



## SESSION 1: Plenary Session

This session offers lectures by experts discussing diverse topics that apply to design, operation and maintenance of transmission and distribution networks. These topics will cover a broad spectrum of voltage ranges and focus on key components and equipment used in overhead and underground power systems.

**Chairman: Marvin L. Zimmerman, Publisher, INMR, Canada**

(Speakers listed in alphabetical order of family name, not in order of presentation.)



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

**Paolo Cardano**

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



### **Polymer Insulators & Live Line Work**

**A. J. (Tony) Carreira**

President, K-Line Insulators, Canada



### **Latest Developments in Fire Mitigation Products**

**Ryan Freeman**

Product Manager, Hubbell Power Systems, United States



### **Silicone Coating of Insulators: Latest Technical Knowledge Based on Field Performance & Laboratory Testing**

**Jean-Marie George**

Scientific Director, Sediver, France



### **Externally Gapped Line Arresters: Reviewing 40 Years Service Experience**

**Florent Giraudet**

Sales Director, Tridelta Meidensha, Germany



### **Trends & Beneficial Applications of Surge Arresters**

**Werner Lesse**

Business Development, Siemens Energy Global, Germany



### **Cyclic Loading of LV & MV Porcelain Insulators**

**Patrick Maloney**

Chief Engineer, PPC Insulators, United States



### **Topic to be announced**

**Ed Niedospial**

Sr. Product Manager, Transmission Insulators, MacLean Power Systems, United States



### **Molecular Characterization of Polymeric Surfaces**

**Rajkumar Padmawar**

CEO & President, ASAsoft, Canada



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

**Robert Ross**

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



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

**Gaku Sakata**

Senior Technical Fellow, Nippon Katan, Japan



### **Optical Fibre Applications in High Voltage**

**Jens Seifert**

Senior Expert, Reinhausen Power Composites, Germany



### **Topic to be announced**

**Raghvendra Singh Pal**

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



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

**Glenn Stapleton**

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



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

**Andre Wagner**

Power Cable Asset Manager, TenneT, Germany



### **Operating an Independent Accredited Laboratory in a Large Manufacturing Organization**

**Dan Windmar**

Vice President, STRI, Sweden



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

This session will explore the latest technological developments as well as service experience when it comes to optimizing insulator design and application. It will also review inspection processes and equipment to assess in-service condition of insulators.

**Chairman: Dr. Igor Gutman, Independent Insulation Group, Sweden**

(Speakers listed in alphabetical order of family name, not in order of presentation.)



### **Tower Framing Conversions Using Polymer Insulators**

**Steve Bell**

Engineering Manager, K-Line Insulators, Canada



### **Understanding & Mitigating Corona on Polymer Insulators**

**Jeff Butler**

Sr. Product Manager, Hubbell Power Systems, United States



### **Interphase Spacer Applications**

**A. J. (Tony) Carreira**

President, K-Line Insulators, Canada



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

**Tim Condon**

Quality Manager, Network Engineering, ESB Engineering, Ireland



### **Simulation of Electric Field: What & What Not to Expect**

**Jean-Marie George**

Scientific Director, Sediver, France



### **Application of Composite Insulators: Perceptions vs. Service Experience**

**Igor Gutman**

Independent Insulation Group, Sweden



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

**Jan Juhasz**

Product Manager, PPC Insulators Group, Slovakia



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

**Vesa Malinen**

Transmission Line Maintenance Specialist, Fingrid, Finland



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

**Alberto Pigni**

T&D Expert Consultant, Italy



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

**Milan Radosavljevic**

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



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

**Kamran Rezaei**

Transmission Design Engineer, Transpower, New Zealand



### **Foam-Filled Station Posts for HVDC Applications**

**Jens Seifert**

Senior Expert, Reinhausen Power Composites, Germany



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

**Kentaro Suemoto**

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



### **Aeolian Noise from Polymer Insulators & Appropriate Countermeasures**

**Minoru Uehara**

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



### **Failure Analysis of End Fitting Seal on Composite Insulator**

**Wallace Vosloo**

Corporate Specialist High Voltage Engineering, Eskom, South Africa



### **Influence of Variation in Rain Parameters on Flashover Voltage of Insulators**

**Dan Windmar**

Vice President, STRI, 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**

(Speakers listed in alphabetical order of family name, not in order of presentation.)



