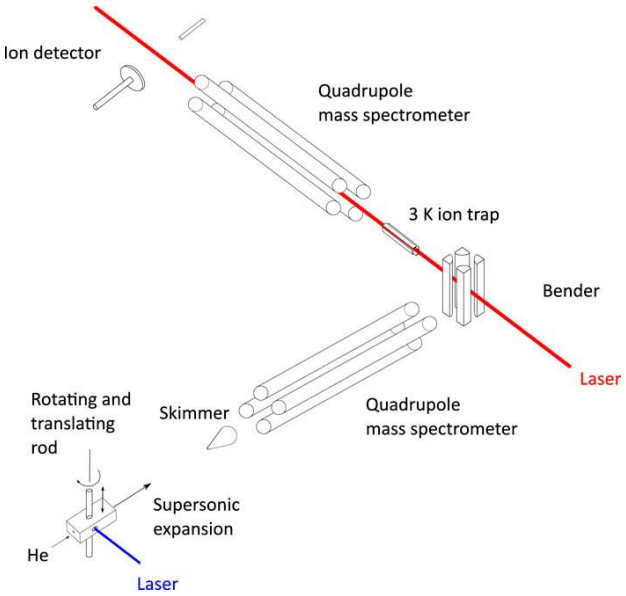
Inventory of experimental and theoretical resources available for NanoSpace COST Action	
Country:	Scotland
Name of Institution/Laboratory:	School of Chemistry, University of Edinburgh
Contact information (name, e-mail):	Ewen Campbell, e.k.campbell@ed.ac.uk
Website:	https://isla-edi.com/
Short description **(max 0.5 page)** of available techniques (experiment or theory): If appropriate, please include 1 picture/figure and caption highlighting resources.	**Gas-phase spectroscopy of mass-selected ions in a cryogenic ion trap** Molecular ions, generated by laser ablation or electron impact, are mass-selected, turned through 90 degrees and then stored in radiofrequency ion trap. They are cooled *via* inelastic collisions with helium buffer gas at low temperature (3K) and high number density (10^{15} cm^{-3}). Action spectroscopy methods are used to obtain their electronic and vibrational fingerprints. A variety of laser systems (CW and pulsed) allow measurement from the UV to far IR regions.  **Figure 1** Sketch of the cryogenic ion trapping apparatus used to obtain spectroscopic data on gas phase molecular ions cooled to below 10 K.
Sample/target description (e.g. gas, clusters, solid,…):	Gas phase molecular ions generated through electron impact (sample: gas, solid) or laser ablation (sample: solid).

How to access to experimental/computational resources (e.g. through collaboration, user facility proposal calls,….):	Collaboration
References **(max 5)**:	[1] E. K. Campbell & P. W. Dunk, *Rev. Sci. Instr.*, **90**, 103101 (2019). https://doi.org/10.1063/1.5116925 [2] E. K. Campbell, *Mol. Phys.*, **118**, e1797918 (2020). https://doi.org/10.1080/00268976.2020.1797918 [3] J. Rademacher, E. S. Reedy & E. K. Campbell, *J. Phys. Chem. A.*, **126**, 2127 (2022). https://doi.org/10.1021/acs.jpca.2c00650 [4] J. Rademacher *et al.*, *Mol. Phys.*, e2173507 (2023). https://doi.org/10.1080/00268976.2023.2173507