering, Beihang University), Yuan Jiang (School of Automation Science and Electrical Engineering, Beihang University), Bowen Jia (School of Automation Science and Electrical Engineering, Beihang University)

Conference Room 21 CD : Switching phenomena in SF₆ gas

Chairperson : Mingzhe Rong (Xi'an Jiaotong University)

8:45 - 9:45, Oct. 16 (Wed)	
A-1-1	Hybrid Thermofluid Simulation with Chemically Non-Equilibrium and Equilibrium Calculations for Decaying SF ₆ Arcs Yasunori Tanaka (Kanazawa University), Takanori Iijima (Toshiba Energy Systems & Solutions Corporation)
A-1-2	Critical Electric-Field Strength of High-Temperature SF ₆ Mixture Gas with Ablated PTFE/BN Vapor at Temperatures of 300-4000 K Tatsuya Ishii (Nagoya University), Masanao Terada (Nagoya University, Hitachi, Ltd.), Yasunobu Yokomizu (Nagoya University), Yuuki Kojima (Nagoya University), Mami Kuroda (Hitachi, Ltd.), Hajime Urai (Hitachi, Ltd.)
A-1-3	Research on the Pressure Characteristics of 550kV Single-Break Self-Blasting Circuit Breaker during the Breaking Process Ruisong Li (School of Electrical Engineering, Shenyang University of Technology), Xin Lin (School of Electrical Engineering, Shenyang University of Technology), Yu Song (School of Electrical Engineering, Shenyang University of Technology), Jianyuan Xu (School of Electrical Engineering, Shenyang University of Technology), Yalong Xia (School of Electrical Engineering, Shenyang University of Technology), Zhenxin Geng (School of Electrical Engineering, Shenyang University of Technology)
A-1-4	Investigations on the Thermal Interrupting Capability of A Self-blast Type SF ₆ Circuit Breaker Jin Guo (Xi'an XD Electric Research Institute Co., Ltd.), Xu Jiang (China XD Group Co., Ltd.), Wenjuan Du (Xi'an XD Electric Research Institute Co., Ltd.), Yuanjing Lu (Xi'an XD Electric Research Institute Co., Ltd.), Haibin Wang (Xi'an XD Electric Research Institute Co., Ltd.)

09:45 - 10:00 **Coffee Break < Sub entrance hall >**

10:00 - 12:00 **Oral Sessions** (*Note : 5 sessions will be held simultaneously)

Main Hall : Others

Chairperson : Masahiro Kozako (Kyushu Institute of Technology)

10:00 - 11:30, Oct. 16 (Wed)	
N-3-1	A Novel Method of Suppressing VFTO in GIS -Spiral Tube Damping Bus-bar Chao Li (State Key Laboratory of Power Grid Environmental Protection, Wuhan University of Technology, School of Automation), XiXiu Wu (State Key Laboratory of Power Grid Environmental Protection, Wuhan University of Technology, School of Automation), Xin Yang (State Key Laboratory of Power Grid Environmental Protection, Wuhan University of Technology, School of Automation), Yu Feng (State Key Laboratory of Power Grid Environmental Protection), Huan Wang (State Key Laboratory of Power Grid Environmental Protection), Hui Hou (State Key Laboratory of Power Grid Environmental Protection, Wuhan University of Technology, School of Automation)
N-3-2	Study on the spatial radiation EMI characteristics of GIS caused by disconnector operation Xin Yang (State Key Laboratory of Power Grid Environmental Protection , Wuhan University of Technology, School of Automation), Xixiu Wu (State Key Laboratory of Power Grid Environmental Protection , Wuhan University of Technology, School of Automation), Jin Qiu (State Key Laboratory of Power Grid Environmental Protection), Chao Li (State Key Laboratory of Power Grid Environmental Protection , Wuhan University of Technology, School of Automation), Bo Wen (State Key Laboratory of Power Grid Environmental Protection , Wuhan University of Technology, School of Automation), Hui Hou (State Key Laboratory of Power Grid Environmental Protection , Wuhan University of Technology, School of Automation), Tao Yang (Electric Power Research Institute of Guizhou Power Grid Co., Ltd), Liang Huang (Electric Power Research Institute of Guizhou Power Grid Co., Ltd)

