



Contribution ID: 173

Type: **Contributed Oral Presentation**

Experimental investigation of a Hydrogen Pulsating Heat Pipe

Tuesday, June 30, 2015 11:45 AM (15 minutes)

The oscillating heat pipe (OHP) has been increasingly studied in cryogenic application, for its high transfer coefficient and quick response. Compared with Nb₃Sn and NbTi, MgB₂ whose critical transformation temperature is 39K, is expected to replace some high-temperature superconducting materials at 25K. In order to cool MgB₂, this paper designs a Hydrogen Pulsating Heat Pipe, which allows to study how applied heat, filling ratio, and length of adiabatic section affect the thermal performance of the OHP, respectively. The thermal performance of the hydrogen OHP is investigated for filling ratios of 30% , 50% and 70% at different heat input, what's more the starting power is received at these three filling ratios.

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Session Classification: C2OrC - Pulsating Heat Pipes and Thermosyphons

Track Classification: CEC-12 - Fluid Mechanics, Heat Transfer, and Cryogen Properties