2022 INMR WORLD CONGRESS

Berlin, Germany
Oct 16-19, 2022 (tentative)

# Conference Program, Speakers & Topics (as of Sep 24, 2021)

**Session #1**

## Plenary General Session

This session will feature technical presentations for all Congress attendees.
*Chairman: Marvin Zimmerman, INMR, Canada*

**Session #2**

## Latest Developments in Insulator Design, Application & Inspection

This session will explore the latest technological developments aimed at optimizing insulator design and application as well as inspection processes and equipment to assess condition in service.
*Chairman: Dr. Igor Gutman, Independent Insulation Group, Sweden*

**Session #3**

## Technology & Service Experience in Application of Surge Arresters

This session will review technologies and experience in different applications of surge arresters to protect lines and substations.
*Chairman: Dr. William Chisholm, T&D Expert, Canada*

**Session #4**

## Testing & Condition Assessment of Cable Systems & Accessories

This session will discuss approaches and methodologies to test cable systems both in the laboratory and on-site as part of pre-commissioning or condition monitoring.
*Chairman: Paul Leufkens, Power Projects Leufkens, United States*

**Session #5**

## Site Severity Assessment & Line/Substation Design for Polluted Service Environments

This session will explain procedures to assess pollution exposure and severity of electrical infrastructure and to specify insulation design suitable for this environment.
*Chairman: Alberto Pigini, T&D Expert, Italy*

**Session #6**

## Testing & Certification Procedures to Ensure Application of Quality MV/HV Grid Components

This session will explore the most effective processes and procedures to qualify suppliers and their products prior to acquisition and application on power grids.
*Chairman: Dr. Iryani Mohamed Rawi, Tenaga Nasional Berhad, Malaysia*

**Session #7**

## Optimizing Material Properties & Production Technologies for Polymeric MV/HV Components for Power Grids

This session will focus on material properties and production technologies that allow optimized manufacture of consistently high-quality polymeric grid components.
*Chairman: Dr. Frank Schmuck, T&D Expert, Switzerland*

## Sedat Adili

Head of R&D, Brugg Cables, Switzerland

### Development & Testing New Insulating Gel for HV Dry Cable Accessories & Other Apparatus

Dr. Adili received his M.Sc. Degree from the Faculty of Electrical Engineering and Information Technology at the Vienna University of Technology in Austria and his Ph.D. at the Institute for Power Systems and High Voltage Technology, ETH in Switzerland. His research interests include dielectric phenomena, electric field control techniques, insulating materials and development of HV apparatus.

## Mohd Faris Ariffin

Specialist, Overhead Systems Design & Diagnostics, Asset Management Dept., Distribution Network Div., Tenaga Nasional Berhad, Malaysia

### Testing & Certification Procedures for MV Premoulded Aerial Bundled Cable Straight Through Joints

Ir. Faris obtained a B.Sc. in Engineering (Electrical) from Northern Arizona University and a Masters in Electrical Engineering from UNITEN, Malaysia. He joined TNB in 1991 where he worked on transmission lines and substations, regional control centre, SCADA and distribution network services. Since 2003, he has been working as Sr. Engineer/Technical Expert in Overhead Line Systems Design & Diagnostics, including MV aerial bundled cable systems. He is a registered Professional Engineer with Practicing Certificate with the Board of Engineers, a member of Institution of Engineers Malaysia and Honorary Secretary of CIRED Malaysia.

## Samuel Arturo Asto Soto

Transmission Line Coordinator, Power Grid of Peru, Peru

### Composite Insulator Performance in Aggressive Service Environments: Comparison vs. Coated Glass Insulators

Mr. Asto Soto is an Electrical Engineer, graduated in 2000 from the National University of the Center of Peru (UNCP 2000) with further studies in Masters of Business Administration at the University Ricardo Palma. He has detailed experience in management, planning and supervision of electrical maintenance and projects in mining, concentrating plants and high voltage electrical transmission systems. He is a member of the Working Group with Tension of the Regional Energy Integration Commission (TcT CIER). His work experience also includes high voltage maintenance in transmission lines, hot line work, corrosion protection in transmission electrical systems and insulation.

## Christiane Baer

Head of Material Development, Pfisterer, Switzerland

### Optimizing Silicone Rubber-Based Housing Materials for HV Composite Insulators in Outdoor Applications

Dr. Baer received a Diploma in Electrical Engineering from the University of Applied Sciences Zittau/Görlitz and a Dr.-Ing. Degree from the Technical University of Munich. She has worked for the past five years as Development Engineer for polymeric insulators and sets and Head of Material Development for composites. She contributes to CIGRE Working Groups related to material properties of polymeric materials for HV applications and is also active in IEC TC 112 & TC 36.

## Steve Bell

Engineering Manager, K-Line Insulators, Canada

### 1. Tower Framing Conversions Using Polymer Insulators

### 2. Interphase Spacer Applications

Mr. Bell holds a Bachelor of Applied Science ME degree from the University of Toronto and works as part of the engineering and development team devoted to new composite insulator and interphase spacer designs and applications. Among his current goals is further improving insulator performance through research and product testing. He is active in IEEE/PES, including NEMA and ANSI C29 Insulator Working Groups and participates in current IEEE e-field sensitivity studies and Guide updates.

## Jeff Butler

Sr. Product Manager, Hubbell Power Systems, United States

### 1. Understanding & Mitigating Corona on Polymer Insulators

### 2. Advancements in Braced Line Post Testing

Mr. Butler graduated from Georgia Tech (Georgia Institute of Technology) in Mechanical Engineering before entering the power utility industry in 2006. Since then, he has held various roles of international and U.S. domestic responsibilities in engineering, business development, sales and marketing. He is an internationally published author and presenter as well as a licensed professional engineer. In his current role, he is based in the manufacturing facility in Aiken, South Carolina.

## Paolo Cardano

R&D Sr. Expert for Bushings, GE Grid Solutions, Italy

### Designing & Testing Solid-Core Bushings for Pollution & Long Service Life

Dr. Cardano received his Doctoral Degree in Electrical Engineering from the Milano Polytechnic University. After graduation, he joined Passoni & Villa in various positions in the technical area. He is presently R&D senior expert at GE Grid Solution for OIP, HVDC and gas bushings and also in charge of development of UHV AC bushings. He has been president of the Italian Committee 36A - Bushings and is active in several CEI/IEC working groups. He has published numerous papers at international conferences.

## A. J. (Tony) Carreira

President, K-Line Insulators, Canada

### 1. Polymer Insulators & Live Line Work

### 2. Interphase Spacer Applications

Mr. Carreira received a degree in Electrical Engineering from the University of Waterloo after years working in the utility industry in distribution and transmission design, construction and maintenance. He is member of CIGRE, CSA, CEA and Sr. Member of IEEE and has chaired the IEEE TF 15.09.04.01 "Guidelines for the In-service Classification of NCI Damage" as well as ESMOL TF on IEEE Std 957 "Guide for Cleaning Insulators". He was appointed Assoc. Expert of WG 32 as well as Assoc. Member of B2-AG-06 and sits on related committees, working groups and task forces.

