2025 IEEE ICDL - FINAL PROGRAM

Date: Sunday, 18/May/2025 – Thursday, 22/May/2025

Registration

Location: Ground Floor (Sunday **3:30pm – 7:30pm**)

Location: Open Space - 2nd floor (Monday **9:00am** to Thursday **11:00am**)

Date: Sunday, 18/May/2025

6:30pm - 9:00pm	**Welcome Reception** Location: Lobby Bar - Ground Floor

Date: Monday, 19/May/2025

9:00am - 9:30am	**Opening Ceremony** Location: Conference Room - 2nd floor Session Chair: **Pawel Rozga**, Lodz University of Technology, Poland
9:30am - 10:30am	Hans Tropper Lecture Session Chair: **Abderrahmane Beroual**, Ecole Centrale de Lyon, France
	ID: 1186 **Applications of Ester Liquids in Power Transformers** **Issouf Fofana** ViAHT - UQAC, Canada
10:30am - 11:00am	**Coffee Break** Location: Open Space - 2nd floor

11:00am - 12:30pm	**Oral Session no. 1: Dielectric Liquids in High Voltage Equipment I** Location: **Conference Room - 2nd floor** Session Chair: **Qiang Liu**, The University of Manchester, United Kingdom
	ID: 1112 **The Impact of Construction Materials of Power Transformers on Aging of Different Natural Ester Liquids** **Valentina Vasovic[1], Ahmed Gamil[2], Draginja Mihajlovic[1], Jelena Lukic[1]** [1]Nikola Tesla Institute of Electrical Engineering, Serbia; [2]HITACHI Energy, Germany **ID: 1184** **Studies on the partitioning of Furfural between liquid and paper insulation** **Saurabh Saurabh[1], Shanika Yasantha Matharage[1], Zhongdong Wang[1], Gordon Wilson[2]** [1]The University of Manchester, United Kingdom; [2]National Grid Electricity Transmission London, United Kingdom **ID: 1136** **View of Atmospheric DGA Gases in Sealed Wind Turbine Transformers Filled with Synthetic Ester – Early Leak Detections Indicators** **Muhammad Daghrah[1], Mahdi Rahmbeksch[2]** [1]MIDEL and MIVOLT FLuids Ltd, United Kingdom; [2]Enercon **ID: 1156** **Gas generation characteristics by partial discharge in rapeseed-oil and soybean-oil based natural ester liquids** **Taisei Homma, Yoshinobu Mizutani, Satoru Miyazaki** Central Research Institute of Electric Power Industry, Japan **ID: 1192** **Investigating adsorbent-based reclamation of aged natural ester fluids for transformer applications** **Leena Gautam[1], R. Sarathi[1], I. Fofana[2], U.M. Rao[3]** [1]Department of Electrical Engineering, Indian Institute of Technology Madras, India; [2]Department of Applied Sciences, University of Quebec at Chicoutimi (UQAC), Canada; [3]General Electric Research, USA **ID: 1102** **Understanding Natural Ester Insulation Liquid Performance during Transformer Energizing at Subzero Temperature** **Ahmed Gamil, Ali Al-Abadi** HITACHI Energy Germany AG, Germany
12:30pm - 1:45pm	**Lunch** Location: **Restaurant Premium - 1st floor**