N-3-3	Design of circuit breaker monitoring system based on MODBUS protocol in Delphi compiler environment
	Zheyuan Pang (School of Electrical Engineering, Shenyang university of technology, China), Zhiyuan Cai (School of Electrical Engineering, Shenyang university of technology, China), Shaohua Ma (School of Electrical Engineering, Shenyang university of technology, China), Yahong Zheng (Shenyang Equipment Manufacturing Engineering School, China)
N-3-4	Application of Disc Insulators for Electric Power Equipment in Pulse Power Technology
	Xiaohong Chi (Xi'an Jiaotong University), Haiyang Wang (Northwest Institute of Nuclear Technology), Zihan Xi (Xi'an Jiaotong University), Jianhong Zhang (Motic Electric Group Co., Ltd., China), Wenfeng Liu (Xi'an Jiaotong University)
N-3-5	Electron Impact Ionization, Attachment, Drift Velocities and Longitudinal Diffusion of SCN ₂ at the Critical Point 127K and 3.4MPa
	Dai Xinlong (Harbin University of Science and Technology), Chen Cuntian (Harbin University of Science and Technology), Wei Hongqing (State Grid Zhejiang Haiyan Country Power Limited Corporation), Zhu Hanan (Harbin Institute of Petroleum), Liu Zhiyong (New Northeast Electric Group High Voltage Switchgear Co., Ltd.), Zheng Dianchun (Harbin University of Science and Technology), Zhao Shufen (Harbin University of Science and Technology)
N-3-6	Residual Magnetic Flux in High Resistance Grounding System
	Yukihiko Himata (Tokyo Denki University), Tadashi Koshizuka (Tokyo Denki University), Kunihiro Hidaka (Tokyo Denki University)

International Conference Room : DC switching technology

Chairperson : Hiroki Ito (Mitsubishi Electric Corporation)

10:00 - 11:15, Oct. 16 (Wed)	
E-5-1	The Analysis of Low-Voltage DC Arc behavior on Three Interrupting Phases Based on AC Black-box Arc model
	Kyu-Hoon Park (Hanyang University), Ho-Yun Lee (Hanyang University), Bang-Wook Lee (Hanyang University)
E-5-2	High Voltage Gradient ZnO-Based Varistors from ZnO Nano-powders for DC Current Switching Application
	Xiangjun Zeng (National Engineering Laboratory for Ultra High Voltage Engineering Technology), Wenfeng Liu (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Lei Zhang (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Zhi Wang (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Shengtao Li (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Fuzeng Zhang (National Engineering Laboratory for Ultra High Voltage Engineering Technology), Tingting Wang (National Engineering Laboratory for Ultra High Voltage Engineering Technology), Yifan Liao (National Engineering Laboratory for Ultra High Voltage Engineering Technology)
E-5-3	Design of bistable permanent magnet-repeat mechanism for medium voltage DC high speed switch
	Xiaomin Zhao (State Grid Pinggao Group Co., LTD), Mingfei Wang (State Grid Pinggao Group Co., LTD), Yi Wu (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Yu Xiao (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Yifei Wu (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Xiao Gu (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Wenkui Liu (State Grid Pinggao Group Co., LTD)
E-5-4	Analysis on the Influence of Stray Inductance on Overvoltage of Hybrid DC Circuit Breaker During Breaking Process
	Yaxiong Tan (Department of Electrical Engineering, Chongqing University), Shushan Luo (Department of Electrical Engineering, Chongqing University), Weigen Chen (Department of Electrical Engineering, Chongqing University), Lin Du (Department of Electrical Engineering, Chongqing University), Han Yan (Department of Electrical Engineering, Chongqing University)
E-5-5	An Experimental Study on Arc Discharge Occured by Breaking of Line in Low-Voltage PV Systems
	Akihiro Tsusaka (Aichi Institute of Technology), Toshiya Yokoi (Aichi Institute of Technology), Toshiro Matsumura (Aichi Institute of Technology), Kazuto Yukita (Aichi Institute of Technology), Yasuyuki Goto (Aichi Institute of Technology), Atsushi Miyamoto (Nitto Kogyo Corporation), Hiroyuki Ito (Nitto Kogyo Corporation)

Conference Room 21 AB : Electrical contacts

Chairperson : Gaku Asanuma(Fuji Electric Co., Ltd.)

