

Supporting Information

Control of Crystallographic Phases and Surface Characterization of Intermetallic Platinum Tin Nanoparticles

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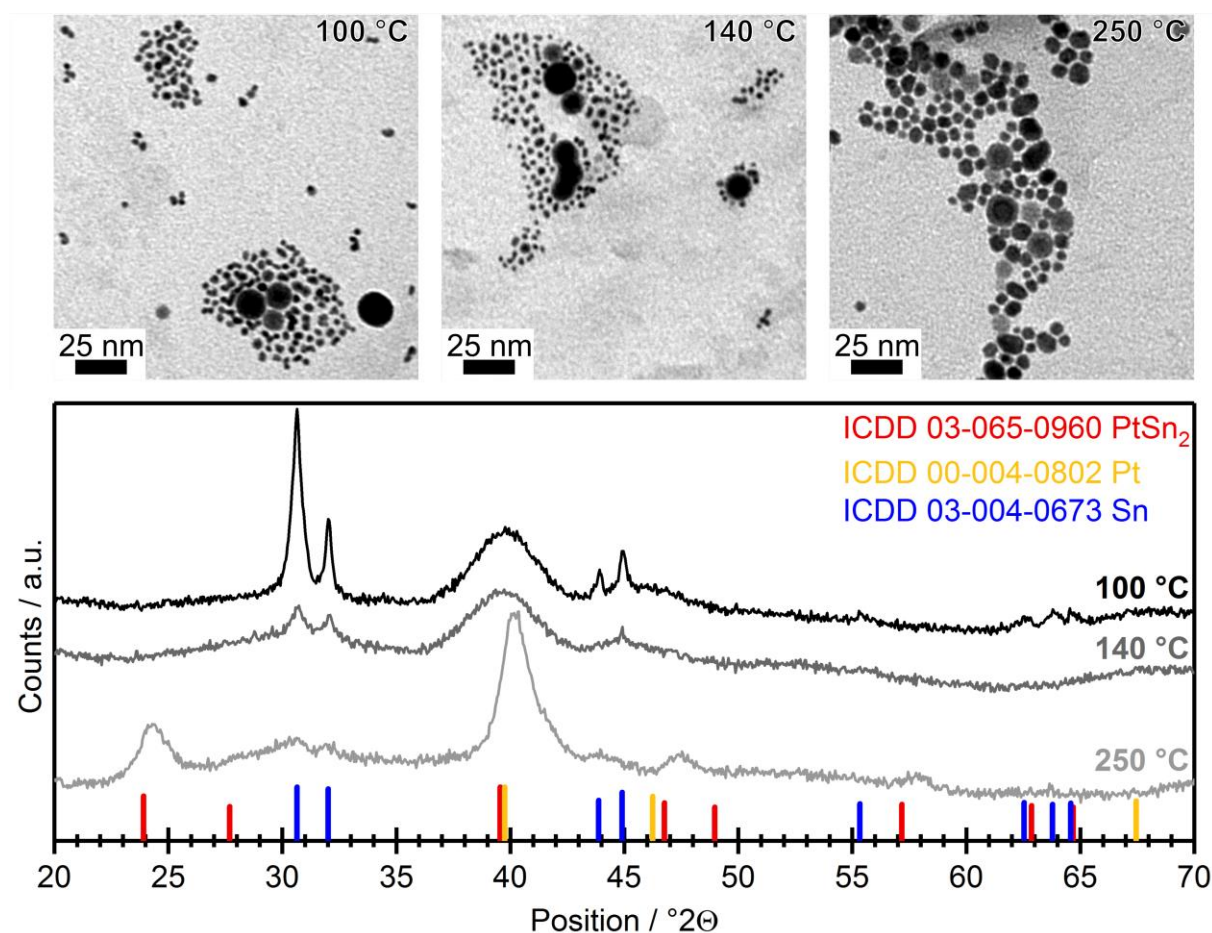


Figure SI 1: TEM images and XRD measurements of nanoparticles obtained by reactions at 100 °C and 140 °C.

The size of the faceted crystals was estimated based on the particle area. From this, a diameter of crystals with spherical shape was determined. This allows comparison with the quasi-spherical 2 nm and 4 nm particles. The size of the smaller and more spherical platinum nanoparticles as well as the platinum-tin nanocrystals were obtained by the determination of the primary and secondary axis of the best fitting ellipse. They were averaged afterwards what gives the diameter. A comparison of both methods reveal a similar size of the 4 nm as well as the 6 nm particles as one can see in Figure SI 3.

