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MAFINCO: MAgnetic Fluid-new INsulated and COoling medium for power transformers

PROJECT DESCRIPTION

The inhibited transformer oil as insulation fluid in power transformers performs two main functions—insulating, i.e. preventing the flow of electric current between conductive components, and cooling, i.e. transfer the heat out of active transformer components. For currently used insulation fluids, especially those with high dielectric strength (highly refined mineral oils ~ transformer oils), a low thermal conductivity is typical, resulting in low-efficiency cooling, limitation of current intensity in transformer windings what influences its size and weight for a given power rating and in the end increases price of the transformer. The idea using transformer oil based magnetic fluids (MF) as a insulating media with the same or better dielectric properties and better thermal conductivity (magnetic convection) against pure oil can resolve above mentioned problems and so relevantly decrease expenses for construction and operation of transformers.

The expected results will be resided in manage of preparation of transformer oil MF with sufficient dielectric and magnetic properties, in construction power transformer filled by MF with better operational condition against this one filled by pure transformer oil.

PARTNERS:

Project coordinator: Faculty of Electrical Engineering and Informatics, Technical University, Košice, **Slovakia**

Project partners: Electrotechnical Research and Design Institute inc. Nova Dubnica , (EVPU) **Slovakia**
Faculty of Aeronautics, Technical University, Košice, **Slovakia**
Institute of Physics Slovak Academy of Sciences, Bratislava, **Slovakia**
University Politehnica Timisoara, **Romania**
Center for Fundamental and Advanced Research, Romanian Academy-Timisoara Branch, **Romania**
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PROJECT DURATION AND TOTAL PROJECT COST:

Duration: 01/01/2009-31/12/2011
Cost: 292.000 Euro



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