

Special Issue “Transformer Research and Asset Management” - Editorial

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WELCOME to this special issue, which is based on selected papers presented at the CIGRE SC A2 & 6th International Colloquium “Transformer Research and Asset Management”, held in Split, Croatia, on November 29th-December 2nd, 2023.

The International Colloquium was organized by the Croatian CIGRE National Committee in cooperation with the Faculty of Electrical Engineering and Computing in Zagreb and the Centre of Excellence for Transformers in Zagreb with support from CIGRE A2 Study committee. The goal of the Colloquium was to share latest research in the in the areas of distribution, power and instrument transformers. Participants from manufacturers, utilities and universities took part in discussions.

The papers were divided into the sessions:

Modeling and Simulation

- Numerical modeling in design, multi-physics and coupled problems
- Transients, harmonics, lumped and distributed parameter models
- Machine learning and hybrid models, models for digital twins

Materials, Components and New Technologies

- Transformer components, insulating and magnetic materials
- New concepts and technologies in the transformer industry
- Digitalization and smart grid applications

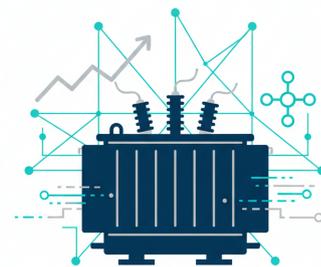
Transformer Life Management

- Monitoring, diagnostics and condition assessment
- In-service experiences and case studies
- Environmental aspects and resilience

We would like to thank the authors for their contributions and the reviewers who dedicated their valuable time in selecting and reviewing these papers. We hope this special issue will provide you a valuable source of newest achievements in transformer technology.

The papers included in this special issue are:

- **Development of Transformers with Natural Ester and Cellulose or Aramid Insulation**
by Ramazan Altay, İrem Hazar, Mahmut Aksoy, Hakan Aktay, Jean-Claude Duart, Radosław Szewczyk
- **Simulated Thermal Fault: Assessing Dissolved Gas Analysis through Tube Heating Method on Mineral Oils and Natural Ester**
by Par Wedin, Elena Minchak, Carl Wolmarans, Robert Fairholm, Jessica Singh, Kaveh Feyzabi, Thomas Norrby
- **Application of Adaptive Finite Focus Beamforming Method for Localization of Low-Frequency Transformer Sound**
by Karlo Petrović, Antonio Petošić, Tomislav Župan
- **3D Acoustic Heat-Maps for Transformer Monitoring Applications**
by Ferdinand Fuhrmann, Anna Maly, Martin Blass, Jakub Waikat, Fredi Belavic, Franz Graf
- **Partial Discharge Monitoring of Power Transformers by Calibrated UHF Measurements**
by Martin Siegel, Christoph Kattmann, Chandra Prakash Beura, Michael Beltle, Stefan Tenbohle



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