Supporting Information

Controlling the Architecture of Au/Pt Core-Shell Nanocubes via Platinum Growth Mode

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Figure S1: Gold nanocubes. a) and b) TEM micrographs of CTAB-stabilized gold nanocubes.

c) Corresponding size histogram (348 particles). d) Associated UV/Vis spectrum.



Figure S2: a) Overview TEM micrograph of the gold nanocubes after heating, showing a spherical-appearing shape. b) Corresponding size histogram.



Figure S3: Size histogram of the cubic Au-Pt nanoparticles (368 particles).



Figure S4: TEM-Micrograph of gold-platinum nanocubes. Shown are cubic gold-platinum nanoparticles with platinum tips at the previously rounded cube corners. Irregular particle shapes are also recognizable. Some of these have a rough surface and additionally formed tips.



Figure S5: EDS spectrum of the core-shell nanoparticles. a) In the range from 0 keV to 15 keV and b) in the range from 0 keV to 2.0 keV.



Figure S6: EDS spectrum from a tip (marked blue in the inset in a)) of the core-shell nanoparticles. a) In the range from 0 keV to 15 keV and b) in the range from 0 keV to 2.0 keV.



Figure S7: TEM micrograph of gold-platinum nanocubes. a) Synthesized using half the amount of platinum precursor and the same amount of reducing agent and b) synthesized using half the amount of platinum precursor and half of the amount of reducing agent. The relatively low

amount of platinum may have resulted in island growth, as there was possibly not enough platinum to form a core-shell structure. However, it is not possible to rule out that the gold particles will begin to dissolve and reconstruct themselves.



Figure S8: EDS spectrum of a dendritic gold-platinum nanoparticle. a) In the range from 0 keV to 15 keV and b) in the range from 0 keV to 2.0 keV.



Figure S9: a) and b) TEM micrographs of dendritic gold-platinum nanocubes, synthesized with the reduction agent ascorbic acid at a reaction temperature of 80°C.



Figure S10: EDS spectrum of a dendritic gold-platinum nanoparticle (synthesized by using 20 % of the previous platinum amount). a) In the range from 0 keV to 15 keV and b) in the range from 0 keV to 2.0 keV.