## William Chisholm

T&D Expert, Canada

**Chair, SESSION 3: Technology & Service Experience in Application of Surge Arresters**

### 1. Selecting Insulators for Metallic Earth Return on HVDC Lines

### 2. Developing Global Consensus: IEEE Standard 1820, Guide on Selection of T&D Insulators

Dr. Chisholm is an expert in the effects of adverse weather on overhead power lines, including lightning and grounding, icing on insulators and thermal rating. He has been an IEEE Fellow for a decade – a distinction given after his long career at Ontario Hydro and Kinectrics. He combines his consulting worldwide with teaching and writing for INMR as well as Wiley & McGraw Hill and also volunteers in the IEEE executive rotation as Chair and Past Chair of the PES T&D Committee. In 2017, he received the Claude de Tourreil Memorial Award for Lifetime Achievement in the Field of Electrical Insulators.

## Tim Condon

Quality Manager, Network Engineering, ESB Engineering, Ireland

### Insulation Design & Inspection Experience at ESB (Irish TAO): Lessons Learned

Mr. Condon received his Bachelor and Masters Degrees in Engineering from National University of Ireland Galway in Ireland and has over 22 years of experience in high voltage equipment manufacturing and the power utility industry. His current role with ESB Engineering and Major Projects includes such areas as substation design, HV cables, overhead line design, power system studies and smart grid solutions.

## Michele de Nigris

Director, Sustainable Development & Energy Sources, RSE, Italy

### Monitoring, Mapping, Modelling & Mitigating Pollution: Application Experience on the Italian Transmission System

Mr. de Nigris received his Degree in Electrical Engineering from the University of Genoa and now serves as Director of Sustainable Development & Energy Sources Department at RSE. He was elected Chairman, IEA Technology Collaboration Program International Smart Grids Action Network at the first Executive Committee Meeting. An expert in the study, research and testing of electrical components for more than 30 years, he has represented Italy at forums such as the European Electricity Grids Initiative. He is author of nearly 100 papers and has been coordinator of the GRID+ project.

## Héctor de Santos

R&D Engineer, La Granja Insulators, Spain

### Dimensioning Silicone-Coated Glass Insulators for Polluted Environments

Mr. de Santos received his Electrical Engineering Degree from the Technical University of Madrid and later completed his M.Sc. in Industrial Engineering. He is currently concluding the Ph.D. degree at the ICAI Engineering School of the Comillas Pontifical University. After working for different Spanish utilities as project engineer in the field of power lines, he joined Verescence La Granja Insulators as approvals and process development engineer. He is Sr. Member of IEEE, member of CIGRÉ and IEC and contributes to several international Technical Committees and Working Groups within these bodies.

## Frédéric Dubé

Product Engineer, Arresters, Hydro-Québec, TransEnergie, Canada

### Experience Detecting Faulty Arresters Using Thermal Imaging

Mr. Dubé graduated from Laval University in Québec and started his career at Hydro-Quebec as a Substation Designer involved in grounding, both permanent and temporary, working methods and later on short-circuit management. He moved towards high voltage apparatus around 2010, since which he serves as Product Engineer for arresters, working in apparatus specification, qualification and technical support. He is a member of l'Ordre des Ingénieurs du Québec and is involved in IEC TC37, where he is Convenor of MT10

## Chris Engelbrecht

Consultant, EPRI, United States/Netherlands

### Approach to Select & Dimension Polymer Insulators for Polluted Conditions

Mr. Engelbrecht has been internationally active in the field of insulation co-ordination since 1990. He convened CIGRE WG C4.303 that has completed the Guidelines for selecting HVDC insulators with respect to pollution. He has been Convener of CIGRÉ Working Group C4.23 as well as a member of IEC TC36 WG.

## Ryan Freeman

Product Manager, Hubbell Power Systems, United States

### Latest Developments in Fire Mitigation Products

Mr. Freeman received his BSc in Mechanical Engineering from the Univ. of South Carolina. He joined Hubbell Power Systems in 2011 as a Design Engineer. Since 2016, he has been an Application Engineer responsible for the design and market of distribution and transmission line arresters. He is a member of the IEEE 693 Seismic Design for Substation WG. He is also a member of CIGRE WG C4.39.

## Ricardo Wesley Salles Garcia

Researcher, Transmission Lines & Equipment Dept., Electrical Energy Research Center (CEPEL), Brazil

### Using Environmental Parameters to Create Pollution Maps for Power Utilities: Experience in Brazil

Mr. Garcia received his Bachelor Degree in Electrical Engineering and MSc in High Voltage Engineering from Rio de Janeiro Federal University. Since 1985, he has worked in the Transmission Lines and Equipment Department at Brazil's Electrical Energy Research Center (CEPEL). His research activities are related to ageing and pollution tests on insulators as well as live line maintenance of overhead transmission lines. He is Chairman of the Brazilian Cigré Working Group for Insulators and also active in various international WGs.

## Michel Gehrig

Engineer & Project Manager, Hübers Verfahrenstechnik Maschinenbau, Germany

### Optimized Processing of High Viscosity Liquid Silicone Rubbers for Large Electrical Components

Mr. Gehrig studied material science at the Swiss Federal Institute of Technology in Zurich. He then worked for 9 years as Leader of the Application Laboratory for Electrical Applications at resin supplier, Ciba-Geigy. He later worked as Managing Director of an equipment supplier and mold maker. Currently, he serves as Sales Engineer and Project Manager at one of the leading suppliers of mixing and dosing equipment for thermosetting materials.

## Jean-Marie George

Scientific Director, Sediver, France

### 1. Silicone Coating of Insulators: Latest Technical Knowledge Based on Field Performance & Laboratory Testing
### 2. AC & DC Pollution Testing Methods: Accuracy & Limitations
### 3. Simulation of Electric Field: What & What Not to Expect

Mr. George received his Electrical Eng. Degree from the HEI School in France and joined Sediver as Research Engineer in 1986. After working as Production Manager for the Composite Insulator Division and Quality Mgr. and Technical Dir. for North America, he is now Scientific Director, with responsibilities covering R&D and technical assistance worldwide. His cross-functional positions with more than 30 years of experience have given him expertise in insulator performance as well as research and development. He has published and co-authored extensively on overhead lines, with 40 papers and articles and he is also author/co-author of patents and utility models. He is a member of CIGRE, IEEE, NEMA, ANSI and CSA as well as 2018 recipient of the Claude de Tourreil Memorial Award for Lifetime Achievement in Electrical Insulators.

## Florent Giraudet

Sales Director, Tridelta Meidensha, Germany

### 1. Externally Gapped Line Arresters: Reviewing 40 Years Service Experience
### 2. Mechanical Considerations & Service Life of Non-Gapped Line Arresters

Mr. Giraudet received a Dipl.-Ing. Degree in Industrial and Electrical Engineering from CESI in Lyon, France in 2010. He joined Siemens Grenoble where his focus was on retrofit of GIS & AIS switchgear and later Siemens, Germany as Application Engineer for surge arrester technologies. In this role, he was responsible for business development of overhead line solutions that include applications of transmission line arresters as well as polymeric insulators. In 2020 he took over Sales & Marketing responsibilities for surge arresters at Tridelta Meidensha.

