

SUPPLEMENTARY INFORMATION

Effects of added thiol ligand structure on aggregation of non-aqueous ZnO dispersions and morphology of spin coated films

Aloïs Mispelon^a, Amir H. Milani^a, Junfeng Yan^a, Mu Chen^a, Wenkai Wang^a,

Paul O'Brien^{a, b} and Brian R. Saunders^{a,*}

^a*Polymer Science and Technology Group, School of Materials, The University of Manchester, Grosvenor Street, Manchester, M9 13PL, U.K.*

^b*School of Chemistry, The University of Manchester, Oxford Road, Manchester, M9 13PL, U.K.*

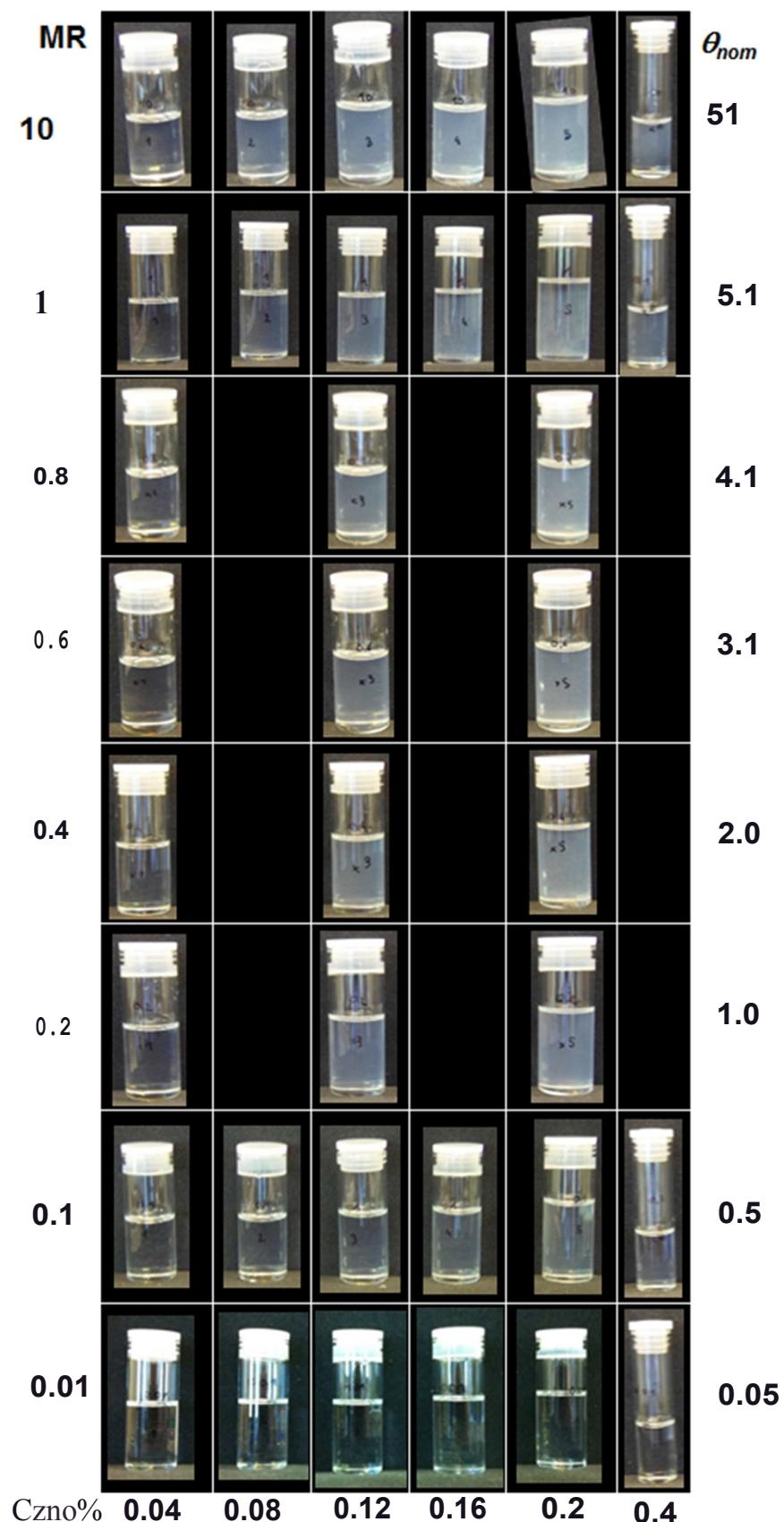


Fig. SI. Zn0/1,2-ethanedithiol dispersion stability. The values for $Czno$, MR and θ_{nom} are shown.

