

Supporting Information:

**Control of Branching in $\text{Ni}_3\text{C}_{1-x}$ Nanoparticles and their
Conversion into Ni_{12}P_5 Nanoparticles**

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Additional HRTEM Images

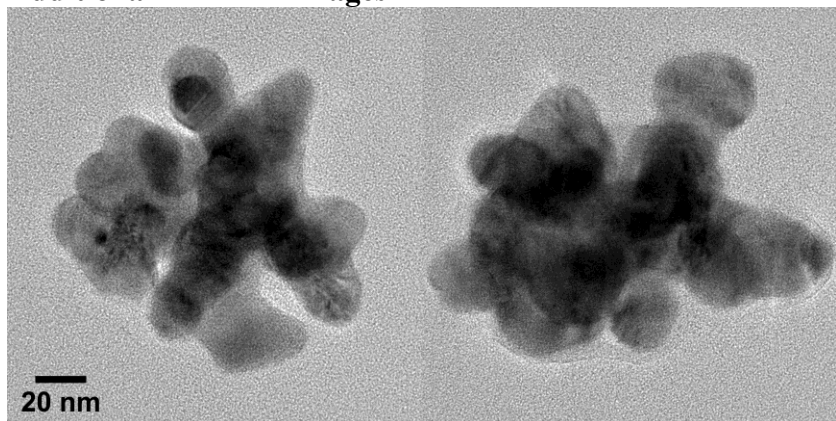


Figure S1. HRTEM images (common scale bar) of the sample grown in ODE at 230 °C for 30 min without TOP (corresponding to Figure 1a).

