Supporting Information

In-suspension growth of ZnO-nanorods with tunable length and diameter using polymorphic seeds

Silvano Del Gobbo, Jitpisut Poolwong, Valerio D'Elia**

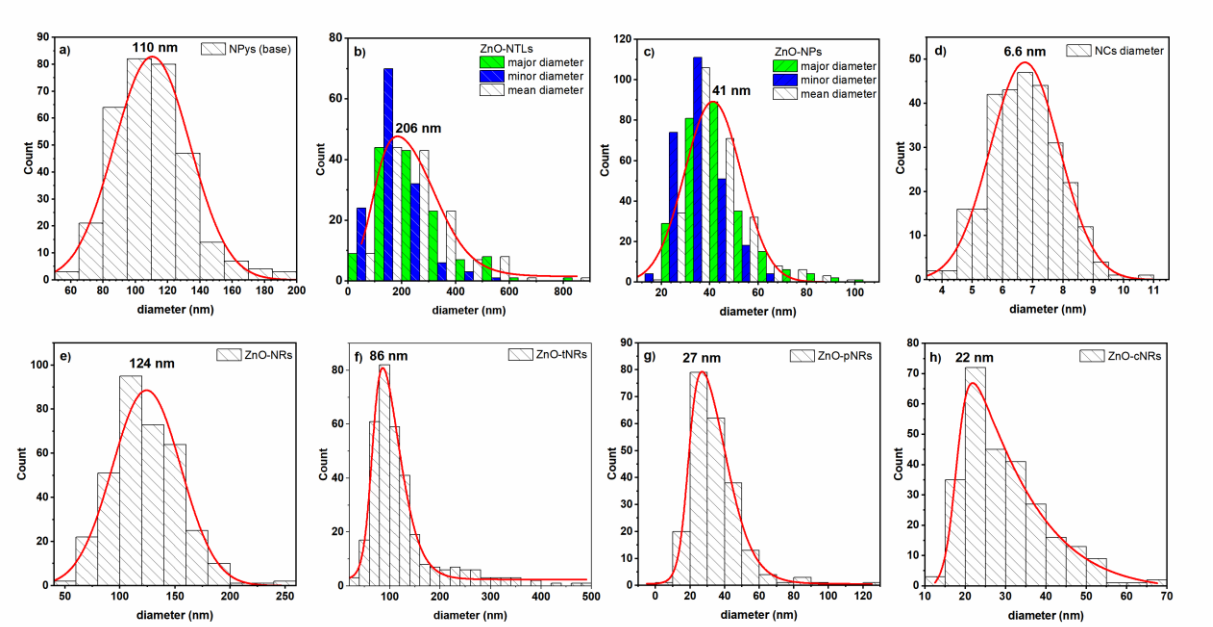

Figure S1: Statistical analysis via histograms of a) ZnO-NPys (refers to the hexagonal base), b) ZnO-NTLs, c) ZnO-NPs and d) ZnO-NCs seeds diameters and of the corresponding, e) ZnO-NRs, f) ZnO-tNRs, g) ZnO-pNRs and h) ZnO-cNRs. Due to the irregularity of the ZnO-NTLs and of ZnO-NPs shape, each diameter distributions shown in panels b) and c) is composed of 3 histograms representing the statistical distribution of major, minor and mean diameter respectively. For NTLs the mean diameter is calculated as an average between the major and the minor side of the NTLs which are assumed to have a rectangular shape. Instead, NPs were assumed to have an elliptic shape with major and minor diameters which average value is given by $d_{mean}=(2d_{maj}+d_{min})/3$.

