
17th ARIES WP15

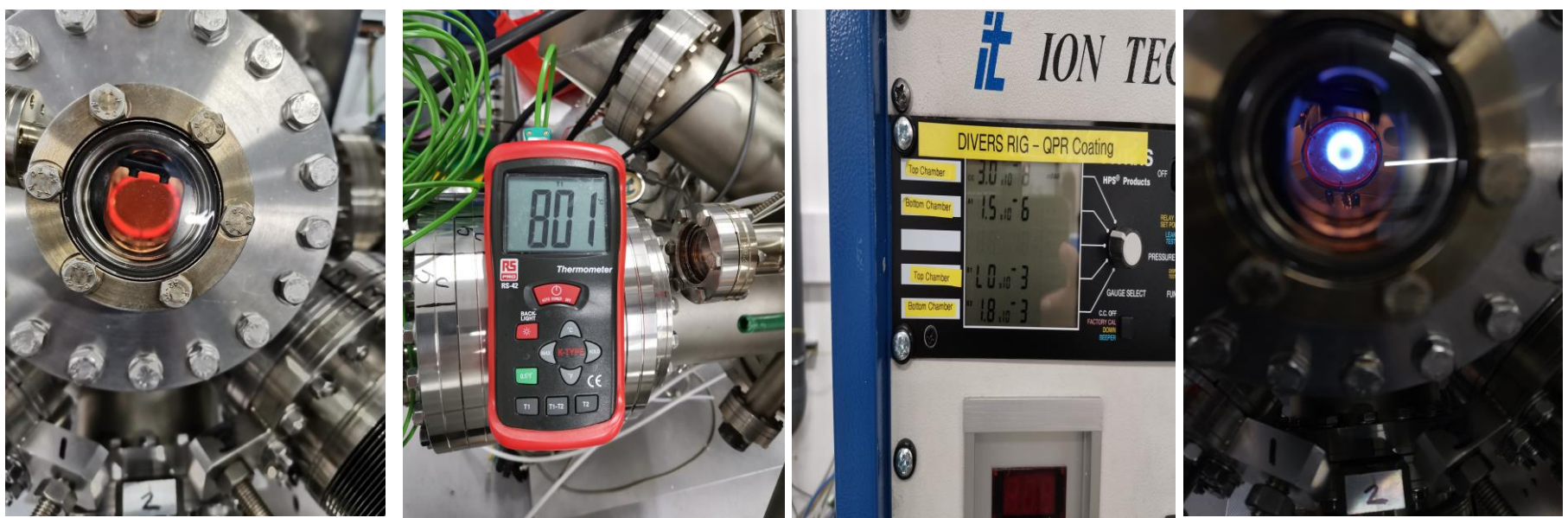
**STFC progress
report**

25/02/21

Activities undertaken past six months

- Deposition of multilayer Nb/AL/NbTiN on copper with HIPIMS
- Deposition of Nb with HIPIMS with different HIPIMS power supply
- Deposition of V₃Si with DC pulsed and HIPIMS at various temperature.

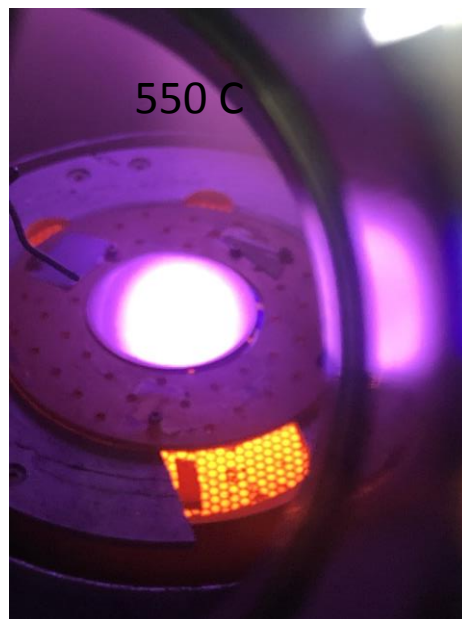
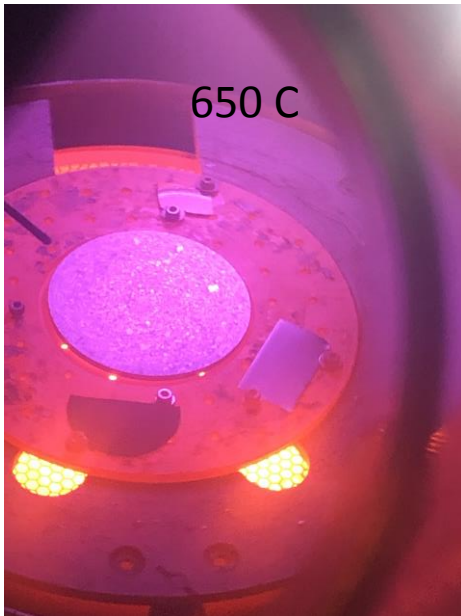
Multilayer dep for QPR