## Josef Grindling

Project Manager, Vogel moulds and machines, Switzerland

### Innovative Manufacturing Processes & Technologies for Liquid Silicone Rubber

Dr. Grindling graduated from the Montanuniversität Leoben in Austria with a Degree in Polymer Engineering and Science. Later, while working, he completed his Doctorate in Mechanical Engineering from the University Paderborn in Germany and his MBA from the University of Zurich in Switzerland. He was employed for 20 years with Ciba Geigy/Novartis, Ciba Specialty Chemicals and Huntsman Advanced Materials in positions such as Technical Service Engineer, Head Application Technique Power, Manager Processing & Testing and Technology Manager Composites. He joined Vogel moulds and machines AG in 2018.

## Edward Gulski

CEO, onsite hv solutions, Switzerland

### Developments in Test Methods & Acceptance Criteria for On/Offshore Power Cables

Dr. Gulski, an IEEE Fellow, received his M.Sc. in information technology from Dresden Univ. of Technology, a Ph.D. from Delft Univ. of Technology and a Doctor Habilitatus from Warsaw Univ. of Technology. A former Professor at Poznan Univ. of Technology and most recently at Lodz Univ. of Technology, he is CEO of an organization of independent companies providing knowledge to power utilities. He has served as Chairman of 4 Cigré Working Groups and is presently Chairman IEEE Working Group PE/IC/F05W/400.4 P400.4, Chairman of IEEE PES ICC Sub G TNL and Swiss member of Cigré WG B1.38. He is author/co-author of 380 publications and 3 books on HV Diagnostics and Asset Management.

## Igor Gutman

Independent Insulation Group, Sweden

**Chair, SESSION 2: Latest Developments in Insulator Design, Application & Inspection**

### 1. Development of IEC-Based Methodology for Site Severity Assessment
### 2. Application of Composite Insulators: Perceptions vs. Service Experience
### 3. Status of Pollution Test Procedures for Insulators Made from Hydrophobicity Transfer Materials

Dr. Gutman received his MSc and PhD in HV engineering from Leningrad Polytechnic Institute and has experience covering 40 years. In 1994 he joined STRI where his main areas of activity included dimensioning and maintenance of insulation in clean and polluted environments; ageing characteristics and accelerated ageing tests. He has published over 200 papers and is a Sr. Member of IEEE. He is also a member of Swedish IEC TC 36 “Insulators”, Distinguished Member of CIGRE and active in working groups within CIGRE/IEC/IEEE. He was 2012 recipient of the Claude de Tourreil Memorial Award for Lifetime Achievement in the Field of Electrical Insulators and also received IEC’s 1906 Awards in recognition of service to technical standards.

## Shakir Hafeez

General Manager & Head of Transmission Lines, National Engineering Services, Pakistan

### Selecting Optimal Outdoor Insulation Under Heavily Polluted Conditions

Mr. Hafeez obtained his BSc & MSc in Electrical Engineering at the University of Technology & Engineering in Lahore and over his career has had extensive experience in design and control of HV and EHV transmission line projects. He has supervised project planning and scheduling, including conceptual design, cost estimation and design of transmission lines and is an expert in preparing bid documents outlining drawing of towers, insulators, line hardware and accessories. His industry experience also includes inspection and type testing of transmission line material to ensure compliance with specifications. He is also responsible for conductor optimization and insulation coordination under applicable climatic conditions as well as isokeraunic and pollution levels.

## Nik Hakimi Nik Ali

Sr. Lecturer, Universiti Teknologi MARA (UiTM), Technical Evaluator, TNB Labs, Malaysia

### Documentation & Technical Evaluation for Product Certification of MV/HV Network Components

Dr. Nik Hakimi received his B.Eng. in Electrical Power Engineering from the Universiti Tenaga Nasional in Malaysia and a Ph.D. in Electronics and Electrical Engineering from the University of Southampton in the U.K. He worked as a post-doctoral researcher at the Institute of Power Engineering and currently is Sr. Lecturer at the School of Electrical Engineering, College of Engineering, Universiti Teknologi. He also serves as Technical Evaluator at Tenaga Nasional Berhad (TNB) Labs. His research interests include condition monitoring of HV cables and transformers, PD measurement, HV insulation/dielectric materials, transformer rating analysis and applied signal processing.

## Huzainie Shafi Bin Abd Halim

Cable Specialist, Transmission & Distribution, TNB Research, Malaysia

### Condition Assessment of Long Length Medium Voltage Underground Cable Using Dual Side Offline Partial Discharge Measurement

Mr. Ts. Huzainie received his Bachelor of Electrical & Electronic Engineering from the University of Portsmouth, U.K. and a Master of Electrical Engineering from Tenaga Nasional University. He is Registered Professional Electrical Engineer and Professional Technologist in Electrical & Electronics. He is currently attached with the High Voltage Diagnostic Research Group at TNB Research where his main focus is on quality assurance, product inspection, insulation diagnostic, failure analysis and assessing remaining life of power cables.

## Kjell Halsan

Manager, Electro-Mechanical Section of Transmission Lines, Statnett, Norway

### Technical, Environmental & Ethical Aspects for Evaluation of Suppliers for OHL Components

Mr. Halsan received a Master of Science in Electrical Power Engineering from the University of Science and Technology in Trondheim and has been involved in electro-mechanical engineering of transmission lines at Norwegian TSO, Statnett, since 1988. This work included participating in various research projects on electrical components and engineering tools for transmission lines. He has been active in many Cigre working groups, both as Convener and as Member and is currently Convener of B2-CAG.

## HE Jinliang

Professor, Dept. of Electrical Engineering, Tsinghua University, China

### Deeply Suppressing Overvoltage of 1000 kV AC UHV Power Grid by Low Residual Voltage Surge Arresters

Professor He received a PhD in high voltage engineering from Tsinghua University in Beijing in 1994. Currently, he is a Cheung-Kong Scholar Distinguished Professor of the Ministry of Education of China in the Department of Electrical Engineering, Tsinghua University and leads the university’s High Voltage and Insulation Technology Research Institute. His research interests include lightning and overvoltage protection technology, advanced power transmission technology, sensor network and big data mining, nanodielectric materials for recycling HVDC cable and environment-friendly gas-insulated power transmission lines. He was Chairman of several international conferences, is Convener of CIGRE C4.26 and a Fellow of IEEE and IET.

## Sam He

Overseas Sales Manager, Dekuma Rubber and Plastic Technology, China

### Selecting Injection Machines for Manufacturing Polymeric Insulators & Hollow Core Insulators

Mr. He has worked at Dekuma for over 10 years. His long experience interacting with composite insulator manufacturers from all over the world has given him an understanding of what is involved when choosing the best machines to meet the needs.

## Roger Hedlund

Technical Specialist & Product Manager, Hitachi ABB Power Grids, Sweden

### Full-Scale Comparative Testing of Helical & Concentric Shed Profiles

Mr. Hedlund earned his M.Sc. in Mechanical Engineering from the Royal Institute of Technology in Stockholm and joined ABB in 1993 working with high voltage capacitors and later at the HVDC power transmission systems site in India. He has had positions in manufacturing management and R&D of high voltage products for over 20 years, including Project Manager for development and production of dry bushings in the ABB Components unit.

