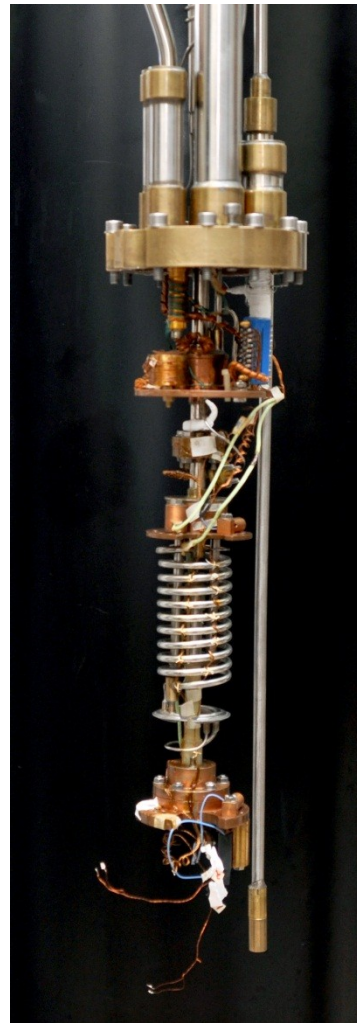


Oxford wet Dilution Refrigerator

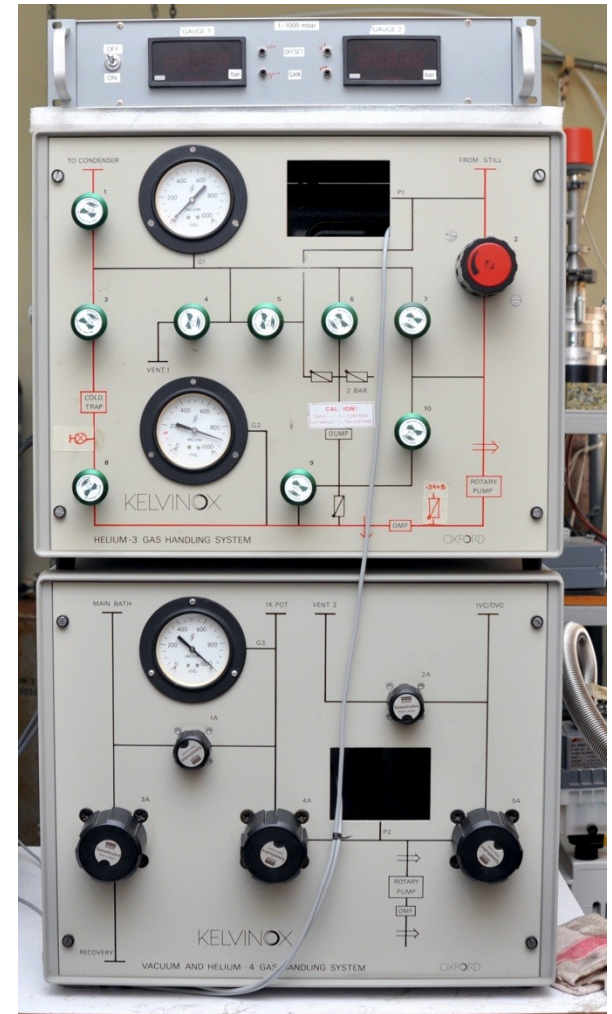
Dilution Refrigerator



Insert

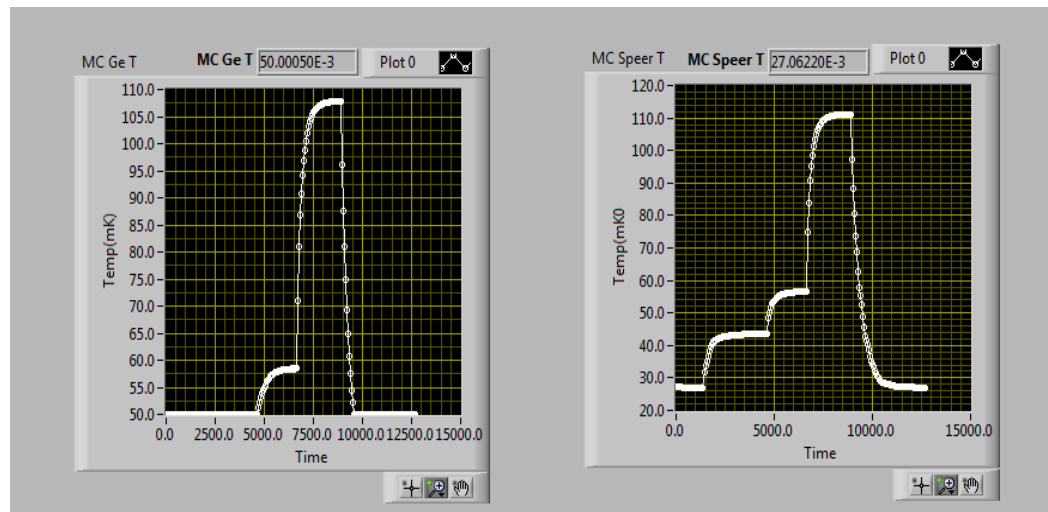
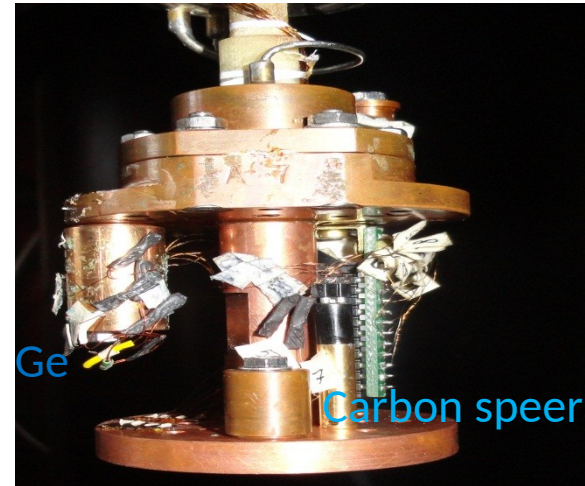


Gas systems



Improvements in dilution refrigerator

- ❖ Initially Ge sensor can measure only up to 50mK
- ❖ Now carbon Speer sensor (with RF filter) added to MC which can measure up to 10mK
- ❖ Temperature controller automated with PID values
- ❖ Lowest temperature reached ~ 27mK
- ❖ Cooling power obtained - 20uW at 100mK



