



Contribution ID: 1027

Type: **Poster Presentation**

C3Po1D-03 [03]: A two-stage closed-cycle sorption pumped ^3He refrigerator with passive thermal links

Wednesday, July 24, 2019 9:00 AM (2 hours)

Sorption pumped ^3He refrigerator systems are a well described method of accessing the $\sim 300\text{mK}$ temperature range. However, pulse-tube pre-cooled ^3He systems typically also include a pumped ^4He refrigerator stage to ensure the efficient condensation of the ^3He charge, and a set of heat switches to isolate the sorption pumps during regeneration. Here we show that excellent cryogenic performance of a ^3He refrigerator (base temperature below 250mK and $100\mu\text{W}$ cooling capacity below 330mK) can be achieved without the added complication of these heat switches.

Primary authors: Dr MATTHEWS, Antony (Oxford Instruments Nanoscience); Mr MARSH, Tom (Oxford Instruments Nanoscience); Dr VAN DER VLIET, Harriet (Oxford Instruments Nanoscience); Mr CLARKE, Neil (Oxford Instruments Nanoscience)

Presenter: Mr CLARKE, Neil (Oxford Instruments Nanoscience)

Session Classification: C3Po1D - Very Low Temperature Aerospace Cryocoolers