## Dennis Hore

Department of Chemistry, University of Victoria, Canada

### Characterizing Polymer Surfaces to Optimize Insulator Performance & Characteristics

Dr. Hore obtained his Ph.D. in Chemistry at Queen's University and in Physics at the Royal Military College. He then became a post-doctoral fellow at the University of Oregon, studying solvent and surfactant structure using a variety of computational and spectroscopic techniques. He joined the Chemistry Department at the University of Victoria in 2006, where he develops advanced optical methods and complementary theory to resolve fine structural details of molecules adsorbed at the solid-liquid interface, with special interest in influence of water on interfacial polymer structure. Through collaboration with ASAsoft (Canada), he has been studying silicone surfaces in response to chemical, electrical and biological stresses.

## Marc Jeroense

CEO, MarCable Consulting, Sweden

### Quality Assurance & Quality Control of HVDC Cable Systems

Dr. Jeroense's professional career in the global power cable industry spans more than 25 years and has involved such activities as managing global R&D projects and portfolios, heading a HV test laboratory and serving as Product Manager at the interface of market and technology. With long experience in the CIGRE community, he has contributed toward several standards and operated across various organizational levels - from expert to Convener to Member of the Strategy Advisory Group. HVDC systems in the renewables sector have provided fertile ground for innovation and Marc has been at the forefront in development and qualification of 525 & 640 kV cable systems. He is an IEEE Senior Member and has received the CIGRE Technical Council Award.

## Thomas Johansson

Principal, InsuConsult, Sweden

### Opportunities to Further Develop Porcelain Insulator Technology in Terms of Performance & Cost

Dr. Johansson studied in Sweden and completed his PhD in the area of thermodynamics. He has has had a long career in areas that include silicon nitride ceramics and porcelain electrical insulators, joining Ceram/PPC Insulators in the 1990s as Group Head, Responsible for Ceramic Technology, before being appointed Chief Technical Officer. He has also served as Chief Operating Officer at WS Industries in India. Presently, he is an international consultant assisting insulator manufacturers in such areas as technical and economic improvement in production.

## Ivan Jovanovic

Director of Engineering, Specialty Products, G&W Electric, United States

### Customized Test Program for 220/230 kV Cables & Accessories per IEC, GB, AEIC & ICEA Requirements

Mr. Jovanovic obtained his Electrical Engineering Degree from the University of Belgrade and his MBA from the University of Chicago. In 2001, he joined G&W Electric and currently has global responsibility for Technology and Engineering of Specialty Products including Cable Accessories. He oversees development and introduction of HV and EHV terminations and joints for extruded and oil-impregnated paper cables up to 500 kV and is involved in all aspects of cable systems, from design to field application. He has authored numerous papers, been a speaker at local and international conferences and represents the U.S. in CIGRE and IEC advisory boards and technical committees. He is Vice Chair of PES Insulated Conductor Subcommittee B (Cable Accessories) and leads the IEEE Standard for Cable Terminations and Joints.

## Jan Juhasz

Product Manager, PPC Insulators Group, Slovakia

### Porcelain Long Rod versus Cap & Pin Insulators: Impact on Overhead Line Design

Mr. Juhasz graduated from the University of Technology in Bratislava with a BSc and MSc in Cybernetics and later from Applied Math and Automation College in Phoenix. Prior to joining PPC Insulators, he worked at Schneider Electric where he was Group Engineering Manager. He also served as V.P. Engineering at FaradayGrid and has held positions with Siemens managing complex T&D utility projects. His technology background focuses on automation, advanced control algorithms and power electric systems.

## Thomas Koch

Team Lead, Sales & Business Development, Siemens Energy Global, Germany

### Online Trend Analysis of Total Leakage Current: The Key to Monitoring Condition of Surge Arresters

Mr. Koch received his Engineering Degree from Bradenburg Technical University and joined Siemens ten years ago as Area Sales Manager. In 2016, he became Product Manager for Arresters & Insulators and this year was appointed Team Lead, with focus on sales and business development for this product portfolio.

## Stefan Kornhuber

Professor, University of Applied Sciences Zittau/Görltiz, Germany

### Evaluation of Hydrophobicity Transfer & Retention: State-of-the-Art & Future Outlook

Dr. Kornhuber received his Electrical Engineering Degree and later his Doctorate from Graz University of Technology with main research on temperature measurement and uprating of OHTLs. Until 2006, he worked at the Test Institute for High Voltage Engineering in Graz doing testing, simulation and investigation of stresses of transients. He later joined Lemke Diagnostics with responsibility for production, development and sales and then ABB Power Transformers as Head of Condition Management. In 2014, he was awarded Professorship in High Voltage and Theoretical Electrical Engineering. His research topics are electrical interfaces of polymeric materials as well as diagnostic test and measuring methods. He is Convenor of CIGRE D1.58 and IEC TC 112 WG3.

## Bart Kruizinga

Consultant, Smart Cable Guard, DNV GL, Singapore

### Opportunities & Challenges in On-Line Partial Discharge Monitoring of MV Cables in Practical Environments

Dr. Kruizinga obtained his PhD degree from the Eindhoven University of Technology focusing on degradation mechanisms and novel diagnostics for low voltage underground power cables. In 2017, he joined DNV GL in The Netherlands, where he specialized in failure investigations for medium and high voltage cables worldwide. Currently, he is an expert consultant on DNV GL's Smart Cable Guard, working on development of on-line measurement practices and site-specific investigations.

## Jan Lachman

Director, EGU-HV Laboratory, Czech Republic

### Testing Quality of Sheath-to-Rod Bonding in Polymeric Insulators to Assure Satisfactory Long-Term Performance

Dr. Lachman graduated from the Czech Technical University in Prague, Faculty of Electrical Engineering where he later received his PhD degree. After graduation, he joined EGU-HV Laboratory as a test engineer. He has also had experience as a design engineer when working abroad. He is active in IEC/CIGRE Working Groups and represents the Czech Republic in SC D1.

## Jens Lambrecht

Manager, Application Engineering, Wacker Chemie, Germany

### Overview of Contemporary Reinforced Silicones: Liquid, Solid & Resin-Like Molding Materials

Dr. Lambrecht studied radio and power engineering, earning a doctorate degree from Dresden University of Technology. Since that time, he has made his career as a development engineer for silicone cable accessories as well as a specialist in application engineering for silicones for both medium and high voltage applications. He has been with Wacker Chemie since 2005.

## Robert le Roux

Primary Plant Specialist, ESB Engineering, Ireland

### Application & Field Experience with Metal Oxide Surge Arresters

Dr. le Roux is an Electrical Specialist with a range of engineering skills and practical experience obtained internationally when it comes to specifying primary plant equipment. He has a track record working on large-scale HVDC, power plant and civil engineering projects and has been involved in such projects for ESB EMP in Ireland and ESB International in Bahrain and Southern Africa. He is co-author of several chapters in the CIGRE Green Book on Switching Equipment, including one devoted metal oxide surge arresters, and Convener of CIGRE WG A3.39.

## Krzysztof Lenarczyk

Head of Transmission Lines Engineering, Technical Standards, Transmission System Operator, Poland

### Static Analysis of Transmission Line Outages Due to Lightning Discharges

Dr. Lenarczyk received his MSc and PhD in HV engineering from Warsaw University of Technology. In 2004, he joined the Polish Transmission System Operator where his areas of activity include technical aspects of transmission lines, covering: insulators, grounding, conductors, fittings, cables and equipment. He is a member of the CIGRE WG, Chairman of the Polish SC CIGRE B2 Overhead Lines and participates in the Committee on Lightning Protection at the Polish Electricians Association.

