

## Recent Trend and Issues in Developments of HTS Power Transformer

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Due to a tremendous progress achieved in the past decade and that is continuing today in transforming High Temperature Superconducting (HTS) materials into HTS conductor, we are at the threshold of a new era in which HTS material is expected to play a key role in a number of applications including electric power devices, such as a power transformer. Ever since the 1<sup>st</sup> generation HTS wire came on the stage back in 1990s, a number of research programs about development of HTS power transformer had been proposed and performed by lots of research groups in the world, but very recently, most of them are now focusing on the fundamental common technologies for HTS applications instead of a development of a prototype or a product despite the remarkable progress in a performance of 2<sup>nd</sup> generation HTS wire, coated conductor. It seems that the budgets for development of device have been trimmed because of two outstanding issues concerning HTS power transformer, one is cryogenic high voltage issue and the other is AC loss. Those two issues will be getting more serious when the power of the transformer goes higher, and now it is well agreed that we need to resolve them first. The latest states of the development programs for large power transformer and efforts to reduce the ac loss from the 2<sup>nd</sup> generation HTS conductor will be introduced in the presentation.

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