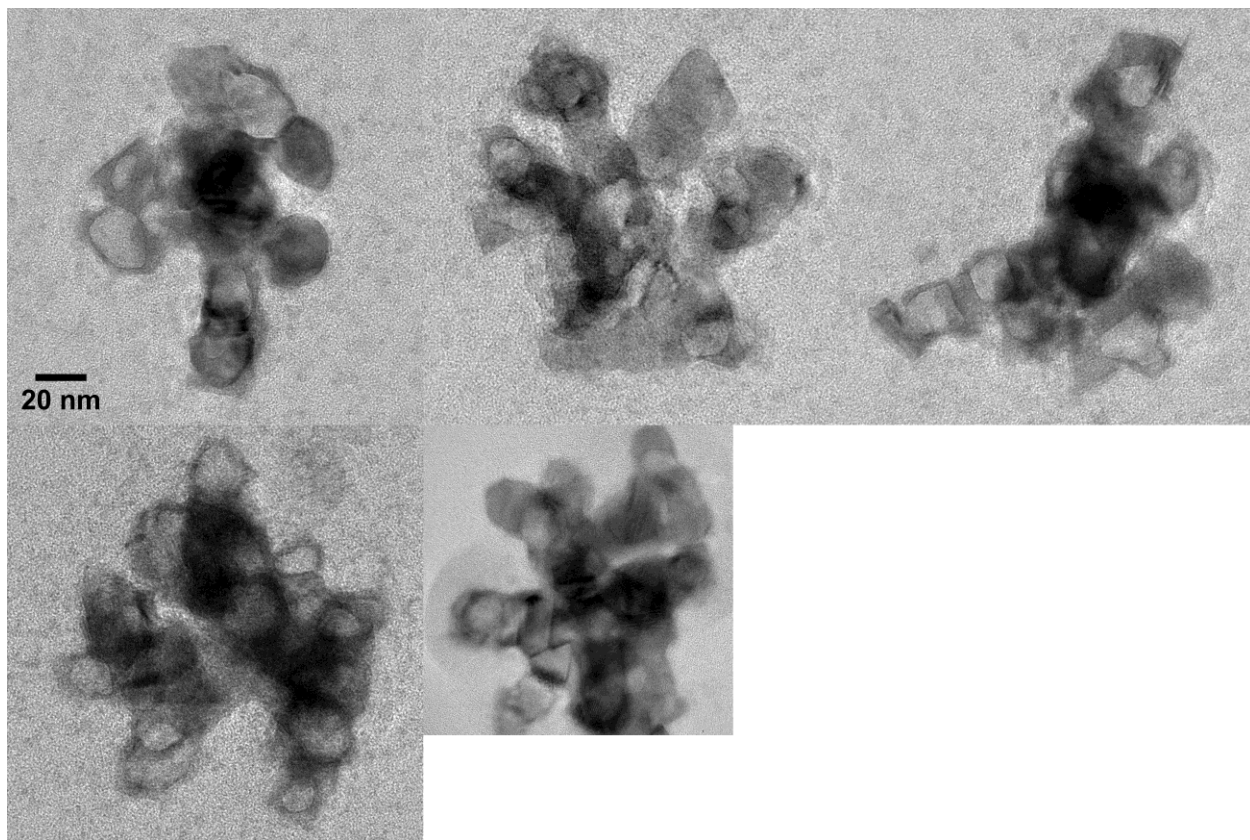


Figure S2. HRTEM images (common scale bar) of the sample grown in ODE at 230 °C for 30 min without TOP, followed by conversion into Ni_{12}P_5 after adding 0.3 mL TOP and heating at 300 °C for 30 min (corresponding to Figure 2a).

