Electronic Supplementary Material (ESI) for RSC Advances

Supporting Information

Nickel nanocrystals: fast synthesis of cubes, pyramids and tetrapods

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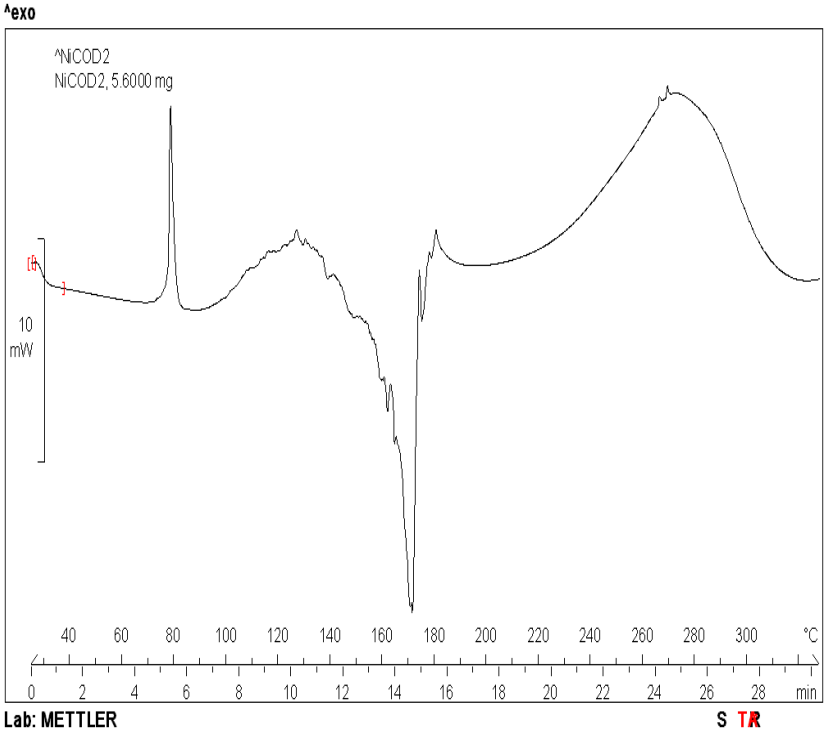


Figure S1: Differential Scanning Calorimetry under nitrogen with heating slope of 10ºC/min

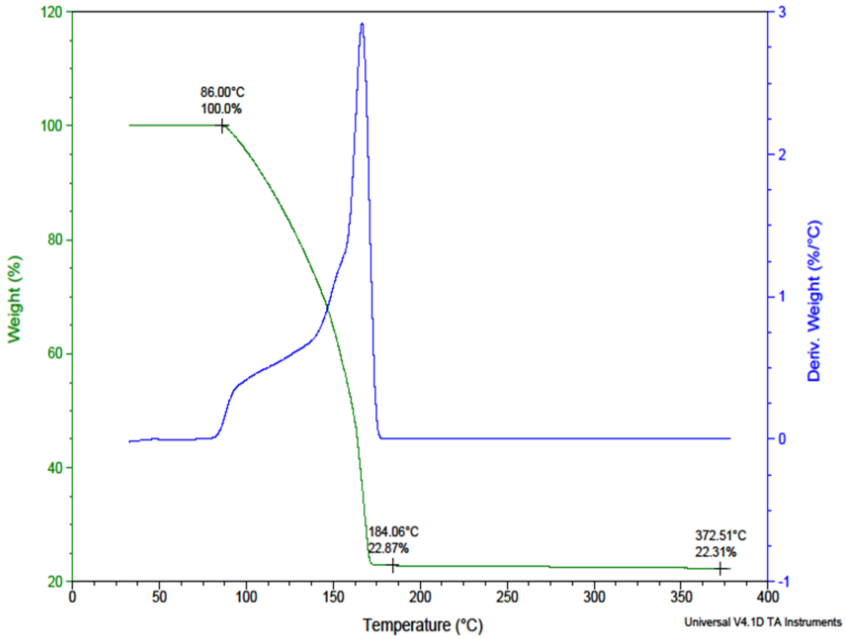


Figure S2: Thermal Gravimetric Analysis under nitrogen with heating slope of 10ºC/min