## Werner Lesse

Business Development, Siemens Energy Global, Germany

### Trends & Beneficial Applications of Surge Arresters

Mr. Lesse received a Dipl.-Ing. Degree in Electrical Engineering with focus on high voltage power grid management from the University of Wuppertal. He has worked for Siemens AG in several functions in the Energy Management Sector, covering MV/HV air and gas insulated switchgear, SCADA and protection system, power transformer and surge arrester global business development. Currently, he is responsible for transmission switching products in North and Central America, including station and distribution class surge arresters as well as overhead line solutions including transmission line arrester and composite insulators.

## Paul Leufkens

Principal, Power Projects Leufkens, United States

**Chair, SESSION 4: Testing & Condition Assessment of Cable Systems & Accessories**

### Cable Testing: State of the Art, Standards & Technological Developments

Mr. Leufkens holds an MS EE Degree from Delft Technical University in the Netherlands and has had more than 20 years' experience as an executive in the power sector. He worked internationally for consulting and testing companies, including 13 years with KEMA in Netherlands and in the United States. Previously he directed product development in the cable and switchgear industry. In recent years, he has built technical and business cases for new High Voltage, High Power and Energy Storage laboratories as well as a technical and commercial market introduction of new generation switchgear. His U.S.-based consulting firm now provides strategic support to manufacturers and testing organizations in growing their business.

## LIANG Xidong

Professor, Electrical Engineering Dept., Tsinghua University, China

### Progress on Revision of IEC TS 60815

Professor LIANG is one of China's pre-eminent experts in the field of composite insulators and also among the country's leading academics teaching power engineering at Tsinghua University in Beijing. With more than 25 years R&D experience in this field, he is also influential in standards setting bodies for insulators, represents China at CIGRE and has been closely involved with INMR Congresses going back to 2001. He is Convenor of IEC TC36 WG11, working on revision of IEC TS 60815, and Convenor of IEC TC36 MT19, working on revising IEC 62217.

## Nancy Liu

International Sales Manager, Yizumi Rubber Machinery, China

### Moulding Machine Technology & Solutions for Insulators & Cable Accessories

Ms. Liu has been International Sales Manager since 2009 and has had more than 15 years of experience in the rubber machinery industry. She has presented papers at international events, including past INMR WORLD CONGRESSES in Korea, Canada, Germany and Spain.

## Vesa Malinen

Transmission Line Maintenance Specialist, Fingrid, Finland

### Impact of Biological Growths on Application of Composite Insulators: Experience Under European Conditions

Mr. Malinen received his Bachelor and Master Degrees in Electrical Engineering from Aalto University in Espoo. He currently works as Transmission Line Maintenance Specialist at the Finnish transmission system operator, Fingrid.

## Patrick Maloney

Chief Engineer, PPC Insulators, United States

### Cyclic Loading of LV & MV Porcelain Insulators

Mr. Maloney holds a BS ME degree from Purdue University and has worked for PPC Insulators for the past 19 years, coordinating product testing, quality and application engineering. He is active in American Standards Committees, including NEMA and C29 insulator Working Groups.

## Arun Mankodi

Managing Director, Kloeckner Desma Machinery, India

### Special Solutions for Efficient Production of Quality Insulators & Cable Accessories Made from Elastomers

Mr. Mankodi graduated in Mechanical Engineering. After a long career in machine manufacturing as well as plastic extrusion and injection molding, he joined Desma in 1995. Over the past two and a half decades, he has helped develop cost effective solutions for tooled up complete solutions for polymeric insulators and surge arresters, among other industry applications, including molds and cold runner blocks. Desma India has a base of 1500 machines installed domestically and 350 machines exported to 22 countries.

## Mohd Muzafar Bin Ismail

Sr. Lecturer & Researcher, Faculty of Engineering Technology, Electrical & Electronics, University Teknikal Melaka, Malaysia

### Lightning Safety on HV Grid Components

Dr. Ismail received his PhD in Atmospheric Discharges from Uppsala University in Sweden under the supervision of Prof. Vernon Cooray. His present research interests focus on atmospheric discharges, specifically lightning electromagnetics and lightning safety. He is Graduate Member and Professional Engineer with the Board of Engineers of Malaysia. Presently, he is active in teaching, consulting and research in the field of lightning and electromagnetics.

## Chade Neeman

Development Engineer - Insulators & Line Arresters, Siemens Energy Global, Germany

### 765 kV Externally Gapped Line Surge Arrester (EGLA): Steps in Design, Testing & Integration

Mr. Neeman has a B.Sc. in Mechanical Engineering from the Technical University of Berlin. He began working at Siemens Energy in the Engineering Department for arresters and insulators in 2015. In early 2020, he started as a Development Engineer at Siemens Energy to focus on further development of composite insulators and externally gapped line arresters.

## Tobias Neier

Cable Diagnostics Expert, Baur, Austria

### Increasing Confidence in MV Cable Testing & Diagnostics

Mr. Neier (a graduate Ing. & MBA) is an expert in MV cable diagnostics with numerous years of international experience. He has worked as a Technical Advisor for power utilities across the globe to establish diagnostic philosophies that go beyond simple application of diagnostic devices. His extensive background as Trainer and Consultant has also allowed him to publish papers and presentations in this field at events such as CMD, IEEE PES, Cable Tech, EDC SEA, GTD Asia as well as CIRED T&D conferences.

## Ed Niedospial

Technical Sales Director - Transmission, MacLean Power Systems, United States

### 1. Selecting Proper Corona Protection Using E-Field Modeling

### 2. Designing & Manufacturing Insulators: Not All Polymers Are the Same (Part 1)

### 3. Designing & Manufacturing Insulators: Not All Polymers Are the Same (Part 2)

Mr. Niedospial holds a B.S. in Physics and Mathematics from Elmhurst College as well as an MBA in Project Management and Marketing from Keller Graduate School of Management at Devry University. He has worked for Maclean Power Systems since 1996 as part of the Technical Engineering Team where his focus is on high strength mechanical applications. This includes development of features for improved insulator performance and service life through product testing and validation. He is an active member of IEEE and other Technical Committees.

## Marco Nosilati

Technology Leader, GE Grid Solutions, Italy

### Pollution Design & On-Site Monitoring of Insulators for AIS Disconnectors

Mr. Nosilati is an Electrical Engineer, graduated at the University of Padova with a Masters thesis in collaboration with the Helsinki University of Technology. He started his work experience in 2009 as R&D Test Engineer in Areva and he is currently the Technology Leader of air-insulated disconnectors in GE Grid Solutions. He is holder of several patent applications linked mainly to HV equipment and technological solutions for HVDC applications. He has served as a member of IEC as well as ad hoc Working Groups for DC switchgear.

## Rajkumar Padmawar

CEO & President, ASAsoft, Canada

### Molecular Characterization of Polymeric Surfaces

Mr. Padmawar developed efficient systems for manufacturing electroceramic products in Seto, Japan and later worked in development of cross-linked plastics with memory functions. He has been successful in creating composite insulators for T&D as well as for 25 kV applications for railways in infrastructure priority markets in South Asia.

