



Curtin University



CMD 2018 – Curtin University, Perth, Australia, 23-26 September 2018

Conference Program and Technical Sessions

Sunday 23rd September

Hyatt Regency Perth, 99 Adelaide Terrace, Perth WA 6000

- 8.30 - 9.00am Tutorial Registration, Plaza Ballroom 3
- 9.00am - 10.30am Tutorial 1
- 10.30am - 11.00am Morning Tea
- 11.00am - 12.30pm Tutorial 1 cont.

- 12.30pm - 1.30pm Lunch

- 1.30pm - 3.00pm Tutorial 2, Plaza Ballroom 3
- 3.00pm - 3.30pm Afternoon Tea
- 3.30pm - 5.00pm Tutorial 2 cont.
- 6.00pm – 8.00pm Conference Registration and Welcome Reception, Gershwin rooms

Monday 24th September

Curtin University, Kent Street, Bentley

- 7.30am Conference Bus (Hyatt Hotel to Curtin University)
- 8.00am-5:00pm Conference Registration , 213 Foyer
- 8.30-9:00am Welcome/Opening Ceremony , 213:104
- 9.00-10:00am Keynote Speech 1, 213:104
- Electrical Insulation in Sub-Atmospheric Pressures under High Frequency Applied Fields, Professor Hulya Kirkici

10.00-10:30am Morning Tea 215 Foyer

10:30-12:30pm **Parallel Technical Sessions (S01, S02, S03)**

S01- Partial Discharge 1		Chair: Hulya Kirkici, University of South Alabama, USA	213:104
P3	Tianxin Zhuang, Shujing Yang, Ming Ren and Bo Song	Dielectric Loss Factor And Circuit Impedance Under Partial Discharge Via Excess Current Detection	
P10	Taufik Rossal Sukma, Umar Khayam, Suwarno, Ryouya Sugawara, Hina Yoshikawa, Masahiro Kozako, Masayuki Hikita, Osamu Eda, Masanori Otsuka, Hiroshi Kaneko and Yasuharu Shiina	Determination of Type of Partial Discharge in Cubicle-Type Gas Insulated Switchgear (C-GIS) using Artificial Neural Network	
P17	Hongmei Wang, Jiangrong Cheng, Dengwei Ding, Weidong Liu and Liang He	A feasibility study on bushing tap UHF sensing method for partial discharge in transformer	
P50	Yuhang Zhang, Baojun Hui, Mingli Fu, Feng Huang, Shuai Hou and Yang Xu	Partial Discharge Behavior of 110 kV Silicone Rubber Premoulded Cable Joint Induced by Pre-Expanding Installation and Temperature	
P61	Seiya Masuda, Tadahiro Fujimura, Yusuke Nakano, Masahiro Kozako, Masayuki Hikita, Hiroshi Haruyama, Kazunori Miyazaki, Hideaki Sato and Fumiyasu Aono	Discussion on Partial Discharge Measurement Technique of Cable Joint in Three Phase High Voltage Overhead Transmission Line	
P71	Xue Qin, Honglin Zhao, Qi Zhang, Yong Qian, Gehao Sheng and Xiuchen Jiang	Simulation on Propagation Characteristics of Optical Signals of Partial Discharge in Single-core and Three-cores GIL	
S02- Power Transformers 1		Chair: Zahra Jabiri, Western Power, Australia	213:101
P18	Liang He, Xinghai Zhang, Jiangrong Cheng, Xing Li, Dengwei Ding and Weidong Liu	Condition monitoring technology of transformer with multiple sensing method united	
P116	Muhammad Muneer, Lakshitha Naranpanawe and Chandima Ekanayake	Application of Blind-Source-Separation Algorithm for investigating transformer vibration patterns	
P178	Charbel Antoun	High Voltage Circuit Breaker and Power Transformer Failure Modes and Their Detection	
P79	Xinbo Huang, Xiang Wang and Yi Tian	Research on Transformer Fault Diagnosis Method based on GWO Optimized Hybrid Kernel Extreme Learning Machine	
P80	Yuhang Shi, Weifeng Lu, Fan Zhang, Yongliang Dang, Cao Zhan, Shengchang Ji and Ziqian Zhu	Diagnosis of Transformer Winding Looseness Based on Vibration Sensor Array	
P19	Daniel Martin and Neville Watson	Statistical analysis of Australian and New Zealand Power Transformer Catastrophic Failure	
S03- Electrical Machine 1		Chair: Guan-Jun Zhang, Xi'an Jiaotong University, China	210:104
P58	Santhosh Gunasekaran, Shrinathan Esakimuthu Pandarakone, Keisuke Asano, Yukio Mizuno and Hisahide Nakamura	Condition Monitoring and Diagnosis of Outer Raceway Bearing Fault using Support Vector Machine	

