

Supporting Online Information

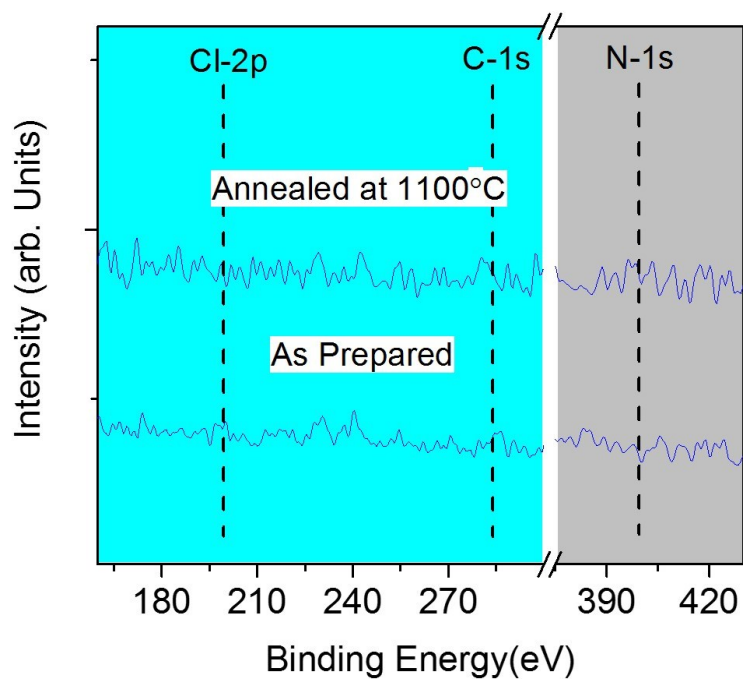
Size-Dependent Adhesion Energy of Shape-Selected Pd and Pt Nanoparticles

