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HTS based 400 mm level sensor for liquid Nitrogen

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Content :

The high temperature superconductor tapes are commercially available with lowest width of 3 mm. An attempt to use those types for level sensor application for liquid nitrogen is described in this paper. The output curves versus liquid level shows the linear behavior when a constant current of 1 ampere is used in a four probe method. An attempt to develop the liquid level sensor of 400 mm of length for use in cryostage of LOX tank and the calibration of level sensor against the secondary standard (capacitance type level sensor) is presented here. The calibration was carried out using liquid Nitrogen. The light weight superconductor type level sensor weighing less than 1 kg can be used in cryostage to reduce the payload of the flight. The continuous online data logging has been done using the program developed in LabVIEW 11.0 software.

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