Inventory of experimental and theoretical resources available for NanoSpace COST Action	
Country:	Scotland
Name of Institution/Laboratory:	Heriot-Watt University Astrochemistry Group
Contact information (name, e-mail):	Martin McCoustra m.r.s.mccoustra@hw.ac.uk
Website:	
Short description **(max 0.5 page)** of available techniques (experiment or theory): If appropriate, please include 1 picture/figure and caption highlighting resources.	We have two UHV systems equipped with sample transfer systems, (1) Beam Rig – Supersonic Beam-Surface Interactions System at sub-120 K with RAIRS, TPD and XPS and Knudsen Cell for metal deposition. Low energy electrons, ion gun and arc lamp light sources for irradiation. (2) Ice Rig – Thermal and Plasma Beam-Surface Interactions System at sub-20 K with RAIRS, TPD and AES and Knudsen Cell for metal deposition. Low energy electrons, ion gun and arc lamp light sources for irradiation. Pictures can be provided on request.
Sample/target description (e.g. gas, clusters, solid,…):	Any solid sample on a SPECS sample transfer plate.
How to access to experimental/computational resources (e.g. through collaboration, user facility proposal calls,….):	Through collaboration
References **(max 5)**:	1. “Laboratory Surface Astrochemistry Experiments”, V. L. Frankland, A. Rosu-Finsen, J. Lasne, M. P. Collings, and M. R. S. McCoustra, *Rev. Sci. Inst.*, 2015, **86**, 055103 2. “Laboratory Surface Astrophysics Experiment”, H. J. Fraser, M. P. Collings, and M. R. S. McCoustra, *Rev. Sci. Instrum.*, 2002, **73**, 2161-2170. 3. “Electrons, Excitons and Hydrogen Bonding: Electron-promoted Desorption from Molecular Ice Surfaces”, D. Marchione and M. R. S. McCoustra, *Phys. Chem. Chem. Phys.*, 2016, **18**, 29747-29755.

	4. “Surface Science Investigations of Icy Mantle Growth on Interstellar Dust Grains in Cooling Environments”, D. Marchione, A. Rosu-Finsen, S. Taj, J. Lasne, A. Abdulgalil, J. Thrower, V. Frankland, M. P. Collings, and M. R. S. McCoustra, *ACS Earth Space Chem.*, 2019, **3**, 1915-1931.