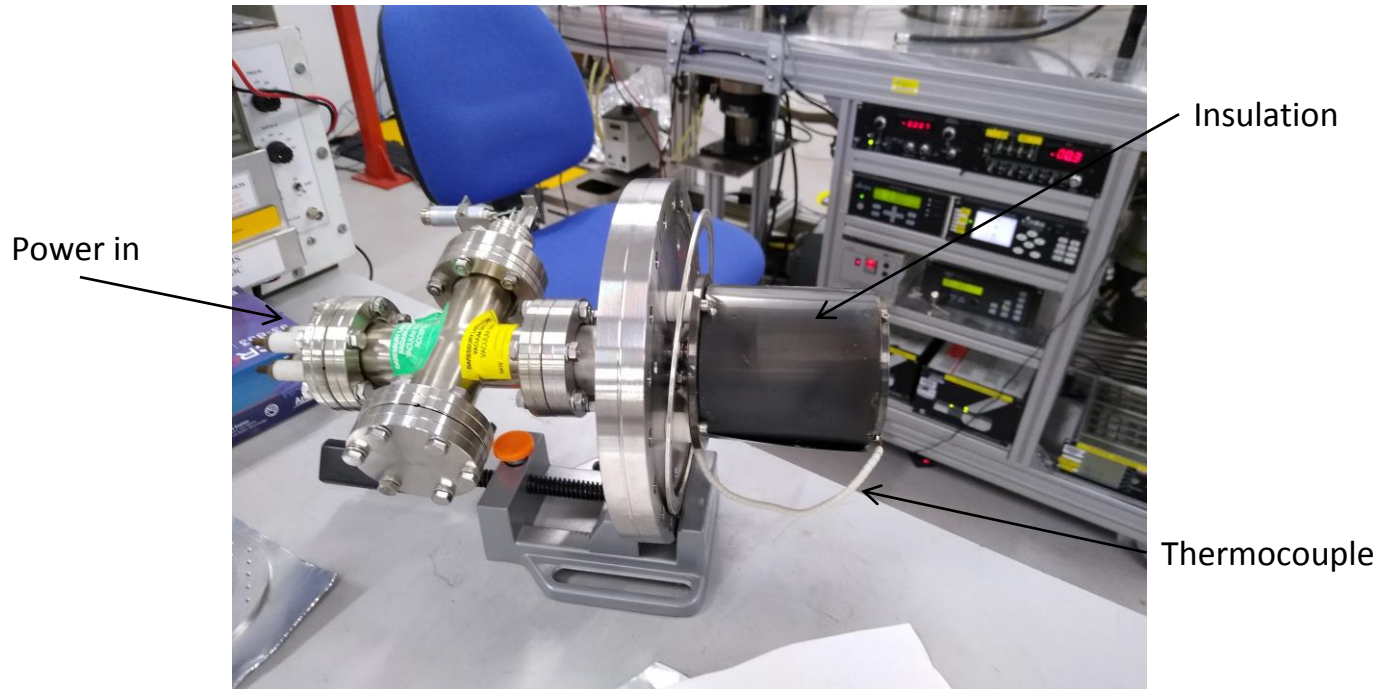
Progress on V₃Si

- V₃Si target arrived and installed
- New heater built and tested
- Samples deposited on copper and silicon

