Experimental investigation of load scenarios on the behaviour of local distribution transformers with new cost effective sensors

Bachelor-/ or Masterthesis

The increasing integration of renewable energies at the low and medium-voltage levels is leading to greater utilisation of resources in local grid stations and transformer stations. The higher capacity utilisation and the efforts of network operators to continuously reduce their costs within the framework of incentive regulation are leading to a change in asset management from a fixed time interval-based maintenance to condition-oriented maintenance. Condition-based maintenance is based on recording the condition of operating resources and their ageing behaviour as a function of the utilisation of operating resources. In this thesis new sensors are used for condition monitoring of the local distribution transformer.

The aim of this work is therefore to investigate the influence of different loads on the electrical and mechanical properties of a transformer. In the context of the work, the local network transformer shall be measured with these new sensors in different load scenarios and its influence shall be investigated.

Figure 1: Local distribution transformer on the test bench, IAEW

Goals and Focus of the thesis:

Your core tasks will be:

- Familiarization with typical fault cases and the measurement of local network transformers
- Experimentelle Untersuchung des Einflusses verschieden Lastszenarien
- Execution and evaluation of test series

Your Profile

- Study in Engineering or Business Administration & Engineering or Computer Sciences.
- First experience in laboratory tests are advantageous
- First experience in MATLAB® for test evaluation are advantageous

Contact

Andre Würde
+49 241 80 - 49331
wuerde@ifht.rwth-aachen.de

Focus

- Experimental Investigation
- High Voltage Engineering
- Transformer Investigation