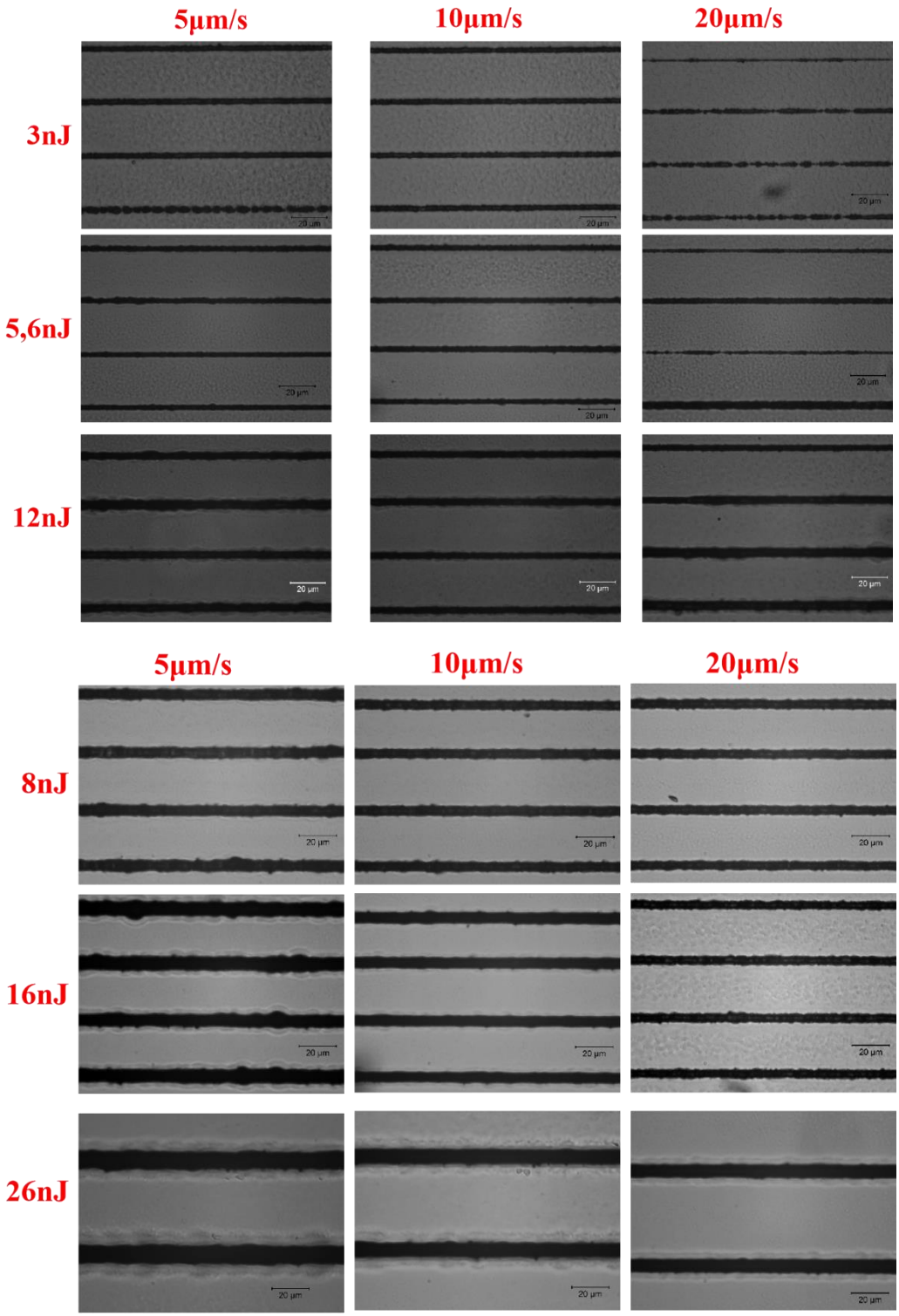
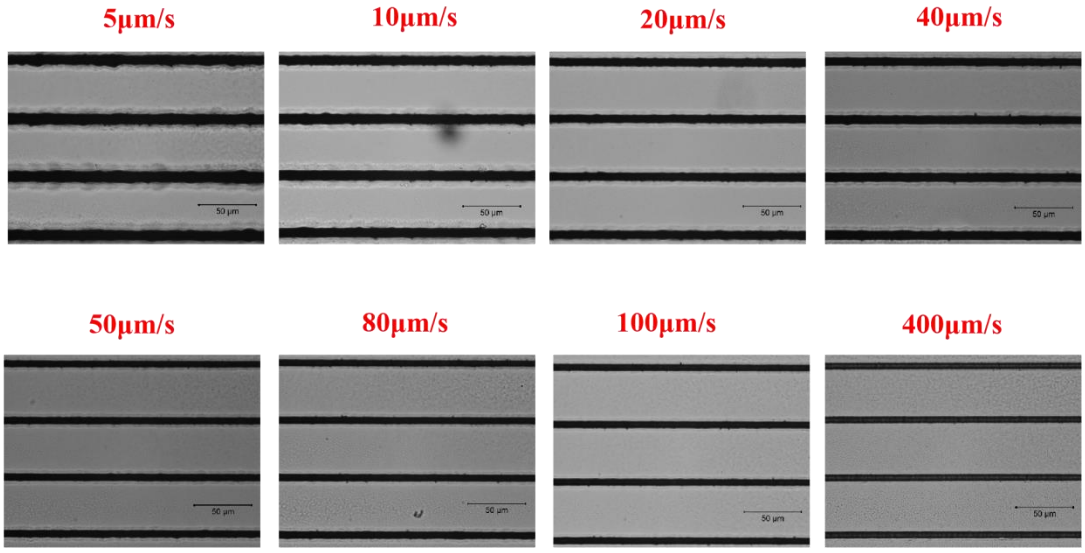
Supplementary data