V3Si deposition with Pulsed DC

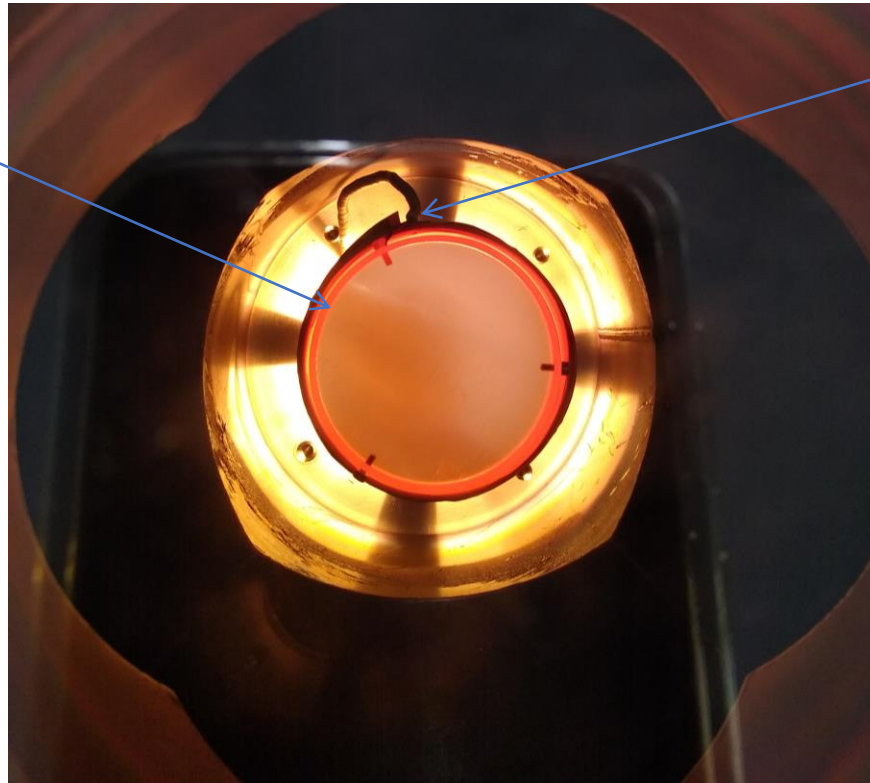


Heater completed



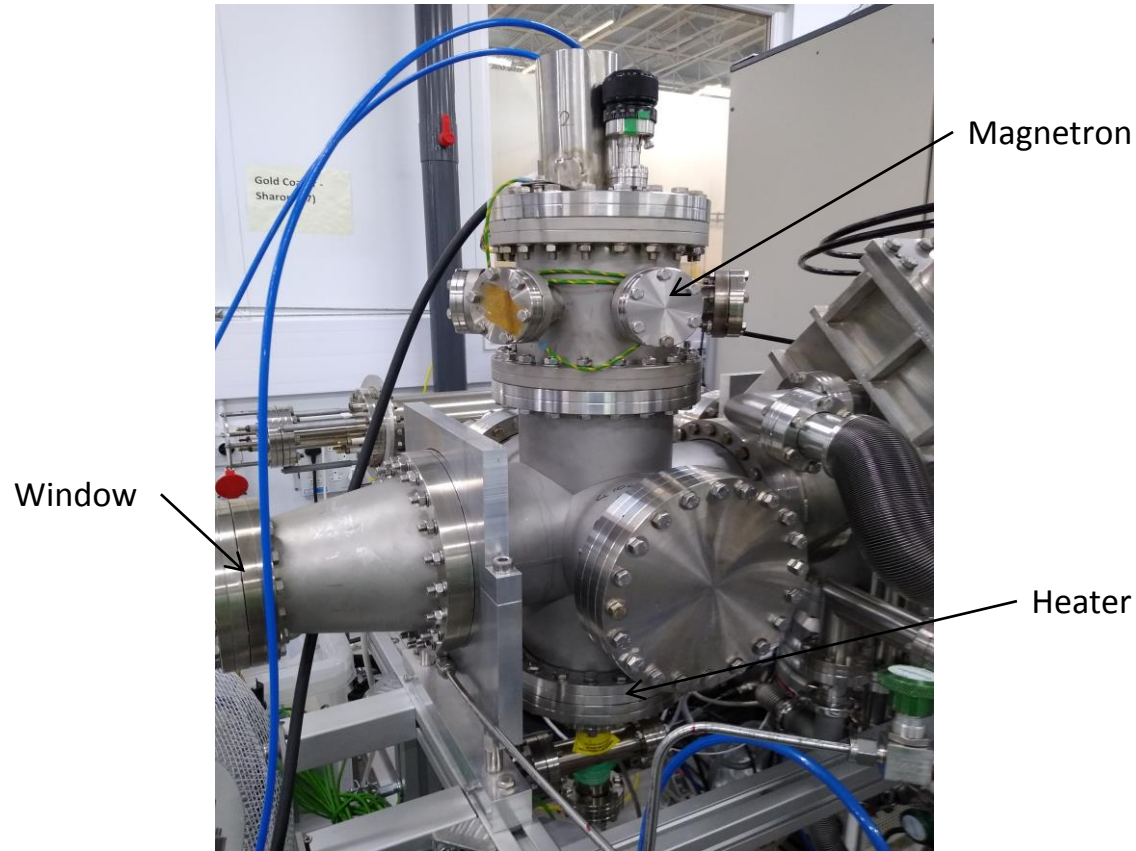
