Supplementary Material (ESI) for CrystEngComm
This journal is (c) The Royal Society of Chemistry 2010

Supplementary data

Biomolecule-Assisted Route for Shape-Controlled Synthesis of Single-Crystalline $MnWO_4$ Nanoparticles and Spontaneous Assembly of Polypeptide-Stabilized Mesocrystal Microspheres

Thanh-Dinh Nguyen, Driss Mrabet, Thi-Thuy-Duong Vu, Cao-Thang Dinh, and Trong-On Do*

Department of Chemical Engineering, Laval University, Quebec G1K 7P4 Canada

*Address correspondence to *Fax:* (418) 656-5993; *E-mail:* Trong-On.Do@gch.ulaval.ca

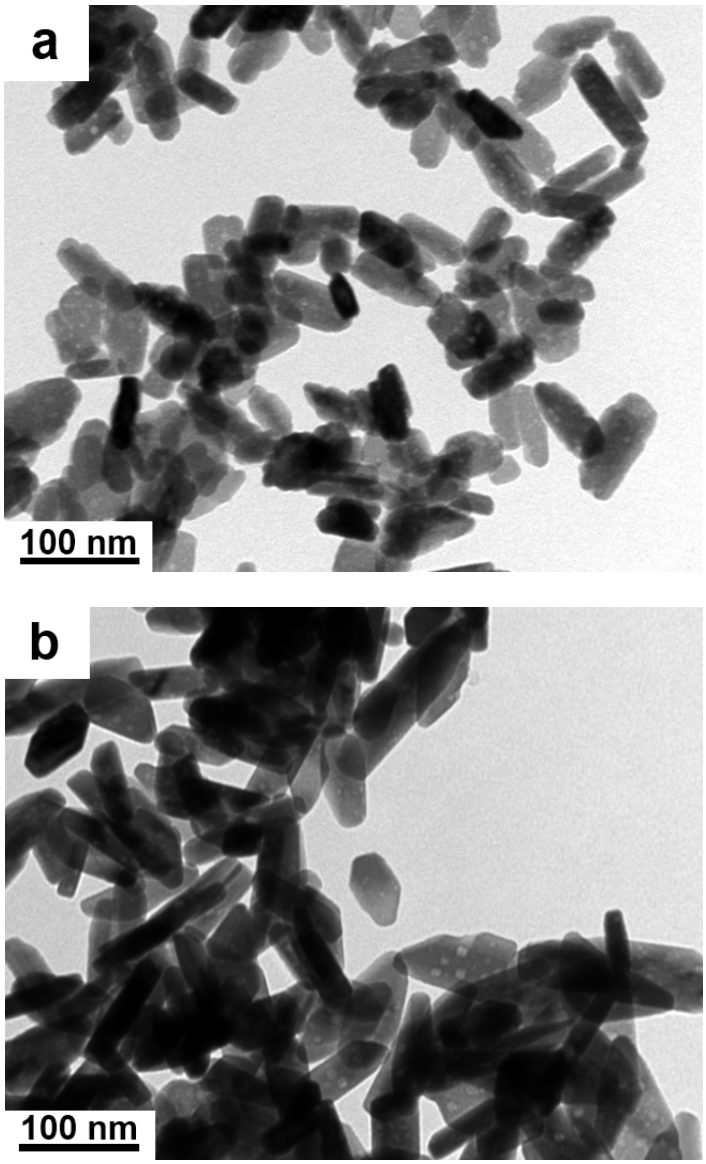

Fig. S1. TEM images of the $MnWO_4$ nanobars synthesized from an aqueous solution of 0.015 M $Mn(NO_3)_2$ and 0.015 M Na_2WO_4, pH = 9, at lower reaction temperatures for 20 h: (a) 140 ^oC and (b) 160 ^oC.

