

## Supplementary figure

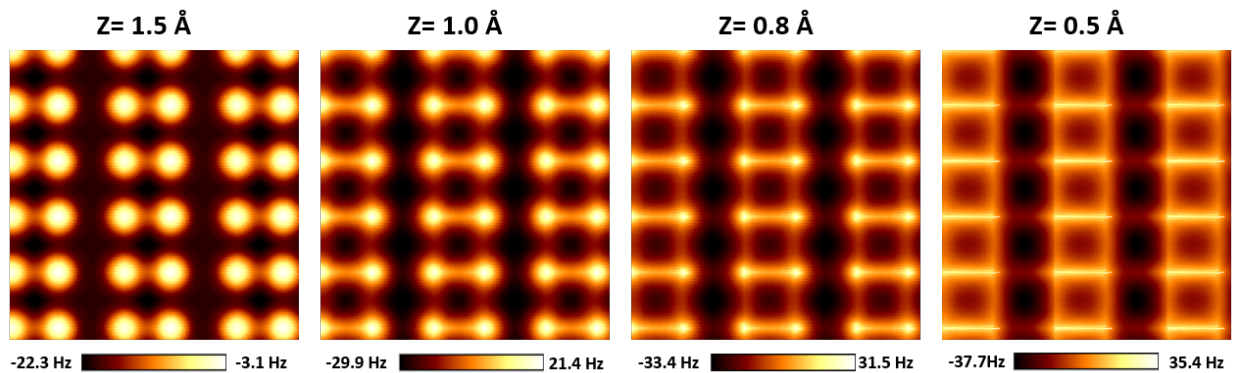


FIG. S1. Series of  $(2 \times 2) \text{ nm}^2$  frequency shift maps at different tip elevations converted from the simulated force maps presented in Fig. 3-b of the manuscript (case of a flexible tip) using the conversion method introduced by Giessibl [1]. We used  $k = 1800 \text{ N/m}$  and the same parameters as in the experiment:  $A_0 = 1 \text{ \AA}$ ,  $f_0 = 26 \text{ kHz}$

## Supplementary References

- [1] F. J. Giessibl, “A direct method to calculate tip–sample forces from frequency shifts in frequency-modulation atomic force microscopy,” *Applied Physics Letters* **78**, 123 (2001).
- [2] William Humphrey, Andrew Dalke, and Klaus Schulten, “VMD – Visual Molecular Dynamics,” *Journal of Molecular Graphics* **14**, 33–38 (1996).