P127	N. Phumipunepon, P. Chaisiri, K. Thungsook and N. Pattanadach	Polarization and Depolarization Current Characteristics of Degradation Stator Insulation of A Rotating Machine
P129	N. Phloymuk, P. Nimsanong, N. Phumipunepon, S. Potivejkul, T. Wiangtong and N. Pattanadach	The Dissipation Factor ($\tan \delta$) Monitoring of A Stator Winding Insulation of A Synchronous Machine
P216	Mohamad Danish Anis	Towards Remaining Useful Life Prediction in Rotating Machine Fault Prognosis: A Degradation Model
P234	Bhaba Priyo Das	ETEL Smart Distribution Transformer for Electric Vehicle Applications
P6	Majid Malekpour, Toan Phung and Eliathamby Ambikairajah	Modelling and Diagnostic of Incipient Stator Inter-turn Short Circuit Fault in Induction Motors

12:30-1:30pm Lunch 215 Foyer

1:30-3:30pm Parallel Technical Sessions (S04, S05, S06)

S04- power Cables 1 Chair: Robert J Fleming , Former Editor-in-Chief of the IEEE Electrical Insulation Magazine		213:104
P77	Zhu Yufeng, Xu Yongpeng, Chen Jingde, Fan Rusen, Sheng Gehao and Jiang Xiuchen	Partial discharge pattern recognition of DC XLPE cables based on convolutional neural network
P219	Nazatul Shiema Moh Nazar, Noor Syazwani Mansor, Nor Asiah Muhamad, Mohamad Kamarol Mohd Jamil, Mariatti Jaafar and Amir Izzani Mohamed	Electrical Tree Propagation in XLPE Containing Untreated and Treated Silica Nanofiller
P199	Guanglei Huang, Weikang Cao, Xiaolei Xie, Zilong Li, Zhe Li and Gehao Sheng	Classification of Partial Discharge Images within DC XLPE Cables Based on Convolutional Deep Belief Network
P57	Hao Zeng, Kai Gao, Zhien Zhu, Dong Li, Rongkai Yang and Liming Yang	Research on Difference between HVDC and HVAC Cable Shielding Materials
P205	Zehao Chen, Chen Wu, Ruifeng Fang, Zhe Li, Gehao Sheng and Xiuchen Jiang	Research on leakage current analysis of DC cable based on wavelet packet multi - scale decomposition
P207	Yu Zhang, Deyuan Liu, Jiandong Wu and Yi Yin	Charge Transport Simulation in XLPE Cable Insulation Based on Two-dimensional Unstructured Mesh

S05- Space Charge 1 Chair: Harry McDonald, IEEE WA PES/PELS chapter chair		213:101
P42	Zhiyu Cao, Yewen Zhang, Cong Guo, Feihu Zheng, Zhenlian An, Enke Yu, Xinlong zheng, Stéphane Holé, Zhien Zhu and Liming Yang	Space Charge Measurement System Based on Laser PWP Method for the Full-size Long HVDC Cable
P197	Deyuan Liu, Yu Zhang, Yunkun Deng, Jiandong Wu and Yi Yin	Experiment and Simulation of Space Charge Distribution in 35mm Cable Insulation
P204	Yunkun Deng, Fengli Li, Zhonghua Sun, Dada Wang, Yi Ma, Yi Yin and Jiandong Wu	Research on Polarization-Depolarization Current of Oil-impregnated Paper after Electrical-thermal Aged
P34	Yan-Qin Liu, Ke-Feng Li, Xiao-Feng Fan, Xiang-Yu Liu, Han Wang and Jun-Bo Deng	Influence of Metal Particles on Surface Charge Accumulation Characteristics of Spacer in SF6/N2 Mixtures under Impulse Voltage
P54	Dong Li, Zhien Zhu, Liming Yang, Hao Zeng, Kai Gao and Lixin Xu	Interface Charge Behaviors of between LDPE and EPDM with Different Conductivity
P203	Jiaxuan Xu, Yunkun Deng, Yi Ma, Fengli Li, Jiandong Wu and Yi Yin	Effect of Moisture Content on Dynamic Characteristics of Space Charge in Oil-paper Insulation under AC Field

S06- Transmission Lines 1 Chair: Dean Sharafi, Australian Energy Market Operator		210:104
P4	Hanqing Liang, Xianyin Mao, Yadong Liu, Gehao Sheng and Xiuchen Jiang	Methodology For Obtaining Key Transient Information of Unsymmetrical Earth Fault in Overhead Transmission Line
P27	Nor Asiah Muhamad, Nurun Najah, Abdul Rahim, Saiful Mohammad Iezham Suhaimi, Nouruddeen Bashir and Noor Azlinda Ahmad	Detection of Transmission Line Insulator Flashover Based on Categorized Discharge Intensity Level of Ultraviolet Signal
P37	Long Zhao, Xinbo Huang and Yu Zhao	Broken strands monitoring of transmission lines by vibration signal analyzing
P105	Ying Du, Qingzhu Shao, Yadong Liu, Gehao Sheng and Xiuchen Jiang	Detection of Single Line-to-Ground Fault Using Convolutional Neural Network and Task Decomposition Framework in Distribution Systems
P130	Xinbo Huang, Han Zhang and Yu Zhao	Usability of fiber Bragg grating sensors for the fatigue life monitoring of overhead transmission lines
P191	Zilong Li, Yadong Liu, Honglin WANG and Guanglei Huang	A Novel Anomaly Localization Method on PMU Measure System Based on LS and PCA