### **Key Technology & Application of UHVAC Controllable Metal Oxide Arresters**

**CHEN Xiujuan**

Sr. Engineer, High Voltage Technology, China Electric Power Research Institute, China



### **Mechanical Considerations & Service Life of Non-Gapped Line Arresters**

**Florent Giraudet**

Sales Director, Tridelta Meidensha, Germany



### **Surge Arrester Development for Lightning Protection of UHV DC Transmission Lines**

**GU Shanqiang**

Chief Engineer, Wuhan NARI State Grid Electric Power Research Institute, China



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

**HE Jinliang**

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



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

**Thomas Koch**

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



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

**Robert le Roux**

Primary Plant Specialist, ESB Engineering, Ireland



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

**Krzysztof Lenarczyk**

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



### **Tailoring Overall Properties of ZnO Varistors by Point Defects**

**LIU Wenfeng**

Professor, School of Electrical Engineering, Xi'an Jiaotong University, China



### **Applications of Surge Arresters for Lightning Protection of Transmission Lines**

**LUO Bing**

Director of High Voltage Department, Electric Power Research Institute of China Southern Power Grid, China



### **Lightning Safety on HV Grid Components**

**Mohd Muzafar Bin Ismail**

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



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

**Chade Neeman**

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



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

**Philipp Raschke**

R&D Manager, Tridelta Meidensha, Germany



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

**Tim Rastall**

Director, Enspect Power, United Kingdom



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

**Kostas Velitsikakis**

Grid Strategy Specialist, Asset Management, TenneT TSO, Netherlands





## 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**

(Speakers listed in alphabetical order of family name, not in order of presentation.)



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

**Mohd Faris Ariffin**

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



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

**Edward Gulski**

CEO, onsite hv solutions, Switzerland



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

**Huzainie Shafi Bin Abd Halim**

Cable Specialist, Transmission & Distribution, TNB Research, Malaysia



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

**Marc Jeroense**

CEO, MarCable Consulting, Sweden



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

**Ivan Jovanovic**

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



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

**Bart Kruizinga**

Consultant, Smart Cable Guard, DNV GL, Singapore



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

**Paul Leufkens**

Principal, Power Projects Leufkens, United States



### Increasing Confidence in MV Cable Testing & Diagnostics

**Tobias Neier**

Cable Diagnostics Expert, Baur, Austria



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

**Hein Putter**

Manager, Testing & Diagnostics, Megger, Germany



### Partial Discharge Localisation and Diagnosis of MV & HV Power Cables Using Damped Alternating Current

**Kai P. Steinfeld**

Managing Director, ohv Diagnostic, Germany



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

**Joel Yeo Wei Wen**

PhD Candidate, Singapore University of Technology & Design, Singapore



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

**Chris Yu**

Project Engineer, ASTA Observer, Intertek, China



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

**Ahmad Zaidi**

School of Electrical System Engineering, Universiti Malaysia Perlis, Malaysia



### Developing Test Specifications for Wind Power Cables, Cables for Battery Energy Storage & Liquid Cooled Cables

**Jill Zhou**

Manager, Solar & Commercial Products, TÜV Rheinland, China



## 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 that is suitable for this environment.

**Chairman: Alberto Pigni, T&D Expert, Italy**

(Speakers listed in alphabetical order of family name, not in order of presentation.)



**Composite Insulator Performance in Aggressive Service Environments: Comparison vs. Coated Glass Insulators**  
**Samuel Arturo Asto Soto**

Transmission Line Coordinator, Power Grid of Peru, Peru



**Monitoring, Mapping, Modelling & Mitigating Pollution: Application Experience on the Italian Transmission System**  
**Michele de Nigris**

