IMAGING, CALIBRATION AND NOISE

a) Scan the calibration grid with the following values:

Scan size: 60 um x 60 um
P = 10
I = 9
Scan Speed = 0.7 sec/line

Acquire both forward and backward scans.

What happens by increasing the scan speed up to 0.5 sec/line ?
What happens by reducing the scan speed down to 3 sec/line ?

Comment and analyze the results by comparing images and line profiles.

b) Scan now the sample with the following values:

Scan size: 60 um x 60 um
P = 10
I = 9
Scan Speed = 1 sec/line

What happens by changing the values of P and I ? Comment the results.

c) Based on the previous points, find the optimal scan parameters, take high resolution images and determine periodicity, lateral and vertical dimensions of the features present on the sample.

CD vs. DVD

After optimizing the scan parameters, take AFM images for a CD and a DVD. Measure the track spacing and compare with the standard values: 1.6 µm for CD and 0.74 µm for DVD. Comment on the density of data that can be stored in CD and DVD.

QUANTUM DOTS

After optimizing the scan parameters, plot a statistic on the size of the quantum dots and comment the obtained results.