- Optical microscopies of the initial study of the production of microstructures varying the pulse energy according to the scanning speed.



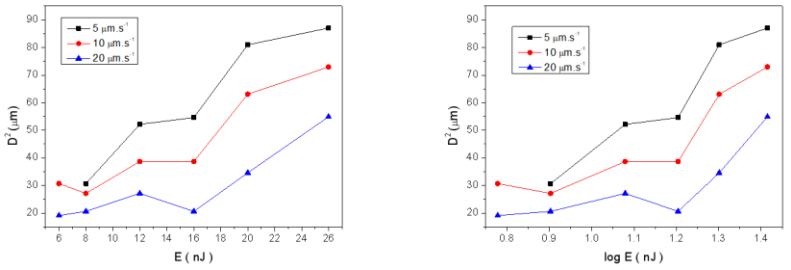
- Higher pulse energy value fixed and a study of the different scanning speeds was performed.

26nJ

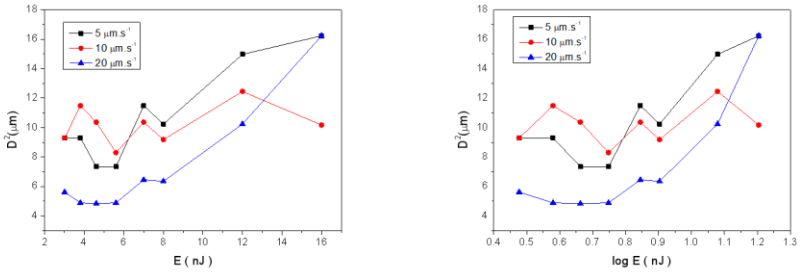


- The above study was performed for two microscope objective lenses. And the values of the line widths were measured and plotted as a function of pulse energy (graphs below). From the graph below it is possible to obtain the threshold energy value, which is the minimum energy necessary to remove material.

