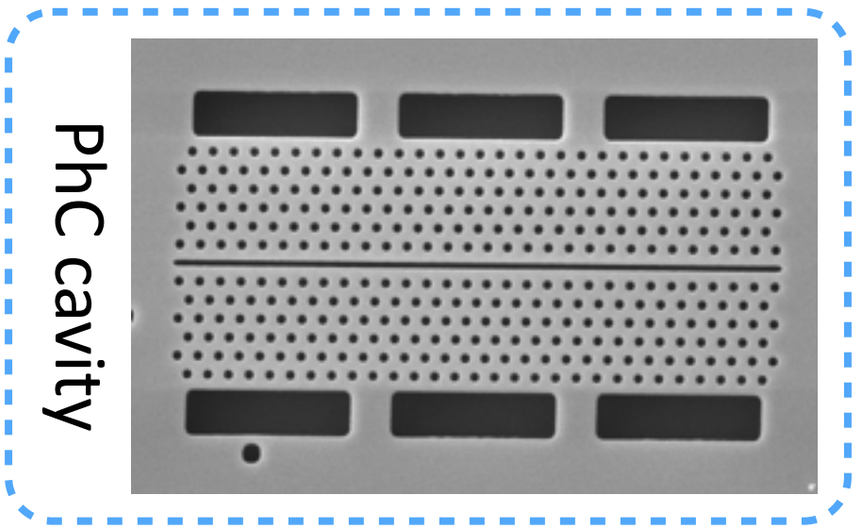
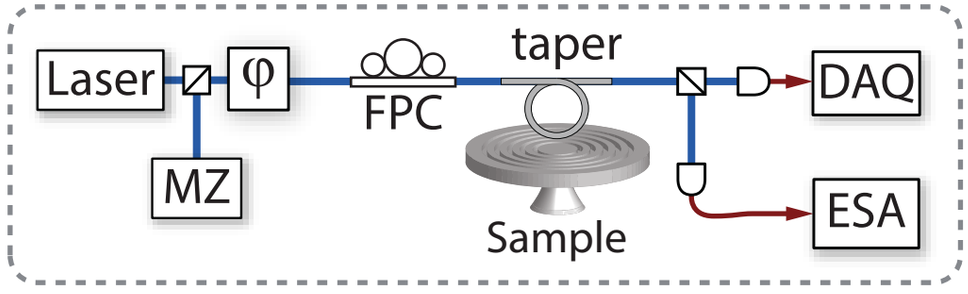
Optomechanics

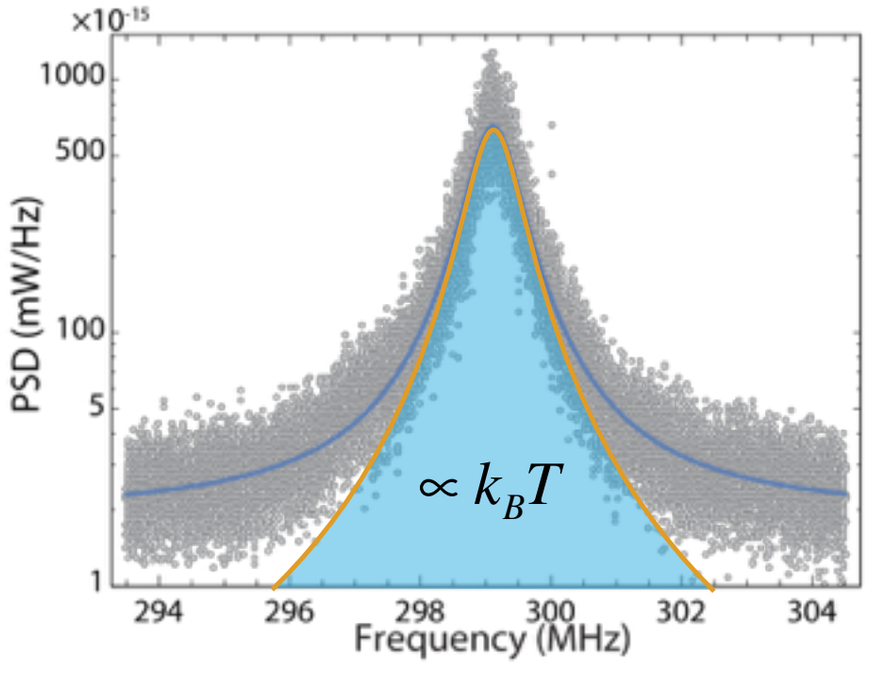
In this experiment, the student will explore the optomechanical effect in a slot type photonic crystal cavity.

The experiment is divided in two parts: first the student will characterise the mechanical mode by using an phase modulator to compare a known frequency tone to the mechanical mode. Then the student will measure the back action between the mechanical and optical mode by looking at the mechanical line width as a function of the input laser power.



Experimental Setup





Optical characterisation

In this experiment, the student will understand the differences between the optical modes of a disk and a photonic crystal cavity.

The student will also measure the thermal bistability in both cases and compare then to see how the geometry affects such effect.

A demonstration of how to fabricate a taper fiber will also be presented.