3.30-4:00pm Afternoon Tea 215 Foyer

4:00-6:00pm Parallel Technical Sessions (S07, S08, S09)

S07-Insulation materials 1 Chair: Carlos Gamez, Western Power, Australia		213:104
P14	Zhien Zhu, Liming Yang, Zhenxing Jiang, Dong Li, Longxiao Chen, Xike Wu, Kai Gao, Hao Zeng, Yili Ma, Chuanbo Wang and Lixin Xu	Investigation on the Design of DC Cable Insulation
P13	Lei Yang	A Normal Cloud Model for Transformer Insulation Condition Prognosis with Optimal Weights
P35	Miao Yulong, Yao Qiang, Wu Siying, Zeng Fuping, Tang Ju and Zhu Ning	A new Method for Fault Diagnosis of SF6 Insulation Equipment Based on Decomposed Components Analysis
P40	Tobias Münster, Tobias Kinkeldey, Peter Werle, Kai Hämel and Jörg Preusel	Investigation on Ageing Parameters of a Thermally Accelerated Aged Paper-Oil-Insulation in a Hermetically Sealed System

P52	Ming Chen, Xuandong Liu, Puming Xu and Tao Wen	Local Inter-foil Insulation Deterioration Diagnosis and Simulation of RIP Bushing Based on FDS Method
P85	Ira Mardya Sari, Suwarno, Tobias Kinkeldey and Peter Werle	Effect of Thermal Aging on the mechanical Characteristic of Insulation Paper Impregnated with Different Insulating Oils.

S08- GIS 1		Chair: Shengtao Li , Xi'an Jiaotong University, China	213:101
P26	Gwanggoo Kang	Power Equipment Diagnosis & Preventive System for GIS and Transformer	
P166	Lin Liu, Xiaoang Li, Qiaogen Zhang, Junping Zhao, Chengjun Liang and Zhibing Li	Surface Flashover of GIS Insulator Attached with Metal Particles Under Lightning Impulse	
P233	Xiao Li, Yang Xu, Jiangrong Cheng, Weidong Liu and Wensheng Gao	The Characteristics and Detection of the Partial Discharge Induced by the Micro Cracks in GIS Insulators	
P41	Miao Yulong, Yao Qiang, Zhang Mingxuan, Zeng Fuping and Tang Ju	Preparation of standard gas reference materials of trace amount of characteristic decomposition components of SF6	
P185	Songlin Jiang, Qinxue Yu, Chen Zhang, Huaqiang Li, Lisheng Zhong, Yu Xu, Xiaobo Hu and Yuanming Shuai	Lighting Impulse Properties in Large Oil Gaps with and without Pressboard Interface	
P112	Zijing Zeng, Jianwen Wang, Yue Hu, Zhicheng Wang and Hongyi Huang	Analysis of Time-frequency Characteristics of PD Electromagnetic Wave Based on Electromagnetic Simulation	

S09- Sensors & Measurements 1		Chair: Harry McDonald, IEEE WA PES/PELS chapter chair	210:104
P121	Muhammad A. Hafeez Ansari and Dan Martin	Feasibility of Optical Fibre Sensors for Moisture Diagnosis in Transformer Insulation	
P175	Junya Maki, Tomohiro Kubo, Takakazu Matsuzoe, Yusuke Nakano, Masahiro Kozako, Masayuki Hikita, Takahisa Ueno, Jintong Sun, Aoto Izumi and Kazunari Karasawa	Determination of Partial Discharge Location in Stator Core using Loop Sensors	
P184	Hua Chai, Toan Phung and Daming Zhang	Development of UHF Sensors for Partial Discharge Detection in Power Transformers	
P64	Tadahiro Fujimura, Seiya Masuda, Yusuke Nakano, Masahiro Kozako, Masayuki Hikita, Yusuke Nakamura, Kazuo Iida, Tokihiro Umemura, Teruhiko Maeda and Masakazu Higashiyama	Partial Discharge Location in Cast Resin Transformer by Multiple Small Loop Sensors	
P15	Zhenhua Li, Yue Tong, Bin Liu, A. Abu-Siada, Chunyan Li and Binxin Zhu	Research on calibration technology for electronic current transformers	
P141	Saifullah Al Yusuf	Development of PLC and SCADA based Integrated Thermal Control system with self/auto-tuning feature.	