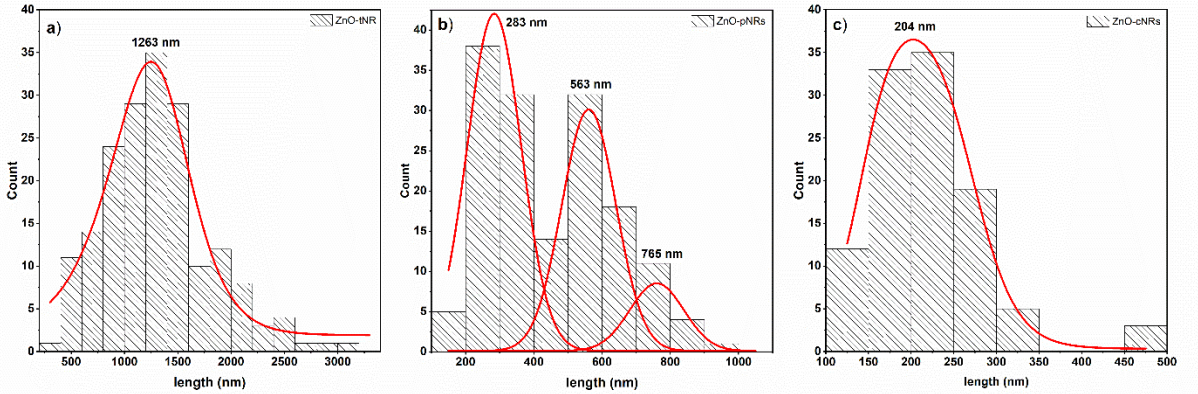

Figure S2: Length statistical analysis via histograms of a) ZnO-tNRs, b) ZnO-pNRs and c) ZnO-cNRs prepared with 25 mM precursors concentration.

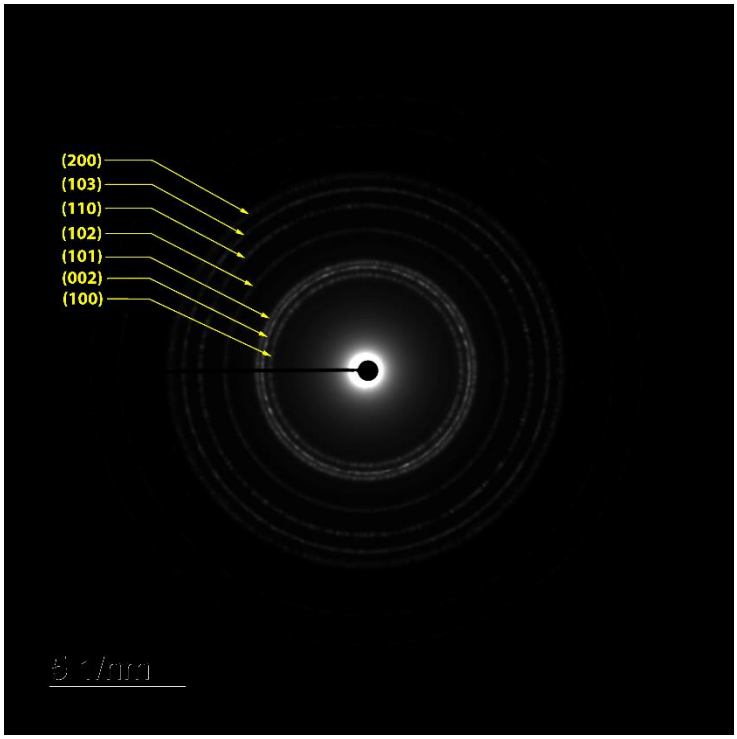

Figure S3: Selected area electron diffraction pattern (SAED) of ZnO-NCs visible in Figure 5c.

