

## TRANSPPOSITION OF THE PARALLEL SUPERCONDUCTING HTS 2G TAPES IN THE WINDINGS OF THE TRANSFORMERS

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**SUMMARY** *In a case where rated current of the windings are higher than the critical current of the used superconducting HTS 2G (second generation) tape, the windings are made of a package of tapes connected in parallel. The necessity to use tapes connected in parallel leads to an increase of the thickness of the windings. The leakage flux permeating the winding is unequally associated with individual parallel tapes and causes equalization currents to flow. This current causes large differences in the values of total current in individual parallel layers and thus reduces the full use of superconducting tapes, as well as affects the generation of additional losses in the windings. To prevent this, a method for equalizing equalization currents in the parallel tapes of the superconducting transformer windings should be developed.*

*This article discusses one of the potential ways of transposition parallel superconducting tapes, developed at the Laboratory of Superconductor Technologies in Lublin, using mechanical connectors – transpositioners, as well as the advantages and disadvantages of this method.*

**Keywords:** *superconducting transformers, superconducting HTS 2G tapes, transformers windings, transposition of the parallel tapes, transpositioners*