## TRANSFORMERS MAGAZINE

ISSN 1849-3319 (Print) ISSN 1849-7268 (Digital)

## **EDITORIAL BOARD**

Editor-in-Chief:

Mladen Banovic, PhD, Merit Services Int., Croatia mladen.banovic@transformers-magazine.com

## **EXECUTIVE EDITORS**

Michel Duval, PhD, Hydro Quebec, Canada
Jean Sanchez, PhD, EDF, France
Michael Krüger, PhD, OMICRON electronics, Austria
Jin Sim, Jin Sim & Associates, Inc., USA
Juliano Montanha, SIEMENS, Brazil
Craig Adams, TRAFOIX, Australia
Arne Petersen, Consulting engineer, Australia
Zhao Yongzhi, Shandong Electrical Engineering & Equipment Group Co., Ltd, China
Barry M. Mirzaei, LargePowerTransformers Inc., Canada
Bhaba P. Das, PhD, Hitachi Energy, Singapore

#### **EDITORS**

Daosheng Liu, Jiangxi University of Science and Technology, China

Mislav Trbusic, University of Maribor, Slovenia Dr. Mohammad Yazdani-Asrami, University of Strathclyde, United Kingdom

Dr. Shuhong Wang, Xi'an Jiaotong University, China Nam Tran Nguyen, PhD, Hitachi Energy, USA

#### **ASSISTANT EDITOR**

Pedro Henrique Aquino Barra, MSc, EESC/USP - University of São Paulo, Brazil

Art Director: Momir Blazek Photo: Shutterstock.com Front page image: Hitachi Energy Language Editor: Ena Tomičić

## ADVERTISING AND SUBSCRIPTION

+385 1 7899 507 sales@merit-media.com

## **SUBSCRIPTION RATES:**

Print edition: \$130 (1 year, 4 issues)
Digital edition: \$60 (1 year, 4 issues)
Online edition - full access: \$20 (1 year, 4 issues)

**Online edition** - free access: free of charge for registered users

www.transformers-magazine.com

## TRANSFORMERS MAGAZINE

Transformers Magazine is published quarterly by Merit Media Int. d.o.o., Setaliste 150. brigade 10, 10 090 Zagreb, Croatia. Published articles do not represent official position of Merit Media Int. d.o.o. Merit Media Int. d.o.o. is not responsible for the content. The responsibility for articles rests upon the authors, and the responsibility for ads rests upon advertisers. Manuscripts, photos and other submitted documents are not returned.

## REPRINT

Libraries are permitted to photocopy for the private use of patrons. Abstracting is permited with credit to the source. A per-copy fee must be paid to the Publisher, contact Subscription. For other copying or republication permissions, contact Subscription. All rights reserved.

Publisher: Merit Media Int. d.o.o. Setaliste 150. brigade 10, 10 090 Zagreb, Croatia Contact: +385 1 7899 507 VAT number: HR09122628912 www.transformers-magazine.com Bank name: Revolut Bank IBAN: LT343250038251836452 SWIFT / BIC: REVOLT21

SWIFT / BIC: REVOLT21
Intermediary BIC: CHASDEFX
Director: Mladen Banovic, PhD

# Dear readers,

his edition of Transformers Magazine is a testament to the dynamic evolution of the energy and transformer sectors, highlighting innovation, resilience, and forward-thinking leadership. From advancements in technology to the critical role transformers play in the energy transition, our interviewees and authors offer a comprehensive look at the challenges, opportunities, and successes shaping our industry.

## Our interviewees and authors offer a comprehensive look at the challenges, opportunities, and successes that are shaping our industry

Interviews in this issue offer a perspective on leadership and innovation. We open with insights from CIGRE's Michel Augonnet, who highlights the importance of smart and expanded grids. As the world accelerates towards cleaner energy sources, grids must rise to the occasion and ensure that they are not the weak link in this global energy transformation. Lorenzo Prieto of Hitachi Energy shares how their commitment to pioneering spirit has driven their technology leadership for over three decades. Vinamra Agarwal's story of transforming a family business into an international transformer manufacturer shows how small players can grow with the right strategy. Jörn Clasen tells the story of Krempel, which has established itself as a trusted name in many sectors.

Our columns delve deeper into the intricacies of the industry, with **Tony McGrail** warning of the dangers of oversimplification in complex systems and **Vitaly Gurin** and **Marius Grisaru** tracing the evolution of transformer insulation fluids. **Vitaly Gurin** complements this by exploring the "art and science" of transformer insulation, highlighting the advances that have shaped today's solutions.

The articles present real-world applications of cutting-edge technologies. Hitachi Energy illustrates the sustainability potential of electrified rail transport, while Siemens Energy demonstrates the transformative power of on-site transformer repair. Amorim Cork Composites showcases how cork-based solutions are helping to manage transformer noise and vibration with environmentally friendly materials.

In the Industry Navigator 2024 conference coverage, Siemens Energy provides insights into the push to decarbonise the energy infrastructure, highlighting the need for collaboration, standards development, and proactive maintenance to future-proof operations in a world increasingly reliant on transformers.



Other articles highlight magnetic shunt topologies and how Europe's decarbonisation efforts are reshaping the landscape of distribution transformers amid supply chain challenges.

As we prepare for the Industry Navigator 2025 conference in Dubai on 9-11 April 2025, this issue sets the stage for the future of transformers. On a recent visit to the conference venue - the Raffles Hotel - I was struck by how extraordinary it is. Although I travel a lot and usually regard hotels as mere stopovers, the Raffles stands out. Its impeccable design and welcoming staff create an atmosphere that truly feels like home.

The Dubai conference offers unparalleled opportunities for sponsors and delegates alike. The venue combines elegance with state-of-the-art conference facilities, providing the ideal setting for high-level networking and collaboration. The timing of the event, immediately following the Middle East Energy exhibition, ensures that delegates can maximise their trip to Dubai. Sponsors will have the opportunity to host exclusive workshops, product launches, and private customer events using the hotel's meeting rooms and terraces. Sponsors from previous conferences have reported significant benefits, with many securing new customers as a result of their participation. The conference aims to share knowledge and to set the course for the future. Transformers Magazines Quiz League also provides a unique platform to inspire the next generation of professionals and great visibility for sponsors.

The Industry Navigator 2025 conference in Dubai is a prime opportunity to build partnerships, drive business development, expand your network and shape the future of the transformer and switchgear industry

Bringing together industry leaders, decision-makers and innovators, this prestigious event is a prime opportunity to build partnerships, drive business development, expand your network and shape the future of the transformer and switchgear industry by addressing emerging challenges and trends.

We hope you enjoy reading and learning more about the latest industry trends.

Yours sincerely,

Mladen Banovic, Editor-in-Chief