ACCEPTED PAPERS

Materials, Components and New Technologies

1. **(Invited Paper) M. Lashbrook, A. Gyore, R. Martin** (M&I Materials Ltd, UK)
   Further Creepage Discharge Investigations under Switching Impulse with Biodegradable Ester-Based Liquids
2. **T. Šimović** (Končar Power Transformers Ltd, Croatia)**, M. Krilčić** (Montelektro d.o.o., Croatia)**, V. Bogati** (Končar Power Transformers Ltd, Croatia)**, K. Bilušić** (Končar Power Transformers Ltd, Croatia)
   Power Transformer Jaworzno Automatic Cooling System Using PLC
3. **R.P. Marek** (DuPont Energy Solutions, USA)**, R. Szewczyk** (Specialty Products Poland Sp. z o.o., Poland)
   Applications and Recent Studies on Aramid Enhanced Cellulose Paper
4. **L.A. Darian, P.V. Golubev, A.M. Osipov** (JSC Technical Inspection UES, Russia)
   Innovative solutions for flammable gases indication from Buchholz relay
5. **G.F. Giorgi** (Cedaspe Power General Manager, Italy)
   CEDASPE SBC – silicone composite bushing
6. **L. Jonsson, H. Löfås** (ABB AB components, Sweden)**, G. Eriksson, C. Forssen** (ABB AB Corporate Research, Sweden)
   Generation of small amounts of combustible gases in oil-filled transformer bushings
7. **D. Šegović** (Končar Power Transformers Ltd, Croatia)**, A. Orešković** (Končar Electrical Engineering Institute, Croatia), **Ž. Janić** (Končar Power Transformers Ltd, Croatia)
   Synthetic Ester Impact on Power Transformer Design, Manufacturing and Testing
8. **M. F. M. Rozi, A. Saadin, Z. A. Bakar, I. Hashim** (Malaysia Transformer Manufacturing Sdn. Bhd., Malaysia)
   Increase Energy Efficiency with 3D Wound Core Transformer Technology
9. **V. Kulatilake, C. Clark** (AltaLink, Canada)
   Power Voltage Transformers: Applications in Transmission Utilities
10. **I. Ivanković** (Croatian transmission system operator HOPS, Croatia)**, D. Peharda** (Končar-KET, Croatia)**, G. Levačić, A. Župan** (Croatian transmission system operator HOPS, Croatia)
    Transmission Power Transformer under Control Room Monitoring Umbrella
11. **W.Gil, W.Masłowski, P.Wronek** (MIKRONIKA Sp.o.o. Poznań, Poland)
    Overvoltages & Transients Identification In On-line Bushing Monitoring
12. **M. F. M. Rozi, A. Saadin, I. Hashim, Z.A.Bakar** (Malaysia Transformer Manufacturing Sdn. Bhd., Malaysia)
    The Use of Mobile Transformer 15 MVA 33/11 kV to Improve Network Reliability and Availability
13. **Z. Godec, V. Kuprešanin, F. Razum** (Končar Electrical Engineering Institute, Croatia)
    Uncertainty estimation of low voltage LI measurements with recurrent surge generator and oscilloscope
14. **Z. Godec, F. Razum** (Končar Electrical Engineering Institute, Croatia)**, D. Švarc** (Končar Power Transformers Ltd, Croatia)
    Reproducibility estimation of sound power level of power transformers
15. **M. Kuhnke, P. Werle** (Leibniz Universität Hannover, Germany), **A. Sbravati, K. Rapp** (Cargill Inc. – Bioindustrial, USA)
    Investigation of X- Wax Formation in Power Transformers under Operating Conditions
16. **V. Haramija, B. Musulin, D. Vrsaljko, V. Đurina** (Končar Electrical Engineering Institute, Croatia)
    Consequences of Rubber Incompatibility with Transformer Oil
17. **V. Šerkinić, M. Majić Renjo, V. Ucović** (Končar Distribution and Special Transformers Inc., Croatia)
    CO2 footprint for distribution oil immersed transformers according to ISO 14067:2018
18. **M. Marković, M. Majić Renjo** (Končar Distribution and Special Transformers Inc., Croatia)
    Permittivity measurement of oil-impregnated cellulose insulation
19. **M. Pirnat** (KOLEKTOR ETRA d.o.o., Slovenia)
    Difference between 50 Hz and 60 Hz transformer no-load noise levels

20. **P. Gabrić, A. Orešković, V. Kuprešanin, A. Mikulecky** (Končar Electrical Engineering Institute, Croatia)**, V. Podobnik** (Končar Power Transformers Ltd, Croatia)
Stressed Oil Volume Theory in Transformer Winding Corner Stress Analysis
21. **Y.N. Nikitin, V.N. Ustinov** (The Plant 'Isolator', Russia)
High-voltage bushings with RIN (RIS) insulation: research, testing, prospects