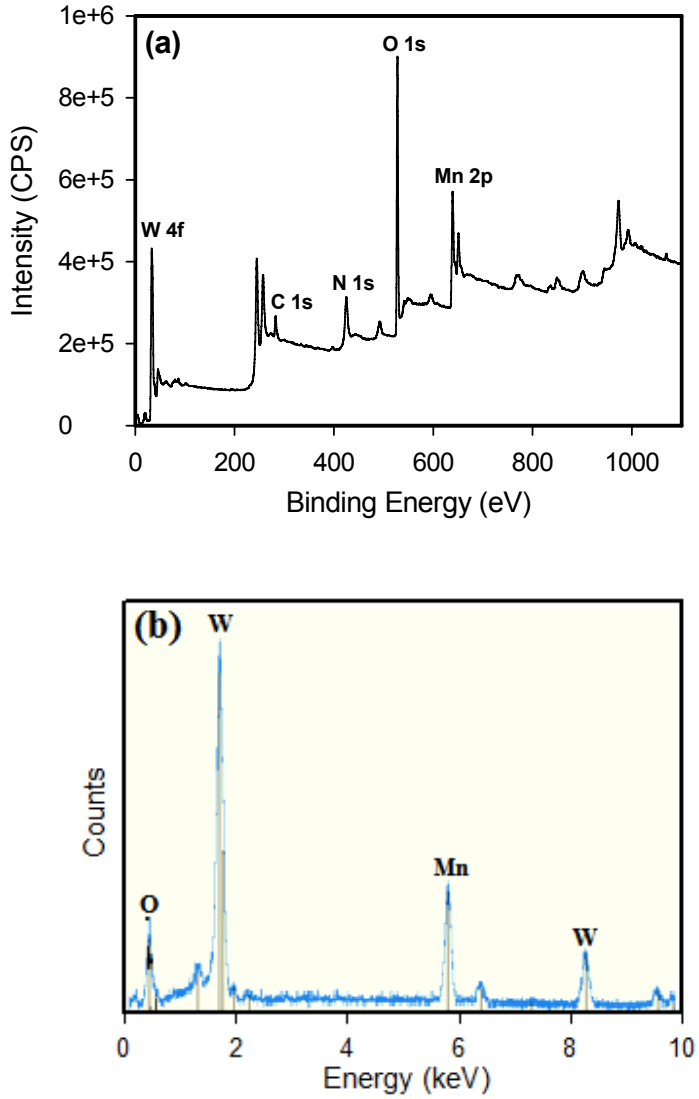

Fig. S2. (a) Survey XPS and (b) EDS spectra of 6-aminohexanoic acid-capped $MnWO_4$ nanobars (sample 1 in Table 1).

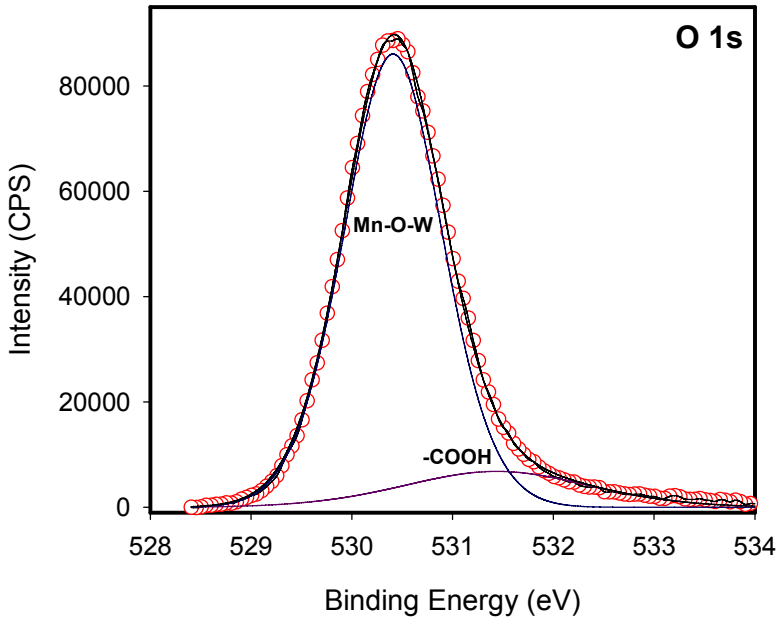

Fig. S3. O 1s XPS spectrum of 6-aminohexanoic acid-capped $MnWO_4$ nanobars.