1:45pm - 3:00pm	**Oral Session no. 2: Measurement Techniques and Material Characterization I** Location: **Conference Room - 2nd floor** Session Chair: **Lars E. Lundgaard**, SINTEF Energi AS, Norway
	ID: 1125 **Investigating Thermal Performance of Oil-Immersed Power Transformers at Low Ambient Temperatures** **Mohamed H. A. Hassan[1], Camilla Espedal[2], Athanasios C. Mermigkas[2], Inge Madshaven[2], Florian Bachinger[3], Nebojša Gavrilov[4], Uroš Plaznik[5], Hugo Campelo[6], Kaveh Niayesh[1]** [1]Norwegian University of Science and Technology (NTNU), Norway; [2] SINTEF Energy Research, Norway; [3]Siemens Energy Austria GmbH, Austria; [4]Končar Power Transformers Ltd, Croatia; [5]Kolektor Etra d.o.o, Slovenia; [6]Nynas AB, Sweden **ID: 1172** **An Experimental Study on Oil Impregnation Physics in Transformer Insulation** **Erik Hagström[1], Hans Edin[1], Durga Pawan Mahidhar Gorla[2], Jan Hajek[2]** [1]KTH - Royal Institute of Technology, Sweden; [2]HITACHI Energy, Sweden **ID: 1190** **Investigation on the Pyrolysis of Mineral Oil and Decane Stressed by Thermal Transformer Faults** **Kristin Homeier, Laureen Stahl, Peter Werle** Leibniz University Hannover, IfES, Schering-Institute, Germany **ID: 1137** **Is There Evidence of Transesterification of Cellulose in Ester Insulating Liquids** **Edward William Casserly, Griffin Allen Burk, Brooke Carpenter** Ergon, Inc, United States of America **ID: 1131** **Impact of Nanoparticles' Size on the Dielectric Properties of Synthetic Ester Oil** **Michail Pitsikalis[1], Konstantinos Koutras[1], Ioannis Triantafyllopoulos[2], Eleftheria Pyrgioti[2], Ioannis Gonos[3], Thomas Tsovilis[4], Georgios Peppas[1]** [1]Technical University of Crete, Greece; [2]University of Patras, Greece; [3]National Technical University of Athens, Greece; [4]Aristotle University of Thessaloniki, Greece
3:00pm - 3:30pm	**Coffee Break** Location: **Open Space - 2nd floor**

3:30pm - 4:30pm	**Oral Session no. 3: Electrohydrodynamics / Fluid dynamics** Location: **Conference Room - 2nd floor** Session Chair: **Pedro A Vazquez**, Universidad de Sevilla, Spain
	ID: 1169 **Impact of External Flow Direction on Heterocharge Layers Morphology of EHD Conduction Pumping** **Jamal Yagoobi, Alexander Castaneda** Worcester Polytechnic Institute, United States of America **ID: 1120** **Pressure-flowrate characteristics of electrohydrodynamic conduction pump with rod-ring electrodes including reverse flow range** **Masahito Nishikawara[1], Genki Seshimo[2], Takeshi Miyakita[3], Hiroshi Yokoyama[2]** [1]Nagoya University, Japan; [2]Toyohashi University of Technology, Japan; [3]Japan Aerospace Exploration Agency, Japan **ID: 1110** **A novel ion-drag pump system for thermal management** **Alberto Navarro-Calvo[1,2], Mathieu Legrand[1], Patricia Vega-Martínez[2], Marta Platon-Alvarez[1]** [1]Universidad Politécnica de Madrid, Spain; [2]Cedrion C.T.I., Spain **ID: 1140** **Optical Measurement of Electrically Induced Resonance in Sessile Liquid Metal Drops: A Method for Mechanical Characterization.** **Laurent Davoust, Rémi Simon** SIMaP Laboratory, Grenoble-Alpes University, France
4:30pm - 5:30pm	**Free Time**
5:30pm - 6:00pm	**Bus Transportation to EC1**
6:00pm - 10:00pm	**Evening Event - EC1**

Date: Tuesday, 20/May/2025

9:00am - 10:30am

Oral Session no. 4: Basic Properties and Fundamental Studies I
Location: **Conference Room - 2nd floor**
Session Chair: **Pavel Trnka**, University of West Bohemia, Czech Republic

ID: 1167

Dynamics of Droplets in Water Vapor Condensation Process under Non-Uniform Electric Field

Dian Li, Guangze Liu, Zirui Xu, Yuhang Zhang, Jian Wu

Harbin Institute of Technology, China

ID: 1181

Multipole Expansion for the Calculation of Field-Dependent Molecular Ionization Potentials

Ingrid Dybdal[1], Inge Madshaven[2], Per-Olof Åstrand[1]

[1]NTNU - Norwegian University of Science and Technology, Norway; [2]SINTEF Energy Research, Norway

ID: 1143

A Method to Estimate Minimum Partial Discharge Inception Electric Field of Metallic Particles with Various Shapes in Mineral Oil

Hirotaka Muto[1], Shigeyoshi Yoshida[1], Yoshinobu Kitagawa[2], Kenichi Mino[2], Yoichi Nakashima[2], Mitsugu Ueda[2], Tadao Minagawa Minagawa[2]

[1]Advanced Technology Research and Development Center, Mitsubishi Electric Corporation, Japan; [2]Transmission & Distribution Systems Center, Mitsubishi Electric Corporation, Japan