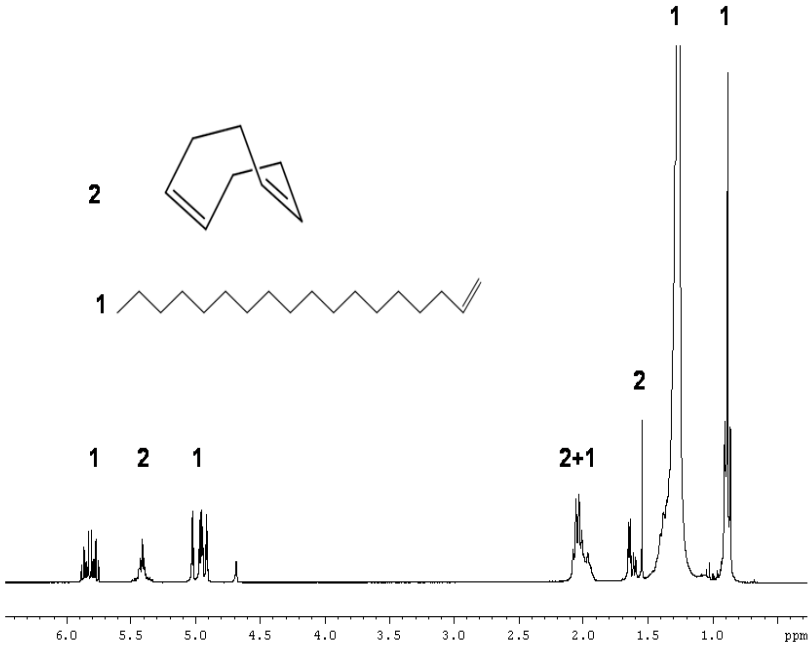
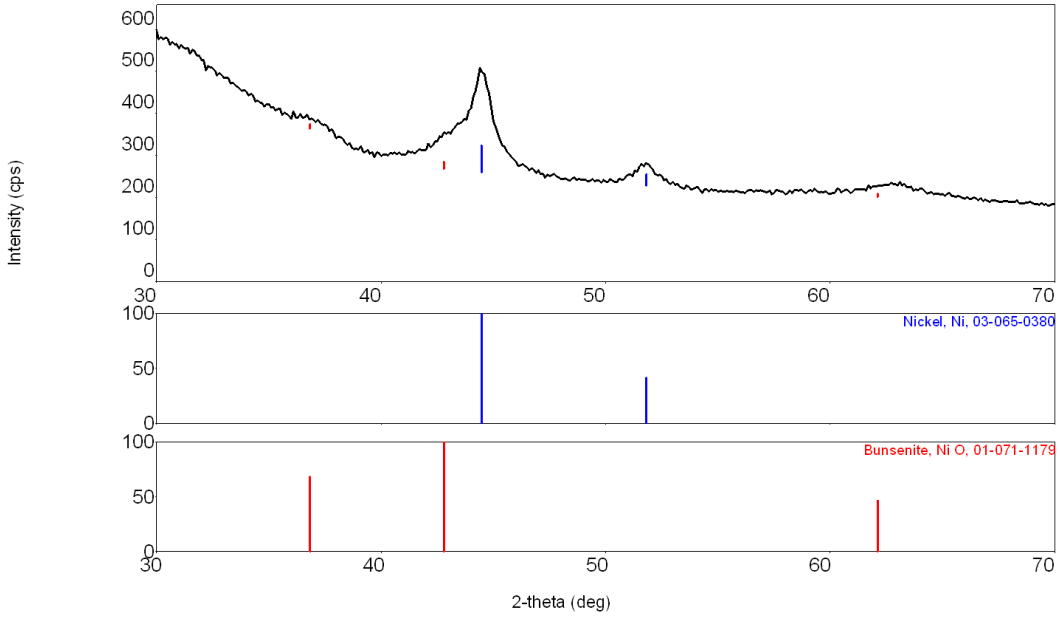
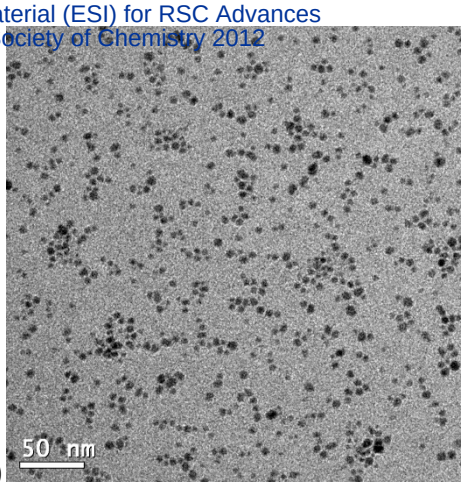


