



Contribution ID: 135 Contribution code: TUP60

Type: **Poster Presentation**

Thermal modelling, design and evaluation of a cryogenic cooling system for a beamline endstation

Tuesday 16 September 2025 17:00 (1 hour)

The accurate estimation of thermal contact conductance (TCC) is a fundamental need towards the optimal design of a cryogenic cooling system for the new flagship beamline CSXID at Diamond Light Source, which utilizes mechanically pressed copper components to form the heat conduction path. To aid development, a study of thermally conducting joints at cryogenic temperatures has been performed combining Simulink and ANSYS Mechanical. To verify and validate the simulation results, an experimental setup will be made to carry out experiments to determine performance of the system, taking into consideration parameters including surface roughness, surface finish, temperature, & clamping force, which all greatly influence TCC.

Footnotes

Funding Agency

Author: TILLIN, David (Diamond Light Source)

Co-authors: BOVO, Claudio (Diamond Light Source); BURN, David (Diamond Light Source); KELLY, Jon (Diamond Light Source); BEAMISH, Scott (Diamond Light Source); DAVIES, Steve (Diamond Light Source)

Presenter: TILLIN, David (Diamond Light Source)

Session Classification: Tuesday Poster Session

Track Classification: BEAMLINES: End Stations