Electronic Supplementary Material (ESI) for RSC Advances.

Synthesis of UV/Blue Light-Emitting Aluminum Hydroxide with Oxygen Vacancy and Their Application to Electrically Driven Light Emitting Diodes

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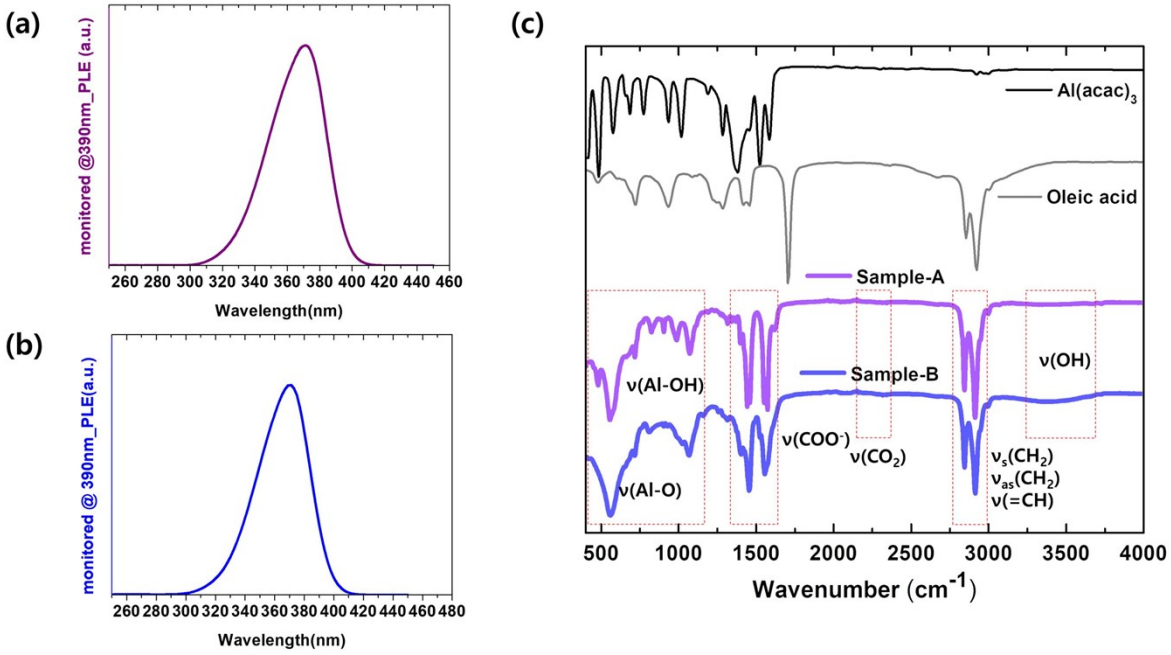

Fig. S.1. PLE spectrum of Sample-A (a) and sample –B (b) dispersed in hexane monitored at 390 nm. (c) FT-IR spectrum of $Al(acac)_3$ (black color, first spectrum on the top of the graph) and oleic acid (gray color, 2nd spectrum) are precursors and that of purified powder is Sample-A (3rd line, violet color) and Sample-B (4th line, blue color).

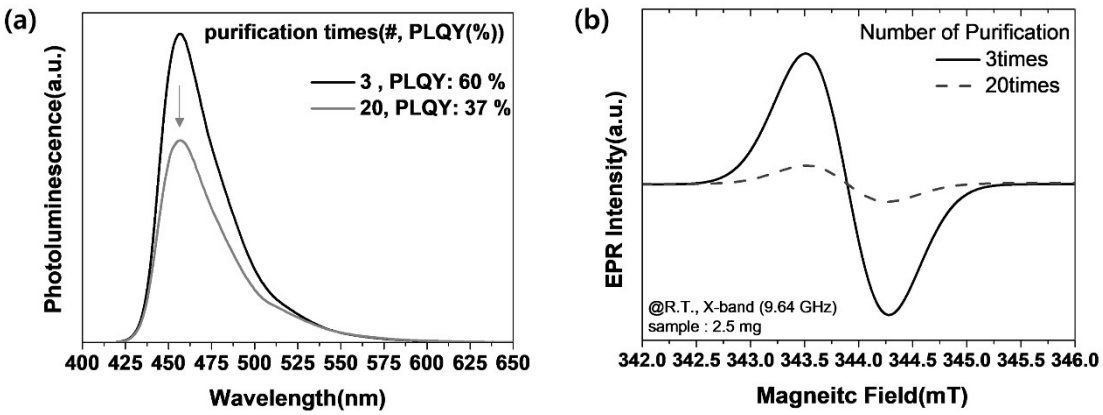

Fig. S.2. (a) PL spectra of 3 times (marked black) and 20 times (marked gray) washed Sample-B dispersed in hexane at room temperature. (b) X-band (9.64 GHz) EPR spectra of 3 and 20 times washed Sample-B powder at room temperature marked black line and gray dot, respectively.