Figure S3: ^{1}H NMR of the supernatant after filtration of the Ni NPs



b) 

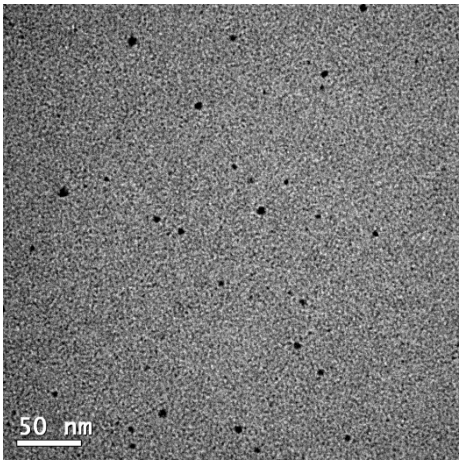
c) 

Figure S4: XRD of Ni NPs (sample 1d) casted on a glass slide (a); Transmission Electron Microscopy images of Ni nanoparticles synthesized in different ligands with a constant ratio precursor/ligand: 1/2 in a microwave at T = 170 °C for 30 minutes b) benzylamine, c) triphenylphosphine

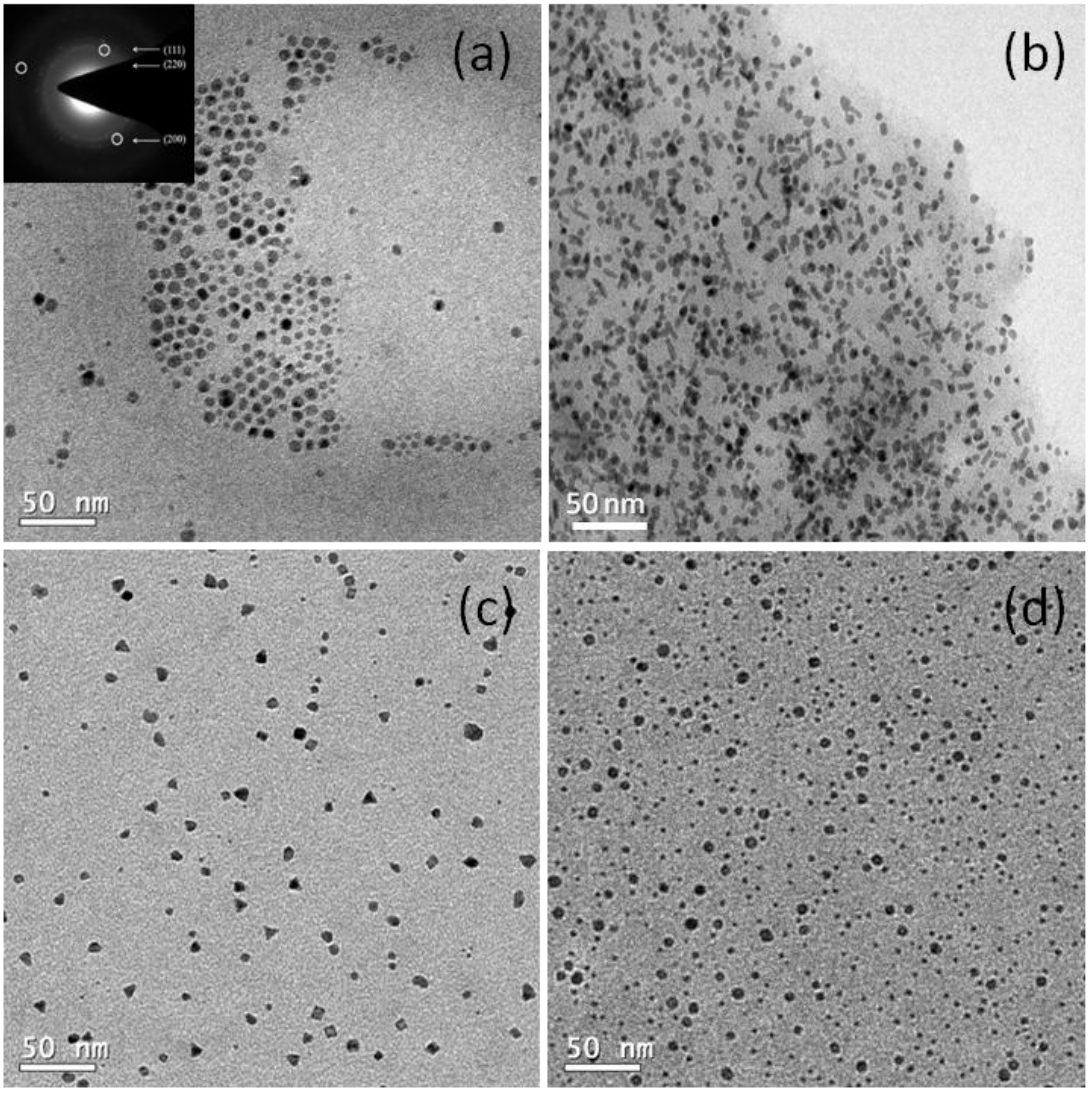


Figure S5: Transmission Electron Microscopy images of Ni nanoparticles synthesized in the microwave (see table 1 below)

Sample	HDA/Ni	T (˚C)	t (min)	Morphology	Size (nm)
2a	10	80-120˚C	30	sphere	5 ± 3
2b	10	150-160 ˚C	45	rod, sphere	5*15; 7 ± 3
2c	10	170˚C	2	triangle, cube and sphere	5 ± 2
2d	10	150-170 ˚C	240	Sphere	4 ± 3