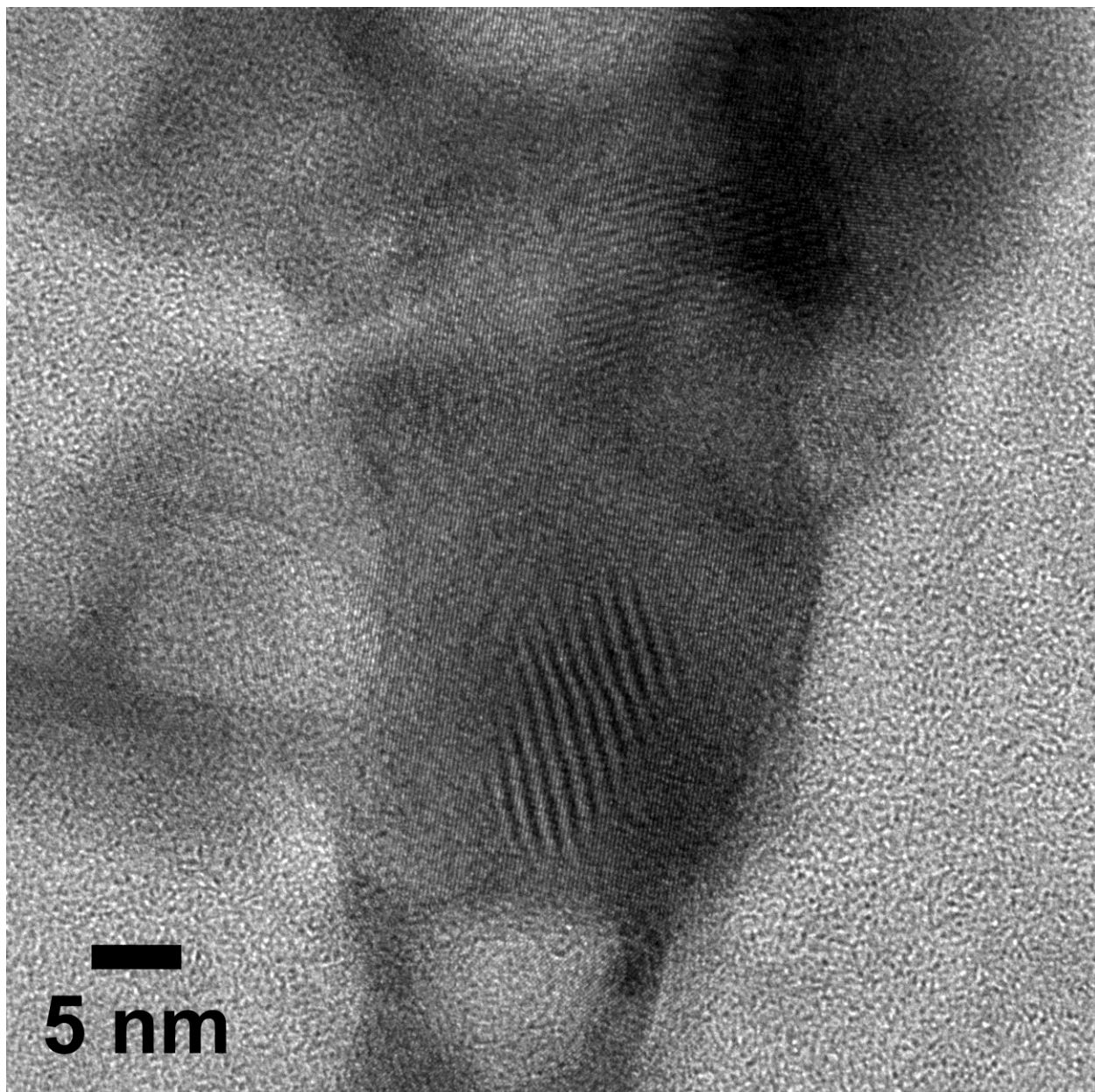


Figure S3. Additional HRTEM image showing the lattice of part of the Ni₁₂P₅ nanoparticle shown in Figure 3b, which was initially grown in ODE at 230 °C for 30 min without TOP, followed by conversion into Ni₁₂P₅ after adding 0.3 mL TOP and heating at 300 °C for 30 min.

TEM Images and XRD for Samples Prepared Using Oleylamine Only or 99.5% 1-Octadecene

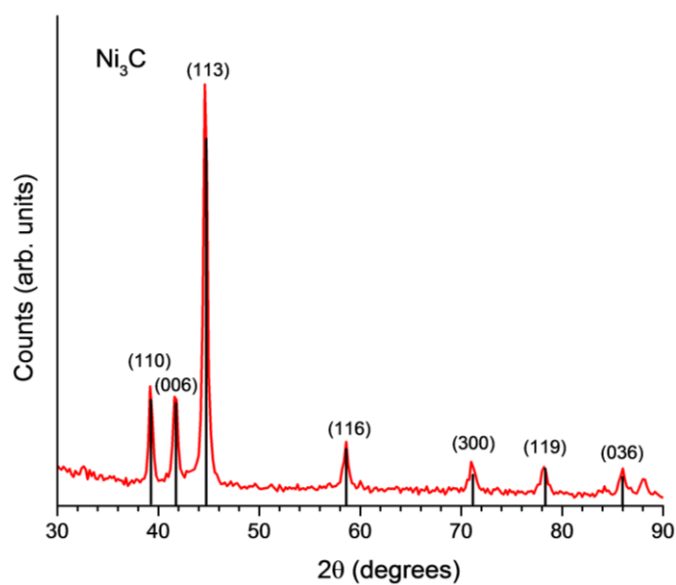
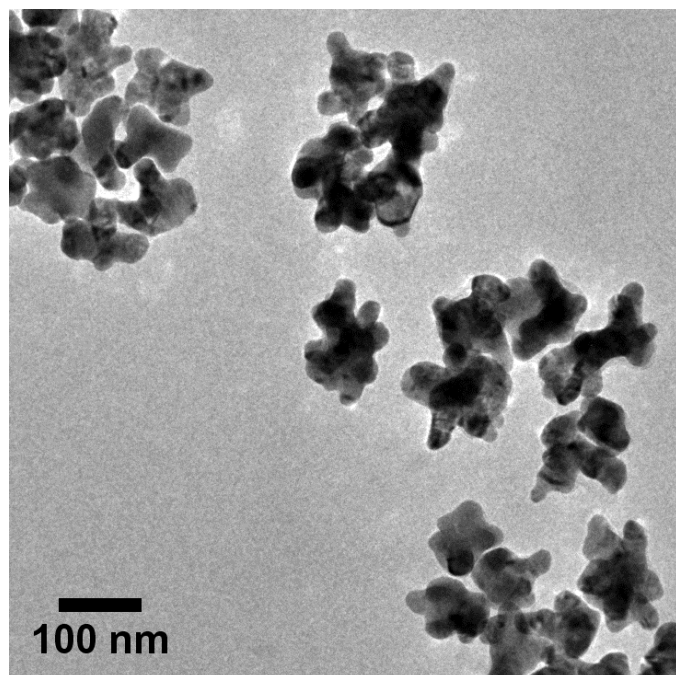