10:00 - 11:15, Oct. 16 (Wed)	
L-1-1	<p>An Experimental Study on Contact Dynamic Welding under Different Contact Materials and Surrounding Atmospheres in HVDC</p> <p>Wenxuan Liu (State Key Laboratory of Advanced Electromagnetic Engineering and Technology, School of Electrical and Electronic Engineering, Huazhong University of Science and Technology), Yuan Liao (State Key Laboratory of Advanced Electromagnetic Engineering and Technology, School of Electrical and Electronic Engineering, Huazhong University of Science and Technology), Lin Jiao (State Key Laboratory of Advanced Electromagnetic Engineering and Technology, School of Electrical and Electronic Engineering, Huazhong University of Science and Technology), Xiaoping Bai (Fuda Alloy Material Limited by Share Ltd.), Ruxin Feng (Zhongxi Group Co., Ltd.), Zhenbiao Li (State Key Laboratory of Advanced Electromagnetic Engineering and Technology, School of Electrical and Electronic Engineering, Huazhong University of Science and Technology), Makoto Hasegawa (Chitose Institute of Science and Technology)</p>
L-1-2	<p>Comparative study on the erosion mechanism of W70Cu30 anode in DC gaseous arcs</p> <p>Yufei Cui (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Yi Wu (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Mingzhe Rong (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Haodong Chang (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Weiping Guan (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University)</p>
L-1-3	<p>Simulation of Cathode Spots Crater Formation on Zirconium electrode</p> <p>Xiao Zhang (Xi'an Jiaotong University), Lijun Wan (Xi'an Jiaotong University), Sheli Jia (Xi'an Jiaotong University), D L Shmelev (Institute of Electrophysics)</p>
L-1-4	<p>Investigate of electrical performance of CuCr30 manufactured by three different ways</p> <p>Kai Liu (shaanxi sirui advanced material Co., Ltd), Peng Li (shaanxi sirui advanced material Co., Ltd), Shi SongZhang (shaanxi sirui advanced material Co., Ltd), Xiaojun Wang (shaanxi sirui advanced material Co., Ltd), Bin Yang (shaanxi sirui advanced material Co., Ltd), Gang Li (shaanxi sirui advanced material Co., Ltd), Xiao Yun Shi (shaanxi sirui advanced material Co., Ltd), Xiao Juan Zhu (shaanxi sirui advanced material Co., Ltd)</p>
L-1-5	<p>Theoretical Derivation of Current Commutation Process during Electrical-Contact Sliding Movement in Model DC Motor</p> <p>Yosuke Ogura (Nagoya University), Yasunobu Yokomizu (Nagoya University), Takashi Fukutsuka (Nagoya University), Kazuya Oshima (Nagoya University)</p>

Conference Room 21 CD : Switching phenomena in SF6 gas

Chairperson : Bang-Wook Lee (Hanyan University), Motohiro Sato (Mitsubishi Electric Corporation)

10:00 - 12:00, Oct. 16 (Wed)	
A-2-1	<p>Investigation of Ablation Gas Transportation with Optical Emission Spectroscopy for Gas Circuit Breaker</p> <p>Toshiaki Sakuyama (Hitachi, Ltd.), Hiroyuki Kobayashi (Hitachi, Ltd.), Hideyuki Kotsuji (Hitachi, Ltd.), Katsuhiko Shiraishi (Hitachi, Ltd.), Hajime Urai (Hitachi, Ltd.)</p>
A-2-2	<p>Evaluation of Gas Flow by Multi-point Pressure Measurement using a Self-blast Gas Circuit Breaker Model</p> <p>Hideyuki Kotsuji (Hitachi, Ltd.), Toshiaki Sakuyama (Hitachi, Ltd.), Masanori Terada (Hitachi, Ltd.), Hajime Urai (Hitachi, Ltd.)</p>
A-2-3	<p>Improvement of Dielectric Recovery Performance for Self blast Circuit Breaker</p> <p>Myounghoo Kim (ILJIN Electric), Kyonghoe Kim (ILJIN Electric), Hojung Jeong (ILJIN Electric), Amer Smajkic (EnergoBos ILJIN d.o.o, University of Sarajevo), Mahir Muratovic (EnergoBos ILJIN d.o.o, University of Sarajevo), Mirsad Kapetanovic (EnergoBos ILJIN d.o.o, University of Sarajevo)</p>
A-2-4	<p>Sensitivity of dynamic resistance of gas circuit breakers to the arc-induced contact erosion</p> <p>Milad Mohammadhosein (University of Tehran), kaveh Niayesh (University of science and technology, NTNU), Amir Abbas Shayegani Akmal (University of Tehran), Hossein Mohseni (University of Tehran)</p>

