

Electronic Supplementary Information

Interfacial assembly of ZnO quantum dots into giant supramolecular architectures

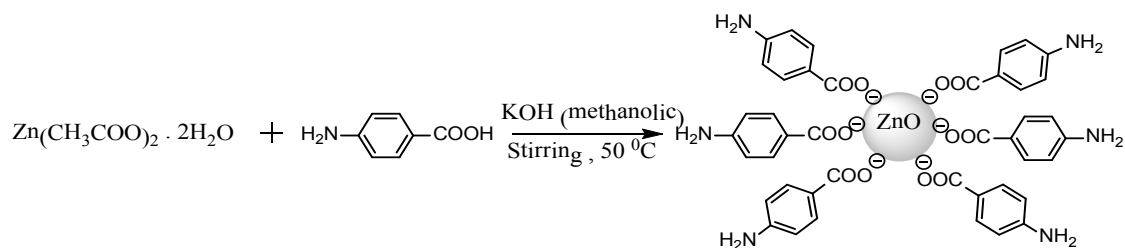
Mohammed Ali, Sudip Kumar Pal, Hasimur Rahaman, and Sujit Kumar Ghosh*

Department of Chemistry, Assam University, Silchar-788011, India

E-mail: sujitkchem@gmail.com

ESI 1. Schematic presentation of the synthesis of ZnO nanoparticles

A schematic presentation showing the formation of ZnO nanoparticles is shown in Scheme SI 1.



Scheme SI 1. Schematic presentation of the synthesis of ZnO nanoparticles

ESI 2. Transmission electron micrograph and selected area electron diffraction pattern (SAED) of the ZnO particles

Transmission electron micrograph and selected area electron diffraction pattern of the ZnO particles are shown Fig. SI 1. From the TEM image, it is seen that the particle size lies in the size range of 2 ± 0.3 nm. From the SAED pattern, the diffraction rings which are consistent with reflections (100), (002), (101), (102), (110) corresponds to the hexagonal wurtzite phase of ZnO nanoparticles (M. Y. Ge, H. P. Wu, L. Niu, J. F. Liu, S. Y. Chen, P. Y. Shen, Y. W. Zeng, Y. W. Wang, G.Q. Zhang, J.Z. Jiang, *J. Cryst. Growth* 2007, 305, 162–166.)

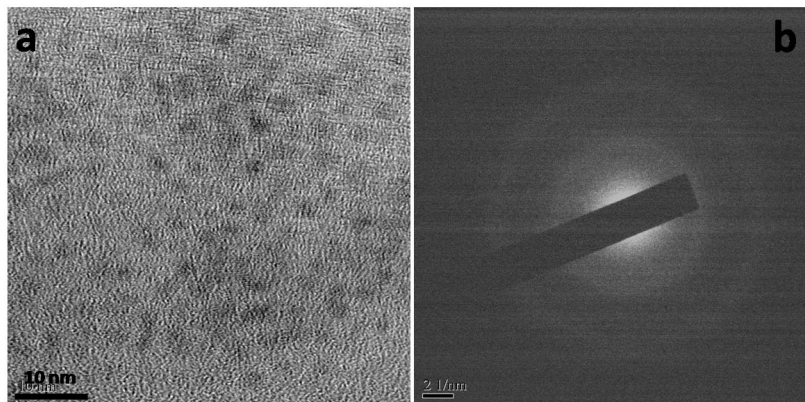
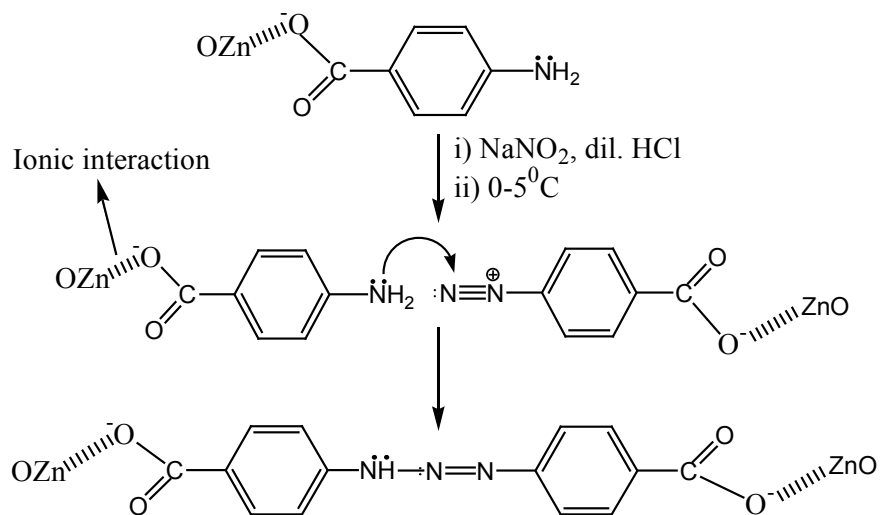


Fig. SI 1. (a) Transmission electron micrograph and (b) selected area electron diffraction pattern of the ZnO particles

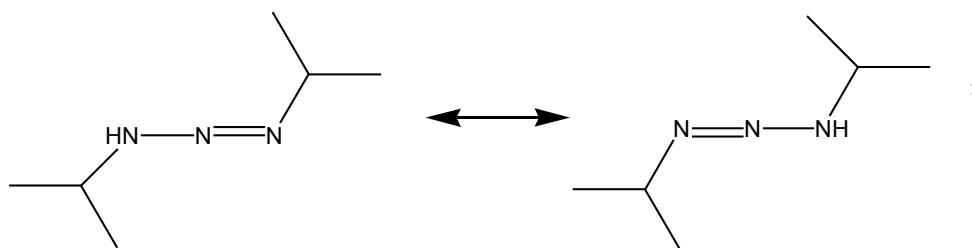
The particles formed by this method were subjected to diazo reaction for designing the hierarchical assemblies.

ESI 3. Mechanism of cross-linking between ZnO nanoparticles by diazo reaction

A schematic illustration of the diazo reaction and subsequent arylamine formation (P. Sykes, In *A Guidebook to Mechanism in Organic Chemistry*, 6th edn. Longman, London, 1986.) in forming the assembly of the PABA stabilized ZnO nanoparticles are shown in Scheme SI 2.



Following resonating structures are involved in amino-azo derivatives:



Scheme SI 2. Schematic illustration of the diazo reaction and subsequent arylamine formation in forming the assembly of the PABA stabilized ZnO nanoparticles