

Supporting Information

for

Ta₂N₃ nanocrystals grown in Al₂O₃ thin layers

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Additional experimental data

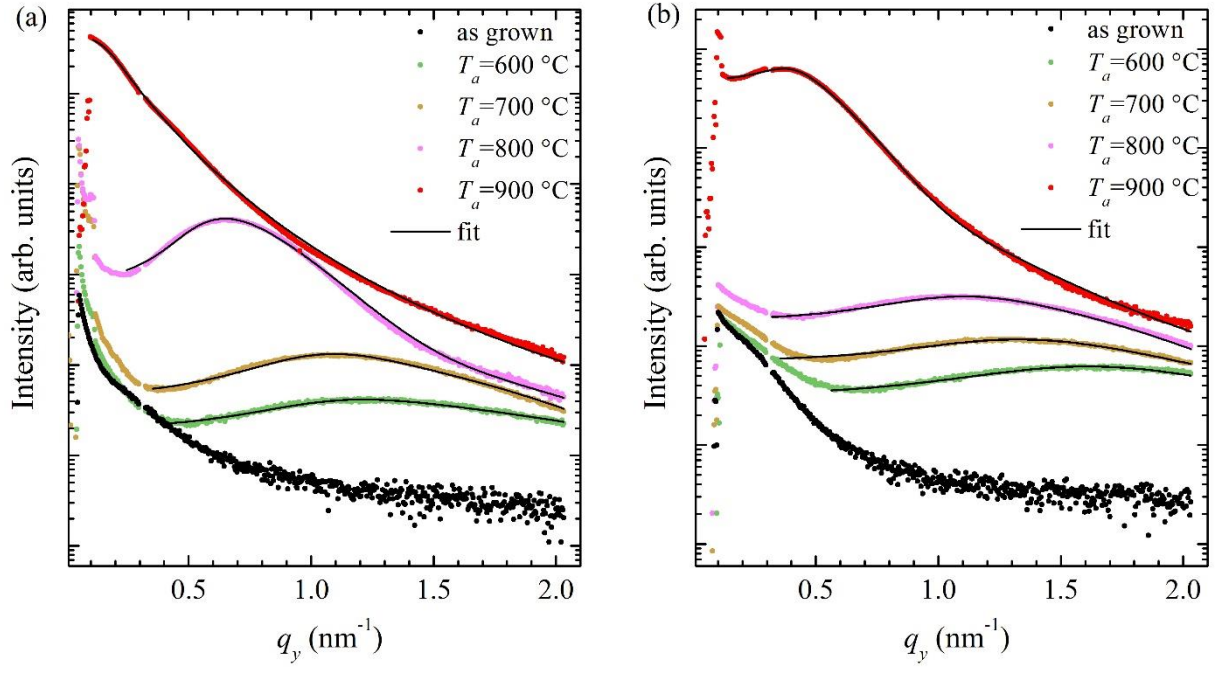


Figure S1: 1D intensity cross sections taken from the GISAXS patterns (shown in Figure 1) along the q_y axis (constant $q_z=0.46 \text{ nm}^{-1}$) of as grown and annealed multilayers with (a) thinner (4 nm) and (b) thicker (12 nm) metallic layers. The spectra are vertically shifted for clarity. Solid lines represent best fits to the experimental data.

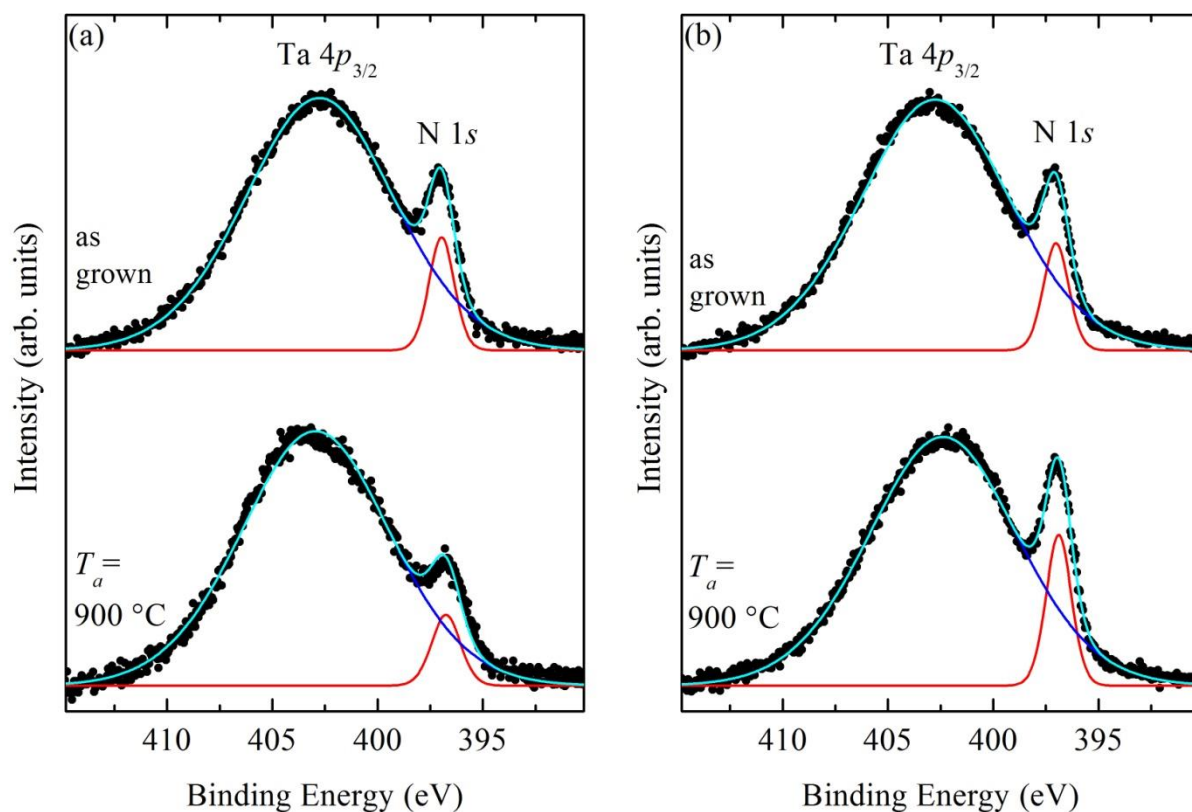


Figure S2: Deconvoluted XPS spectra for Ta 4p and N 1s core levels of the samples shown in Figure 5 of the main text: as grown (upper curves) and annealed at 900 °C (lower curves) MLs for two different nominal thicknesses of the metallic layers: (a) 4 nm (b) 12 nm. The location of N 1s energy level at BE of 397.2 eV implies the formation of N-Ta bonds [1].

References

- [1] Lehn, J.-S. M.; van der Heide, P.; Wang, Y.; Suh, S.; Hoffman, D. M. *J. Mater. Chem.* **2004**, *14*, 3239–3245.