

4th Order of Silicon

The 4th order Raman band is a proof of sensitivity and optical efficiency for every Raman microscope.

To demonstrate the potential and sensitivity of the WITec Confocal Raman Microscope alpha300 R a Raman spectrum of silicon was acquired using a frequency doubled Nd:Yag laser for excitation with wavelength of 532 nm. The power on the sample was less than 4 mW. The scattered light was collected using a 60x objective (NA 0.8).

A high efficient back-illuminated CCD detector (128x1024 pixels) connected to a 300 mm f/4 spectro-meter was used for imaging of the spectrum. The spectrum as seen in figure below was obtained by using

ten accumulations with an acquisition time of 60 s each. The 4th order Raman band can easily be seen in the zoomed area.

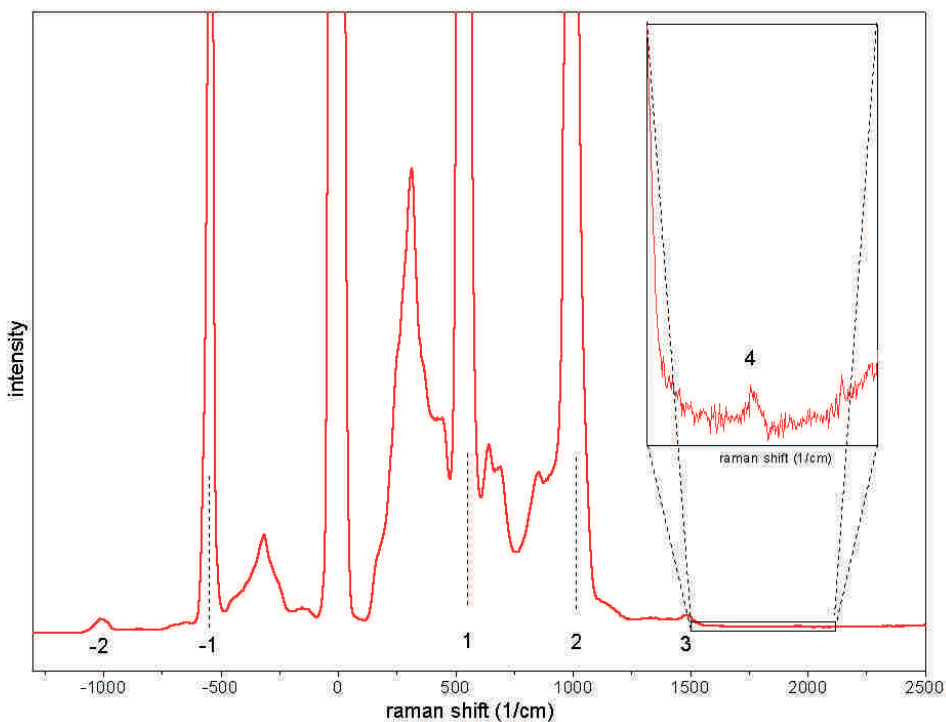


Fig. 1: Confocal Raman Spectrum of Silicon