MEMS (Microscale) Tribometer

- Due to the much smaller scales of MEMS devices, it is difficult to adapt macroscale lubrication regimes into the microscale.
- The tribometer makes direct measurements of friction from a pair of MEMS parts, thus providing more 'MEMS-like' conditions for tests.
- The 'sliding' is provided by a rotating shaft coupled to one test pieces, which rubs against the stationary test piece.
- The stationary test piece is mounted on a platform supported by 4 beams, where the 'displacement' of the beam gives a measure of the frictional load and the normal load.
- The MEMS parts are fabricated from silicon, using the deep reactive ion etching (DRIE) process.

Summary

- Novel test facilities have been developed in this project.
- Research is being conducted to address the problem of high friction in MEMS devices.

List of selected publications