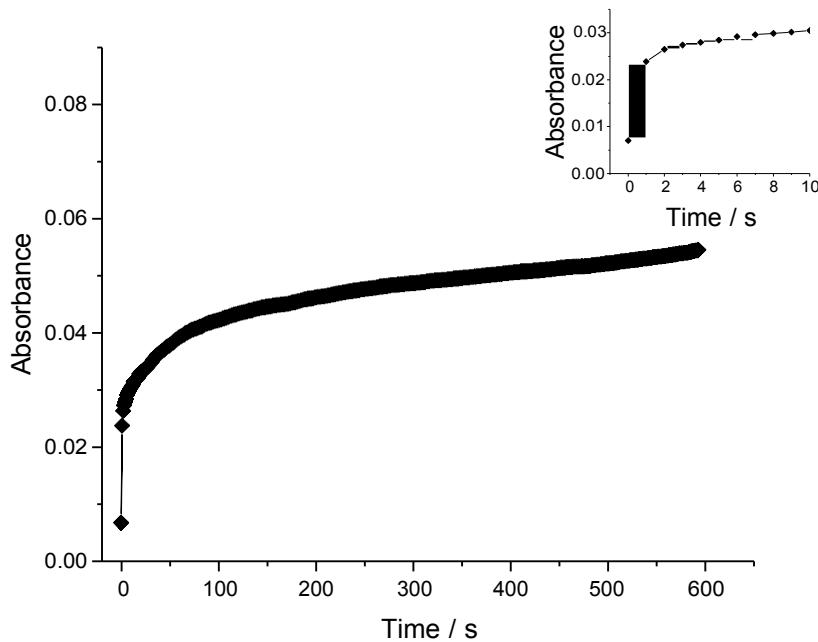


Fig. S2. Kinetic study of ZnO/1,2-ethanedithiol dispersion aggregation. The variation of the absorbance measured at 450 nm as a function of time is shown. The conditions used were $MR = 1.0$ and $C_{ZnO} = 0.016\%$.

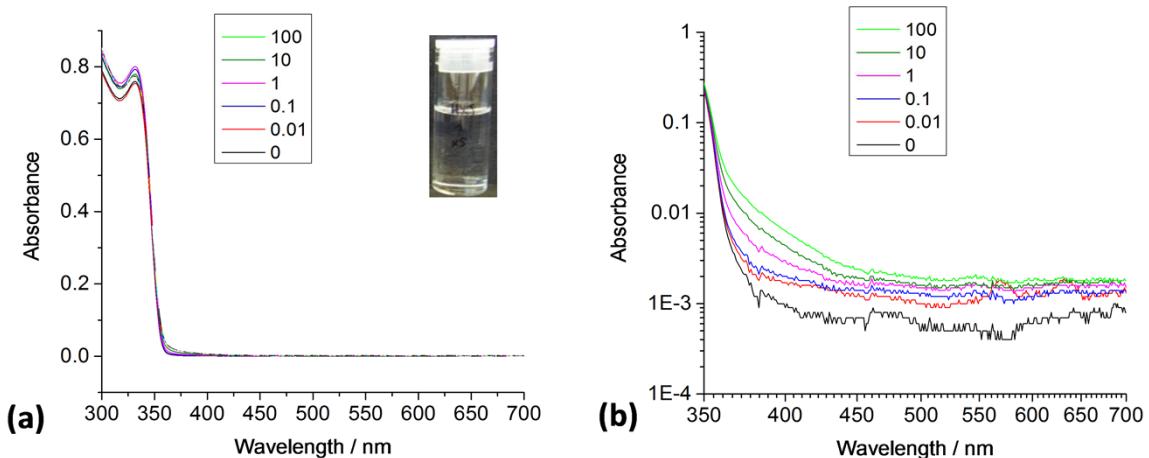


Fig. S3 Effect of added hexanethiol on the UV-visible spectra for ZnO dispersions. (a) shows the spectra for ZnO/1-hexanethiol dispersions. (b) shows log-log plots to illustrate particle scattering. The vial shown in (a) contained ZnO/1-hexanethiol with $MR = 1$ ($_{nom} = 4$) and $C_{ZnO} = 0.2\%$.

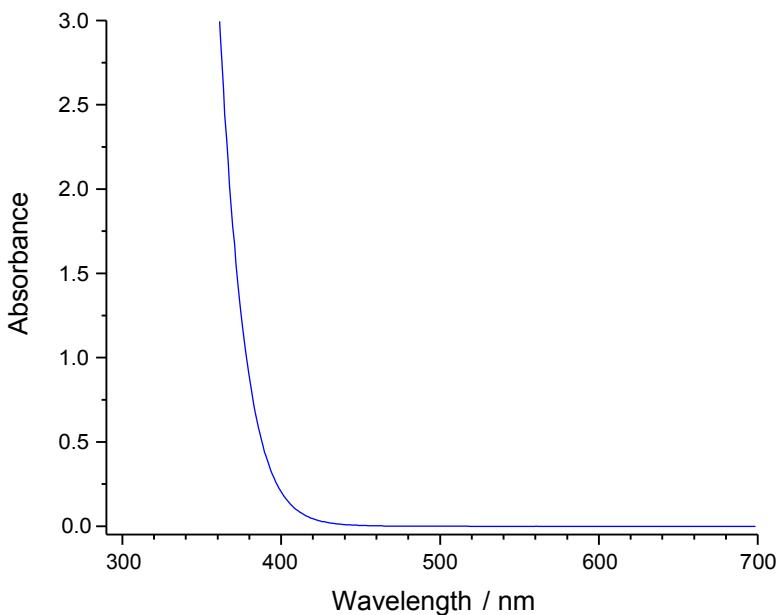


Fig. S4. UV-visible spectrum of 1,2-benzenedithiol. The spectrum was obtained using a cosolvent blend of chlorobenzene:methanol (90:10) with a 1,2-benzenedithiol concentration of 0.1 M. The latter is equivalent to $MR = 100$ (in the case of ZnO/1,2-benzenedithiol).

