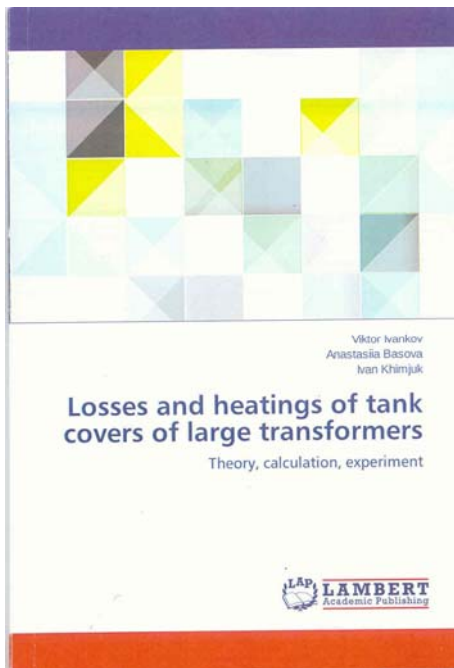


**Technical sciences.** <sup>1</sup>IVANKOV V.F., <sup>1</sup>BASOVA A.V., <sup>2</sup>KHIMJUK I.V. Losses and heatings of tank covers of large transformers: Theory, calculation, experiment. – LAMBERT Academic Publishing, 2015. – 87 p. – ISBN: 978-3-659-28296-6.



<sup>1</sup> VAT «Zaporizhtransformator», Zaporizhia;

<sup>2</sup> Institute of Electrodynamics of NAS of Ukraine.

Design features and key methods of the general and local losses decrease in the tanks of power transformers from the concentrated magnetic fields of powerful current leads are presented. Mathematical statement of the tasks of electromagnetic and thermal processes calculation is given. The main approaches to numerical modeling of losses in constructions of nonmagnetic and ferromagnetic still are presented by methods of superficial and volume losses are presented. Numerical and analytical solutions of a number of local tasks for the systems of nonmagnetic and ferromagnetic plates, which are elements of tank covers design, are provided. Known empirical and analytical estimates of coefficients of thermolysis, and also application of CFD method of tasks modeling of a heat mass transfer to calculate the heating of elements of tank design, are presented. The main approaches to the development of computational models of transformer devices by means of ANSYS are described. The results of numerical researches and their comparison

with the measurements on real samples of powerful power transformers are presented.