

# TRANSFORMER-LIFE-MANAGEMENT CONFERENCE

## Bangkok

Jasmine Hotel - Bangkok

### 07. - 08. Nov. 2017



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**TRANSFORMER-LIFE-MANAGEMENT  
CONFERENCE**

## About the Conference



**TLM goes global**

### **Transformer Life Management 2017**

**07. – 08. Nov. 2017**

**Jasmine Hotel - Bangkok**

**This year the TLM symposium will take place with a special focus on the question:**

**How can the safety and operation of the transformers in the network be assured in the face of increasing loading and age?**

The TLM 2017 attempts to answer this question. Manufacturers, operators, engineers and scientists will present methods and possibilities for transformer condition assessment and improvement, giving you the information to help develop an efficient maintenance concept.

The different diagnostic methods lead to a holistic condition appraisal, helping to identify age related changes and malfunctions at an early stage. This procedure allows early intervention to implement condition improvements that optimize operational reliability.

The main objective of this event is to find ways for prolonging the residual lifetime of transformers and to reduce unplanned outages.

The symposium and associated technical exhibition is directed at engineers, physicists, chemists, technicians and consultants involved in the manufacturing, design, operation, assessment and maintenance of transformers, as well as universities and research institutes with an interest in the reliable operation of electrical networks.



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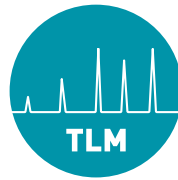
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## Conference Program - Jasmine City Hotel

**Tuesday 07.11.2017**

11 <sup>00</sup> -13 <sup>00</sup>	Check-in with welcome Snack and Distribution of the Conference Papers
13 <sup>00</sup> -13 <sup>30</sup>	Chairman - Welcome and Introducing <b>Prof. Dr.-Ing. Peter Werle, University of Hannover</b>
13 <sup>30</sup> -14 <sup>00</sup>	Technical and Economic Impacts of Distributed Generationon Distribution Systems <b>Mr. Nattachote Rugthaicharoencheep Ph.D.</b>
14 <sup>00</sup> -14 <sup>30</sup>	Asset Management of Transformer fleets - An Overview <b>Prof.Dr.Ing. Peter Werle, University of Hannover</b>
14 <sup>30</sup> -15 <sup>00</sup>	What you need to know about Transformer oils <b>Nils Herlenius, Ergon</b>
15 <sup>00</sup> -16 <sup>00</sup>	Coffee Break, Visit the Exhibition
16 <sup>00</sup> -16 <sup>30</sup>	Mitigating Murphy´s Law While Test <b>Frederic Dollinger, Haefely Hipotronics</b>
16 <sup>30</sup> -17 <sup>00</sup>	Properties of Ageing Mineral Insulating Oils in Service <b>Chian Yaw TOH, Nynas</b>
17 <sup>00</sup>	Dinner at Jasmine Hotel



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## Conference Program - Jasmine City Hotel

### Wednesday 08.11.2017

09 <sup>30</sup> -10 <sup>00</sup>	Chairman - Summarising of First Day <b>Prof. Dr.-Ing. Peter Werle, University of Hannover</b>
10 <sup>00</sup> -10 <sup>30</sup>	Material Testing with VLF on Transformers <b>Jürgen Jakober, b2 High Voltage</b>
10 <sup>30</sup> -11 <sup>00</sup>	Insulating Liquids for Power Transformers and their use for Condition Assessment Purposes <b>Prof. Dr.-Ing. Peter Werle, University of Hannover</b>
11 <sup>00</sup> -11 <sup>30</sup>	Frequency Converter as Power Supply for Transformer Testing <b>Frederic Dollinger, Haefely Hipotronics</b>
11 <sup>30</sup> -12 <sup>00</sup>	Real Life Assesment of Natural Ester Filled <b>Rajaram Shinde, Cargill</b>
12 <sup>00</sup> -13 <sup>30</sup>	Lunch - Visit the Exhibition
13 <sup>30</sup> -14 <sup>00</sup>	Stray Gassing of different refinery streams and impact of metal deatctivators <b>Nils Herlenius, Ergon</b>
14 <sup>00</sup> -14 <sup>30</sup>	Demystifying transformer Oil Treatment and regeneration <b>Igor Kudela, Ekofluid</b>
14 <sup>30</sup> -15 <sup>00</sup>	Experiance with electronic Buchholzgasrelais with Gas Sensors <b>Karin Machura, EMB</b>
15 <sup>00</sup> -16 <sup>00</sup>	Coffee Break - Visit the Exhibition
16 <sup>00</sup> -16 <sup>30</sup>	Naphthenic Mineral Insulating Oils in a Challenging Market Dynamics <b>Mr. Sutarmono, Nynas</b>
16 <sup>30</sup> -17 <sup>00</sup>	Measuring Methods for Solubility of Gases in Insulation Liquids- Summary of the day <b>Prof. Dr.-Ing. Peter Werle, University of Hannover</b>



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## Partner in Exhibition



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## Registration form TLM 2017 in Bangkok

**Resend to:**

info@energy-support.de

Fax: +49 21314039608

**Company Name:** \_\_\_\_\_

**Participation 1:** \_\_\_\_\_

**Participation 2:** \_\_\_\_\_

**Participation 3:** \_\_\_\_\_

**Street:** \_\_\_\_\_

**City:** \_\_\_\_\_

**Phone:** \_\_\_\_\_

**E-Mail:** \_\_\_\_\_

Included in the Fee of 695,00 € for each Person:

- Colloquium materials
- Welcome drinks
- All Snacks
- Lunches
- Official dinner

Payment against Invoice must be made in advance.