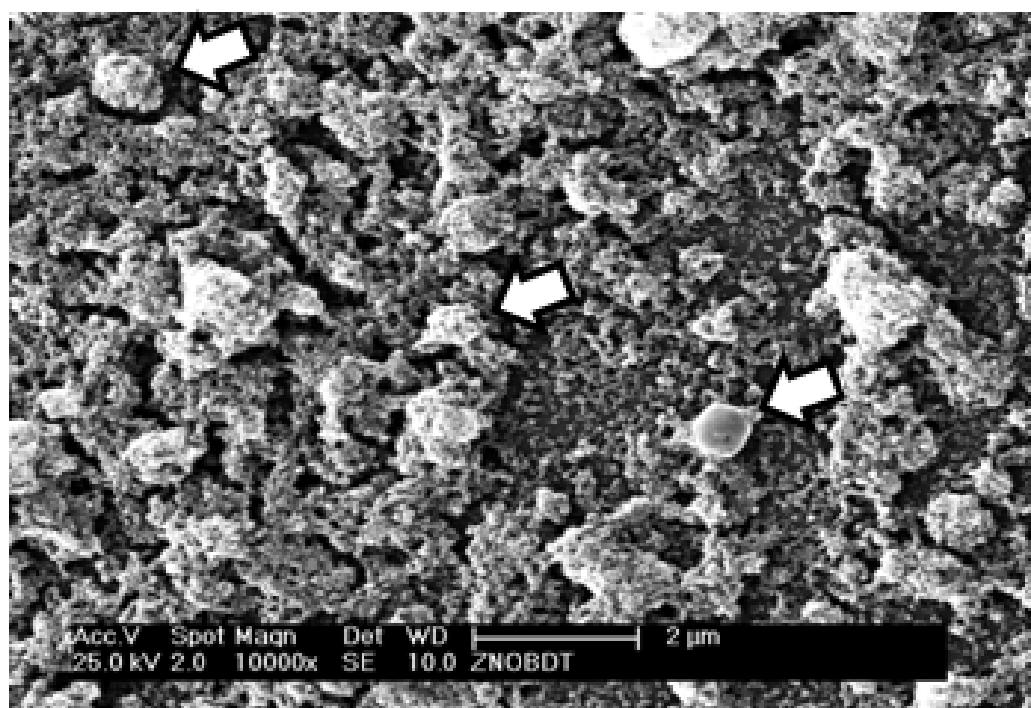


Fig. S5. SEM images of ZnO/1,2-benzenedithiol film. The values for MR and C_{ZnO} were, respectively 0.2 and 0.16 %. The arrows highlight sub-micrometre sized secondary aggregates.

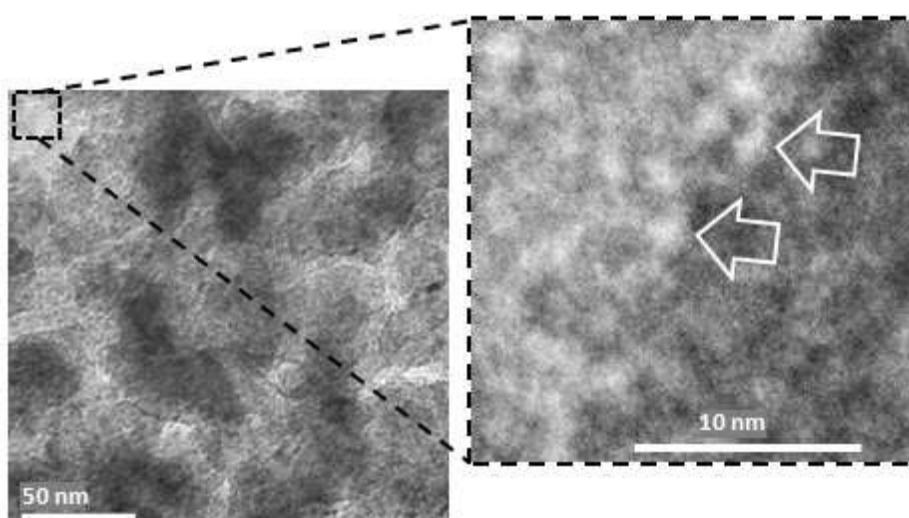


Fig. S6. TEM images of ZnO/1,2-benzenedithiol. The arrows highlight ZnO NCs.