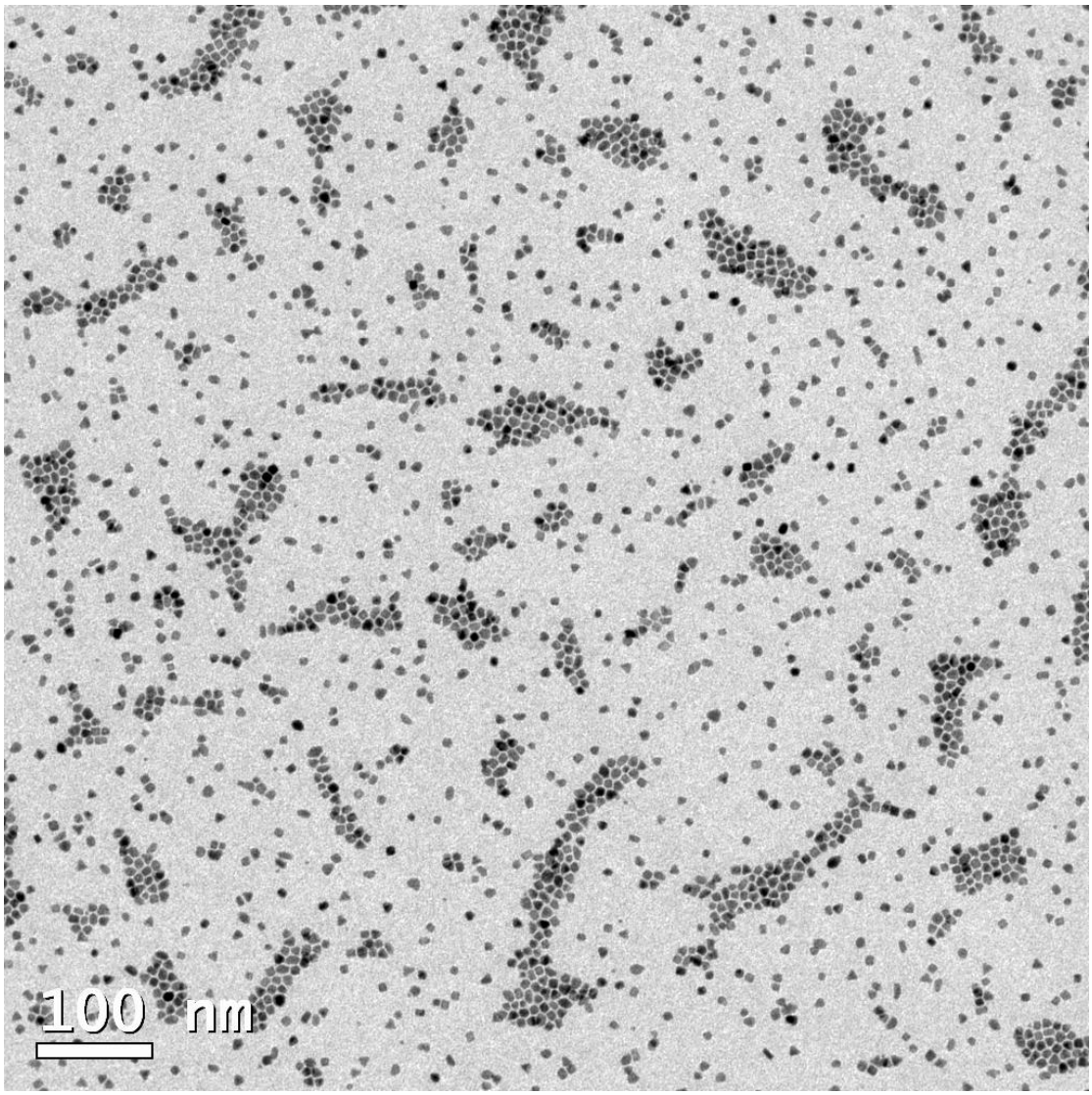


Figure S6: Low magnification TEM of pyramidal and cubic NPs (Microwave, Hexadecylamine 2 equivalent, T = 170˚C, 20 min reaction)

