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Two-stage high frequency pulse tube refrigerator with base temperature below 10 K

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This paper will introduce our recent experimental results of high frequency pulse tube refrigerator. To achieve a temperature below 10 K, two types of two-stage configuration, gas coupled and thermal coupled, have been designed, built and tested. At present, both types can achieve a no-load temperature below 10 K by using only one compressor. The configuration, the phase shifters and the regenerative materials of the developed two types of two-stage high frequency pulse tube refrigerator will be discussed, and some typical experimental results and considerations for achieving a better performance will also be presented in this paper.

Authors: Dr CHEN, Liubiao (Chinese Academy of Sciences Key Laboratory of Cryogenics, Technical Institute of Physics and Chemistry); Dr WU, Xianlin (Chinese Academy of Sciences Key Laboratory of Cryogenics, Technical Institute of Physics and Chemistry); Dr ZHU, Xiaoshuang (Chinese Academy of Sciences Key Laboratory of Cryogenics, Technical Institute of Physics and Chemistry); Dr PAN, Changzhao (Chinese Academy of Sciences Key Laboratory of Cryogenics, Technical Institute of Physics and Chemistry); Ms ZHU, Wenxiu (Chinese Academy of Sciences Key Laboratory of Cryogenics, Technical Institute of Physics and Chemistry); Prof. ZHOU, Yuan (Chinese Academy of Sciences Key Laboratory of Cryogenics, Technical Institute of Physics and Chemistry); Prof. WANG, Junjie (Chinese Academy of Sciences Key Laboratory of Cryogenics, Technical Institute of Physics and Chemistry)

Presenters: Dr CHEN, Liubiao (Chinese Academy of Sciences Key Laboratory of Cryogenics, Technical Institute of Physics and Chemistry); Dr PAN, Changzhao (Chinese Academy of Sciences Key Laboratory of Cryogenics, Technical Institute of Physics and Chemistry); Prof. WANG, Junjie (Chinese Academy of Sciences Key Laboratory of Cryogenics, Technical Institute of Physics and Chemistry)

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