

Supporting Information

Highly Transparent Bulk PMMA/ZnO Nanocomposites with Bright Visible Luminescence and Efficient UV-Shielding Capability

*Yu Zhang, Xiao Wang, Yongxin Liu, Shuyan Song, and Dapeng Liu **

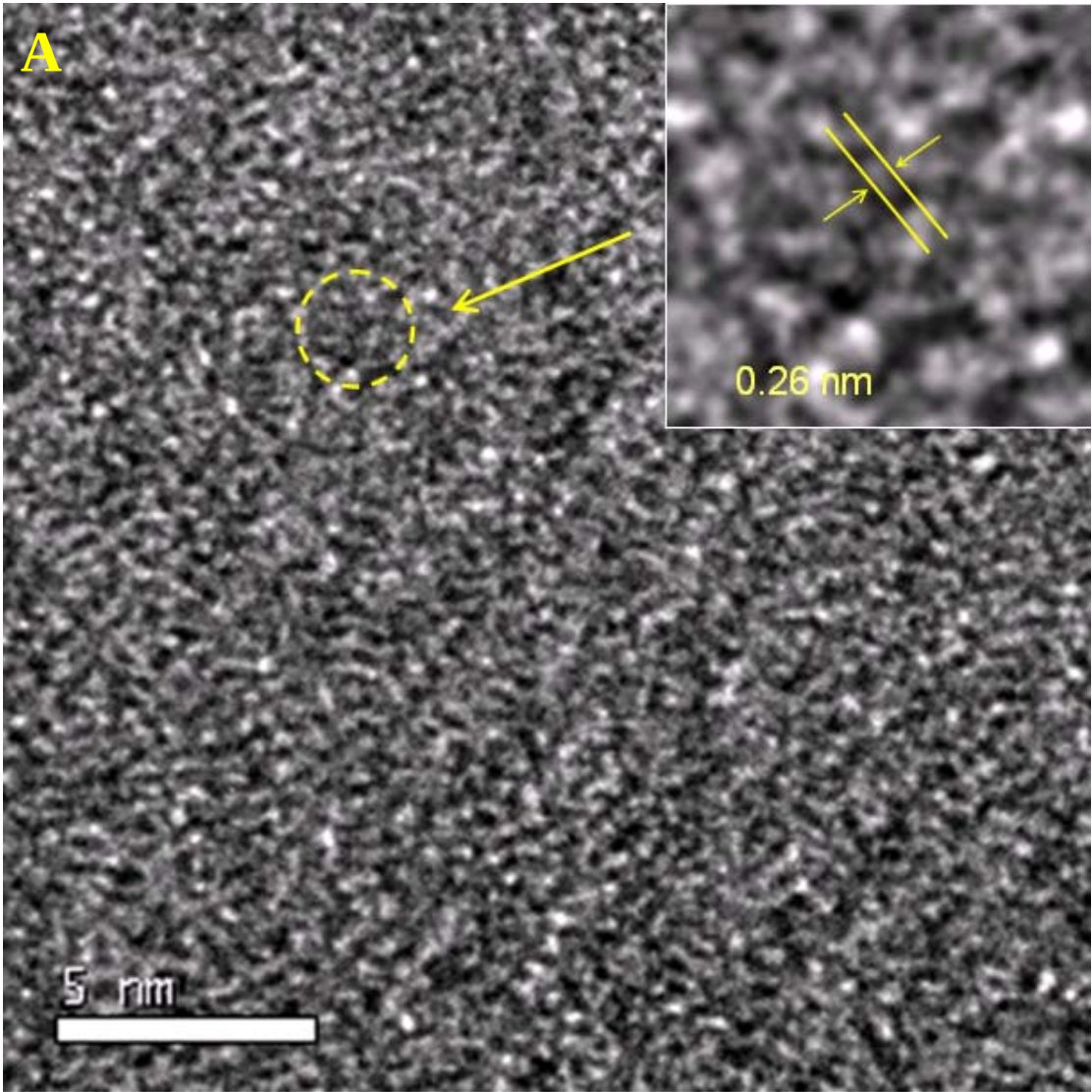
State Key Laboratory of Rare Earth Resource Utilization, Changchun Institute of Applied Chemistry, Chinese Academy of Sciences, 5625 Renmin Street, Changchun, 130022, P. R. China

Fax: +86-431-85698041, 85685653; E-mail: liudp@ciac.jl.cn

KEYWORDS: PMMA/ZnO, nanocomposites, quantum dots, Luminescence, UV-shielding



Figure S1. Photos of 4 cm (diameter) × 0.4 cm (thickness) PMMA/ZnO-1 and -2 sheets. The refractive index is about 1.4444 for both PMMA/ZnO-1 and -2.