ID: 1100

Electron drift mobility in H2 gas at low temperature

Armando Francesco Borghesani[1,2], Jacopo Pazzini[1,2], Madiha Makhdoom[1,2], Giovanni Carugno[2], Giuseppe Messineo[2]

[1]Università degli Studi di Padova, Italy; [2]Istituto Nazionale di Fisica Nucleare, sez. Padova, Italy

ID: 1178

Analysis of E-field-Dependent Polarization of Triglyceride Ester Oil Molecules Using DFTB-MD Simulations

Maja Kobus

Technical University of Applied Sciences Würzburg Schweinfurt, Germany

ID: 1159

Evaluation of Physicochemical and Dielectric Properties of Mineral oil – Natural Ester Mixtures under various Ageing Conditions: Implications for Retrofilled Transformers

Andrés Montero[1], Belén García[1], Shanika Matharage[2]

[1]Universidad Carlos III de Madrid, Spain; [2]The University of Manchester, United Kingdom

10:30am - 11:00am	**Coffee Break** Location: Open Space - 2nd floor
11:00am - 12:30pm	Oral Session no. 5: Prebreakdown and Breakdown Phenomena in Liquids I Location: Conference Room - 2nd floor Session Chair: **Feipeng Wang**, Chongqing University, China
	ID: 1161 **Lightning Impulse Breakdown and Acceleration Voltages of a Synthetic Ester Liquid at Large Gaps** **Arif Adam Bin Mohd Nor[1], Qiang Liu[1], Zhongdong Wang[1], Attila Gyore[2], James Reid[2]** [1]The University of Manchester, United Kingdom; [2]MIDEL & MIVOLT Fluids Ltd, United Kingdom **ID: 1127** **Positive streamer back-strokes from a propagating negative streamer head in transformer oil in a long 80 mm gap** **Torstein Grav Aakre, Lars Lundgaard** SINTEF Energy Research, Norway **ID: 1122** **Analysis of dielectric properties of selected ester based dielectric liquids at negative lightning impulse voltage** **Filip Stuchala[1], Pawel Rozga[1], Daniel Kolankiewicz[1], Fabio Scatiggio[2], Giorgio Campi[2]** [1]Lodz University of Technology, Poland; [2]A&A Fratelli Parodi, Italy **ID: 1203** **Underwater wire-guided discharges: Energy characteristics and pressure impulses** **Yifan Chai, Igor Timoshkin, Martin Given, Scott MacGregor** University of Strathclyde, United Kingdom **ID: 1150** **Space-charge effects on streamer propagation and acceleration voltage in transformer insulating liquids** **Lars E. Lundgaard, Torstein G. AAkre, Dag Linhjell, Inge Madshaven** SINTEF Energi AS, Norway **ID: 1173** **Discharge Inception and Breakdown of the Oil-Wedge Type Electrode Model Insulated with GTL based Dielectric Liquids** **Pawel Rozga[1], Filip Stuchała[1], Marco Milone[2], Ed van Schaik[3], Konrad Strzelecki[1], Dominik Gońda[1]** [1]Lodz University of Technology, Poland; [2]SGB-SMIT, Germany; [3]Shell (SDSI), Projects & Technologies (PTX/T/E), The Netherlands

12:30pm - 1:45pm	**Lunch** Location: Restaurant Premium - 1st floor
1:45pm - 3:00pm	**Oral Session no. 6: Basic Properties and Fundamental Studies II** Location: Conference Room - 2nd floor Session Chair: **Igor Timoshkin**, University of Strathclyde, United Kingdom
	ID: 1197 **The Moisture Absorption Characteristics and its Influence on Power Frequency Breakdown Voltage of Silicone Oil and Mineral Oil** **Hangyue Mei, Shengyuan Cui, Zhou Zuo, Chao Wu, Xidong Liang** Tsinghua University, China **ID: 1209** **Dynamic Behavior of Fillers in Liquid Dielectrics: Dielectrophoretic Orientation under Square Wave Voltage for Enhancing Charge Transport in Composites** **Huanmin Yao[1,2], Andrea Cavallini[2], Maoqun Shen[1], Wenrui Tian[1], Haoxiang Zhao[1,3], Haibao Mu[1], Guanjun Zhang[1]** [1]Xi'an Jiaotong University, China; [2]University of Bologna, Italy; [3]Eindhoven University of Technology, The Netherlands **ID: 1188** **Local field factors in dielectric liquids: cyclohexane and ethyl laurate** **Ingrid Dybdal[1], Inge Madshaven[2], Per-Olof Åstrand[1]** [1]NTNU - Norwegian University of Science and Technology, Norway; [2]SINTEF Energy Research, Norway **ID: 1195** **Effect of Metal Organic Frameworks on Dielectric Characteristics of Mineral Oil** **Manas Chakraborty[1], Ambuj Kumar[2], Sisir Kumar Nayak[2]** [1]Central Power Research Institute, India; [2]Indian Institute of Technology Guwahati, India **ID: 1155** **Electrostatic Charging Tendency (ECT) of Natural Ester-Based ZnO, TiO2 and CuO Nanofluids** **Paweł Jan Skotnicki[1], Abderrahmane Beroual[2], Maciej Władysław Jaroszewski[1]** [1]Wroclaw University of Science and Technology, Poland; [2]Ecole Centrale de Lyon, France

