

Supporting information

Determination of the STM tip-graphene repulsive forces by comparative STM and AFM measurements on suspended graphene

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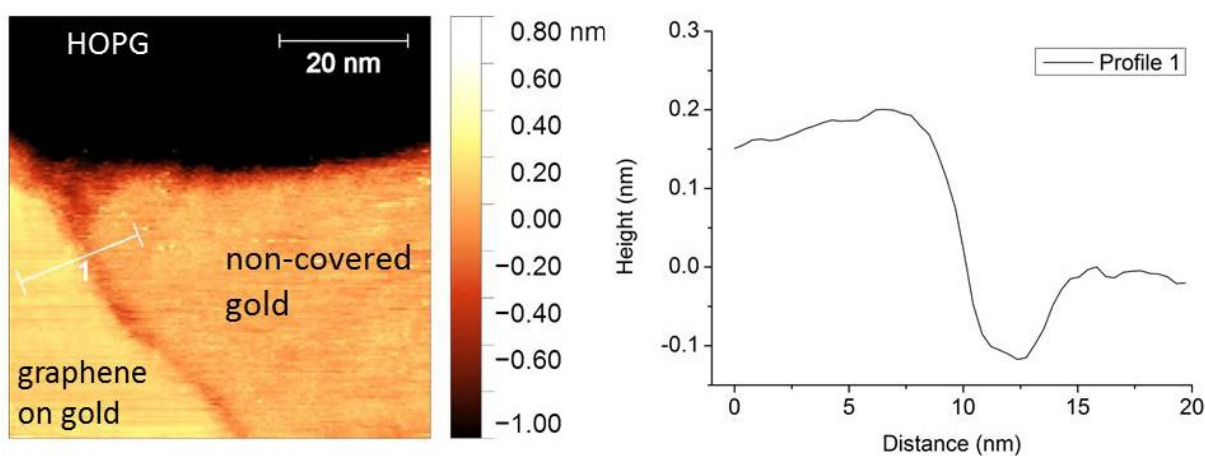


Figure S1. STM image of a gold nanoisland partially covered with graphene (left panel). The height profile corresponding to the line section 1 shows a graphene thickness of 0.2-0.3 nm (right panel).

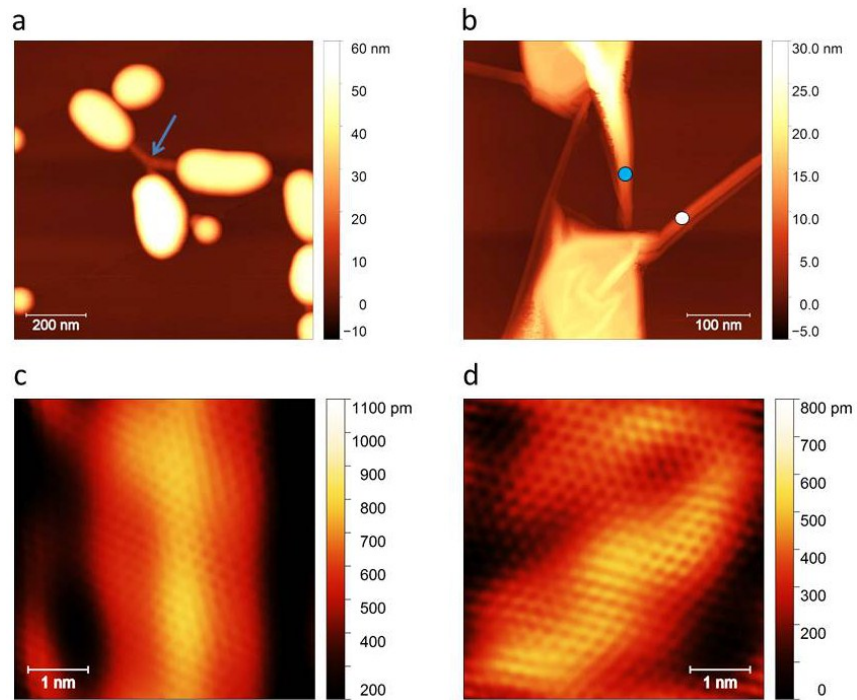


Figure S2. (a) AFM image of gold nanoislands not covered with graphene. A gold nanowire (marked by arrow) connects two islands. (b) STM image of gold nanoislands covered with graphene. Graphene wrinkles (blue and white dots) are observed. (c) and (d) Atomic resolution STM images of the graphene wrinkles marked with blue and white dots in b), respectively.

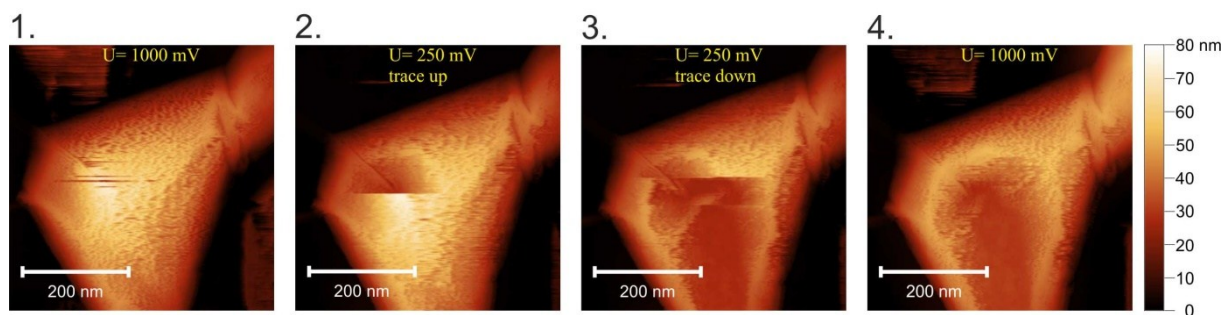


Figure S3. Series of STM images of the graphene nanobubble from Figure 2 of the manuscript. 1. $U_{\text{bias}} = 1000$ mV, 2. $U_{\text{bias}} = 250$ mV (trace up), 3. $U_{\text{bias}} = 250$ mV (trace down), the graphene bubble undergoes an abrupt switching from convex to concave geometry, and 4. $U_{\text{bias}} = 1000$ mV, the graphene does not recover the initial shape.