Transformer Life Management

1. **(Invited Paper) T. Auronen** (Vaisala Oyj, Finland)**, I. Murat** (Končar Power Transformers Ltd, Croatia)**, T. Hanninen** (Vaisala Oyj, Finland)**, S. Keitoue** (Končar Power Transformers Ltd, Croatia)
Future Trends in Transformer Online Monitoring
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Lessons Learned when Introducing and Applying Continuous Condition Monitoring Systems
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Technical and Financial aspects of Transformer Monitoring
4. **I. Al Balushi, F. Al Shukaili, A. Al Busaidi** (Oman Electricity Transmission Company, Oman)
Advantage of Condition Based Monitoring for Transformers in enhancing the maintenance strategy
5. **W. Sorgatz** (Germany)**, N. Ruszkowski** (Croatia)
Contamination free oil sampling the key to avoid misinterpretation of your oil sample
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Power Transformers Long Term Maintenance Strategy
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Managing Transformers Risk through Failure Codification
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Verification of Maintenance Intervals for Vacuum On-Load Tap-Changers
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Fire and safety aspects of flashovers in high voltage transformer bushings
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Power Transformer Efficiency – survey results
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Mitigating Murphy's Law While Test
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Implementation of Enterprise Asset Management (e-AM) system at OETC
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Optimal cooling and life time management for power transformers
14. **E.H. Ko, T. Dokic, M. Kezunovic** (Texas A&M University College Station, USA)
Prediction Model for the Distribution Transformer Failure using Correlation of Weather Data
15. **S. Keitoue, I. Murat, B. Jurisic, D. Filipovic-Grcic** (Končar Electrical Engineering Institute, Croatia)**, B. Filipovic-Grcic** (University of Zagreb, Croatia)**, A. Zupan** (Croatian transmission system operator HOPS, Croatia)
Analysis of overvoltages on power transformer recorded by transient overvoltage monitoring system
16. **D. Vrsaljko, V. Haramija, B. Musulin, V. Đurina** (Končar Electrical Engineering Institute, Croatia)
Chemistry in transformer business: from materials to transformers and their diagnostics
17. **S. Jamšek, A. Bučar, A. Urankar** (ELES d.o.o., Slovenia)
Asset management model implementation in ELES company
18. **J. Benach** (WEIDMANN Electrical Technology Inc., USA)
Bushing failure analysis
19. **J. Hinshaw, D. Skelly, T. Waters, D. Bidwell** (Serveron Corporation, USA)
Analysis of gases dissolved in electrical insulating fluids, technologies and the importance of accuracy

Numerical Modelling

1. **(Invited Paper) B. Jurišić, T. Župan** (Končar Electrical Engineering Institute, Croatia)**, G. Plišić** (Končar Power Transformers Ltd, Croatia)**, A. Xemard** (Électricité de France R&D, France)**, B. Filipović-Grčić** (University of Zagreb, Croatia)
   On site measurement and simulation of transferred lightning overvoltages in power transformers
2. **B. Gustavsen** (SINTEF Energy Research, Norway)**, A. Martins** (University of Porto, Portugal)**, L. Braña, R.C. Lopes, P. Lima, A. Soto** (Efacec Energia - Máquinas e Equipamentos Eléctricos, Portugal)
   Small Signal Internal Voltage Transfer Measurements and White-Box Transient Calculations for Non-Standard Test Conditions of a Shell-Form Power Transformer
3. **B. Bosnjak, D. Nowak, R. Sitar, J. Walker** (Hyundai Electric Switzerland AG, Switzerland)
   Numerical Computation of the Vibroacoustic Behaviour of an Oil-Immersed Power Transfomer
4. **J. Raith, Ch. Bonini, M. Scala** (Siemens AG, Austria)
   Simulation of long-term transformer operation with a dynamic thermal, moisture and aging model
5. **B. van der Aa** (Royal SMIT Transformers (SGB-SMIT group), Netherlands)
   Axial Vibration Response of an Oil-immersed Transformer Winding-set
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   Internal fault performance of instrument transformers with sectioned active part
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   Calculation of Eddy Current Losses in Iron Core of Transformer
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   Line discharge capability of inductive voltage and combined transformers
9. **K. Petrović, B. Jurišić, T. Župan** (Končar Electrical Engineering Institute, Croatia)
   Appropriate Modeling of Transformer High Current Leads in 3D FEM
10. **S. Goglia** (Končar Power Transformers Ltd, Croatia)**, T. Župan, B. Jurišić** (Končar Electrical Engineering Institute, Croatia)**, K. Capuder** (Končar Power Transformers Ltd, Croatia)
    Dimensioning stabilizing windings for Y-Y transformers
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    A Numerical Procedure for Rapid Seismic Assessment of Transformers and Comparison with Experiments
12. **A. Daneryd, K. Sahu** (ABB Corporate Research, Sweden)**, L. De Mercato** (ABB PG Transformers Development Center, Switzerland)**, C. Lagerström** (ABB Corporate Research, Sweden)
    Prediction of Outdoor Air Core Reactor Coil Vibro-Acoustics Properties
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    Determining natural resonant frequencies of large power transformer windings
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    Measurement of Circulating Currents in Split-Winding Transformer and Comparison with Numerical Calculation
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    Novel Calculation Method of Power Transformer Winding Fault Detection using Frequency Response Analysis
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    A Novel Approach for High Frequency Modelling of Power Transformers to Support Frequency Response Analysis
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    Coupled Electromagnetic-Thermal Model Applicable for Distribution Transformers
18. **C.C. Linhares, R.R. Teixeira, C. Coutinho, J.S. Costa, J.E. Santo, M. Pinto, S.M.O. Tavares, H. Mendes** (Efacec Energia, Máquinas e Equipamentos Elétricos S.A., Portugal)
    Experimental modal analysis of power transformer windings
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    Influence of conductor transposition on transformer winding RLC parameters

20. **J. Wojtkun, B. Bródka** (Power Engineering Transformatory Sp. z o.o., Poland)**, D. Stachowiak** (Poznan University of Technology Faculty of Electrical Engineering, Poland)
The magnetic flux density distribution in the anisotropy transformer core
21. **M. Pirnat, P. Tarman** (KOLEKTOR ETRA d.o.o., Slovenia)
Strongly coupled 3D acoustic-mechanical finite element model for calculation of transformer load noise
22. **Á. Portillo** (Independent Transformer Consultants, Uruguay)**, L.F. de Oliveira** (WEG – Power Transformers, Brazil)**, F. Portillo** (Independent Transformer Consultants, Uruguay)
Calculation of Circuit Parameters of High Frequency Models for Power Transformers using FEM