Electronic Supplementary Material (ESI) for Physical Chemistry Chemical Physics.

Supporting Information

Stretching of assembled nanoparticle helical springs

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AFM MEASUREMENT

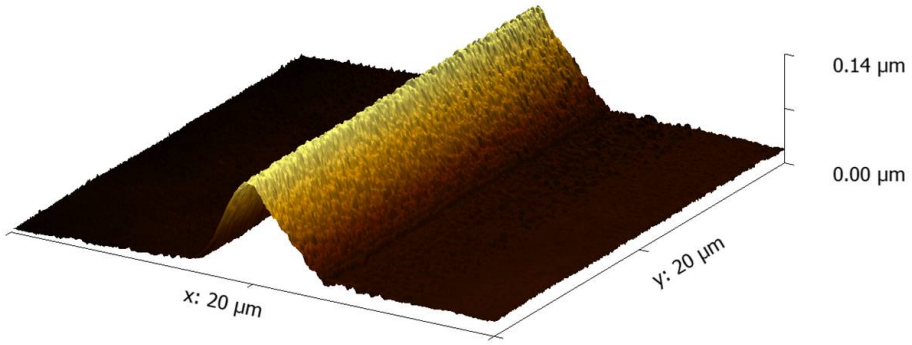

FIG. 1: This figure shows an AFM 3D image of a ribbon, illustrating the dimensions and geometry of the cross-section. The ribbon thickness is measured to be 122 ± 9 nm and the width is 5.9 ± 0.4 μm.

MEASUREMENT OF RADIUS AND PITCH

The pitch was measured as the distance between one turn to the next using the highest intensity points. The radius was measured as the distance to the valley of a turn of the ribbon to the line used to connect two nodes of the helix, as illustrated in the Fig. S1. The high pitch/low radius measurements were made in the same manner, where the bright points were used to measure the pitch. At this point, the radius is essnetially approaching the limitation of the ribbon thickness.

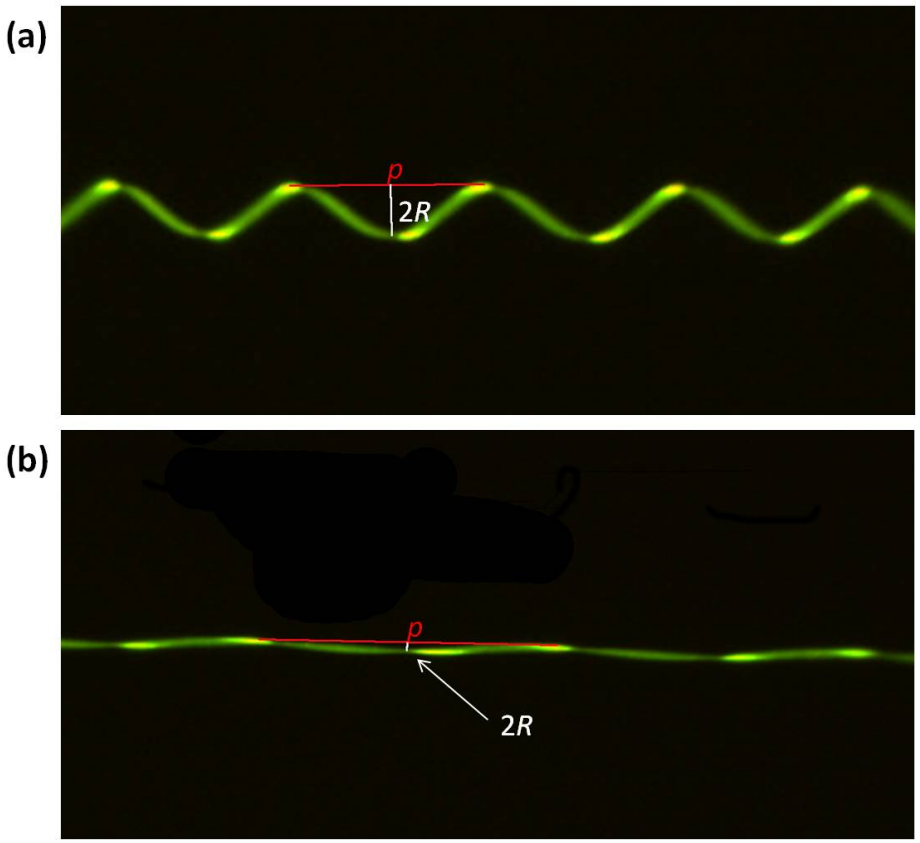

FIG. 2: Demonstrates the method of measurement for the pitch and radius of an extending nanoparticle spring for both medium and high extension regimes. The images are highly zoomed from the same helical sample used in Fig. 2 from the main text.