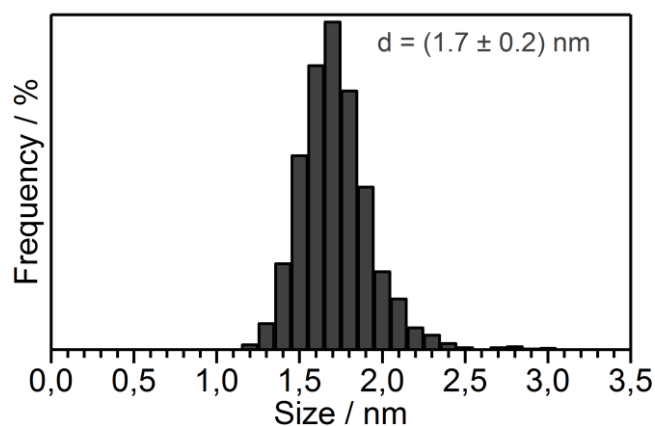


Figure SI 2: Size distribution of the 2 nm platinum seeds.

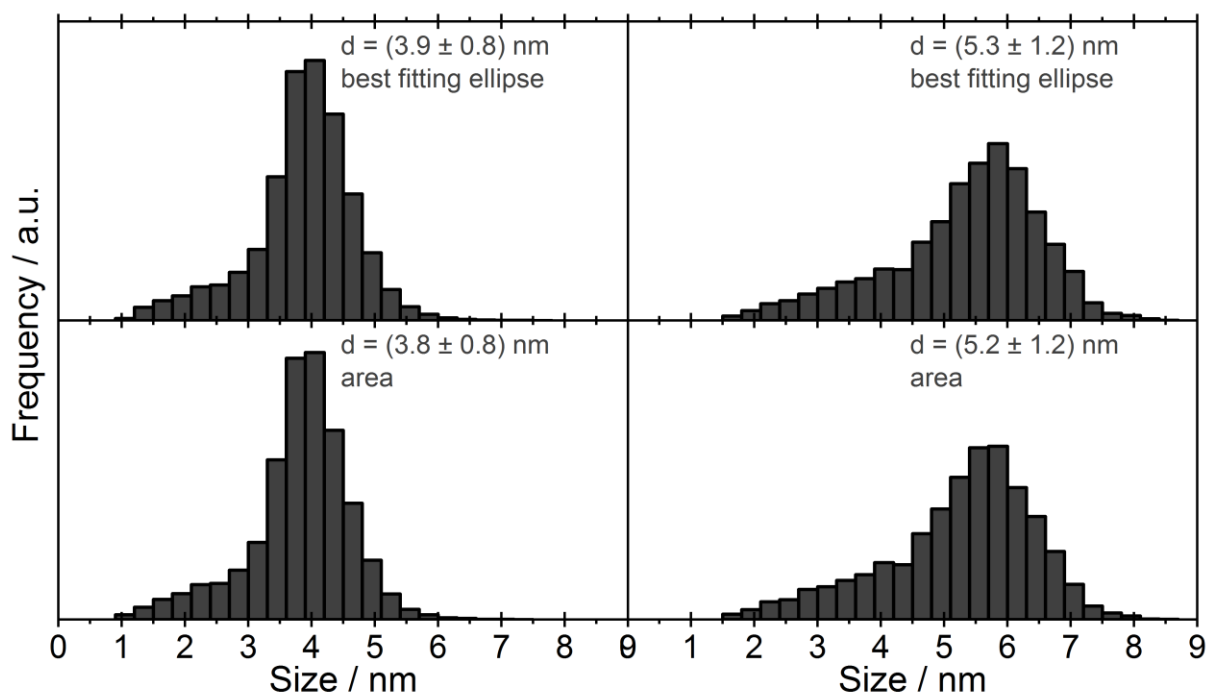


Figure SI 3: Size distribution of 4 nm platinum particles (left side) and 6 nm platinum particles (right side) determined by the best fitting ellipse and by the area.