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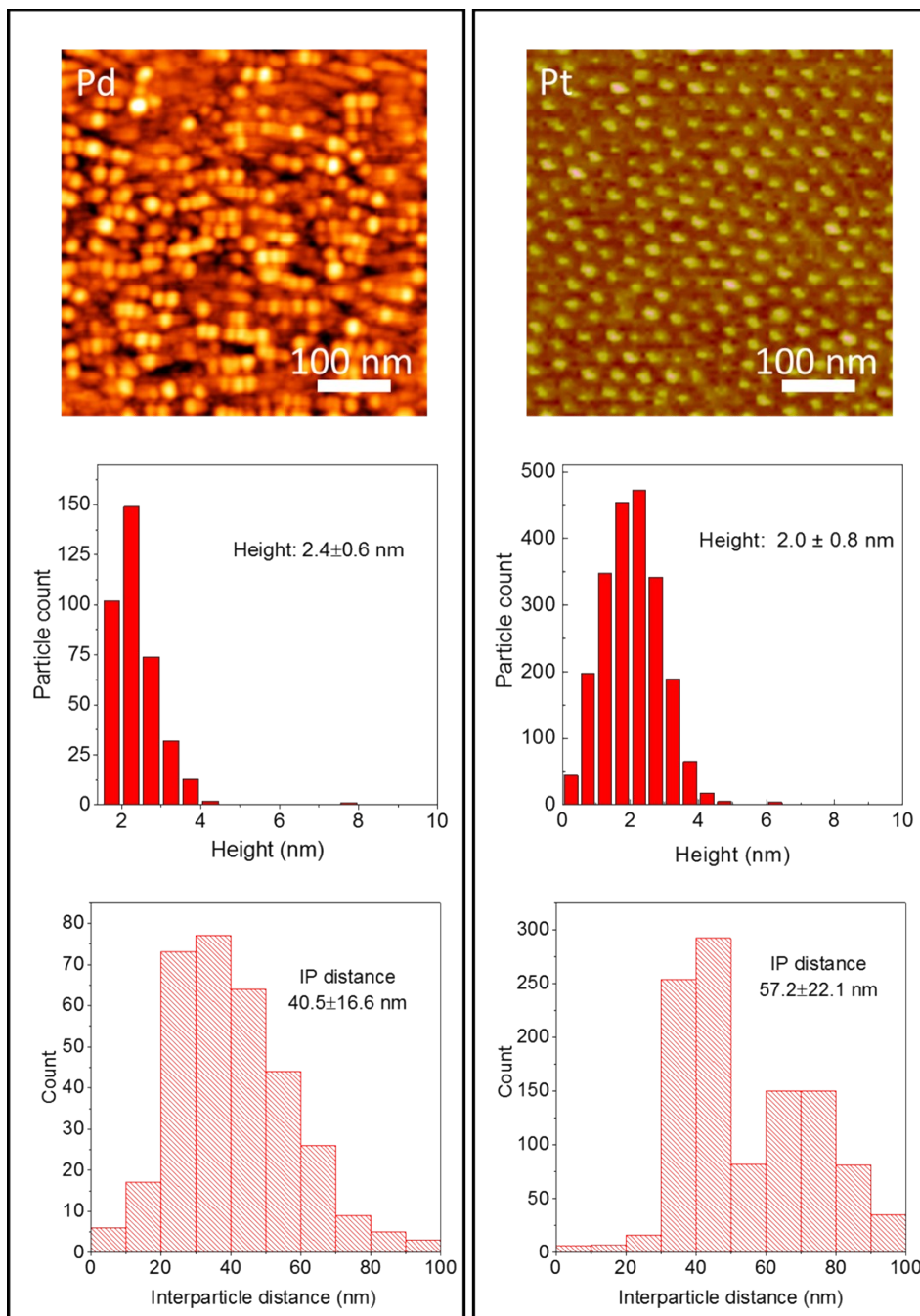
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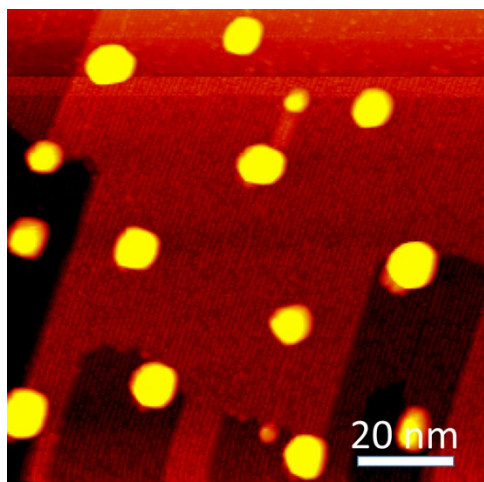
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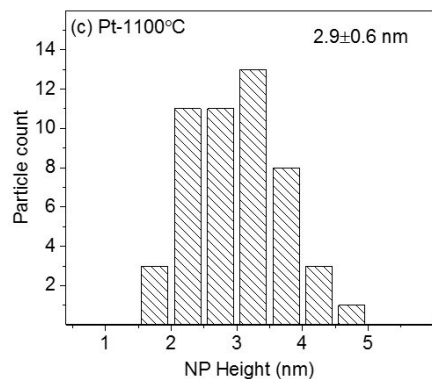
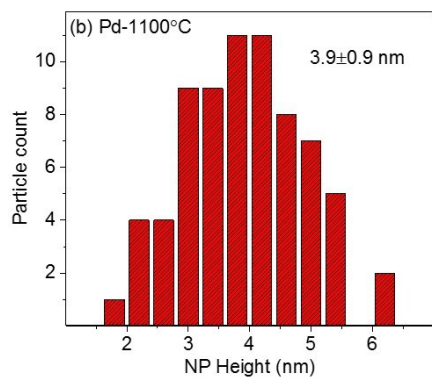
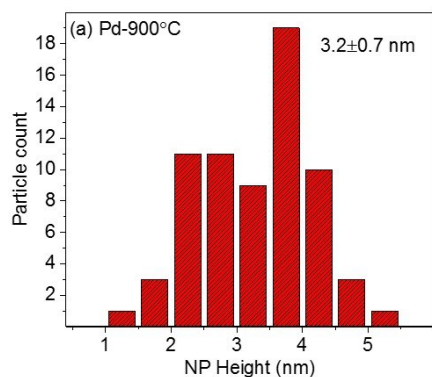
Suppl. Fig. S1: XPS spectra of the Cl-2p, C-1s and N-1s core level regions of a Pd NP/TiO₂(110) sample acquired at 25°C on the as-prepared sample (O₂-plasma treated) and the same sample after annealing at 1100°C in UHV.



