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## **C2Or2A-06: A 4He sub-Kelvin adsorption refrigerator**

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Adsorption refrigeration is a significant method for achieving temperatures below 1 K. The process involves pumping a helium tank to a high vacuum by adsorbents, resulting in the liquid helium reaching sub-Kelvin temperatures. The adsorbents are then heated to desorb  $4\text{He}$ , which condenses in the region below the critical temperature, and the adsorption refrigeration cycle is repeated. This paper presents the design and experiments of a  $4\text{He}$  sub-Kelvin adsorption cooler that can achieve an ultra-temperature of 773 mK, continuously refrigerate for 9.4 hours without any additional heat power, and has a cooling power of  $100\ \mu\text{W}$  at 803 mK.

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