**Signature and Company Seal:** \_\_\_\_\_

**Registration**

After registration you will get a confirmation and an invoice.

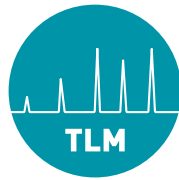


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## TRANSFORMER-LIFE-MANAGEMENT CONFERENCE

# ENERGY SUPPORT

Experts in providing mobile Solutions

## Equipment for Transformer Oil Analysis



### Contamination Free Oilsampling Set

- to get a reliable Oilsample according to IEC/ASTM Standard
- to avoid any misinterpretation of your Laboratory results
- measure the Oil Temperature
- avoid any contamination with ambient air or dirt particles



### MobilGC

- Portable DGA Equipment for Analysis 9/11 Gases
- according ASTM D3612/IEC 60567
- direct Analysis of Buchholz gases
- with Partial Vacuumdegassing Unit
- with Software Package Expertsystem

### TOP TOGA

- DGA Analysis according to ASTM D3612/IEC 60567
- with Autosampler 16/32 Syringe 50/100ml
- fully automatic Vacuumdegassing
- with Analysis of 11 Gases
- with high sensitivity
- with Software Package Expertsystem



### Breakdown Voltage Measurement

- BA 75/100 KV
- according to all usable Standards
- smallest Breakdown Voltage Analysator
- USB drive, Software controlled
- Battery operated



### Pocket TitratorKF

- Water content measurement using Karl Fisher Method
- full automatic with high precision
- measuring low concentrations



### TDM 4000

- Automatic Dielectric Constant Tan Delta & Resistivity Measurement
- Heating Chamber with automatic Temperaturcontrol
- automatic drainage of your Oilsample
- with Printer and Calibrator



[www.energy-support.de](http://www.energy-support.de)

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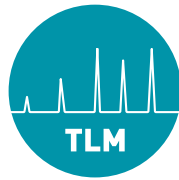
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## TRANSFORMER-LIFE-MANAGEMENT CONFERENCE

**ENERGY SUPPORT**

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# Contamination Free Oilsampling Set



## Avoid Misinterpretation of your Oilsamples

**ENERGY Support developed the Contamination Free Oilsampling Set with temperature control, to avoid any misinterpretation of Oilsamples.**

Results are strongly dependent on Temperature and Oil Ageing Conditions.

Temperature in C°	80	15	46
Dielectric Strength (kV/mm)	13	70	45
Water in Oil (mg/kg)	48	10	20

- Where does the water come from?
- Moisture can be in the insulation when it is delivered from factory.
- If the transformer is opened for inspection or has a leak, the insulation can absorb moisture from the atmosphere.
- Moisture is also formed by the degradation of insulation as the transformer ages.
- Additional benefit is the sampling with gas-tight syringes according to standard IEC 60475/ASTM D 923.
- The aim of proper sampling is to ensure that the result of the dissolved gas analysis are not distorted by contamination with ambient air or dirt particles.
- This guarantees a reliable and exact dissolved gas analysis and a solid decision basis for the further treatment of your Transformer.

With this in mind, we organise our TLM Conference 2016. To achieve a stable integrated electricity network, generation, transmission and distribution companies must employ best practice performance methodologies to achieve optimal resilience and a future-proof grid.

**Interested in learning more and share your knowledge at Transformer Life Management Conference?**

[www.energy-support.de](http://www.energy-support.de)

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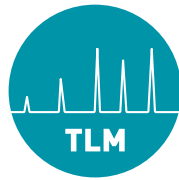
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## TRANSFORMER-LIFE-MANAGEMENT CONFERENCE

+++ SAFETY FIRST +++ SAFETY FIRST +++ SAFETY FIRST +++ SAFETY FIRST +++ SAFETY FIRST+++



Since more than 60 years the EMB GmbH has been developing and producing reliable protection devices for liquid filled transformers, tap changers and chocke coils in Germany. We aspire to fulfill and to exceed the continuously increasing safety requirements of our costumers in more than 100 countries.

### EMB SMART Buchholz relay



#### Capacitive sensor (NM-series):

- For analogue measuring of gas accumulation
- Reliable & continuous monitoring of Buchholz gases starting already at 50 cm<sup>3</sup>

#### Temperature sensor:

- For continuous oil temperature monitoring
- Available separately or combined with humidity sensor

#### Humidity sensor:

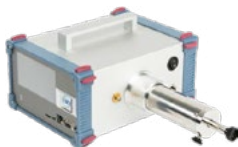
- Constant monitoring of humidity in oil
- For early detection & preventive measuring to extend transformer life time

### Buchholz relay 3+3



- Buchholz relay with 6 independent contacts
- 3 contacts for alarm & 3 contacts for disconnection
- Also available with mechanical pre-alarm system

### Buchholz gas tester BGT 4.2



- Measuring and analysis of Buchholz gas directly on site
- Detection & analysis of H<sub>2</sub>, CO, CO<sub>2</sub>, C<sub>2</sub>H<sub>2</sub>, CH<sub>4</sub>+
- Enables to decide about the continuous operation of the transformer
- Easy handling via touch display
- Incl. Buchholz gas sampler BGS

### Breathing buffer box G3B



- For significant lifetime extension of open type transformers
- Sustained reduction of oxygen in oil through hermetic sealing
- To slow down the aging process of transformer insulating material

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