Cryogen Free Dilution Refrigerator



NDBD lab @ TIFR

Gas Handling system along with the dilution unit

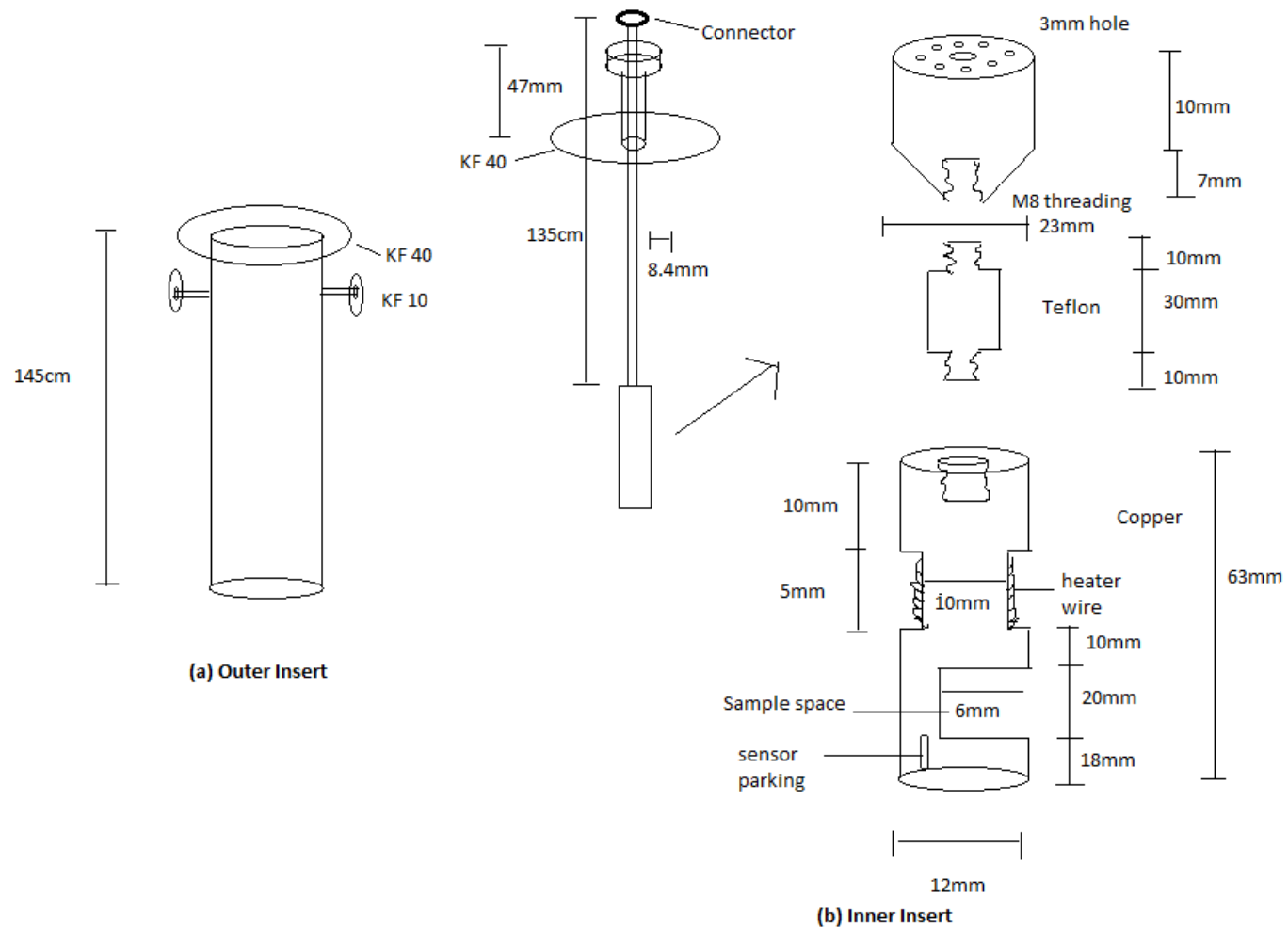


Inset of
dilution unit