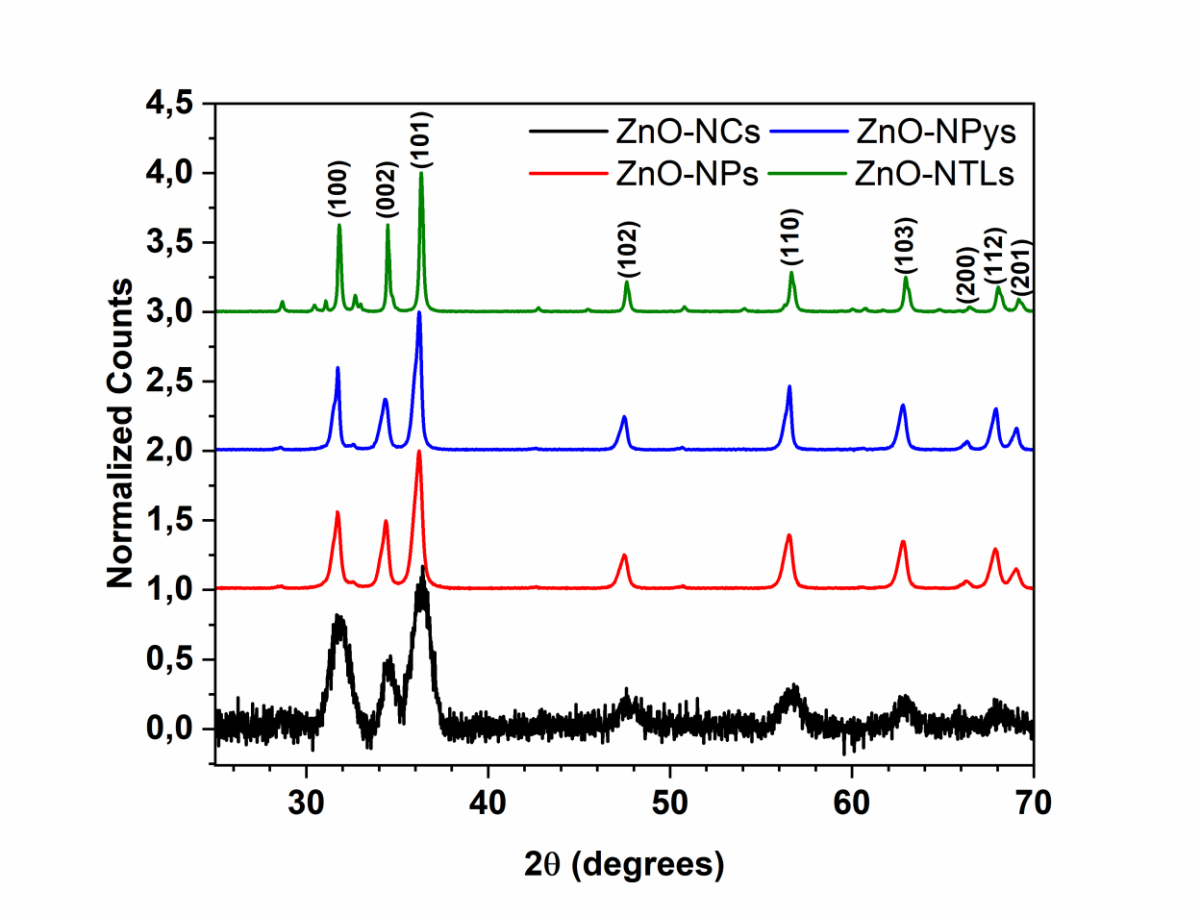

Figure S4: XRD patterns of ZnO-NTLs, ZnO-NPys, ZnO-NPs and ZnO-NCs.

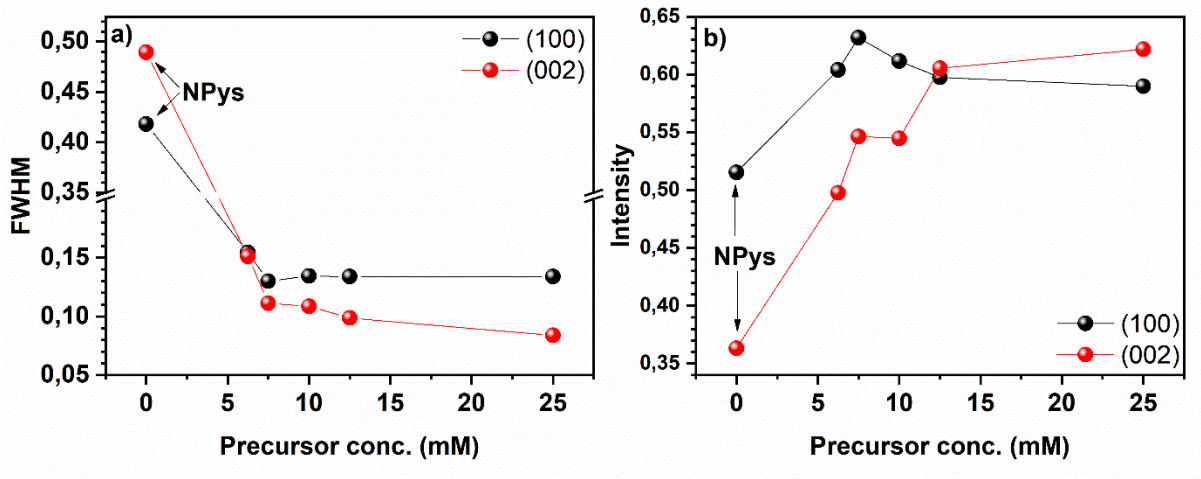

Figure S5: a) FWHM and b) peak height of (100) and (002) diffraction peaks for ZnO-NRs synthesized with the 5 precursor concentrations. Same parameters for ZnO-NPys are also included.

