

## Supplementary Information

### Direct comparison between subnanometer hydration structures on hydrophilic and hydrophobic surfaces via three-dimensional scanning force microscopy

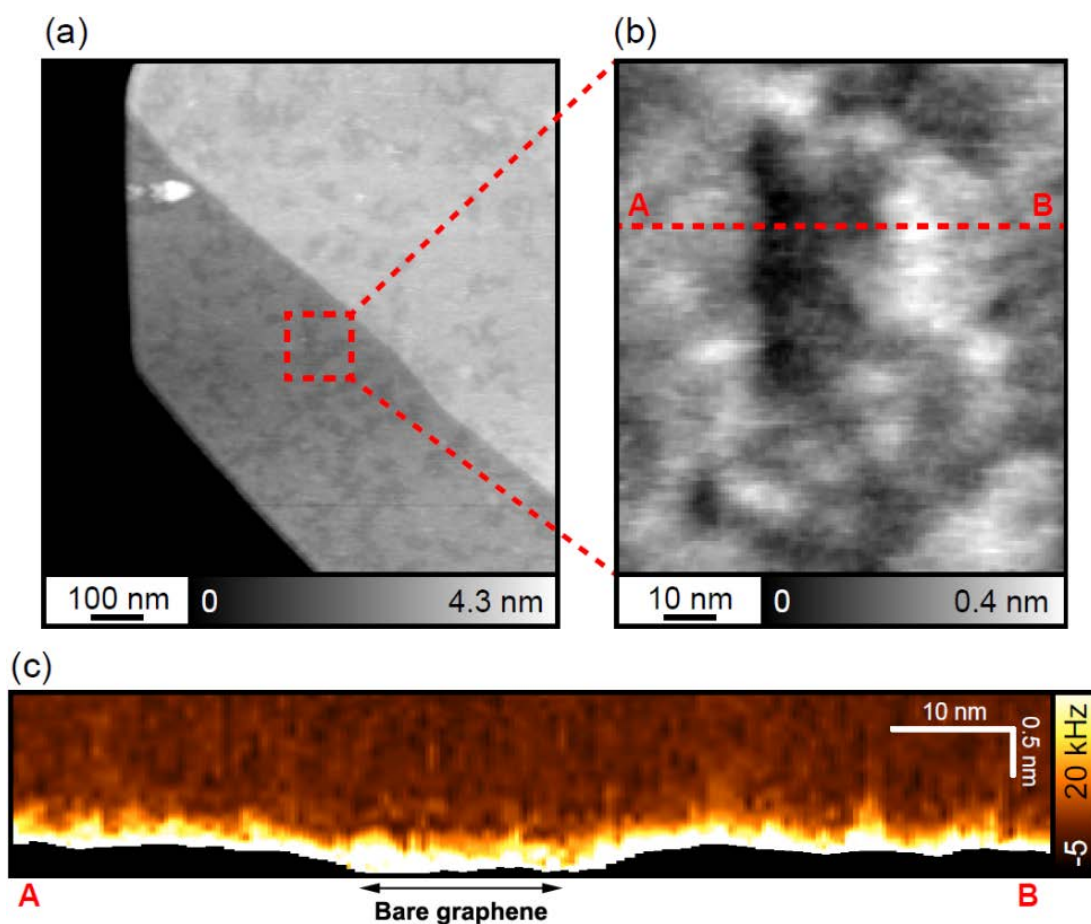
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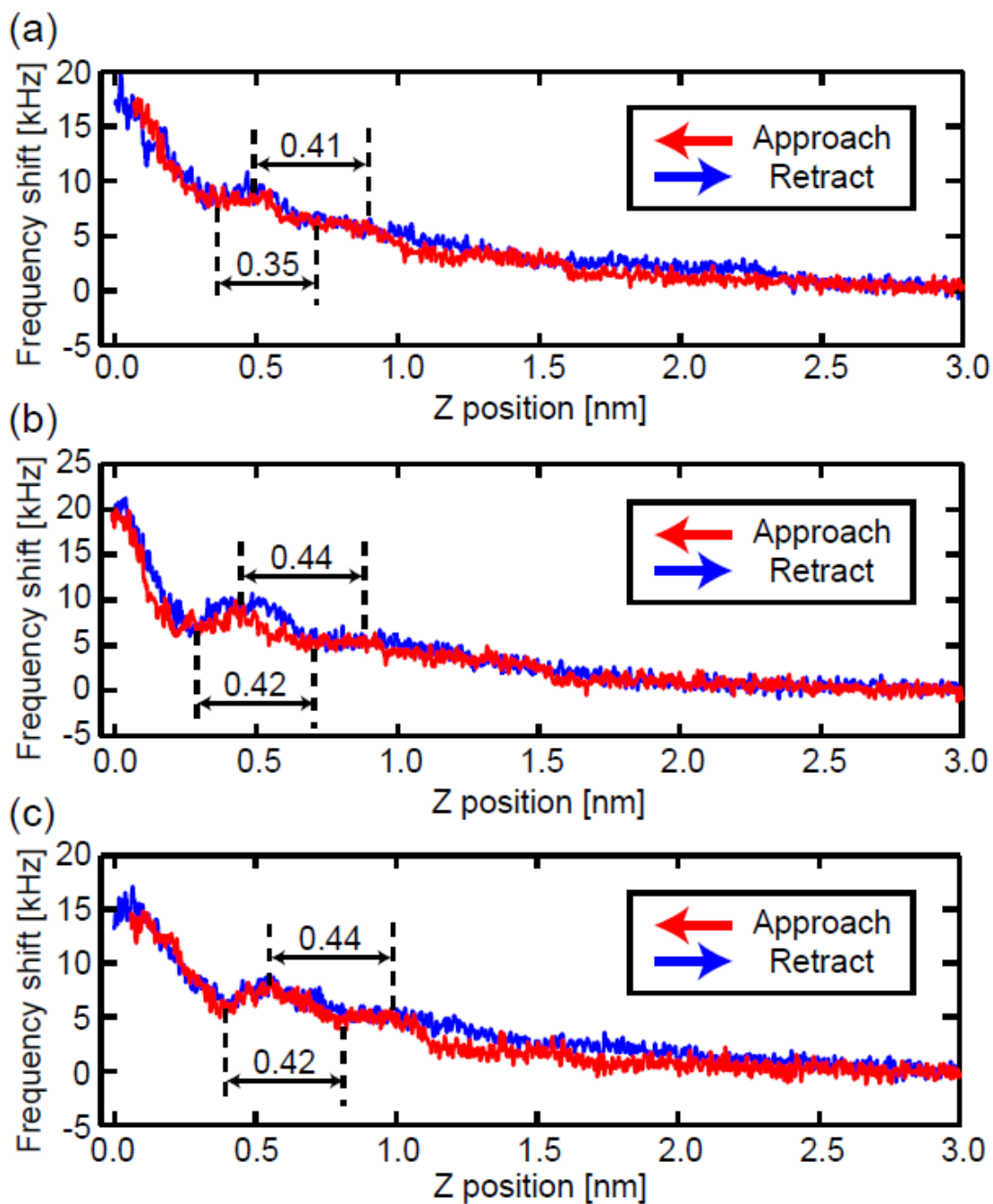
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**Fig. S1** (a) Topographic image of graphene and mica acquired in water. (b) Height image of 3D  $\Delta f$  mapping on the area outlined in a red dashed box in (a). (c) Z-section image obtained from 3D  $\Delta f$  mapping along the red dashed line in (b).



**Fig. S2** Typical force curves of frequency shift versus the tip position measured on bare graphene. Retract force curves are similar to approach curves, indicating that the hydration layers are stable against perturbation by the tip.