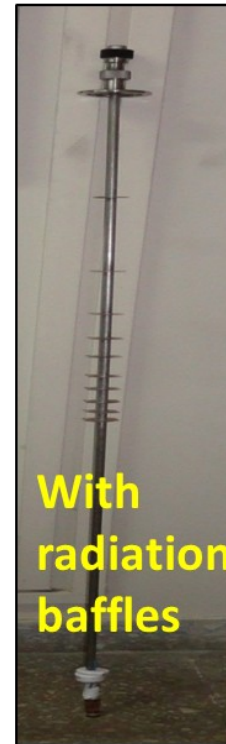


Probe setup

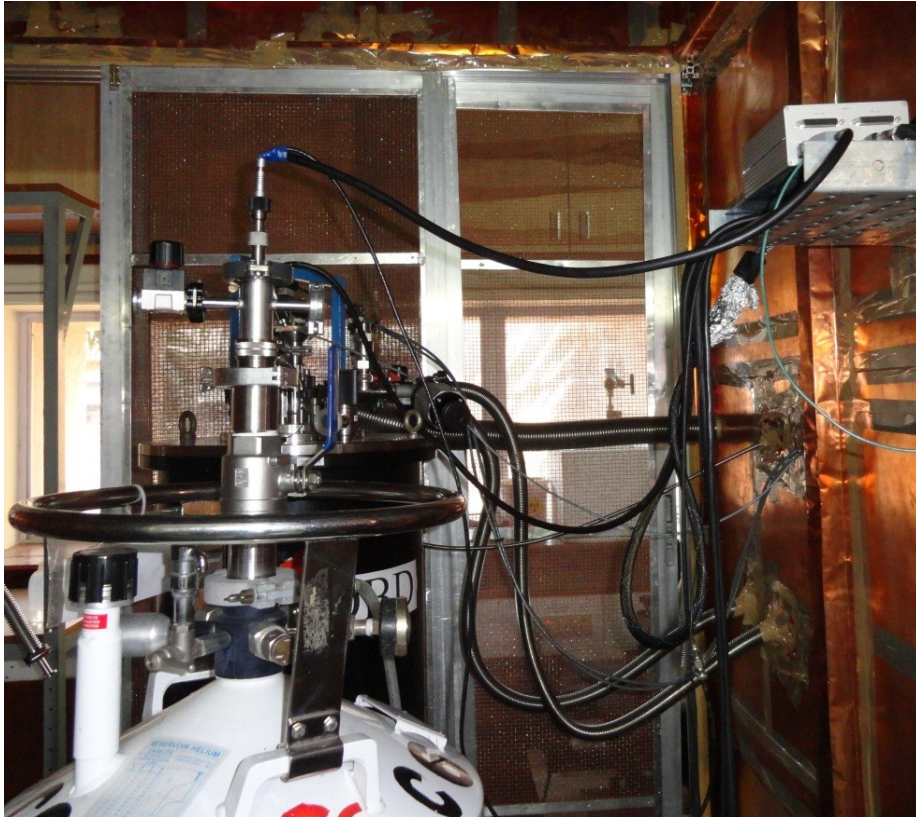
Schematic of 4 K insert



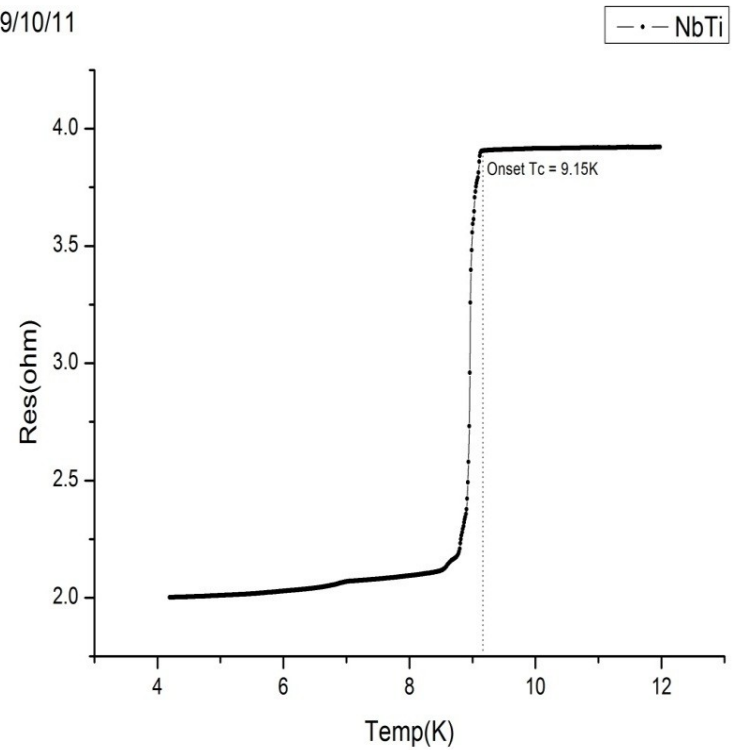