Director, Sustainable Development & Energy Sources, RSE, Italy



**Approach to Select & Dimension Polymer Insulators for Polluted Conditions**  
**Chris Engelbrecht**

Consultant, EPRI, United States/Netherlands



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

**Ricardo Wesley Salles Garcia**

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



**AC & DC Pollution Testing Methods: Accuracy & Limitations**

**Jean-Marie George**

Scientific Director, Sediver, France



**Development of IEC-Based Methodology for Site Severity Assessment**

**Igor Gutman**

Independent Insulation Group, Sweden



**Status of Pollution Test Procedures for Insulators Made from Hydrophobicity Transfer Materials**

**Igor Gutman**

Independent Insulation Group, Sweden



**Selecting Optimal Outdoor Insulation Under Heavily Polluted Conditions**

**Shakir Hafeez**

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



**Progress on Revision of IEC TS 60815**  
**LIANG Xidong**

Professor, Electrical Engineering Dept., Tsinghua University, China



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

**Marco Nosilati**

Technology Leader, GE Grid Solutions, Italy



**Pollution Design & Testing: Unresolved Issues**

**Alberto Pigni**

T&D Expert Consultant, Italy



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

**Christian Pons**

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



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

**Darcy Ramalho de Mello**

Consultant & Researcher, Brazil



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

**Philipp Trenz**

System Engineer, Materials, E.ON Group, Germany



**Utility Perspective on Outdoor Insulator Selection for Polluted Environments**

**Wallace Vosloo**

Corporate Specialist High Voltage Engineering, Eskom, South Africa



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

**Raouf Znaidi**

T&D Expert, Tunisia



## SESSION 6: Testing & Certification Procedures to Ensure Application of Quality MV/HV Grid Components & Equipment

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**

(Speakers listed in alphabetical order of family name, not in order of presentation.)



### Advancements in Braced Line Post Testing

**Jeff Butler**

Sr. Product Manager, Hubbell Power Systems, United States



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

**William Chisholm**

T&D Expert, Canada



### Testing MV Cable Accessories for DC Networks

**Lukasz Chmura**

Product Development Engineer, Royal Lovink Enertech, Netherlands



### Application of Frequency Response Analysis to Assess Condition of Power Transformers

**Mohd Fairouz Mohd Yusof**

Lecturer, Faculty of Electrical & Electronic Engineering, Universiti Tun Hussein Onn, Malaysia



### Maintenance Strategy to Increase Power Transformer Reliability: Experience in Indonesia

**Harry Gumilang**

Live Line Maintenance & Maintenance Facility, PLN Persero (Indonesian TSO), Indonesia



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

**Kjell Halsan**

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



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

**Jan Lachman**

Director, EGU-HV Laboratory, Czech Republic



### Topic to be announced

**Ed Niedospial**

Sr. Product Manager, Transmission Insulators, MacLean Power Systems, United States



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

**Iryani Mohamed Rawi**

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



### Ageing & Pollution Tests: Tools for Design & Systematic Evaluation

**Jens Seifert**

Senior Expert, Reinhausen Power Composites, Germany



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

**Gobi Kannan Supramaniam**

Specialist Engineer, Tenaga Nasional Berhad, Malaysia



### Quality Assurance for Renewable Energy Projects

**Wan Syakirah Wan Abdullah**

Head Business Assessment & Engineering, TNB Renewables, Malaysia



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

**Vishanti Tangavaloo**

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





## SESSION 7: Optimizing Material Properties & Production Technologies for Polymeric and Ceramic MV/HV Grid Components

This session will focus on material properties and production technologies that allow optimized manufacture of consistently high quality polymeric and ceramic grid components

**Chairman: Dr. Frank Schmuck, T&D Expert, Switzerland**

(Speakers listed in alphabetical order of family name, not in order of presentation.)



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

**Sedat Adili**

Head of R&D, Brugg Cables, Switzerland



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

**Christiane Baer**

Head of Material Development, Pfisterer, Switzerland



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

**Michel Gehrig**

Engineer & Project Manager, Hübers Verfahrenstechnik Maschinenbau, Germany



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

**Josef Grindling**

Project Manager, Vogel moulds and machines, Switzerland



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

**Sam He**

Overseas Sales Manager, Dekuma Rubber and Plastic Technology, China



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

**Dennis Hore**

Department of Chemistry, University of Victoria, Canada



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

**Thomas Johansson**

Principal, InsuConsult, Sweden



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

**Jens Lambrecht**

Manager, Application Engineering, Wacker Chemie, Germany



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

**Nancy Liu**

International Sales Manager, Yizumi Rubber Machinery, China



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

**Arun Mankodi**

Managing Director, Kloeckner Desma Machinery, India



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

**Jeefferie Bin Abd Razak**

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



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

**Markku Ruokanen**

PPC Group Quality and R&D Director



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

**Frank Schmuck**

T&D Expert, Switzerland



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

**Jenny Zhou**

International Sales Manager, Wellwin Precision Mould, China