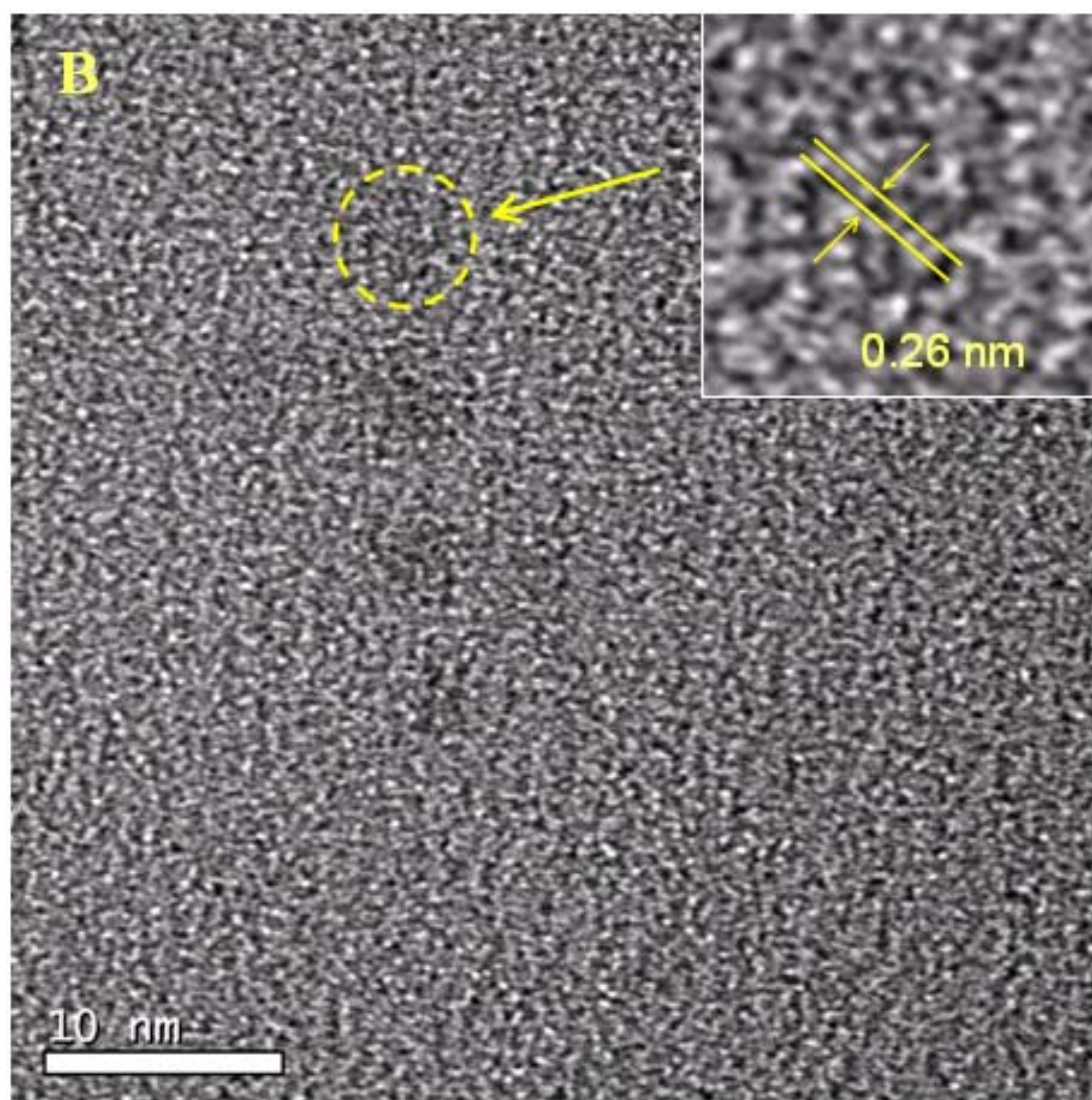


Figure S2 HRTEM images of the ultrathin PMMA/ZnO samples: (A) PMMA/ZnO-1, (B) PMMA/ZnO-2. Inset: the images enlarged three times of the selected areas.