3:00pm - 4:45pm	**Poster Session: All Topics (including coffee/tea refreshment)** Location: **Open Space - 2nd floor** Session Chair: **Luigi Calcara**, University of Roma "La Sapienza", Italy Session Chair: **Filip Stuchała**, Lodz University of Technology, Poland
	ID: 1103 **Testing of some performance of insulating system with biodegradable ester** **Pavel Trnka[1], Jaroslav Hornak[1], Ondřej Michal[1], Zdislava Mokra[1], Stefan Hardon[2], Jozef Kudelcik[2], Zdenek Frana[1], Jan Leffler[1], Tetjana Tomaskova[1]** [1]University of West Bohemia, Czech Republic; [2]UNIZA, Slovakia **ID: 1175** **Evaluation of Dielectric and Insulation Properties of Various Fluorinated Liquids and Analysis Using Molecular Descriptors** **Shota Suenaga, Ryuto Tomaiwa, Takahiro Okamoto, Motoo Tsuchie, Shoya Kawano, Masayuki Hikita, Masahiro Kozako** Kyushu Institute of Technology, Japan **ID: 1128** **Assessing the stability of dielectric properties and viscosity of natural ester oils under aging and temperature changes** **Alai Muniozguren[1,2], Itsaso Artetxe[1,2], Juan F. Sevillano[1,2], Gorka Onederra[1], Ian Gilbert[3], Maite Mujika[1,2]** [1]CEIT-Basque Research and Technology Alliance (BRTA), Spain; [2]Universidad de Navarra, Spain; [3]Ormazabal Corporate Technology, Spain **ID: 1201** **Inspection of factory transformers** **Michał Koch[1], Ewa Kałużna[2], Paweł Albrechtowicz[1]** [1]Cracow University of Technology, Poland; [2]Silesian University of Technology, Poland **ID: 1113** **Surface discharge over rock in transformer oil** **Jozef Kúdelčík, Štefan Hardoň, Samuel Mužila** University of Zilina, Slovak Republic **ID: 1180** **Precautionary Analysis of the Design Aspects of a Preventive Autotransformer to Eliminate Its Potential Impact on the Results of DGA of Transformer Oil** **Kacper Blus[1,2], Grzegorz Drygała[1], Michał Kaczmarek[2]** [1]HITACHI Energy, Poland; [2]Lodz University of Technology, Poland

ID: 1158

Effect of Dissolved Water in Ester Insulating Oils on the Discharge Characteristics under AC and Lightning Impulse Voltages

Katsunori Miyagi, Takuma Kinoshita, Satoshi Nambu, Shu Miyashita, Ryoichi Hanaoka

Kanazawa Institute of Technology, Japan

ID: 1121

Application of Convolutional Neural Networks for classification of oil-based OLTC defects using acoustic emission data

Michał Włodarz, Andrzej Cichoń

Opole University of Technology, Poland

ID: 1196

Comparative Analysis of Optical Emission Spectra Emitted by Electrical Discharges in Insulating Liquids Under Direct and Alternating Voltage

Michał Kozioł, Tomasz Boczar, Michał Kunicki, Łukasz Nagi, Dariusz Zmarzły

Opole University of Technology, Poland

ID: 1101

Analysis of the influence of the degree of mixing of insulating oil with synthetic ester on the dielectric loss factor of impregnated electrotechnical papers in a wide frequency spectrum

