Risk Assessment

PROCEDURE:

- Complete risk assessment in consultation with PI/Supervisor and technical staff as appropriate.
- Risk assessment checked and signed by PI/Supervisor
- A copy or scan of the signed document to be given to the lab technician, School Safety Adviser and PI/Supervisor.

NOTES:

- No laboratory work is to commence without a risk assessment signed by the PI/Supervisor.
- The risk assessment must be reviewed when any changes are made to the equipment, materials, procedure or personnel.
- Technical staff can stop work if no risk assessment is in place or if, in their opinion, there is a risk to safety.
- Examples of how to complete this form are available at www.hse.gov.uk/risk/casestudies/

Project name:	Superconducting and Superinsulating Nanofluids		
Location of work:	Home Study, FRASER NOBLE 057		
Principal Investigator/Supervisor:	Dr Marcus Bannerman	Signed:	Date:
Assessment Prepared by:	Asad Mohiuddin	Signed: Asad.M	Date: 28/11/18
Outline description of the work:	Review nanofluids and their history in thermal conductivity enhancement. This includes describing what models have already been used to approximate their behaviour and critically review their applicability. Construct a Transient Heated Wire cell for the testing of liquid and gas mixture thermal conductivities and use this data to explore the anomalous heat transfer in nanofluids and gas mixtures which have similar dimensional properties to nanofluid systems. Perform molecular simulations of thermal conduction to confirm if transient effects in the thermal conductivity, possible at small time/length scales, dominate conduction. These simulations may be molecular dynamics simulations using DynamO, or coupled kinetic theory-hydrodynamics simulations using code developed by Craig Moir, a PhD student at Aberdeen. Explore new heat exchanger designs which incorporate any time-dependent anomalous phenomena.		
Names of persons carrying out the work:	Asad Mohiuddin (Student), Craig Moir (PhD Student), Dr Marcus Bannerman (Supervisor)		