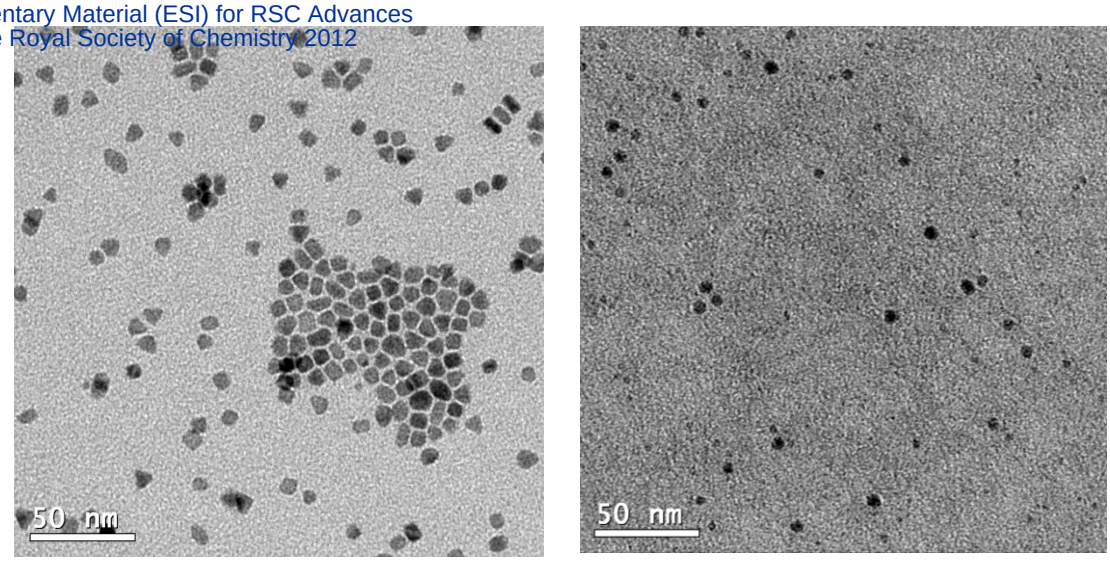


Figure S7: TEM of pyramidal and cubic NPs (Microwave, Hexadecylamine 2 equivalent, T = 170˚C, 30 min (a) and after post-synthesis annealing (T = 150˚C, 60 min) (b)

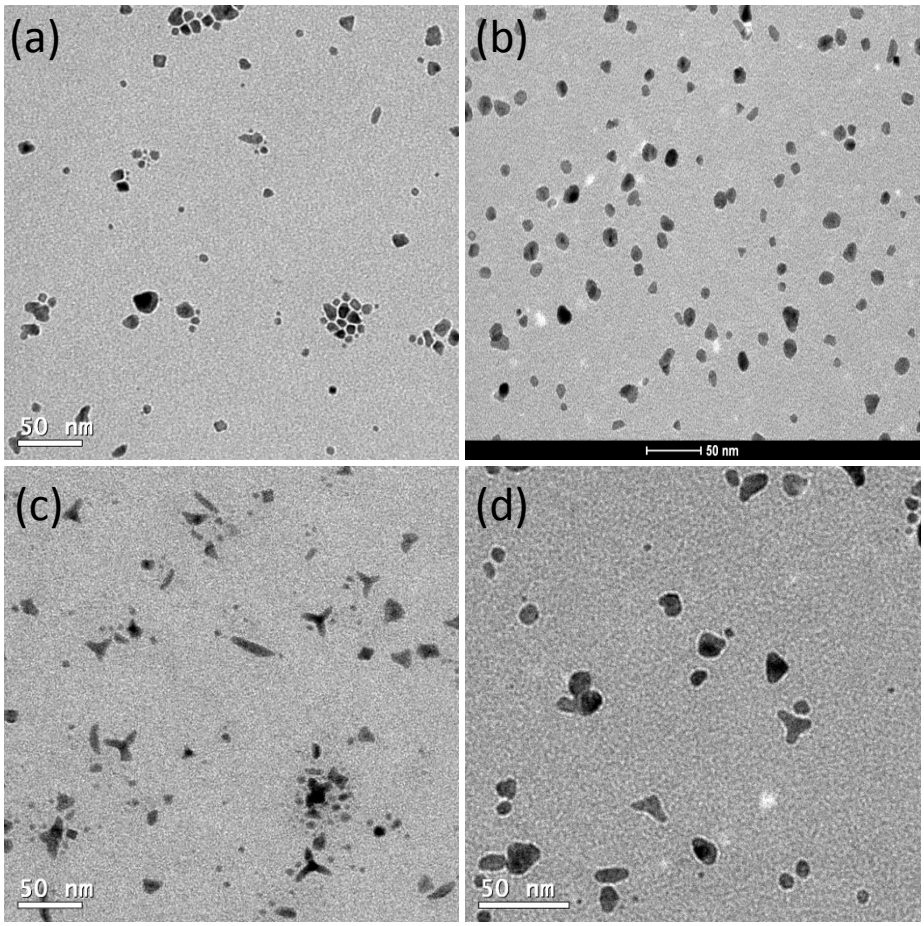


Figure S8: Transmission Electron Microscopy images of Ni nanoparticles synthesized in a microfluidic cell (see table 2 below)

Sam-ple	Injection rate ($\mu L.min^{-1}$)	t (min)	T (˚C)	Morphology	Size (nm)
4a	100	2.5	170	Cube, triangle, sphere	7 ± 2
4b	25	10	170	Cube, triangle, sphere	8 ± 4
4c	25	10	150	Cube, triangle, sphere, tetrapod	10 ± 4
4d	8	30	170	Cube, triangle, sphere, tetrapod	8 ± 4 (pod diameter)