4 K Cryo insert for resistivity measurements



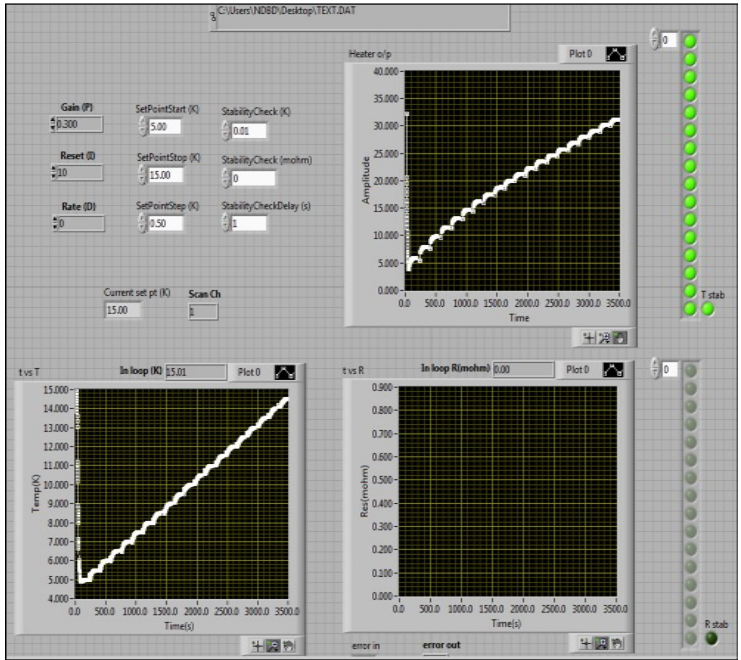
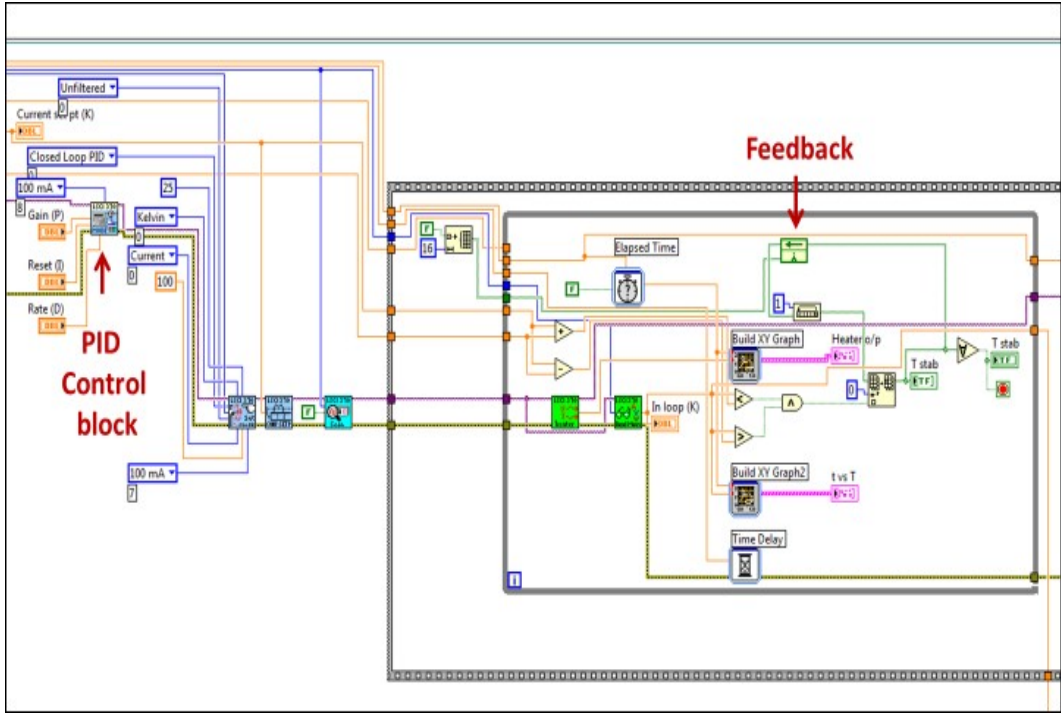
Resistivity measurement in 4 K insert