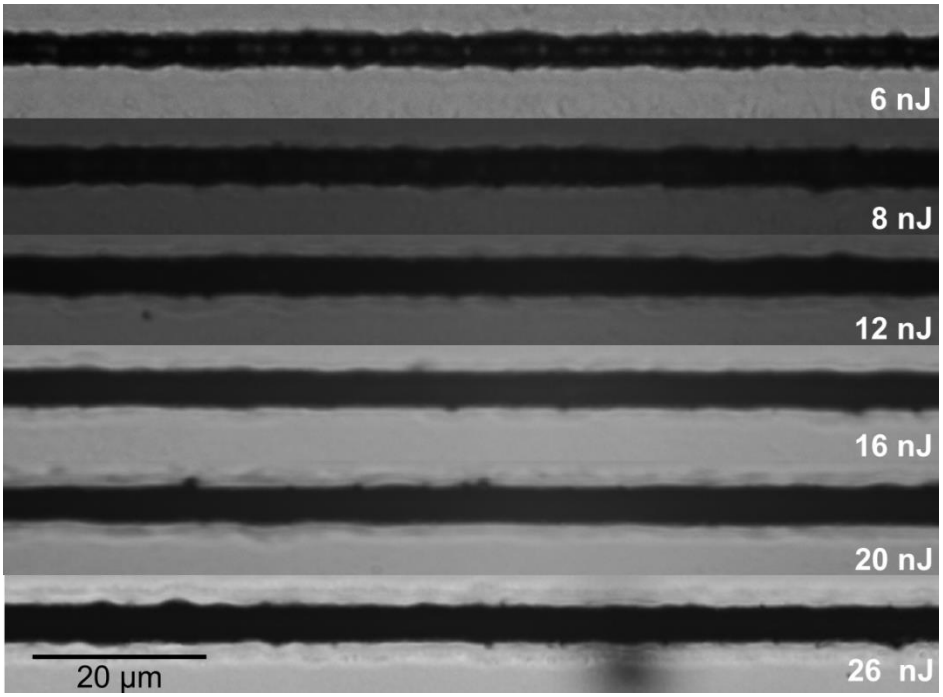
Objective lens 10x



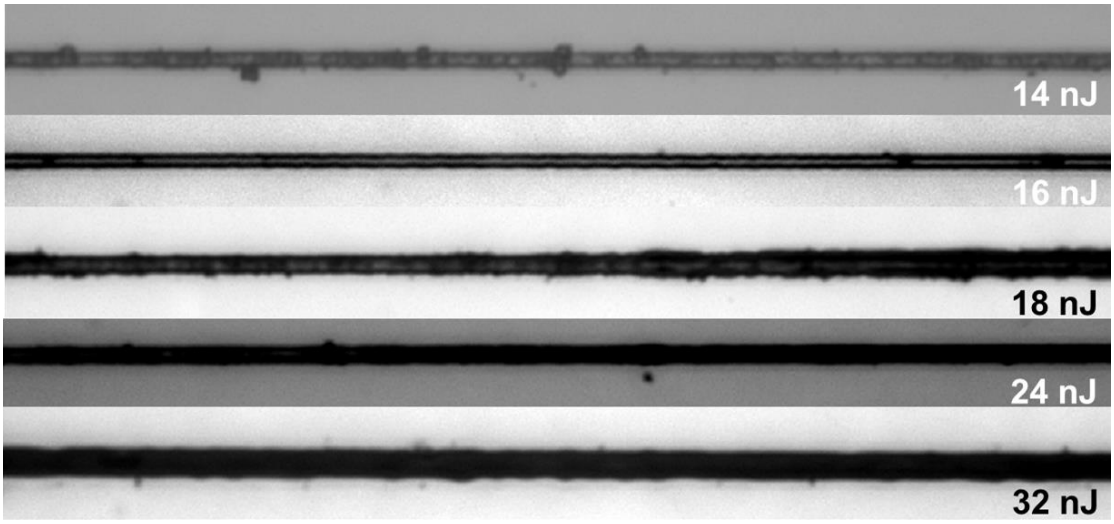
Objective lens 40x



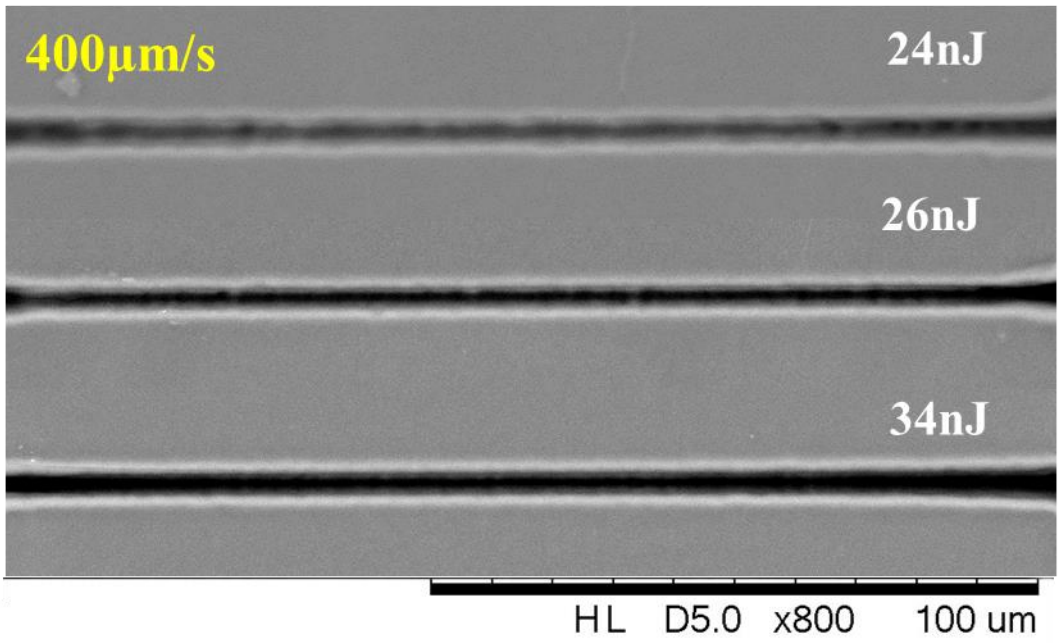
- Optical microscopy of microstructured tracks with a scanning speed of 100 µm/s and a 10x objective lens for different pulse energies.



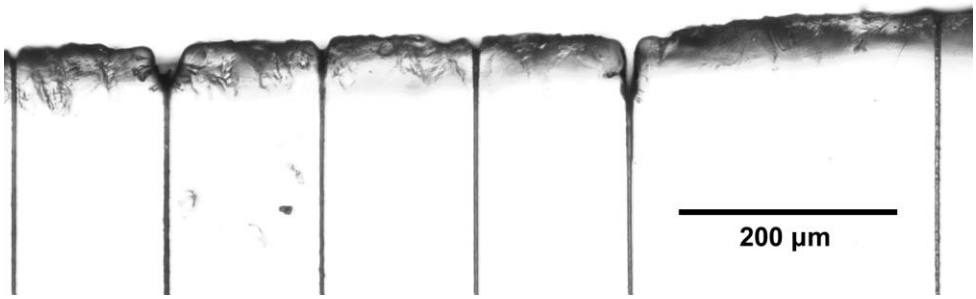