Table S1: FWHM and peak height of (100) and (002) diffraction peaks for, ZnO-NPys, ZnO-NTLs, ZnO-NPs, ZnO-NCs seeds and of the relative ZnO-NRs, ZnO-tNRs, ZnO-pNRs, ZnO-cNRs.

sample	FWHM (100)	FWHM (002)	Peak height (100)	Peak height (002)	(002)/(100) peaks intensity ratio	L (nm)	d (nm)
ZnO-NCs	0.683	0.458	0.691	0.493	0.714	-	6.6
ZnO-NPys	0.418	0.489	0.515	0.363	0.705	-	110 (base)
ZnO-NTLs	0.211	0.151	0.629	0.636	1.011	206 (width)	41 nm (thickness)
ZnO-NPs	0.503	0.475	0.537	0.470	0.875	-	41 (average)
ZnO-NRs (25 mM)	0.134	0.084	0.590	0.622	1.054	952	124
ZnO-tNRs (25 mM)	0.186	0.137	0.631	0.569	0.902	1300	86
ZnO-pNRs (25 mM)	0.276	0.199	0.597	0.626	1.049	283 563 765	27
ZnO-cNRs (25 mM)	0.303	0.215	0.610	0.646	1.060	204	22

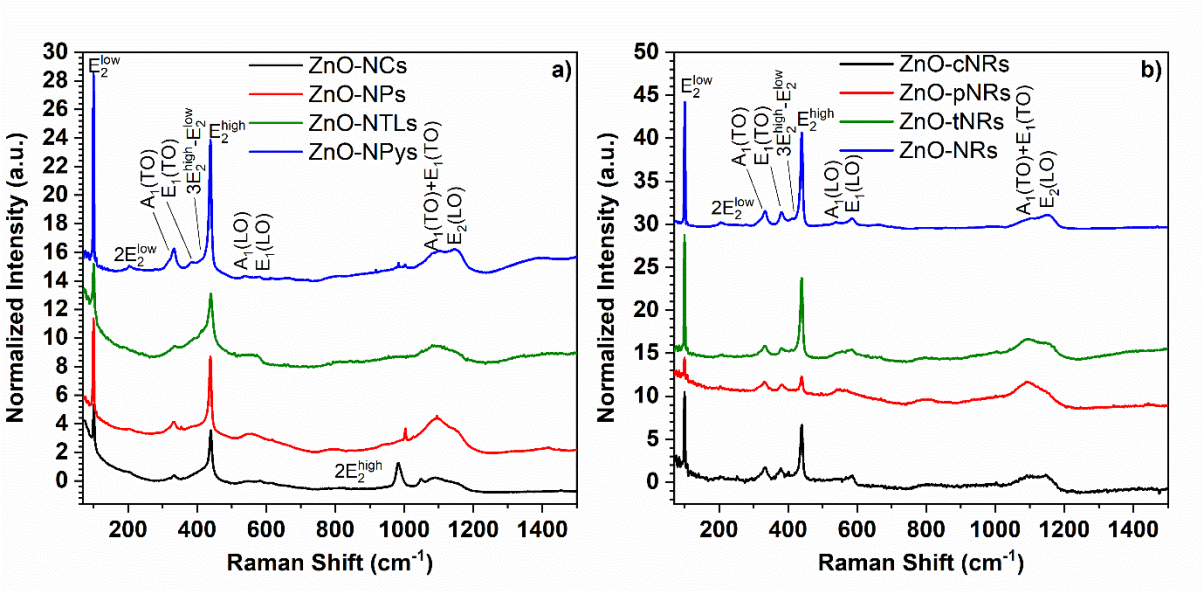

Figure S6: a) Raman spectra of ZnO-NPys, ZnO-NTLs, ZnO-NPs and ZnO-NCs seeds; b) Raman spectra of ZnO-NRs, ZnO-tNRs, ZnO-pNRs and ZnO-cNRs.