

Supporting information

Metal Adatoms Generated by Co-play of Melamine Assembly and Subsequent CO Adsorption

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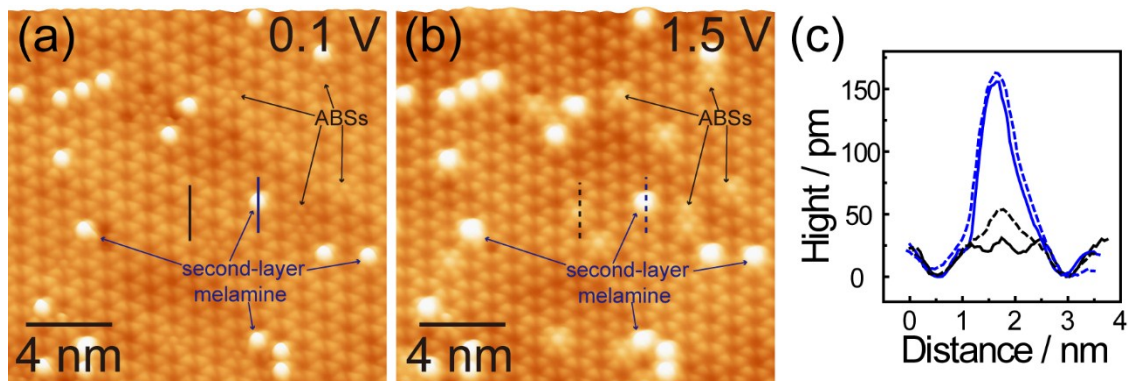


Figure S1. (a) and (b) STM images obtained at different biases showing the distinctive morphologies of the second-layer melamine (2L-Mel) and ABS coexisting on the H-Mel on Au(111). Tunneling conditions: (a) $I = 88$ pA, $U = 0.1$ V, (b) $I = 88$ pA, $U = 1.5$ V. (c) The height profile of a second-layer melamine (blue line) and a ABS (black line) in (a) and (b).

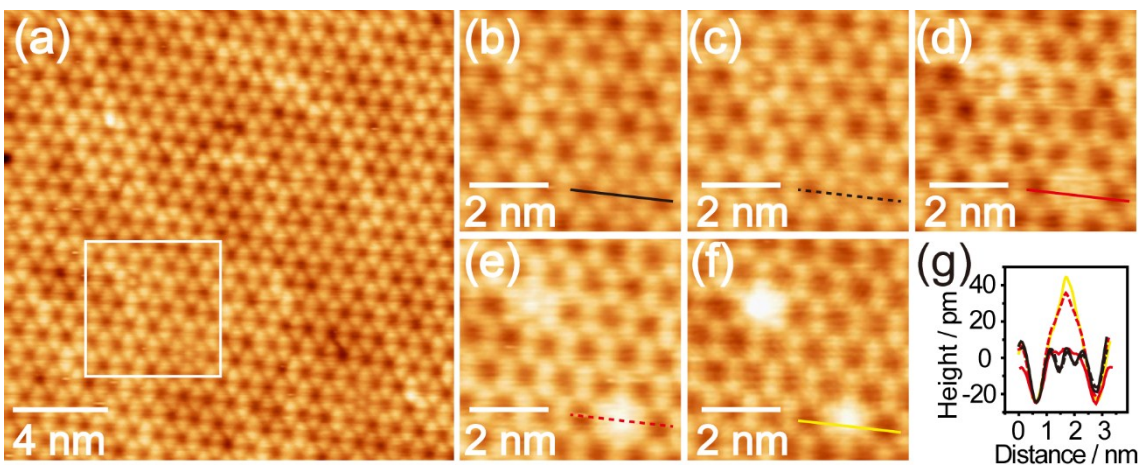


Figure S2. (a) STM image of the honeycomb melamine monolayer on Au(111) with a few intrinsic gold adatoms trapped in the pores. Tunneling conditions: (a) $I = 140$ pA, $U = 0.1$ V. (b) - (f) Series of STM images showing bias-dependent morphology of the Au adatoms. (g) Profiles of the same Au adatom at different bias: black line (b, 0.1 V, 140 pA), dashed black line (c, 0.3 V, 140 pA), red line (d, 0.9 V, 60 pA), dashed red line (e, 1.5 V, 50 pA) and yellow line (f, 2.1 V, 50 pA).

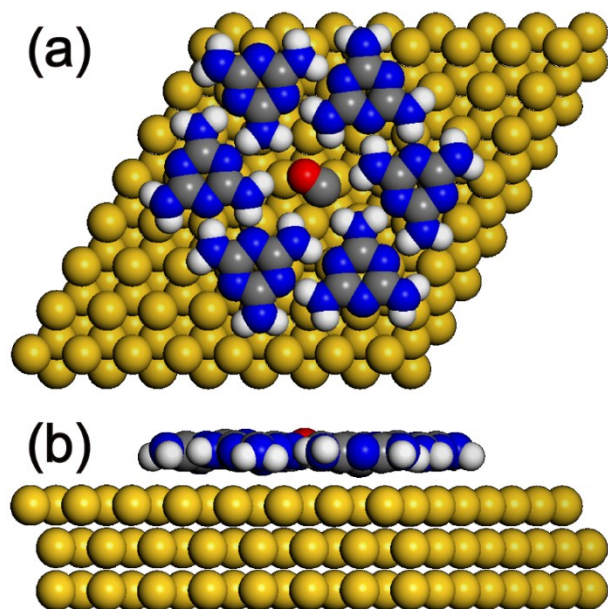


Figure S3. Top view (a) and side view (b) of the calculated model showing CO absorbing in melamine pores with flat-lying configuration. Blue, grey, red and white balls represent N, C, O and H atoms respectively. The substrate atoms are stained in golden color.