- Optical microscopy of microstructured tracks with a scanning speed of 100 µm/s and a 40x objective lens for different pulse energies.



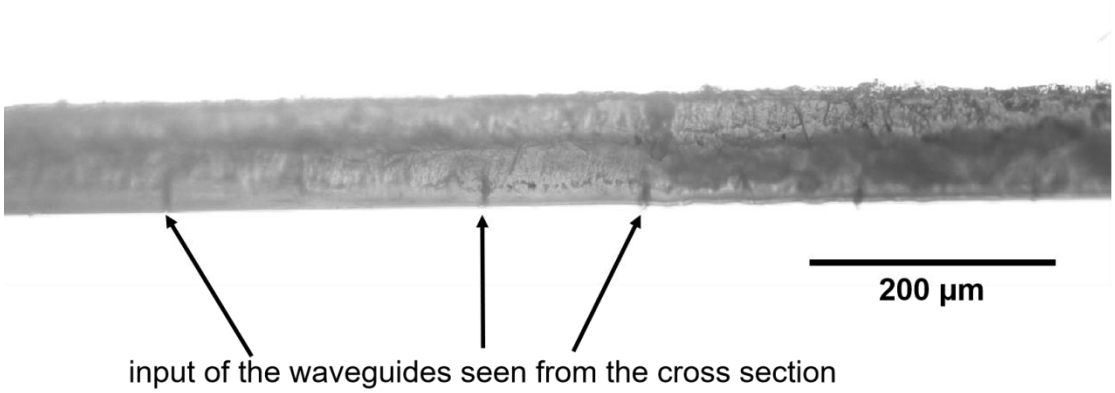
- Scanning electron microscopies of the waveguides obtained at a scanning speed of 400 µm/s with the 40x objective lens for different pulse energies.