6.10pm Conference Bus (Curtin University to Hyatt Hotel)

Tuesday 25th September

Curtin University, Kent Street, Bentley

7.30am Conference Bus (Hyatt Hotel to Curtin University)

8.00am-5:00pm Conference Registration , 213 Foyer

8.00-9:00am Keynote Speech 2, 213:104

Increase of Operation Reliability of HV Apparatus through PD Monitoring, Dr Wojciech Koltunowicz

9.00-9.45 am Keynote Speech 3, 213:104

Some common errors in experimentally-based scientific papers, Dr Robert Fleming

9.45-10.00 am Conference Group Photo, Atkinson Forum

10.00-10:30am Morning Tea 215 Foyer

10:30-12:30pm Parallel Technical Sessions (S10, S11, S12)

S10-Partial Discharge 2		Chair: Toan Phung, University of New South Wales, Australia	213:104
P9	Taufik Rossal Sukma, Umar Khayam, Suwarno, Ryouya Sugawara, Hina Yoshikawa, Masahiro Kozako, Masayuki Hikita, Osamu Eda, Masanori Otsuka, Hiroshi Kaneko and Yasuharu Shiina	Classification of Partial Discharge Sources using Waveform Parameter and Phase-Resolved Partial Discharge Pattern as Input for Artificial Neural Network	
P107	Feng Xue, Dongliang Wei, Zhi Wang, Tong Li, Yue Hu and Hongyi Huang	Grid searching method in spherical coordinate for PD location in a substation	
P114	Xuhong Wang, Hongyi Huang, Yue Hu and Yupu Yang	Partial Discharge Pattern Recognition with Data Augmentation based on Generative Adversarial Networks	
P117	Qinqin Zhang, Hui Song, Jun Lin and Gehao Sheng	Fault Identification Based on PD Ultrasonic Signal Using RNN, DNN and CNN	
P12	Akhmad Fauzan, Umar Khayam, Suwarno, Yoshizumi Hiromasa, Masahiro Kozako and Masayuki Hikita	Simulation of Electromagnetic Wave and Surface Current Caused by PD for Seeking Better Detection Sensitivity by TEV Sensor Attached with a Bucket	
P120	Glenn Behrmann, Wojciech Koltunowicz and Uwe Schichler	State of the art in GIS PD Diagnostics	

S11- Power Transformers 2		Chair: Daniel Martin, University of Queensland, Australia	213:101
P131	Song Wang, Shuang Wang, Hao Qiu, Hanke Feng, Shuhong Wang and Ahmed Abu-Siada	Frequency Response Analysis of the Transformer Subjected to Twice Short-circuit Impulse Tests Under Two Different Connection Schemes	
P140	Sai Srinivas Manohar, Aravinth Subramaniam, Mehdi Bagheri, Sivakumar Nadarajan, Amit Kumar Gupta and Sanjib Kumar Panda	Transformer Winding Fault Diagnosis by Vibration Monitoring	

P81	Cao Zhan, Shengchang Ji, Yong Liu, Lingyu Zhu, Yuhang Shi and Fuqiang Ren	Winding Mechanical Fault Diagnosis Technique of Power Transformer Based on Time-Frequency Vibration Analysis
P167	Aravinth Subramaniam, Pritam Mukherjee, Sai Srinivas Manohar and Sanjib Kumar Panda	Diagnosing Axial Movements in Transformer Windings by Leakage Flux Monitoring
P222	Shuang Wang, Song Wang, Shuhong Wang, Hao Qiu, Hanke Feng and Ting Zhu	Research on Radial Stability and Its Influence Factors of Transformer Windings under Short Circuit Fault
P119	Shawn Nielsen	Reconstruction of the Transformer Response from On-Line FRA Measurements Performed via Bushing Taps

S12- Sensors & Measurements 2		Chair: Masayuki Hikita Kyushu Institute of Technology, Japan	210:104
P23	Shaorui Qin, Yanbo Wang, Guocheng Ding, Taiyun Zhu, Jianlin Li and Guan Jun Zhang	Methodology of Searching the Best AE Sensor Array Layout to localize PD sources in Power Transformer	
P46	Changwen Zheng, Ziqiang Chen and Deyang Huang	A novel Sensor Fault Diagnosis method for Lithium-ion Battery System Using Hybrid System Modeling	
P238	Toshihiro Takahashi	Methodology of On-site Precise Partial Discharge Measurement for Cable Terminations and Joints	
P236	Vanraj, Sukhdeep S. Dhami, B.S. Pabla	Gear fault classification using Vibration and Acoustic Sensor Fusion: A Case Study	
P113	Ke Wang, Xiaoming Mai, Jin Tan, Yue Hu and Hongyi Huang	Design of an Omnidirectional PD UHF Antenna for Substation Inspection Robot Considering Installation Circumstance	
P223	Kozo Banno, Yusuke Nakamura, Yuuki Fujii and Toshiya Takano	Partial Discharge Source Classification for Switchgears with Transient Earth Voltage Sensor Using Convolutional Neural Network	

