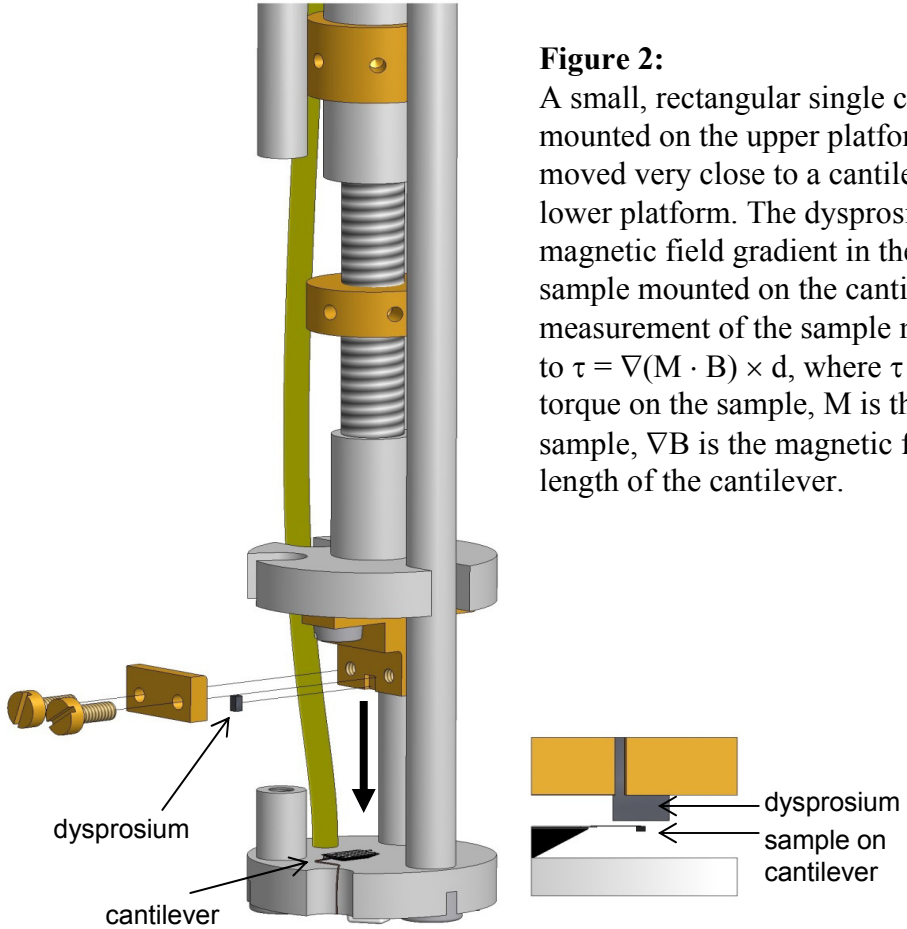

Figure 2:
A small, rectangular single crystal of dysprosium is mounted on the upper platform, and can then be moved very close to a cantilever mounted on the lower platform. The dysprosium creates a large magnetic field gradient in the vicinity of a small sample mounted on the cantilever, and allows measurement of the sample magnetisation according to $\tau = \nabla(M \cdot B) \times d$, where τ is the torque on the sample, M is the magnetisation of the sample, ∇B is the magnetic field gradient and d is the length of the cantilever.