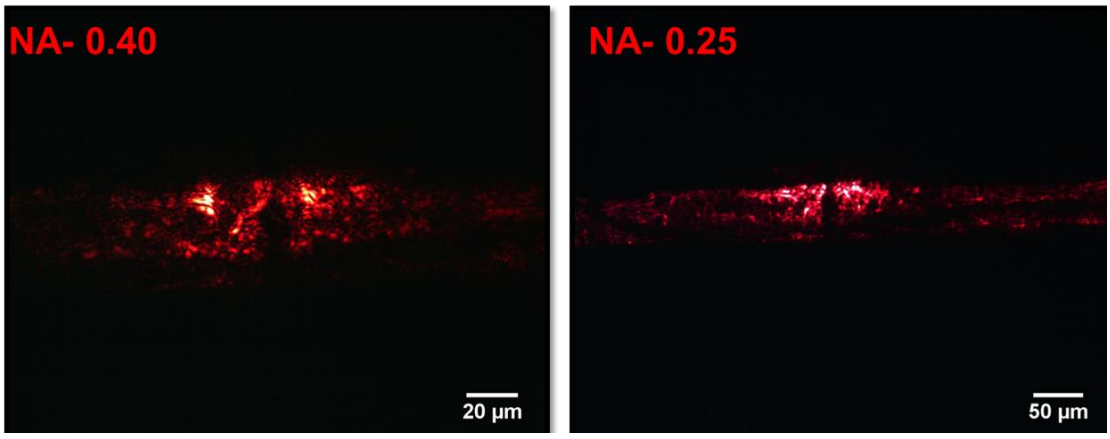
- Top view optical microscopy of the silk fibroin thin film with the waveguides.



- Optical microscopy of the cross-section of the silk fibroin thin film with the input of the waveguides indicated by the black arrows.

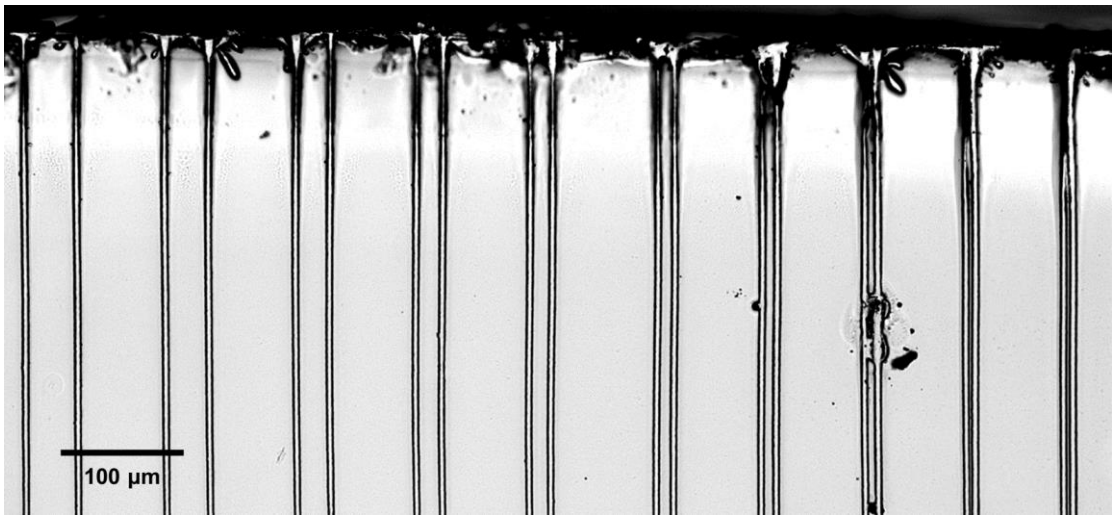


- Near-field output profile of the light guided at 632.8 nm using 20x and 10x input microscope objective lenses.