Heater Tested

Copper Substrate



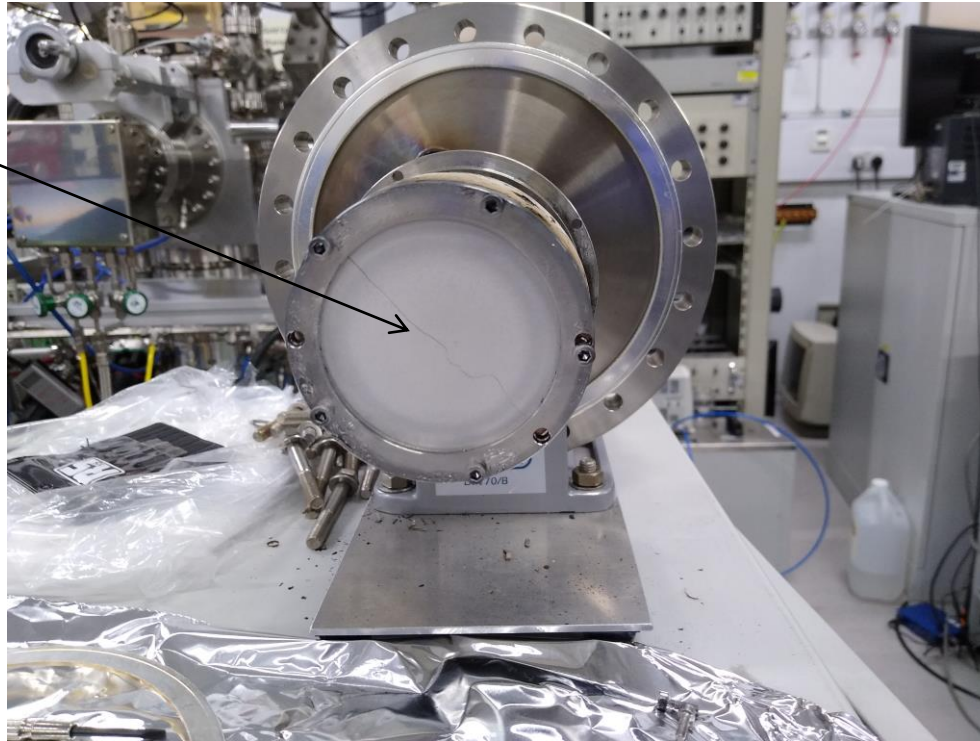
Maximum measured
Temperature 780 °C
But, temp measured on side