Stefan Wolny

Opole University of Technology, Poland

ID: 1202

Application of Artificial Intelligence Tools for Partial Discharge Classification

Oskar Zmarzly, Tomasz Boczar, Michal Koziol

Opole University of Technology, Poland

ID: 1118

Electron thermalization in para-H2 at very low temperature

Madiha Makhdoom[1,2], Giusppe Messineo[2], Jacopo Pazzini[1,2], Armando Francesco Borghesani[1,2], Giovanni Carugno[2]

[1]Università degli Studi di Padova, Italy; [2]Istituto Nazionale Fisica Nucleare, sez. Padova, Italy

ID: 1114

Green Insulation System for Transformers in MVDC and HVDC Energy Networks

Joyce Jacob[1,2], Ayyoub Zouaghi[2], Anatoli Serghei[3]

[1]Muthoot Institute of Technology and Science, India; [2]Ecole Centrale de Lyon, France; [3]Ingénierie des Matériaux Polymères University Claude Bernard, France

ID: 1115

Investigating the Effect of Nanofillers on the Electrical Conductivity of Dielectric Liquids and their Impregnated Pressboard

Joyce Jacob[1], Ayyoub Zouaghi[1], Anatoli Serghei[2]

[1]Ecole Centrale de Lyon, France; [2]Ingénierie des Matériaux Polymères University Claude Bernard, France

ID: 1116

DC Creepage Flashover Properties on Overlapping Structures of Pressboards in Transformer Oil

Yoshitaka Miyaji, Shigeyoshi Yoshida, Hirotaka Muto

Mitsubishi Electric Corp., Japan

ID: 1154

AC Dielectric Strength in Natural Ester and Natural Ester-Based ZnO, TiO2 and CuO Nanofluids

Paweł Jan Skotnicki[1], Maciej Władysław Jaroszewski[1], Abderrahmane Beroual[2]

[1]Wrocław University of Science and Technology, Poland; [2]Ecole Centrale de Lyon, France

ID: 1117

Simulation of Streamer Propagation in Ester-Based Insulating Oil Considering Electron Saturation Velocity

Bojun Li, Feipeng Wang, Shi Li, Sichen Yan, Zhi Wang, Ying Zhang, Jian Zhou, Jian Li

Chongqing University, China

ID: 1185

PDIV characteristics of Natural Ester-based nanofluids and the Impact of varying Moisture Content under Oxidative aging

Satyajeet Anand, Ambuj Kumar, Deepak Kanumuri, Sisir kumar Nayak

IIT Guwahati, India

ID: 1205

Physiochemical and Thermal Assessment of Mineral oil Aged Silicone Rubber Nano/Micro Composites

Dhanunjaya Naidu Vangapandu[1], Palash Mishra[1], Jatoth Varun[1], Soumya Chatterjee[2], Chillu Naresh[3], Neel Mani[4], Pawel Rozga[5], Luigi Calcara[6]

[1]National Institute of Technology Warangal, India; [2]National Institute of Technology, Durgapur, India; [3]Vellore Institute of Technology, Andhra Pradesh, India; [4]NKT HV Cables AB, Sweden; [5]Lodz University of Technology, Poland; [6]University of Roma "La Sapienza", Italy