12:30-1:30pm **Lunch** 215 Foyer

1:30-3:30pm **Parallel Technical Sessions (S13, S14, S15)**

S13-Power Cables 2		Chair: Wojciech Koltunowicz, OMICRON Energy Solutions, Germany	213:104
P74	Chenzhao Fu, Wenrong Si and Yongchun Liang	On-line Computation of the Underground Power Cable core's Temperature and Ampacity based on FEM and Environment Detection	
P88	Yue Zhang, Xiaoxin Chen, Yong Qian, Zhe Li, Gehao Sheng and Xiuchen Jiang	Simulation Study and Detection Position Analysis on Position of Partial Discharge Detection in XLPE Cable Cross-bonding System	
P94	Tobias Maier, Thomas Leibfried, André Wagner and Christian Freitag	Frequency-Dependent Line-Parameters of an XLPE Power Cable Relating to Geometrical Variations	
P96	Chen Min, Urano Koji, Zhou ZhiPeng, SUN Bo, ZHOU Yunjie and GAO Xiaoqing	Application of Distributed Partial Discharge Detection in Sync Technique to After-laying Withstand Voltage Test for Large-scale 500kV XLPE Cable Circuit	
P98	Naoshi Hirai and Yoshimichi Ohki	Location Attempt of Multiple Heated Spots in a Polymer-insulated Coaxial Cable by Frequency Domain Reflectometry	
P106	Tobias Maier, Daniel Lick and Thomas Leibfried	Frequency-Domain-Cable-Model with a real representation of joints, smooth failure changes and a Diagnostic investigation with the Line-Resonance-Analysis	

S14-Insulation materials 2		Chair: Shawn Nielsen, The Queensland University of Technology, Australia	213:101
P16	Wei Yan, Liuqing Yang, Huize Cui, Zhao Ge, Shijun Li and Shengtao Li	Comparison of Degradation Mechanisms and Aging Behaviors of Palm Oil and Mineral Oil during Thermal Aging	
P55	Hisashi Morooka, Akira Yamagishi, Kenichi Kawamura, Hiroki Kojima and Naoki Hayakawa	Mechanism behind Increasing Electrostatic Charging Tendency in Aged Mineral-Oil-Immersed Pressboards	
P70	Huize Cui, Liuqing Yang, Shengtao Li, A. Abu-Siada, Wei Yan, Guanghao Qu, Shijun Li, Yuanwei Zhu and Wenying Yue	Effect of temperature and prestressed voltage on breakdown of oil-impregnated paper	
P125	S. Maneerot and N. Pattanadech	Effect of Contaminant on Breakdown Characteristics of Mineral Oil and Palm Oil	
P69	G D P Mahidhar and R Sarathi	Understanding incipient discharge activity in synthetic ester oil under Harmonic AC voltages	
P56	Hisashi Morooka, Akira Yamagishi, Kenichi Kawamura, Hiroki Kojima and Naoki Hayakawa	Thermal Degradation Mechanism of Mineral-Oil-Immersed Pressed-Boards and Influence of Aging on Pressed-Board Properties	

S15-Space Charge 2		Chair: Zahra Jabiri, Western Power, Australia	210:104
P30	Wenbo Zhu, Boxue Du, Jin Li, Jinpeng Jiang, Huan He, Wei Li, Lei Wei, Xiaochun Wang and Heng Du	Effects of Temperature on Surface Charge Behavior of Fluorinated Oil-impregnated Paper under the Coupling of DC and Pulse Voltages	
P59	Daiki Hanazawa, Keita Sonoda, Hiroaki Miyake, Yasuhiro Tanaka and Tatsuo Takada	Development of Measurement system for DC Integrated Charge at High Temperature	
P109	Yandong Li, Hongyi Huang, Yue Hu and Weidong Zhang	Microscopic simulation and characteristics analysis of surface discharge based on PIC-MCC method	
P62	Hina Yoshikawa, Seiya Masuda, Yusuke Nakano, Masahiro Kozako, Masayuki Hikita, Takeshi Mawatari and Takashi Matsumoto	Basic Study on Partial Discharge Detection with High Sensitivity using Ferrite Core	
P63	Hiromasa Yoshizumi, Yusuke Nakano, Masahiro Kozako, Masayuki Hikita, Yuuki Fujii, Yusuke Nakamura and Hiroaki Cho	Consideration of Generation Mechanism of Low Frequency Component of Partial Discharge Signal Detected by Transient Earth Voltage Method	

P68	Akhmad Fauzan, Umar Khayam, Suwarno, Masahiro Kozako and Masayuki Hikita	Design and Fabrication of 3-D Cube UHF Antenna for Partial Discharge Detection
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3.30-4:00pm Afternoon Tea 215 Foyer

4:00-6:00pm Parallel Technical Sessions (S16, S17, S18)

S16-Fault Identification 1		Chair: Suwarno Harjo, Bandung Institute of Technology, Indonesia	213:104
P103	Ren Zhigang, Zuo Xinbin, Li Lisheng, Dai Jindun and Liu Yadong	Fault Location Method for Distribution Networks Based on Leakage Energy Function	
P186	Zhiyuan Liu, Xinqian Xia, Shengchang Ji, Yuhang Shi, Fan Zhang, Yu Fu and Zhitong Jiang	Fault Diagnosis of OLTC Based on Time-Frequency Image Analysis of Vibration Signal	
P220	Mohammad Akbari Azirani, Moritz Kuhnke, Peter Werle and Wolfgang Sorgatz	Online Fault Gas Monitoring System for Hermetically Sealed Power Transformers	
P230	Wafa Ben Hassen, Moussa Kafal, Esteban Cabanillas and Jaume Benoit	Power Cable Network Topology Reconstruction Using Multi-carrier Reflectometry for Fault Detection and Location in Live Smart Grids	
P108	Xinbo Huang, Zhiwen Li and Yongcan Zhu	The System of Temperature Rise Monitoring and Fault Early Warning for Electrical Equipment	
P104	Wen Yan, Meng Hailei, Fang Mu, Dai Jindun and Liu Yadong	Fault Location Method Based on Full Waveform Information for Distribution Networks	