V_3Si Target installed with the heater

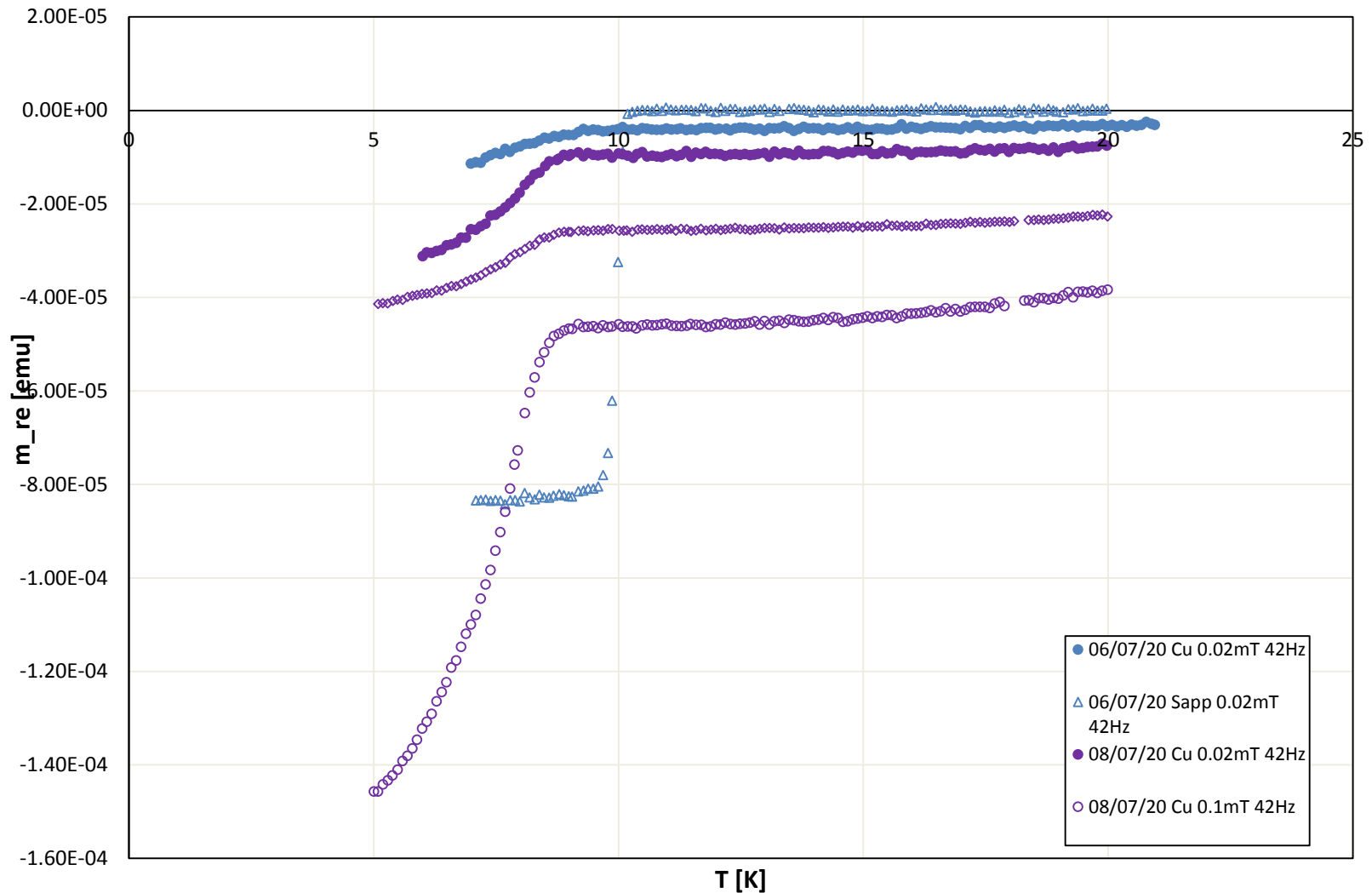


Problems

Target crack



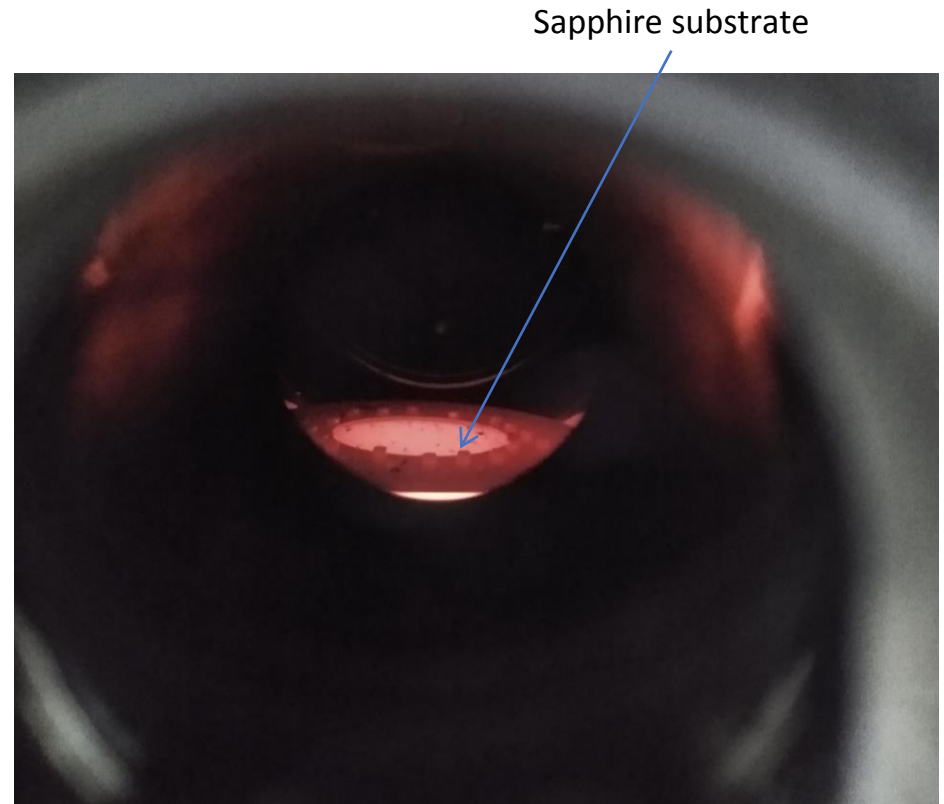
Tc of V3Si determined by AC Susceptibility



Sapphire substrate

A Sapphire target is used to find if Copper from behind the cracked target is reaching the substrate. Also Sapphire is good substrate for V3Si

However the maximum temperature with a sapphire 704 °C



Summary

- High temp deposition rig is assembled
- V_3Si targets have a breaking problem
- We might need to perform duel sputtering

Cylindrical Magnetron