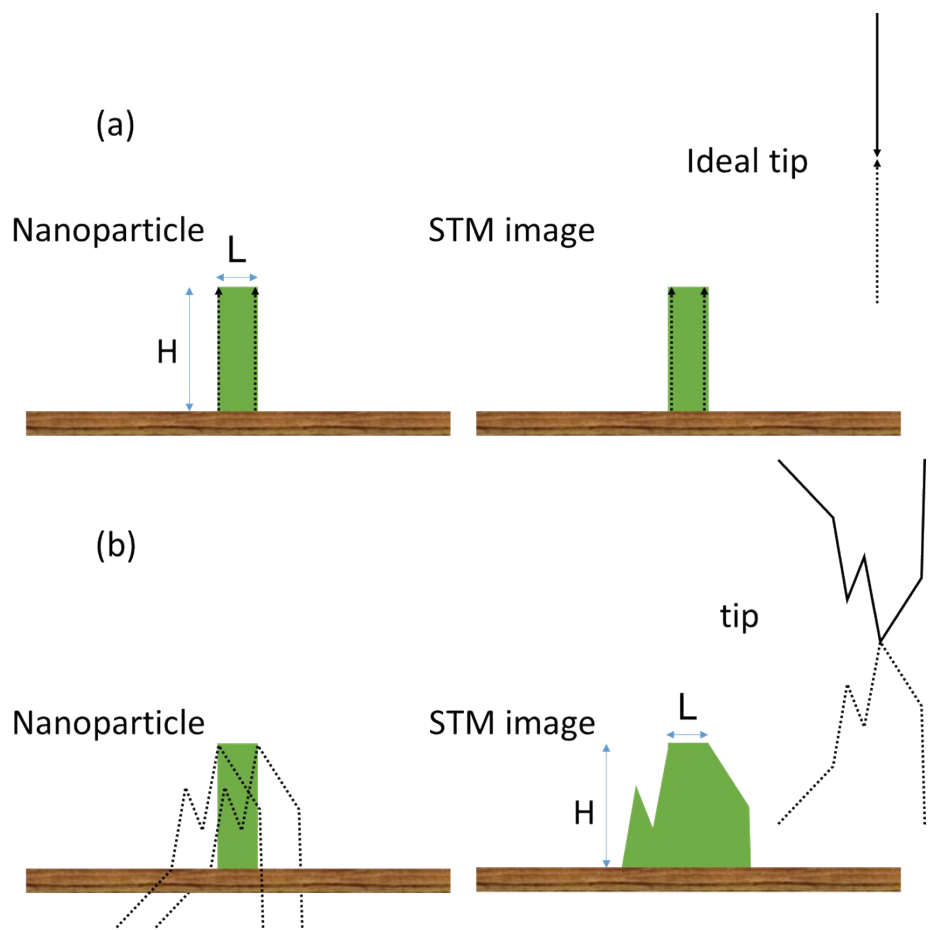
Suppl. Fig. S2 500×500 nm AFM images of micellar (a) Pd and (b) Pt NPs supported on SiO₂/Si (001) after oxygen plasma, their particle height distribution and their interparticle distance distribution extracted from the analysis of AFM images.