S17-Condition Monitoring 1		Chair: Robert J Fleming, Former Editor-in-Chief, IEEE Electrical Insulation Magazine	213:101
P47	Kiyoto Takenaka, Yukio Mizuno and Atsushi Yoshida	Condition Monitoring of Damaged AC Power Supply Cord Using Voltage Waveform	
P75	Naqash Azeem and Yuan Xiaoqing	Experimental study on the Condition Monitoring of Shaft Unbalance by using Vibrations Spectrum and Phase Analysis	
P176	Kwi-Jun Kang, Jung-Won Lee, Eun-Dong Lee and Myung-Dong Kim	Intelligent Autonomous driving Condition Monitoring and Diagnosis Robot-system of Underground electric power conduit pipe	
P235	Junhyuck Seo	A Practical Scheme for Vibration Signal Measurement-Based Power Transformer On-Load Tap Changer Condition Monitoring	
P38	Xinbo Huang, Yu Zhao and Long Zhao	A Vibration-based Monitoring System for Transmission Tower Settlement	
P118	Apu Banik, Shawn Nielsen and Ghavameddin Nourbakhsh	Impact of Voltage Harmonics on Condition Assessment of Polluted Insulator through a Simulation Model	

S18-Asset Management and Remaining life 1		Chair: Carlos Gamez, Western Power, Australia	210:104
P43	Shijun Li, Liuqing Yang, Wei Yan, Huize Cui, Zhao Ge and Shengtao Li	An effective principal component regression method for transformer life management based on indirect parameters	
P48	Yongjie Ning, Gang Wang, Jiacheng Yu and Hanhan Jiang	A Feature Selection Algorithm Based on Variable Correlation and Time Correlation for Predicting Remaining Useful Life of Equipment Using RNN	
P82	Hanshen Li, Zhe Li, Huijuan Hou, Gehao Sheng, Xiuchen Jiang and Jinglu Hu	An Intelligent Transformer Warning Model based on Data-driven Bagging Decision Tree	
P110	Xinbo Huang, Hua Gao, Wen Cao, Yi Tian, Wenbo Yang and Zhengkang Yuan	Study on UV Aging Properties of Polymer Composite Insulators	
P149	Mohamad Danish Anis	Identifying A Mathematical Model to Optimize Pump Maintenance Planning Decisions - A Case of Irrigation Asset Management in K.S.A	
P134	Huan Niu, Wenfeng Liu, Xiaohong Chi, Yin Huang, Shusai Zheng, Daomin Min, Shengtao Li, Yu Xia and Wen Wang	Effects of Hygrothermal Ageing on Breakdown performance of Polyesterimide Nanocomposites	

6.10pm Conference Bus (Curtin University to Hyatt Hotel)

7:00 – 10:00 pm Conference Gala Dinner, Grand Ballroom, Hyatt Regency, 99 Adelaide terrace, Perth, WA 6000

Wednesday 26th September

Curtin University, Kent Street, Bentley

07:30 Conference Bus (Hyatt Hotel to Curtin University)

08:30-9:30 Keynote Speech 4: 213:104

A Journey on FRA for fault detection in Power Transformers Offline to Online – Challenges and Opportunities, Prof. Syed Islam

9.00-9:30am Morning Tea 215 Foyer

9:30-12:10pm Parallel Technical Sessions (S19, S20, S21)

S19-Partial Discharge 3		Chair: Wenyu Guo, OMICRON electronics Australia	213:104
P90	Sayidul Morsalin, Toan Phung and Michael G. Danikas	Influence of Partial Discharge on Dissipation Factor Measurement at Very Low Frequency	
P95	Ji-Yong Shin, Sung-Wook Kim, Hyang-Eun Jo, Jae-Ryong Jung and Eun-Hee Kim	Partial Discharge Induction with X-rays to Detect Void Defects in Solid Insulating Materials	
P196	Shao-Rui Qin, Yu-Hang Fang, Guo-Cheng Ding, Tai-Yun Zhu, Jian-Lin Li, Chen-Chen Zhang and Guan-Jun Zhang	Partial Discharge Identification of Power Transformers Based on Chaotic Characteristics of the Cumulative Energy Function	
P213	Jae-Seop Lim, Won Choi, Jeon-Seon Lee, Byong-Seon Moon and Du-Il Kang	On-site Applications of the VHF Partial Discharge Detection Method for the Underground Power Cable Terminations	