## Raghvendra Singh Pal

Business Development Manager (India & Sub-Continent), Engineering Silicones, Wacker Metroark Chemicals, India

### High Performance Silicones for Transmission & Distribution Applications

Mr. Pal holds a Master's Degree in physical chemistry and a M. Tech in plastics engineering. He started working with Wacker in 2013 as Technical Manager for Elastomers with responsibility for India and South East Asia and now heads the Elastomer Business for India and the sub-continent. He has wide application and engineering knowledge of silicone elastomers in T&D applications among other industrial areas

## Thales M. Papazoglou

Professor & Director, Electric Power Systems Laboratory, TEI Crete, Greece

### Testing World's Longest Subsea 150 kV AC Cable Interconnection

Dr. Papazoglou has been active for decades in CIGRE and contributed to 12 Working Groups and Task Forces as well as acting as Convener of WG C2.13 on Voltage and VAr Support in System Operation. He has published numerous papers, technical brochures, textbooks and contributed articles to journals such as ELECTRA, IEEE Transactions as well as at major international conferences. He is Steering-Committee Convener of the annual conference on Deregulated Electricity Market issues in South Eastern Europe and received the CIGRE Technical Committee award on System Operation and Control

## Alberto Pigini

T&D Expert Consultant, Italy

**Chair, SESSION 5: Site Severity Assessment & Line/Substation Design for Polluted Service Environments**

### 1. Pollution Design & Testing: Unresolved Issues

### 2. RTV Coatings on Ceramic Insulators: Latest Developments and R&D Needs

Dr. Pigini received a Doctoral Degree in Electrical Engineering from the University of Milan. He worked for more than 35 years at CESI, first as a researcher, then as Research Manager and finally as Division Director, responsible for a number of aspects of HV electrical system, including environmental impact and generation. He is a Distinguished Member of CIGRE, Fellow of IEEE and active in various WG and Committees at these bodies. Recipient of the 2015 Claude de Tourreil Memorial Award for Lifetime Achievement in the Field of Electrical Insulators, he acts as consultant to international clients and has also served as expert Contributor to INMR for more than 10 years.

## Christian Pons

Research Engineer, EDF Lab les Renardières, Electricité de France, France

### Global Overview of Pollution Mapping for Power Utilities & How to Draw a Pollution Map on a Local Scale

Mr. Pons joined the Electrical Equipment Laboratory at EDF Lab Les Renardières in 2001, where he has worked in the fields of software data processing as well as metrology management for high voltage and high current equipment. His current position is Research Engineer on external insulation. For more than a decade now, he has dealt with studies and tests on insulators for both overhead line and substation applications, with the main research focus being on insulator performance, behavior under pollution, monitoring and diagnostics. He is a member of IEC TC 36 'Insulators'

## Hein Putter

Manager, Testing & Diagnostics, Megger, Germany

### Application Strategies for Offline Measurement of PD in Power Cables

Mr. Putter received his M.Sc. degree in Electrical Engineering from Delft University of Technology in 2007. In his thesis "Investigation of Water Treeing – Electrical Treeing Transition in Polymeric Insulation of Service Aged Power Cables", he investigated methods to determine the condition of service aged cables using several diagnostic techniques. He joined SebaKMT/ Megger Germany as Technical Support Engineer for cable testing and diagnosis and since 2011 has been working as Product Manager in this department. He is active in national and international bodies, including being a member of Cigre Working Group B1.58-Asset Management of MV Cables.

## Milan Radosavljevic

Sr. Asset Manager, Svenska Kraftnät (Swedish TSO), Sweden

### Application of Composite Apparatus Insulators at Substations: Policy, Driving Forces & Service Experience

Mr. Radosavljevic obtained his M Sc in Electrical Engineering from the University of Belgrade. After working in different roles in design and building of substations, HV cables and overhead lines in Nigeria, Russia and Serbia, he spent 15 years in the Swedish power industry as a consultant at SwedPower and Vattenfall Power Consultants before joining Svenska Kraftnät in 2011. His experience covering over 20 years has made him an expert in substations and cables, covering all aspects from design to installation to commissioning to refurbishment. This includes writing technical guidelines for components such as post insulators, insulator sets, surge arresters and connectors.

## Darcy Ramalho de Mello

Consultant & Researcher, Brazil

### Practical Application of Pollution Standards: Issues & Questions

Mr. Mello studied Electrical Engineering at Rio de Janeiro Federal University where he obtained his Masters Degree. He worked as Research Engineer in the Electrical Energy Research Center (CEPEL) from 1978 to 2013, focusing on high-voltage and pollution tests on insulators for overhead lines and substations. Currently, he works as Consultant for several Brazilian electric utilities in insulation dimensioning and R&D for new lines. He is Chairman of the Brazilian Working Group for Insulator Standards, Brazil's representative in IEC 36, a member of IEEE and Cigré and active in various WGs in Cigré and IEC.

## Philipp Raschke

R&D Manager, Tridelta Meidensha, Germany

### Smart & Effective Monitoring of Surge Arresters: Utility Experience & Feedback

Mr. Raschke graduated with a Bachelors Degree in Electrical Engineering at the University of Cooperative Education in Gera, Germany. He began his career in 2009 as Product Developer working on overvoltage protection electronics for Gigabit Ethernet. He later received his Master's Degree in Electrical Engineering at the University of Applied Sciences in Leipzig. Since then, he has served as Product Specialist at Tridelta Meidensha, where he is responsible for development of polymer-housed surge arresters as well as surge arrester diagnostic products.

## Tim Rastall

Director, Enspec Power, United Kingdom

### Optimizing Application of MV Surge Arresters in Resistor-Capacitor (RC) Snubbers: How to Simulate, Select & Apply

Mr. Rastall received his M.Eng. in Electrical Engineering from The University of Sheffield. He specializes in Grid Code compliance solutions for large-scale industry and renewables and has extensive direct experience in modelling and application of surge arrestors for protection of MV/ HV capacitor banks as well as harmonic filters.

## Iryani Mohamed Rawi

Head, Product Certification & Quality Assurance, Tenaga Nasional Berhad, Malaysia

**Chair, SESSION 6: Testing & Certification Procedures to Ensure Application of Quality MV/HV Grid Components**

### Quality Evaluation of MV/HV Network Components at TNB: Experience with Failures & Lessons Learned

Dr. Rawi received a bachelor degree in Electrical Engineering from Universiti Teknologi and completed her doctorate focusing on protecting transmission lines against lightning. She has worked in the Engineering Department of the Transmission Division at Tenaga Nasional Berhad since 2002. Originally, she was responsible for design and innovation of transmission lines equipment with main interests in transmission line engineering & design, surge arresters and lightning protection on power systems. More recently, she has headed up the Quality Control & Certification of Components used on TNB's extensive transmission and distribution networks.

## Jeefferie Bin Abd Razak

Sr. Lecturer & Researcher, Center of Smart System & Innovative Design, Universiti Teknikal Melaka, Malaysia

### Development & Testing of Silicone Rubber Filled Synthetic Wollastonite Dielectric Composite for HV Applications

Dr. Razak received his PhD in Materials Science from National University of Malaysia. His research interests are on polymer & rubber blends, dielectric & conductive polymeric composites and polymer based nanocomposites. He is a Chartered Engineer with Engineering Council (EC), UK and appointed as Professional Technologist in nanotechnology. Presently, he serves as Sr. Lecturer at the Faculty of Manufacturing Engineering and is active in consultation and research in engineering materials design, testing and optimization.