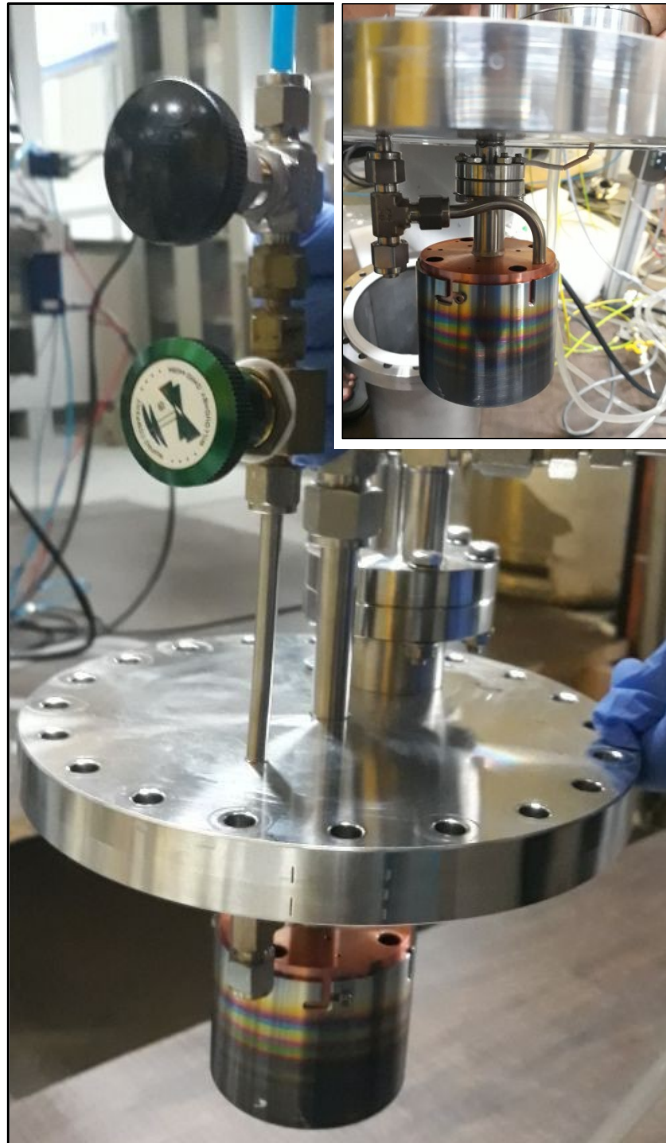
19/10/11



Automation of 4 K insert



Sputtering set up & Dip stick



Co-evaporation setup & Sample stage