P224	Junchen Zhu, Bangle He, Xiaodi Wang, Liang Cui and Yuhao LI	Extraction of Partial Discharge Signal Feature Based on Dual-tree Complex Wavelet Transform and Singular-value Decomposition
P208	Wu Fan, Luo Lingen, Song Hui, SHENG Gehao and JIANG Xiuchen	UHF Partial Discharge Localization Methodology Based on Generalized Regression Neural Network
P226	Xiaoqi Wan, Hui Song, Lingen Luo, Zhe Li, Gehao Sheng and Xiuchen Jiang	Pattern Recognition of Partial Discharge Image Based on One-dimensional Convolutional Neural Network
P239	M. Hermansyah, Gian Carlo Montanari, Paolo Seri and Suwarno	Investigating Partial Discharge Behaviour and Extracting Diagnostic Markers for Partial Discharge Aging of Type I Insulating Materials

S20- Power cables 3		Chair: Syed Islam, Federation University, Australia	213:101
P53	Wei Zhao, Lisheng Zhong, Xiaoyu Yang, Ying Li and Jinghui Gao	Effects of Revulcanization on XLPE Crystalline Morphology and AC Breakdown Performance	
P73	Ying Li, Lisheng Zhong, Liang Cao, Haiyang Ren, Wei Zhao and Jinghui Gao	DC breakdown characteristics of LLDPE-based XLPE with different crosslinking degrees	
P111	Dong Li, Longxiao Chen, Zhien Zhu, Liming Yang, Zhenxing Jiang and Yili Ma	Research on EPDM for ± 535 kV HVDC Cable Accessories	
P212	Long-Xiao Chen, Li-Ming Yang, Zhi-En Zhu and Xi-Ke Wu	Effects of Different Load on Temperature and Electric Field Distribution of Flexible DC Cable terminal	
P173	Kyu-Hoon Park, Ho-Yun Lee, Mansoor Asif and Bang-Wook Lee	Investigation of Arc Behavior in HVDC LC Resonance Circuit Breaker Using Flexible Pulsed DC-Source	
P83	Jiangting Liu, Kaifeng Zhou, Hui Peng and Yue Hu	EMD-WVD Method Based High-Frequency Current Analysis of Low Voltage Arc	
P72	Liang Cao, Lisheng Zhong, Ying Li, Zhuoyuan Shen, Lei Jiang, Jinghui Gao and Guanghui Chen	Effect of Blend of Polystyrene on the Temperature Dependence of DC Breakdown Characteristics of Polyethylene	
P29	Meng Tian, Boxue Du, Jingang Su, Jin Li, Lewei Zhu and Yang Yu	Electrical Tree in Epoxy Resin under Combined DC-harmonic Voltage	

S21- Sensors & Measurements		Chair: Nor Asiah Muhamad, Universiti Sains Malaysia	210:104
P122	N. Phloyumuk, P. Nimsanong, N. Phumipunpon, S. Kittiratsatcha and N. Pattanadech	Dielectric Properties Analysis of Gas Turbine Synchronous Generator by Polarization Current and Depolarization Current Measurement	
P28	Feng Ji, Qing Xu, Zheng-qi Tian and Jin Bao	A New White Box Test Method Applying to Watt-hour Meter Based on EEPROM Read and Write Data	
P126	S. Maneerot, K. Jariyanurat, P. Nimsanong, C. Bunlaksananusor, A. Kunakorn and N. Pattanadech	Studies of Electrical and Thermal Characteristics of Natural Ester Immersed Transformer Compared with Mineral Oil Immersed and Palm Oil Immersed Transformer	
P232	Chulho Park, Sangsuh Park, Jeongchae Kim, Sangbae Oh and Yongjoo Hwang	Development of automatic detection algorithm and system on ultrasonic diagnosis for electric facilities	
P78	Xu Zheng, Yongzhou Wang, Le Zhang, Chao Ma, Shengtao Li and Jianying Li	Precise thickness control of solution-processed alpha-polypropylene thin film in sub-micron range and its morphological characterization	
P133	Hanke Feng, Ke Wang, Jinzhong Li, Shuqi Zhang, Qingfeng Xie, Xiaobo Hu, Bingliang Li, Song Wang and Shuhong Wang	Analysis of Exciting Current For Single-Phase Four-Limb Ultra-High Voltage Transformer Under DC Bias	
P227	Yun Hongguang, Niu hang, Hou Chenggang and Zhang Xiaodong	An improved windowed time synchronous averaging method based on genetic algorithm	
P143	Shantanu Kumar, Narottam Das, and Syed Islam	Implementing PRP and HSR Schemes in a HV Substation based on IEC62439-3	

12:10-1:10pm Lunch 215 Foyer

1:10-3:50pm Parallel Technical Sessions (S22, S23, S24)