## Kamran Rezaei

Transmission Design Engineer, Transpower, New Zealand

### Application of Leakage Current Monitoring in Design of HVDC Insulation

Mr Rezaei holds a Bachelor's Degree in Electrical Engineering from Azad University in Tehran. He has worked as transmission line designer for 15 years, starting first with engineering consulting firms in Iran and later at hydropower generators such as Statkraft in Europe. Currently, he is responsible for design of insulators and transmission lines at New Zealand's TSO.

## Robert Ross

Professor, Technical University of Delft & Asset Management Strategist for TenneT, The Netherlands

### Diagnostics, Maintenance and Replacement Strategies Applied to Insulators & Cable Systems

Dr. Ross is Director at the Institute for Science & Development, Ede and Professor at HAN University of Applied Sciences. He is also Asset Management Research Strategist for the transmission grid operator in the Netherlands and parts of Germany. He worked in the past at KEMA in the area of reliability and post-failure forensic investigation and his present fields of specialization include reliability statistics, electro-technical materials, sustainable technology and superconductivity. He is author of 'Reliability Analysis for Asset Management of Electric Power Grids' based on his extensive experience with power utilities

## Markku Ruokanen

PPC Group Quality and R&D Director

### Impact of Residual Quartz on Lifetime of High Strength Porcelain

Mr. Ruokanen has an M.Sc. degree in Materials Science from the University of Technology in Helsinki, Finland. Before joining PPC in 2014, he held several leading technical positions at Maxwell Technologies in both the Ultra-Capacitor and HV Capacitor Divisions. He is a member of Cigré Switzerland.

## Gaku Sakata

Senior Technical Fellow, Nippon Katan, Japan

### Application of Polymer Insulators for Varying Natural Environments in Japan

Mr. Sakata received an M. S. Eng. Degree in Electrical Engineering from Waseda University in Tokyo. Over a long career, he has developed extensive experience in design, construction, maintenance, asset management and research and development of transmission lines and this includes the application of polymer insulators and snow-related failures on transmission lines. He is currently engaged in application of polymer insulators at Nippon Katan.

## Frank Schmuck

T&D Expert, Switzerland

**Chair, SESSION 7: Optimizing Material Properties & Production Technologies for Polymeric MV/HV Components for Power Grids**

### Reviewing 25 Years of Improvement in Non-Ceramic Materials & Corresponding Process Technologies for Line & Substation Insulation: Past Challenges, Present Solutions & Future Requirements

Dr. Schmuck has been working in the field of composite outdoor insulation for over 30 years, most recently as Corporate Technology Director at Pfisterer in Germany. In 1994 he became a member of various CIGRE and IEC Working Groups and runs the CIGRE Working Group "Insulators" since 2006. Since 2007, he has written as columnist for the INMR, co-authored a monograph on 'Silicone Composite Insulators' in 2011 and contributed the insulator chapter to the first CIGRE 'Green Book on Overhead Lines' in 2014.

## Jens Seifert

Senior Expert, Reinhausen Power Composites, Germany

### 1. Optical Fibre Applications in High Voltage
### 2. Foam-Filled Station Posts for HVDC Applications
### 3. Ageing & Pollution Tests: Tools for Design & Systematic Evaluation

Dr. Seifert obtained his Ph.D. degree from TU Branschweig in 1998. He has had 20 years of experience in development of composite materials for high voltage insulating applications. In 2018 he joined the MR Group as Senior Expert for basic development. He serves as Chairman of IEC TC 36 Insulators and is also Convener of CIGRE Working Groups D1.58 and D1.59.

## Glenn Stapleton

Principal Engineer, Transmission Lines & Cables, Powerlink Queensland, Australia

### Evaluation of Insulation & Flashover Risks During Tower Surface Preparation & Painting

Mr. Stapleton has 25 years' experience with Powerlink Queensland, the transmission network owner, operator and maintainer in the State of Queensland. Over this time, he has held senior engineering roles across a portfolio of transmission projects, including project electrical design and transmission line construction management. Presently, he is responsible for electrical design standards, including overhead line and underground cable primary procurement standards. He is a Fellow of Engineers Australia, and presently Chairs the Standards Australia Committee EL-010 Overhead Lines. He also undertakes post-graduate lecturing at the Queensland University of Technology, specializing in overhead and underground cable ratings.

## Kentaro Suemoto

Chief, Design & Development of Metal Fittings for OHL & Polymeric Insulators, Nippon Katan, Japan

### Application of Polymer Insulators as Countermeasure for Volcanic Ash

Mr. Suemoto received a B.S. and M.S. Eng. from the Dept. of Advanced Materials Science & Engineering and Material Chemistry in Yamaguchi University. Since 2010, he has been working at Nippon Katan on design and development of metal fittings for overhead transmission lines and composite insulators.

## Gobi Kannan Supramaniam

Specialist Engineer, Tenaga Nasional Berhad, Malaysia

### Development of Innovative Technical Solutions for Intelligent Transformer Monitoring

Mr. Kannan holds a Bachelor of Electrical Engineering Degree from Western Michigan University and a Masters of Power Engineering from Tenaga Nasional University. He is a Registered Professional Engineer as well as Chartered Electrical Engineer (IET UK) with Tenaga Nasional Berhad's Transmission Division and represents the Malaysia National Committee in CIGRE WG A2. Currently, he is responsible for new technology assessment, diagnostics and equipment performance improvement for the Transformer Unit in TNB's Engineering Department. In his previous position, Mr. Kannan was responsible for Asset Management and Maintenance where he performed technical assessments of new technologies. He has been Secretary for the launch of the ASEAN Bushing Guidebook.

## Wan Syakirah Wan Abdullah

Head Business Assessment & Engineering, TNB Renewables, Malaysia

### Quality Assurance for Renewable Energy Projects

Ir. Syakirah, an Electrical Engineer with Professional Engineer Certification, holds a Masters Degree in Electrical Engineering from UNITEN and is currently pursuing her PhD in th field. She has had 18 years experience in power systems, including managing transmission networks, generation scheduling and load forecasting. She has also managed the tariff setting mechanism for Peninsular Malaysia. Her current portfolio covers international and local energy related business development, with focus on renewable energy including solar, mini hydro, biogas, biomass, waste to energy and energy storage.

## Vishantini Tangavaloo

Technical Expert, Product Development, Synergy Oil & Gas Engineering, Malaysia

### Testing & Application of Hybrid Control System in Solar/Wind Turbine Power Generation System

Ms. Vishantini obtained her Chemical Engineering Degree from the University Technology of PETRONAS and her MS Chemical and Bioprocess Engineering from the National University of Malaysia. She now heads product development and her present research interests focus across the oil & gas industry's Renewable Energy & Production Enhancement. She has developed recognized commercial products that received the Spotlight New Technology Award in 2020 and is active in mentoring and research in production enhancement, renewables and energy optimization.

## Philipp Trenz

System Engineer, Materials, E.ON Group, Germany

### Impact of High Industrial Pollution on Composite Insulators in Germany & Future Methods for Smart Field Inspection

Mr. Trenz received his Diploma (Dipl.-Ing.) in Materials Science from the University of Bayreuth. Subsequently, he served as Project Engineer at a supplier for polymer products. Currently, he is acting as a Materials Specialist for high voltage lines at a large German TSO.