A-2-5	Influence of arcing contacts erosion on decomposition products under arc discharge in SF ₆ circuit breaker
	Ren Yang (SGCC Shaanxi Electric Power Research Institute), Mengyuan Xu (State Key Laboratory of Electrical Insulation and Power Equipment), Jing Yan (State Key Laboratory of Electrical Insulation and Power Equipment), Yingsan Geng (State Key Laboratory of Electrical Insulation and Power Equipment)
A-2-6	Temperature rise prediction of conductor and enclosure in a GIS component considering contact resistance
	Jeong Ahn Ko (Hyosung Corporation), Seungbo Lee (Hyosung Corporation), Gwang Hyeon Ryu (Hyosung Corporation), Seung Boong Jeong (Hyosung Corporation)
A-2-7	Design of Dual Motion Mechanism Moving along Optimized Stroke Curve to Improve Capacitive Current Switching Performance for Gas Circuit Breaker
	Masanao Terada (Hitachi, Ltd, R & D Group , Department of Electrical Engineering, Nagoya University), Yuki Nakai (Hitachi, Ltd, Power Business Unit), Hiroaki Hashimoto (Hitachi, Ltd, R & D Group), Daisuke Ebisawa (Hitachi, Ltd, Power Business Unit), Hajime Urai (Hitachi, Ltd, R & D Group), Yasunobu Yokomizu (Department of Electrical Engineering, Nagoya University)
A-2-8	Numerical Calculation and Analysis of UHV GIL HSGS during Breaking Process
	Ying Zhu (School of Electrical Engineering,Shenyang University of Technology), Xin Lin (School of Electrical Engineering,Shenyang University of Technology), Jia Zhang (School of Electrical Engineering,Shenyang University of Technology), Shengwu Tan (Pinggao Group Co., Ltd.), Yu Song (School of Electrical Engineering,Shenyang University of Technology), Yingjie Sun (Pinggao Group Co., Ltd.)

Conference Room 22 : Switching phenomena in air

Chairperson : Yuki Inada (Saitama University)

10:00 - 11:45, Oct. 16 (Wed)	
D-1-1	Air Arc Squeezed into Insulating Slits - AC/DC Interruption
	Tengyu Huo (State Key Laboratory of Electrical Insulation and Power Equipment, School of Electrical Engineering, Xi'an Jiaotong University), Chunping Niu (State Key Laboratory of Electrical Insulation and Power Equipment, School of Electrical Engineering, Xi'an Jiaotong University), Hailong He (State Key Laboratory of Electrical Insulation and Power Equipment, School of Electrical Engineering, Xi'an Jiaotong University), Yi Wu (State Key Laboratory of Electrical Insulation and Power Equipment, School of Electrical Engineering, Xi'an Jiaotong University), Longlong Wang (State Key Laboratory of Electrical Insulation and Power Equipment, School of Electrical Engineering, Xi'an Jiaotong University), Mingzhe Rong (State Key Laboratory of Electrical Insulation and Power Equipment, School of Electrical Engineering, Xi'an Jiaotong University)
D-1-2	Simulation of free burning arcs and arcs Inside Cylindrical Tubes initiated by exploding wires
	Ali Kadivar (Norwegian University of Science and Technology, NTNU), Kaveh Niayesh (Norwegian University of Science and Technology, NTNU)
D-1-3	Thermodynamic and Transport Characteristics of High Temperature Atmospheric Air Arcs containing Two Different Metal Vapor of Cu, Fe and Al
	Yusuke Nakano (Kanazawa University), Yasunori Tanaka (Kanazawa University), Yoshihiko Uesugi (Kanazawa University), Tatsuo Ishijima (Kanazawa University)
D-1-4	Arc Plasma Simulation Method in DC Relay with Contact Opening Process
	Keyao Huang (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Chunping Niu (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Yi Wu (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Rong Mingzhe (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Fei Yang (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Hao Sun (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University)
D-1-5	Optimization of Breaking Speed for Miniature Circuit Breakers Using Improved Particle Swarm Optimization Algorithm
	Zhihong Xu (College of Electrical Engineering and Automation, Fuzhou University, IEEE PES China Women in Engineering Committee), Mingjie Shi (College of Electrical Engineering and Automation, Fuzhou University)

D-1-6	Calculation of the switch arc in low voltage circuit breaker considering the interaction between the contact movement and the arc force
	Hao Sun (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Hyun-Woo Joo (LSIS), Yi Wu (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Mingzhe Rong (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University), Chae-Yoon Bae (LSIS), Young-Geun Kim (LSIS)
D-1-7	3D Simulation of Air Arc in the Molded Case Circuit Breaker
	Keewon Kim (LSIS Co., Ltd), Hyun Woo Joo (LSIS Co., Ltd), Chae Yoon Bae (LSIS Co., Ltd), Jongung Choi (LSIS Co., Ltd), Young Geun Kim (LSIS Co., Ltd)

12:00 - 13:30 **Lunch < Every room >**

13:30 - 15:30 **Poster Sessions <Event Hall>**

15:30 - 16:00 **Coffee Break < Sub entrance Hall >**

16:00 - 16:45 **Invited Lecture 2**

< Main Hall >	
Chairperson : Eiji Kaneko (University of the Ryukyus)	
IL-2	Recent Insulation and diagnostic technology in power apparatus and power electronics (<i>Prof. Masayuki Hikita, Kyushu Institute of Technology, Japan</i>)

16:45 - 17:30 **Closing Ceremony < Main Hall >**

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