S22-Partial Discharge 3		Chair: Victor Sreeram, University of Western Australia	213:104
P215	Soumya Thakur and Ramanujam Sarathi	Understanding incipient discharge characteristics in nano ester oil under AC/DC voltages adopting UHF technique	
P201	Xi Zhu, Yalin Wang, Wenpeng Li, Yingrong Zhao, Jiandong Wu, Yi Yin and Qiaohua Wang	Electrical Tree Growth in Polyethylene during the DC Voltage Rise and the Influence of the Tree Defect Size	
P202	Feng Guo, Yani Wang, Weikang Li, Zhuang Ma, Jiandong Wu, Yi Yin and Zhihao Wang	Growth Characteristics of Electrical Tree in Cross-linked Polyethylene under Direct-Current Voltage	
P187	Haohui Su, Qi Wang, Yanzhou Chen, Yiming Wang, Bo Qi, Peng Zhang and Chengrong Li	Hierarchical Layered Method of Converter Station Based on Principal Component Analysis and Association Analysis	
P170	Natsumi Sato, Kotaro Suzuki, Ushio Chiba, Hiroaki Miyake, Yasuhiro Tanaka, Teppei Okumura, Shirou Kawakita, Masato Takahashi and Kiyokazu Koga	Photoelectron Emission on Polyimide Films Irradiated by Proton	
P93	Dowon Kim and Ahmed Abu-Siada	Partial Discharge Analysis On-site in Various High Voltage Apparatus	
P128	K. Thungsook, P. Nimsanong, N. Marukatut and N. Pattanadech	Polarization and Depolarization Current Measurement of Underground Cable with Different DC Test Voltages	
P5	Yichun Tian and Zhenhua Li	Research status analysis of reactive power compensation technology for power grid	

S23- Power Transformers 3		Chair: S M Muyeen, Curtin University, Australia	213:101
P169	Altynay Smagulova, Aigerim Borasheva, Nurtas Moldiyar, Nurbolat Bazarbek, Mehdi Bagheri and B. T. Phung	Real-time Transformer Diagnosis using Voltage-Current Signal over Cloud Environment	

P144	Oluj Sönmez and Guven Komurgoz	Determination of Hot-Spot Temperature for ONAN Distribution Transformers with Dynamic Thermal Modelling
P153	Yiming Wang, Peng Zhang, Bo Qi, Chengrong Li, Haohui Su and Qi Wang	State Prediction of Power Transformer Based on Grey-Lagrange Method with Weighted Coefficient of Variation
P190	Jun Lin, Yingjie Yan, Qinqin Zhang, Gehao Sheng, Da Xie and Chenghong Gu	A Method for Anomaly Detection of State Information of Transformer Based on Association Rules and Elman Neural Network
P221	Chenyu Zhao, Zongren Peng, Peng Liu, Naiyi Li and Shuo Wang	Optimization of Grading Ring for Resin Impregnated Paper UHVDC Wall Bushing using Neural Network Method
P195	Pichai Muangpratoom, Anantawat Kunakorn, Norasage Pattanadech, Wanwilai Vittayakorn and Kittisak Thungsook	Dielectric Properties of Mineral Oil based Nanofluids using Zinc Oxide Nanocomposites for Power Transformer Application
P86	Md Liton Hossain, Ahmed Abu-Siada and S. M. Muyeen	A Hybrid Multilevel Power Electronic Inverter and Fault Location Identification of Switching Devices
P179	Sonal Gedam, Vivek Pal and Ragini Meshram	Brayton-Moser Modeling of Solid State Transformer

S24-Insulation Materials / Sensors 3		Chair: Sara Deilami, Curtin University, Australia	210:104
P198	Haoxiang Zhao, Daning Zhang, Jie Tian, Xiaowei Liu, Chaobin Niu, Haibao Mu and Guanjun Zhang	Research on Dielectric Properties about Different Curing Degree of Epoxy Glass Fiber	
P123	S. Boonsathitthavorn, N. Phumipunepom, P. Kitcharoen and N. Pattanadech	Dielectric Properties of Resin Rich Stator Coil of High Voltage Motor during Processing	
P99	Jindun Dai, Yadong Liu, Jin He, Xianyin Mao, Gehao Sheng and Xiuchen Jiang	Infrared and Visible Image Fusion of Electric Equipment Using FDST and DC-PCNN	
P76	Lei Zhang, Chuan Yu, Le Zhang, Wenfeng Liu, Kangning Wu, Shengtao Li and Jianying Li	A statistical approach for effectively analyzing the grain size distribution along the thickness direction in commercial ZnO-based varistor ceramics	
P194	Haiyan Jiang, Qinxue Yu, Huaqiang Li, Hexiang Tao, Lisheng Zhong and Nianping Yan	Moisture Diffusion Property and Moisture-induced Electrical Performances of Liquid Silicone Rubber	
P124	K. Jongvilaikasem, S. Pumyoy, K. Jariyanurat, S. Maneerot and N. Pattanadech	Different Moisture Contents of Pressboard Effect on Electrical and Chemical Characteristics of Liquid Insulation	
P8	Yuwei Fu, Xiaohua Wang, Aijun Yang and Jiandong Duan	Compositions of SF6 – H2O – O2 Decaying Arc at a Temperature Range of 1000 – 12000 K	
P172	Ryul Hwang, Jin-Yong Na, Jae-Hong Koo, Jong-Sung Kang and Bang-Wook Lee	Short-Term and Long-Term Dielectric Characteristics of Molded Compound According to Various Portion of Alumina Trihydrate Micro-Filler	

3.50-4:20 pm Afternoon Tea 215 Foyer

4:20-5:05pm Closing Ceremony 213:104

5.10pm Conference Bus (Curtin University to Hyatt Hotel)