	ID: 1204 **Surface Morphological and Infrared Thermographic Assessment of Natural Ester Oil Aged Silicone Rubber Microcomposites** **Jatoth Varun[1], Palash Mishra[1], Dhanunjaya Naidu Vangapandu[1], Soumya Chatterjee[2], R. Sarathi[3], Ashish Paramane[4], Pawel Rozga[5], Filip Stuchala[5]** [1]National Institute of Technology Warangal, India; [2]National Institute of Technology Durgapur, India; [3]Indian Institute of Technology Madras, India; [4]National Institute of Technology, Silchar, India; [5]Lodz University of Technology, Lodz, Poland **ID: 1139** **Enhancing Dielectric Properties of Aged Mineral and Natural Ester Oils with Nanofillers** **Manal M. Emara[2], Diaa-Eldin A. Mansour[3,4], Georgios D. Peppas[5], Ioannis F. Gonos[1]** [1]National Technical University of Athens, Greece; [2] KafrElsheikh University; [3]Tanta University; [4]Egypt-Japan University of Science and Technology (E-JUST); [5]Technical University of Crete, Greece **ID: 1165** **Effect of Fullerene Nanoparticles on Creeping Discharges Propagating Over Solid-Liquid Interfaces Under Impulse Voltage** **Hocine Khelifa, Abderrahmane Beroual, Eric Vagnon** AMPERE Lab, France **ID: 1206** **Modeling of Space Charge Accumulation in Oil-Paper Insulation of Converter Transformer under Polarity Reversed Voltage** **Wu Lu, Ge Sun, Kexian Li, Zheming Wang, Wenqiang Zhou, Hua Yang, Chen Yang, Qinglian Shi** Shanghai University of Electric Power, China **ID: 1179** **Design Insulation Level for new biodegradable liquids.** **Maciej Lalik[1,2], Bartłomiej Pasternak[1], Grzegorz Drygała[1], Pawel Rozga[2]** [1]HITACHI Energy, Poland; [2]Lodz University of Technology, Poland **ID: 1153** **Experimental Investigation of Nanoparticle Sedimentation in Nano-Enhanced Natural Ester Insulating Fluids Using Acoustic Spectroscopy** **Stefan Hardon[1], Jozef Kudelcik[1], Pavel Trnka[2]** [1]University of Zilina, Slovak Republic; [2] University of West Bohemia, Czech Republic
4:45pm - 5:30pm	**Free Time**
5:30pm - 6:00pm	**Bus Transportation to Poznanski Palace**

6:00pm - 9:30pm	**Evening Event - Poznanski Palace**

Date: Wednesday, 21/May/2025

9:00am - 10:30am	**Oral Session no. 7: Next Generetion Dielectric Liquids - IEEE TC Liquid Dielectrics Session** Location: **Conference Room - 2nd floor** Session Chair: **Issouf Fofana**, ViAHT - UQAC, Canada

ID: 1138

Dielectric Liquids for Insulation and Cooling: An Electric Vehicle Perspective

Issouf Fofana[1], Ungarala Mohan Rao[2], Pawel Rozga[3], Abderrahmane Beroual[4], Mark Lashbrook[5], Juan Acosta[5]

[1]ViAHT - UQAC, Canada; [2]GE Corporate Research, USA; [3]Lodz University of Technology, Poland; [4]AMPERE Lab., Ecole Centrale de Lyon, France; [5]Midel&Mivolt, USA

ID: 1146

Thermo-Electrical Performance Evaluation of a Bio Based Synthetic Ester Dielectric Immersion Coolant by Functional Testing

Beau Van Vaerenbergh[1], Marion Kerbrat[2], Pieter Struelens[1]

[1]Oleon NV, Research & Development, Belgium; [2]Oleon SAS, Research & Development, France

ID: 1124

Aging and Air Infusion Effects on the Performance and Longevity of Polyol Ester-Based Immersion Cooling Fluids for Data Centers

Amir Farrokh Farzaneh[1], Eva Gustavsson[2], Martin Olofsson[2]

[1]Perstorp AB, Sweden; [2]Perstorp AB, Sweden

ID: 1144

Breakdown Characteristics of Streaming Lubricating Oil toward Higher Power Density Motors for Electric Powered Aircraft

Naoki Hayakawa[1], Naoki Nakazawa[1], Shimpei Noguchi[1], Hiroki Kojima[1], Nobuo Aruga[2], Kiyoshi Utatsu[2], Shunya Watanabe[2]

[1]Nagoya University, Japan; [2]SINFONIA TECHNOLOGY CO., LTD., Japan

ID: 1108

Effects of Thermal Aging on the Electrical, Dielectric and Thermophysical Properties of Cooling and Insulation Liquids in Electric Aircraft

