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MgB_2 Superconducting Wires for Electric Aircraft: Advantages and Future Perspectives

T. Spina, C. E. Bruzek, and G. Grasso

ASG Superconductors SpA, Genoa, Italy

E-mail: spina.tiziana@as-g.it

Abstract **– Among the realm of practical superconductors, MgB_2 is the most lightweight superconductor that can be produced in long length and multifilamentary configuration suitable for several applications. One of the major advantages of MgB_2 is in that the cryogenic cost and the overall size of devices that uses such technology can be substantially reduced thanks to the use of liquid hydrogen (i.e., MrOpen – the open MRI machine developed at ASG). Recently, ASG superconductors has started a campaign in collaborations with universities, for the optimization of the PIT ex-situ industrial MgB_2 wires intended to minimize AC losses thus to be used in the next future in the most common AC applications as the development of MgB_2 electric motors for aircraft and race car.**

Keywords (Index Terms) **– Ex-situ- PIT MgB2 wire; Liquid hydrogen; AC losses**

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