## Minoru Uehara

Deputy Manager, Design & Development of Fittings for OHL & Polymer Insulators, Nippon Katan, Japan

### Aeolian Noise from Polymer Insulators & Appropriate Countermeasures

Mr. Uehara received a B.S. Eng. Degree in Mechanical Engineering from Kanazawa University in Ishikawa and since 1996 has been working at Nippon Katan on design and development of metal fittings for overhead transmission lines and polymer insulators. His experience includes developing and testing polymeric interphase spacers and jumper support assemblies, which has contributed to expansion of use of polymer insulators in Japan.

## Kostas Velitsikakis

Grid Strategist, Asset Management, TenneT TSO, Netherlands

### Surge Arrester Stresses due to Harmonic Resonance Temporary Overvoltages in Transmission Systems: Case Study of Dutch Grid

Mr. Velitsikakis received his M.Sc. in High Voltage Engineering from the Technical University of Delft in 2013 and has worked as a senior expert in the field of Insulation Coordination and Electromagnetic Transient (EMT) studies for transmission systems. He is member of IEEE and an active member of CIGRE, acting as the secretary of the C4.46 Working Group on 'Evaluation of Temporary Overvoltages due to Low Frequency Resonance Conditions' as well as being active in C4.48 'Overvoltage Withstand Characteristics of Power System Equipment 35-1200 kV' and C3.13 'Interactions between Electrical Infrastructure and Wildlife'. In 2018, he has took up the role of Team Leader within the Transmission & Distribution Technology Dept. at DNV GL Energy.

## Wallace Vosloo

Corporate Specialist High Voltage Engineering, Eskom, South Africa

### 1. Utility Perspective on Outdoor Insulator Selection for Polluted Environments

### 2. Failure Analysis of End Fitting Seal on Composite Insulator

Dr. Vosloo is a distinguished international expert in the field of electrical insulation. Over a career spanning decades at one of the world's largest power utiliies, he has presented many training courses in the field and also authored over 100 papers on high voltage insulators. His published texts include: "The Practical Guide to Outdoor High Voltage Insulators", co-authored by Roy Macey and Dr. Claude de Tourreil, and "High Voltage Engineering Practice and Theory" along with Dr. Holtzhausen. He is recipient of the SAIEE President's Award for contribution to development of high voltage insulator research, investigation capabilities and standards in South Africa as well as the Claude de Tourreil Memorial Award for Lifetime Achievement in Field of Electrical Insulation. Dr. Vosloo is active in several national and international working groups.

## Andre Wagner

Power Cable Asset Manager, TenneT, Germany

### Dimensioning of DC Porcelain & Composite Cable Terminations: Experience in Europe

Dr. Wagner completed his studies in Electrical Power Engineering and Economics at RWTH Aachen University in 2011 and received the German University Diploma (Dipl.-Wirt.-Ing.). He later worked as a Research Associate in HV insulation systems and diagnostics at the Institute for High Voltage Technology at RWTH Aachen University and received his PhD in Electrical Engineering in 2017. He is currently Asset Manager for Power Cables at German TSO, TenneT, focusing mainly on design and quality assurance of onshore and offshore HVDC cable systems. He is also involved in investigation, evaluation and implementation of advanced technologies for quality assurance, condition assessment and failure location.

## Dan Windmar

Vice President, STRI, Sweden

### 1. Operating an Independent Accredited Laboratory in a Large Manufacturing Organization

### 2. Influence of Variation in Rain Parameters on Flashover Voltage of Insulators

Dr. Windmar received a Ph.D. degree in high voltage engineering from Uppsala University in Sweden. His professional experience includes extensive work in such areas as insulators (production, testing, materials), high power testing, high voltage testing and dielectric insulation. He has held several management positions at ABB and since 2009 has served as Vice President, Testing at STRI.

## Joel Yeo Wei Wen

PhD Candidate, Singapore University of Technology & Design, Singapore

### Practical Application of Neural Networks in Measuring Partial Discharges in MV Power Cables

Mr. Yeo was awarded the B.Eng. Degree (first class honours) in Electrical Engineering from Queensland University of Technology in 2014. Thereafter, he studied in the high voltage laboratory of the Technical University of Delft where he obtained his M.Sc. degree in 2016. Presently he is Ph.D. candidate at Singapore University of Technology and Design where he performs research on applications of deep learning techniques to measurements of partial discharge.

## Chris Yu

Project Engineer, ASTA Observer, Intertek, China

### MV/HV Cable System Testing & Certification Technology

Mr. Yu recevied his training as a HV wire and cable product test and certification engineer and also has a background in testing and certification of switchgear and busbar systems. He has more than 5 years experience in cable design, manufacturing and tesitng and also 5 years as an ASTA Observer.

## Ahmad Zaidi

School of Electrical System Engineering, Universiti Malaysia Perlis, Malaysia

### On-Site Partial Discharge Measurement Using Rogowski Coil for Insulation Condition in MV Power Cables

Dr. Ts. Zaidi Abdullah received a BEng. in Industrial Electronic Engineering from the University Malaysia Perlis (UniMAP) and an MEng. Electrical Power from the Energy University (UNITEN). He recently completed his doctorate focused on using Rogowski coils to measure and detect partial discharges in power cables. Serving as electrical engineer at the Malaysian Public Works Department, he handled more than 25 new projects. Since 2011, he has served as Senior Lecturer at UniMAP, with research interests that include partial discharge measurement, solar PV application and energy management.

## Mohd Zainal Abidin Ab Kadir

Professor, Centre for Electromagnetic & Lightning Protection Research, Advanced Lightning, Power and Energy Research, Universiti Putra, Malaysia

### 1. Site Measurement & Analysis for Improving Lightning Performance of 500 kV Transmission Line

### 2. Insulation Characteristics of GFRP Crossarm Subjected to Lightning Impulse Testing

Prof Zainal received his BEng and PhD from Universiti Putra Malaysia and University of Manchester, respectively. He is a Fellow of Academy of Sciences Malaysia and Fellow of the IET as well as an IEEE Power & Energy Society Distinguished Lecturer in lightning and high voltage engineering. He has authored or co-authored over 400 journals and conference papers. His research interests include high voltage engineering, lightning protection, electromagnetic compatibility, power system transients and renewable energy. Currently, he is Chairman of the NMC of IEC TC 81 (Lightning Protection) and Local Convener of CIGRE Malaysia C4 on System Technical Performance.

## Jenny Zhou

International Sales Manager, Wellwin Precision Mould, China

### Optimizing Ejection Function in Injection Moulding Polymeric Electrical Components

Ms. Zhou has more than 10 years experience in the rubber mould field applied to the power industry and has participated in related technology patent applications. As part of her professional role, she helps users in mould solutions and as well as after-sales service.

## Raouf Znaidi

T&D Expert, Tunisia

### Laboratory Simulation of Harsh Desert/Industrial/Marine Pollution: Current Situation & Future Challenges

Mr. Znaidi has had a long career at STEG, the power grid operator in Tunisia, where he was responsible for setting up insulator test stations across the country. Through this work he has become an expert on the comparative performance of different insulator types and designs in severe service environments. He has visited power companies across the globe reporting on service problems as well as remedial solutions using RTV coatings to combat pollution flashover. He is active in relevant CIGRE Working Groups.