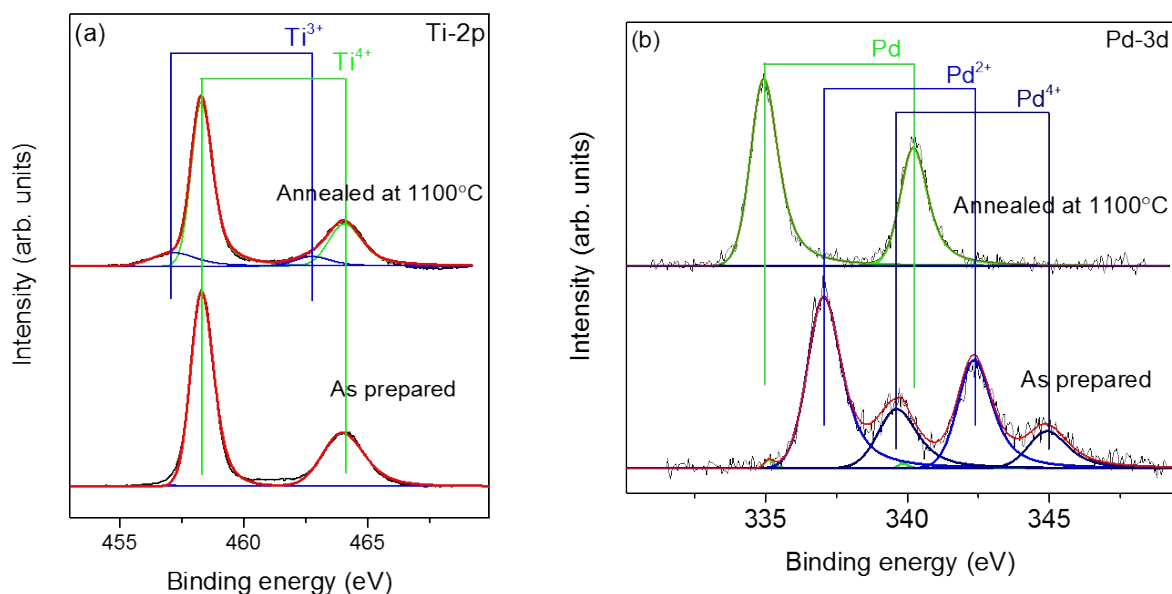
Suppl. Fig. 3: 100×100 nm STM image of micellar Pt NPs supported on TiO₂(110). The image was acquired at 25°C after annealing at 1100°C.



Suppl. Fig. S4: Particle height distribution of (a) Pd NPs supported on TiO₂(110) after annealing at 900°C for 5 hours, (b) Pd NPs supported on TiO₂(110) after annealing at 1100°C for 20 min and (c) Pt NPs supported on TiO₂(110) after annealing at 1100°C for 20 min extracted from STM measurements acquired at 25°C.



Suppl. Fig. S5: Schematic STM image of (a) an ideal tip, and (b) a real tip.



Suppl. Fig. S6: XPS spectra of the (a) Ti-2p and (b) Pd-3d core level region of Pd NP/TiO₂(110) acquired at 25°C on the as-prepared sample (O₂-plasma treated) and the same sample after annealing at 1100°C in UHV. The Ti-2p region has been fitted with two doublets corresponding to Ti³⁺ (2p_{3/2}, 457.2 eV) and Ti⁴⁺ (2p_{3/2}, 458.3 eV). The presence of Ti³⁺ in the sample after the thermal treatment is due to the increase in oxygen vacancies on the surface. The Pd-3d region of the as prepared sample has been fitted by three doublets corresponding to Pd metallic (3d_{5/2}, 335 eV), Pd²⁺ (3d_{5/2}, 337 eV), Pd⁴⁺ (3d_{5/2}, 339.6 eV). After annealing at 1100°C, just metallic Pd has been observed, which rules out the formation of Pd-Ti after annealing in UHV.