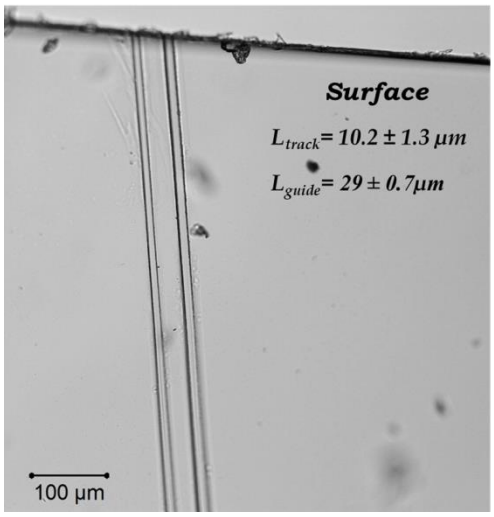


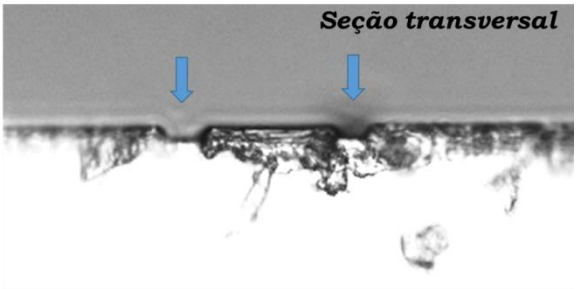
Study of the production of waveguides with modification type II.

- Optical microscopy of the waveguides produced by varying the spacing between the microfabricated tracks.

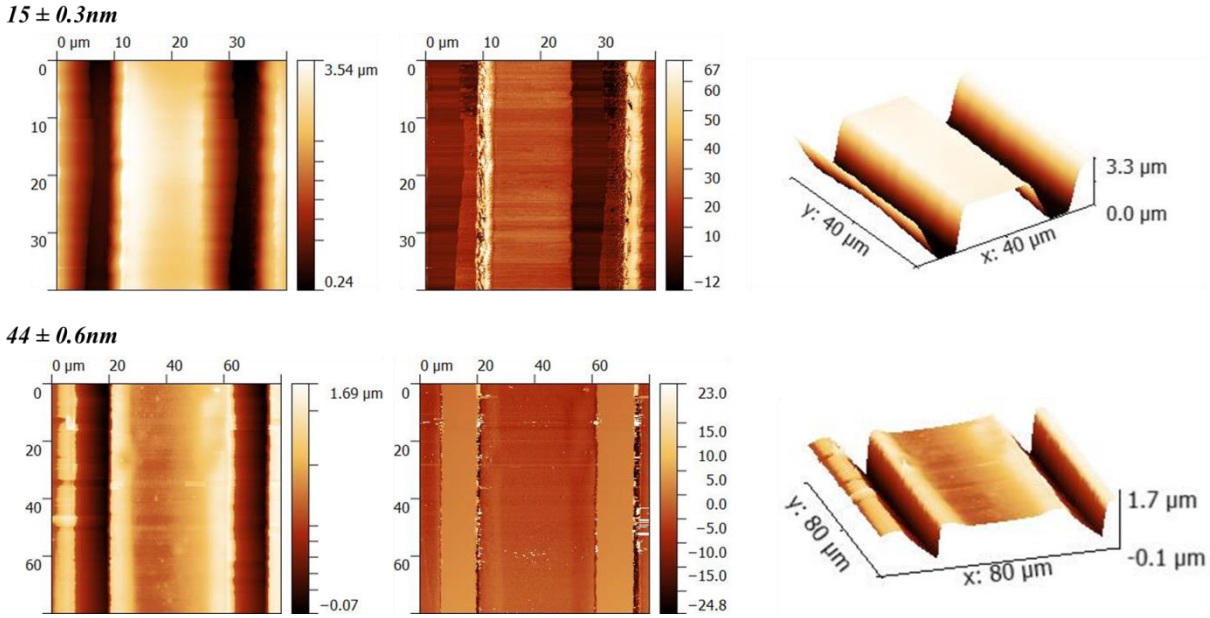


- Optical microscopy of a top view waveguide and its respective cross-section showing the input of each microfabricated track indicated by the blue arrows.





- Atomic force microscopies of two waveguides showing the tracks (dark color) and the spacing between them (light color) and their repective 3D images of the surface.



- Top view images of some waveguides with different spacing when coupled at 632.8 nm using an input objective lens of NA=0.45 (40x). As can be seen, light is guided on the microfabricated tracks.