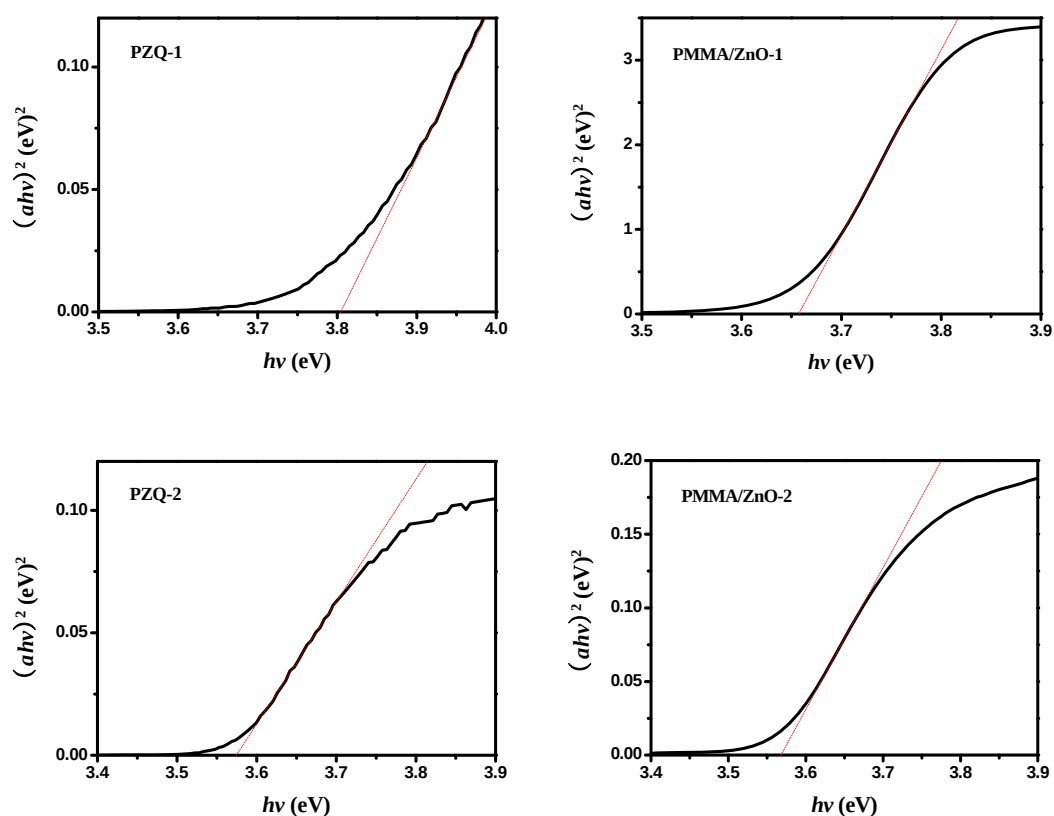


Figure S3. The spectra for the ZnO QDs plotted as $(\alpha h\nu)^2$ versus $h\nu$ according to the corresponding UV-vis spectra in Figure 3 and Figure 5. (α : the absorption coefficient.) Extrapolation of the linear region gives a band gap (E_g) of 3.81 eV for PZQ-1, 3.67 eV for PMMA/ZnO-1 and 3.58 eV for both PZQ-2 and PMMA/ZnO-2, respectively.

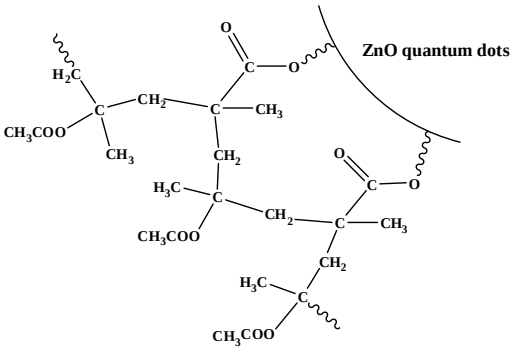
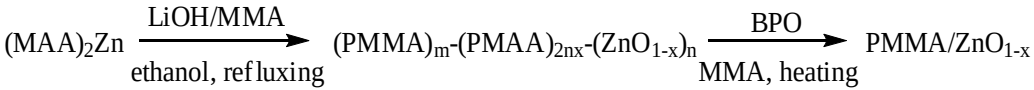


Figure S4. Equations on preparation of PMMA/ZnO nanocomposites and the possible interaction between the two components.