Successful installation by Oxford Instruments of a Cryofree® dilution refrigerator with 9T magnet at the National Tsing Hua University in China:

The system comprising of a completely Cryogen-free dilution refrigerator and 9T magnet was successfully installed in August. It uses a Pulse Tube Refrigerator (PTR) to firstly cool down the 9T magnet and IVC (Inner Vacuum Can) down to 2.8K, then the He3/He4 circulating gas which then cool the MC(mixing chamber) down to 30mK. It initially takes 34 hours to cool down the system from room temperature down to 30mK. However once the system is cold, it can be kept at base temperature without having to refill with liquid helium. As the PTR has very low level of vibrations, temperatures down to dozens of mK can be reached with very low noise levels acceptable for electrical property measurements. Prof Chiu commented: “The whole system’ stability is excellent compared to traditional Dilution Refrigerators. After few adjustments, we could achieve pA level.”

Prof.CHIU & his colleagues and an OI engineer Dr.Richardo in front of dilution refrigerator.