
**SESSION 6: GM & GM-Type Pulse Tube
Cryocoolers**

Paper No. 6-2 Wednesday Morning 9:15 AM

***Development of a 2W 4K Pulse Tube
Refrigerator with Remote Valve***

*T. Lei and M. Xu, Sumitomo (SHI) Cryogenics of America,
Inc., Allentown, PA*

A two-stage pulse tube refrigerator, having a capacity of 2 W at 4.2 K and simultaneously 60 W at 50 K, has been developed by Sumitomo (SHI) Cryogenics of America, Inc. for applications such as large cryogen-free dilution refrigerators and superconducting magnets. This pulse tube refrigerator has a low-vibration design using a remote valve. The development of this pulse tube refrigerator and its performance characterization, including improvements in system efficiency, are described in this paper. Characteristics of the new pulse tube refrigerator in potential applications are also discussed.