

Thermal System Design for a Large Space Simulator(Φ 8m x L10m)

**Guee-Won Moon, Chang-Lae Cho, Hyokjin Cho, Sang-Hoon
Lee, Hee-Jun Seo, and Seok-Weon Choi**
Space Test Div., Korea Aerospace Research Institute

According to the National Space Program of Korea, KARI(Korea Aerospace Research Institute) has been developing a large space simulator (working dimension; Φ 8m x L10m) to verify the performance of future large satellites under the space environment conditions. Especially, a very low temperature condition of space will be simulated by shrouds covering the inside surface of the vessel. The surface of shrouds will be cooled down to 77K by liquid nitrogen(LN₂) from ambient temperature and hence, an optimal LN₂ circulation system design is necessary to remove gaseous nitrogen(GN₂) sufficiently and maintain the shrouds at the LN₂ temperature.