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DEVELOPMENT OF A CRYOMODULE FOR BETA 0.61 650 MHZ SCRF CAVITY AT RRCAT

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Content :

Abstract

Design and development work for cryomodule of low beta 0.61, 650 MHz SCRF cavities has been initiated at Cryomodule Engineering Lab. of Cryo-engineering and Cryomodule Development Division (CCDD) of RRCAT. This cryomodule will be part of superconducting structure of LINAC of upcoming Indian Spallation Neutron Source (ISNS) project. Designed diameter of cryomodule is 1.2 meter and length of cryomodule is 5 meter, housing three numbers of 0.61 beta 650 MHz SCRF cavities. Cryomodule comprises of various subsystems inside a vacuum vessel such as 70 K thermal radiation shield, bottom cavity support system and different cryogenic piping with their supports. Design for subsystems was initiated and 3-D models for major subsystems were prepared. This paper discusses about design of these subsystems in detail. This paper also discusses finite element analysis for rectangular cryogenic distribution box. Design review is underway.

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