Laureen Stahl, Kristin Homeier, Büsra Özdemir, Peter Werle

Leibniz University Hannover, Germany

	ID: 1170 **Compatibility of ester-based cooling lubricants with solid materials in motors** **Zhi Wang[1], Feipeng Wang[1], Zhengyong Huang[1], Jiacheng Zhang[1], Bojun Li[1], Yihua Qian[2], Qing Wang[2], Jian Li[1]** [1]Chongqing University, China; [2]Guangdong Power Grid Co Ltd., Elect Power Research Institute, China
10:30am - 11:00am	**Coffee Break** Location: **Open Space - 2nd floor**
11:00am - 12:30pm	**Oral Session no. 8: Dielectric Liquids in High Voltage Equipment II** Location: **Conference Room - 2nd floor** Session Chair: **Georgios Peppas**, Technical University of Crete, Greece
	ID: 1107 **Enhanced Thermal and Moisture Distribution Modelling for Ester Insulating Liquid-filled Transformers** **Ali Al-Abadi[1], Jakub Bobrowski[2], Ahmed Gamil[1]** [1]HITACHI Energy, Germany; [2]HITACHI Energy, Poland **ID: 1130** **The influence of natural ester aging conditions on its neutralization value in terms of the limits given in the IEC 62975** **Dominika Szcześniak, Piotr Przybyłek** Poznan University of Technology, Poland **ID: 1133** **The effect of selected experimental conditions on DGA key gas ratios during simulated thermal faults in a bench-top test rig** **Pär Wedin, Elena Minchak, Jessica Singh, Robert Fairholm, Hugo Campelo** NYNAS AB, Sweden **ID: 1160** **Experimental study of the effect of moisture and temperature on the dielectric properties of kraft paper impregnated in biodegradable transformer liquid** **Ismael Antolín Maestre, Inmaculada Fernández Diego, Cristian Olmo Salas, Fernando Delgado San Román, Cristina Méndez Gutiérrez** Universidad de Cantabria, Spain **ID: 1162** **Assessment of Natural Ester Retrofilling Effects on Transformer Lighting Impulse Behaviour Regarding to Safety Margins of Transformer Insulation: A Case Study on a 180 MVA, 400/36 kV Power Transformer** **Ozan Ali Mutlu[1], Belen García[2], Andrés Montero[2]**

	[1]Best Transformer, Turkey; [2]Universidad Carlos III de Madrid, Spain **ID: 1211** **Electrical discharges in dielectric fluids, correlation between amount of energy delivered and dissolved gases produced** **L. Calcara[1], C.A. Serafino[2], G. Maffei[2], E. Breda[2], G. Tontoli[2], D. Rocconi[2], D. Gasparini[2], A. Santoro[2], D. Gamba[2], M. Mezzano Cont[2], C. Favata[2], M. Pompili[1]** [1]University of Roma "La Sapienza", Italy; [2]Terna Rete Italia, Italy
12:30pm - 1:45pm	**Lunch** Location: **Restaurant Premium - 1st floor**
1:45pm - 3:00pm	**Oral Session no. 9: Measurement Techniques and Material Characterization II** Location: **Conference Room - 2nd floor** Session Chair: **Armando Francesco Borghesani**, Univeristà degli Studi di Padova, Italy
	ID: 1199 **Dielectric Response Analysis of Nano-Impregnated Pressboard in Natural Ester Oil Incorporating TiO2 and Fe3O4 Nanoparticles** **Ambuj Kumar[1], Deepak Kanumuri[1], Niharika Baruah[2], Sisir Kumar Nayak[1]** [1]Indian Institute of Technology, Guwahati, India; [2]The University of Manchester, United Kingdom **ID: 1106** **Comprehensive Regression Modeling for Evaluating Chemical Properties of Transformer Oil under Thermal Aging Conditions** **Sifeddine Abdi[1], Boubaker Achraf Besseri[1], Abderrahmane Haddad[2], Noureddine Harid[3], Ahmed Boubakeur[4]** [1]Medea University, Algeria; [2]Cardiff University, UK; [3]Khalifa University, UAE; [4]Ecole Nationale Polytechnique, Algeria **ID: 1142** **A new approach toward assessing transformer insulating paper condition via online optical detection of 2-FAL** **Letizia De Maria[1], Daniele Bartalesi[1], Francesco Arcadio[2], Nunzio Cennamo[2], Diego Chialvi[3], Carlo Roggero[3]** [1]RSE, Italy; [2]University of Campania, Spain; [3]Sea Marconi Technologies, Italy **ID: 1147** **New sensor technology for measuring the level of dielectric liquids such as cryogenic liquids** **Niusha Dashtpeyma, Nelly Bonifaci, Philippe Benech, Jean-Marc Duchamp** UGA-G2Elab, France **ID: 1182** **Partial Discharge Analysis of Natural Ester Oil Based Nanofluid Impregnated Pressboard Insulation.**