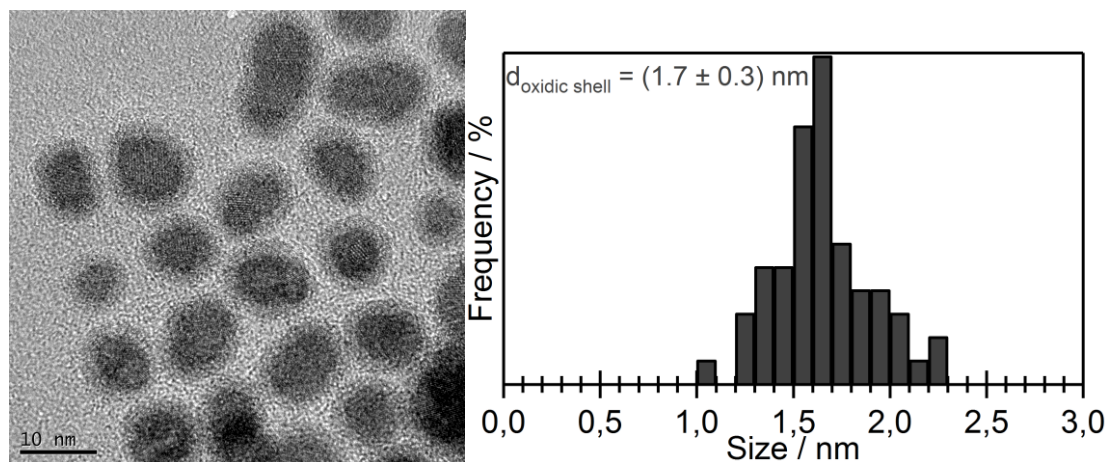


Figure SI 4: TEM image (left) of the sample $\text{PtSn}_2\text{-Pt}_{6\text{nm}}$ and the size distribution (right) of the thickness of the oxidic shell, obtained by measuring the shell at 59 randomly chosen places in the TEM image.

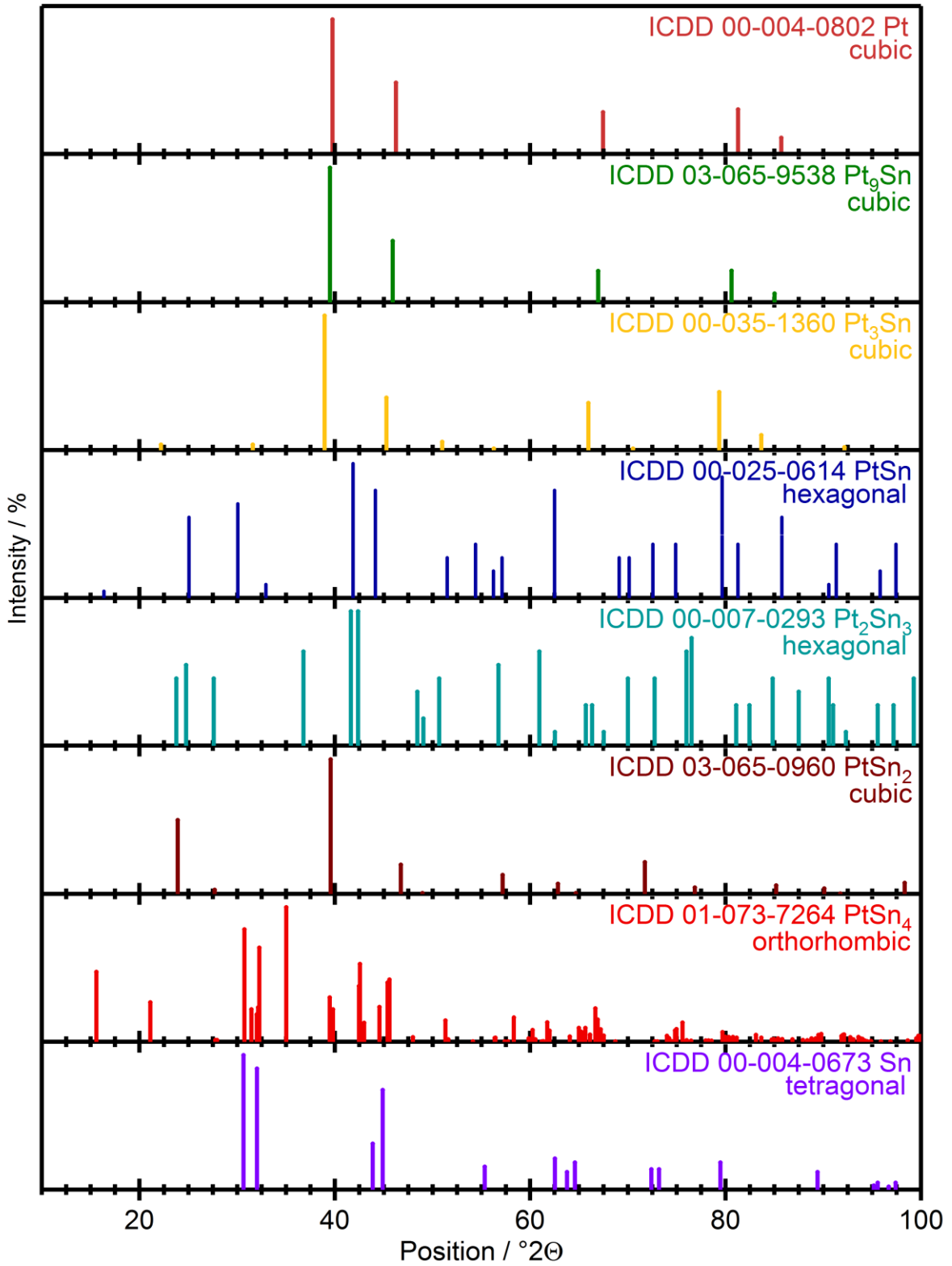


Figure SI 5: Reference patterns for XRD analysis.