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C3Or2A-05: 50-100kW HTS motor demonstrator design and manufacturing for hybrid-electric propulsion

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Lightweight and powerful technologies for hybrid-electric propulsion technology on-board transport aircraft are needed. GREEN laboratory with the support of DGA and SAFRAN Tech proposed an innovative electromagnetic design using High Temperature Superconductors (HTS) wire and bulks. This motor concept is very promising and can be upscaled easily to deliver large power to mass ratio performance.

This original superconducting concept will be tested on a 50 kW, 5000 rpm machine designed and manufactured by AFCryo. AFCryo benefits from in-house capabilities to design, model, optimize, manufacture and test such a device.

The paper will focus on the overall motor concept and associated design. The outcomes of the manufacturing will be reported with the first test results.

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