



Contribution ID: 728

Type: **Contributed Oral**

Thu-Mo-Or2-04: Development of low AC loss, high purity aluminum (HPAL) and MgB₂ conductors and magnets to enable high power density motors and generators

Thursday 3 July 2025 11:30 (15 minutes)

Hyper Tech Research will report on progress that has been made on developing high purity aluminum (HPAL) and magnesium diboride superconductor wires, cables and coils with significantly lower AC losses. The use of HPAL low AC loss stands will enable high power density motors and generators in the 35-45 kW/kg range, with efficiencies in the range of 99%. HPAL low AC loss coils for stators can enable rotating machines at higher frequencies than superconductors, allowing for much higher rpm machines that are lightweight. We will also show that present day MgB₂ conductors are usable for AC applications such SMES, motors and generators. Electrical and mechanical properties of strands and cables will be discussed in addition to loss values and strand/cable architecture.

Authors: Dr PENG, Xuan; Mr KWON, Jin; KOVACS, Chris (Scintillating Solutions LLC); Mr GUO, Yang (The Ohio State University); RINDFLEISCH, Matt; SUMPTION, Michael; TOMSIC, Mike

Presenter: TOMSIC, Mike

Session Classification: Thu-Mo-Or2 - Rotating Machinery II