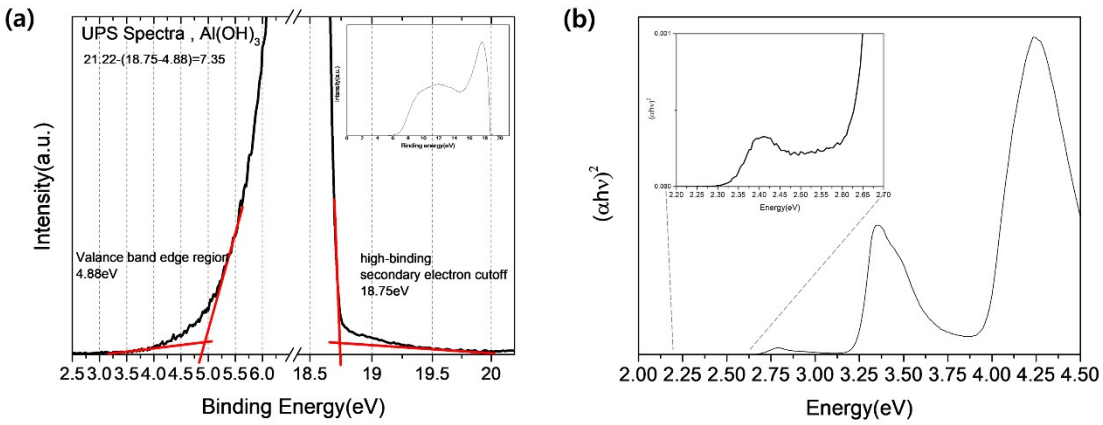

Fig. S.3. (a) UPS data of synthesized Sample-B nanoparticles for the emitting layer and full-spectrum above the inset. (b) Tauc-plot converted from the absorption spectra of Sample-B dispersed in hexane.

The spectrum ranged 2.2-2.7eV was additionally inserted into the graph.

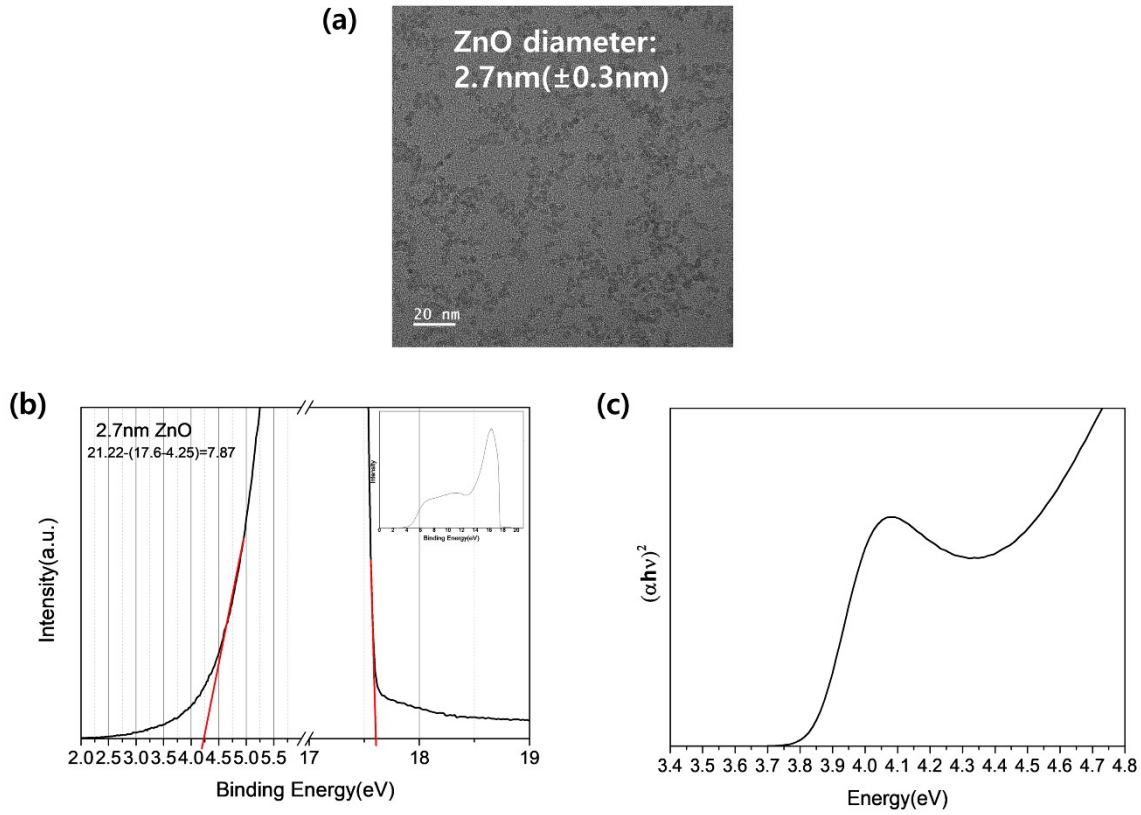

Fig. S.4. (a) FE-TEM image of ZnO nanoparticles (d~2.7nm), (b) UPS data of synthesized ZnO nanoparticles for electron transport layer, and a wide spectrum above the inset. (c) Tauc-plot converted from the absorption spectra of synthesized ZnO nanoparticles dispersed in butanol.