	Subhendu Sekhar Sahu[1], Deepak Kanumuri[1], Thirumurugan Chandrasekaran[2], Sisir Kumar Nayak[1] [1]Indian Institute of Technology Guwahati, India; [2]University of Warwick, United Kingdom
3:00pm - 3:30pm	**Coffee Break** Location: **Open Space - 2nd floor**
3:30pm - 4:30pm	**Oral Session no. 10: Basic Properties and Fundamental Studies III** Location: **Conference Room - 2nd floor** Session Chair: **Naoki Hayakawa**, Nagoya University, Japan
	ID: 1207 **Energy Characterisation of Spark Discharges in Water** **Ruairidh MacPherson, Igor Timoshkin, Martin Given, Scott MacGregor** University of Strathclyde, United Kingdom **ID: 1105** **Comparison of Polarization Phenomena and Changes in Relative Permittivity in Mineral- and Ester-Based Nanofluids** **Zdislava Mokrá, Pavel Trnka, Jaroslav Hornak, Ondřej Michal, Pavel Sláma** University of West Bohemia, Czech Republic **ID: 1164** **Frequency domain dielectric response of Thermally aged Mineral Oil-paper Insulation Retrofitted with Ester Oils** **Brahma Swarup Laha[1], Soumya Chatterjee[1], Arup Kumar Das[2]** [1]National Institute of Technology, Durgapur, India; [2]Indian Institute of Technlogy, Benaras Hindu University, India **ID: 1177** **Investigation of Liquid Insulating Materials for Power Module Encapsulation: Effects on Partial Discharge and Electric Field Characteristics** **Ryuto Tomaiwa, Shota Suenaga, Takahiro Okamoto, Motoo Tuchie, Masayuki Hikita, Masahiro Kozako** Kyushu Institute of Technology, Japan
4:30pm - 5:30pm	**Free Time**
5:30pm - 6:00pm	**Bus Transportation to Monopolis**
6:00pm - 11:00pm	**Gala Dinner – Monopolis**

Date: Thursday, 22/May/2025	
9:00am - 10:30am	**Oral Session no. 11: Dielectric Liquids in High Voltage Equipment III** Location: **Conference Room - 2nd floor** Session Chair: **Shanika Yasantha Matharage**, The University of Manchester, United Kingdom
	ID: 1194 **POST-MORTEM STUDY OF TWO 100 MW GSU POWER TRANSFORMERS** **Inmaculada Fernandez, Alfredo Ortiz** Universidad de Cantabria, Spain **ID: 1176** **Influence of Fe_3O_4, TiO_2, and Al_2O_3 Nanoparticles on Dielectric Strength of Natural Ester Oils** **Deepak Kanumuri[1], Subhendu Sekhar Sahu[1], Thirumurugan Chandrasekaran[2,4], Niharika Baruah[3], Sisir Kumar Nayak[1]** [1]Indian Institute of Technology Guwahati, India; [2]University of Warwick, United Kingdom; [3]The University of Manchester, United Kingdom; [4]TIFAC CORE Research Centre, India **ID: 1213** **Sensors and Actuators based Liquid Dielectrics** **Zhongyang Cheng** Auburn University, United States of America **ID: 1132** **Comparative evaluation of synthetic ester and mineral oil for compatibility with polymeric gaskets materials at high temperature – recorded presentation** **Sohan S Beldar, Jitendra D Patil, Girish A Morde, Narasimhan C S** Savita Oil Technologies Ltd, India **ID: 1206** **Modeling of Space Charge Accumulation in Oil-Paper Insulation of Converter Transformer under Polarity Reversed Voltage – recorded presentation** **Wu Lu, Ge Sun, Kexian Li, Zheming Wang, Wenqiang Zhou, Hua Yang, Chen Yang, Qinglian Shi** Shanghai University of Electric Power, China **ID: 1174** **Study on Physicochemical Properties of Liquid Crystal Based Natural Ester Insulation Oil – recorded presentation – recorded presentation** **Yizhou Jiang, Zhengyong Huang*, Jian Li, Feipeng Wang, Chen Zhao, Haoyu Guo** Chongqing University, China
10:30am - 11:00am	**Coffee Break** Location: **Open Space - 2nd floor**

11:00am - 12:00pm	**Closing Ceremony** Location: Conference Room - 2nd floor Session Chair: **Pawel Rozga**, Lodz University of Technology, Poland
12:30pm - 1:45pm	**Lunch** Location: Restaurant Premium - 1st floor

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