Figure S4. TEM image and powder XRD of dendritic $\text{Ni}_3\text{C}_{1-x}$ nanoparticles grown in 99.5% ODE at 230 °C for 30 min without TOP. Reference XRD pattern for Ni_3C is shown as a stick spectrum.

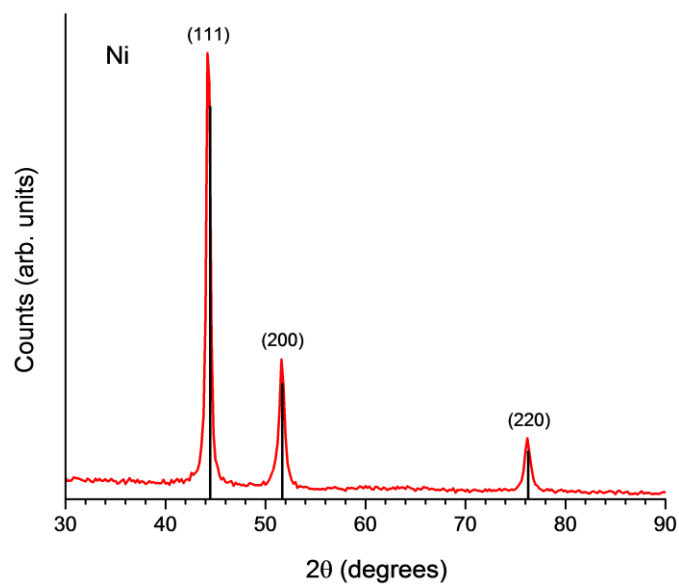
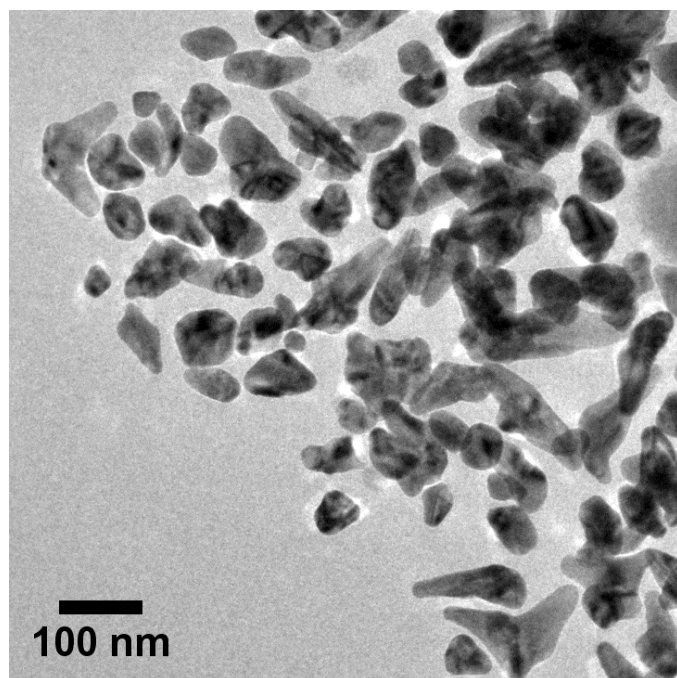


Figure S5. TEM image and powder XRD of Ni nanoparticles grown in 10 mL oleylamine at 230 °C for 30 min without TOP and in the absence of any other solvent. Reference XRD pattern for Ni is shown as a stick spectrum.