

IEEE Sri Lanka Central Region Subsection, IEEE PES Sri Lanka Chapter and IEEE PES Peradeniya Student Branch
Jointly organizes a talk on

“Methanol and Ethanol As Paper Ageing Indicators For Transformers”

By

Mr. Shanika Matharage

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Wednesday, 22nd February 2017
4:00 pm - 5:00 pm

Refreshments at 3.45 pm

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DEEE Seminar Room, Faculty of Engineering

All Students are Welcome

Abstract: *Aging of transformer paper insulation is commonly investigated through indirect measurements conducted in the oil, such as furanic compounds and carbon oxide gases. In addition to the conventional indicators, recent investigations have shown that alcohols like methanol and ethanol in oil could be used as paper aging indicators. Applicability of these new paper aging indicators in a novel, gas-to-liquid technology based transformer oil was investigated through an accelerated laboratory aging experiment. A conventional mineral oil was also tested as a reference. Kraft paper aged in both oil types showed similar reductions in degree of polymerization and tensile strength. Amount of methanol in oil was higher than that of 2-FAL in oil when DP is over 400, confirming the promise of using methanol as an early paper aging indicator. In addition, oil only aging experiments showed that oil does produce methanol but it is negligible compared with oil paper aging experiment; however the amount of ethanol measured in the present oil paper aging experiment is believed to be originated from oil oxidation rather than from paper aging.*



Biography: Shanika Matharage received the B.Sc. degree in Electrical and Electronic Engineering (2011) from the University of Peradeniya in Sri Lanka. He received a fully industry funded scholarship to pursue his PhD at The University of Manchester, UK in the field of transformer insulation ageing. He has published two journal papers and seven international conference papers. He also won “The GnoSys Global Ltd prize” for Best Research Presentation at 7th UHVnet Colloquium held at the University of Surrey, UK in 2014 for the presentation of “Methanol as a Transformer Paper Ageing Indicator”. Currently he is working as a research associate at the University of Manchester where he conducts research on the ageing of transformer paper insulation. He is also the publication chair of the 2017 IEEE International Conference on Dielectric Liquids (ICDL). His research interests are transformer condition monitoring, transformer insulation aging and alternative liquid insulations.