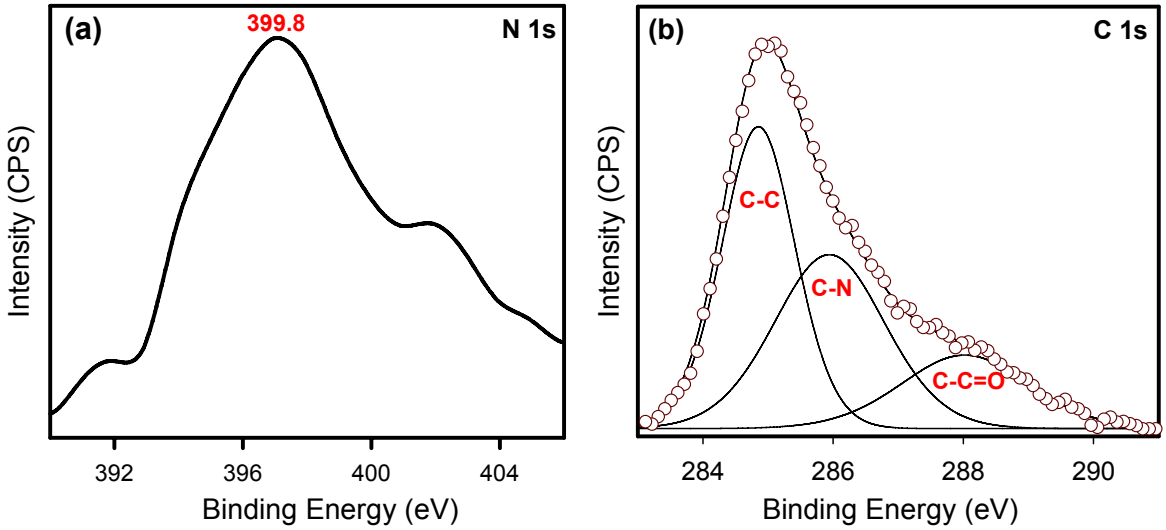

Fig. S4. High-resolution (a) N 1s and (b) C 1s XPS spectra of 6-aminohexanoic acid-capped $MnWO_4$ nanobars.

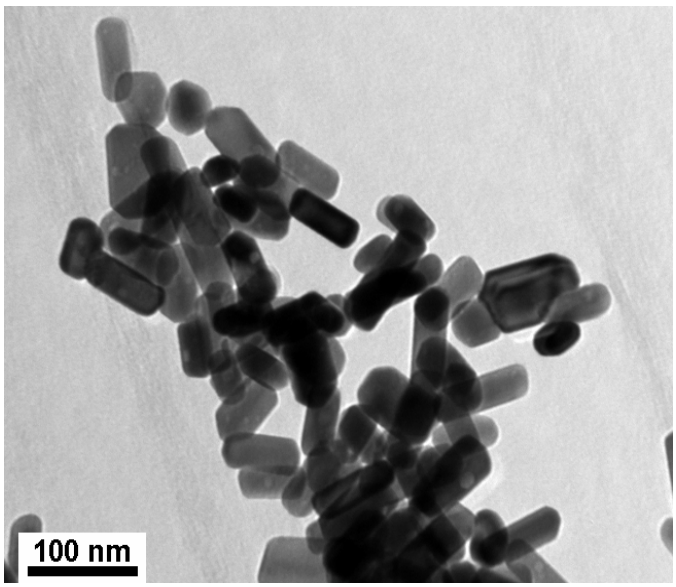

Fig. S5. TEM image of 25 nm x 50 nm-sized $MnWO_4$ nanobars synthesized using capping hexamethylenediamine, $[Mn^{2+}] = [WO_4^{2-}]$ of 0.015 M, at 180 ^oC for 20 h.

.

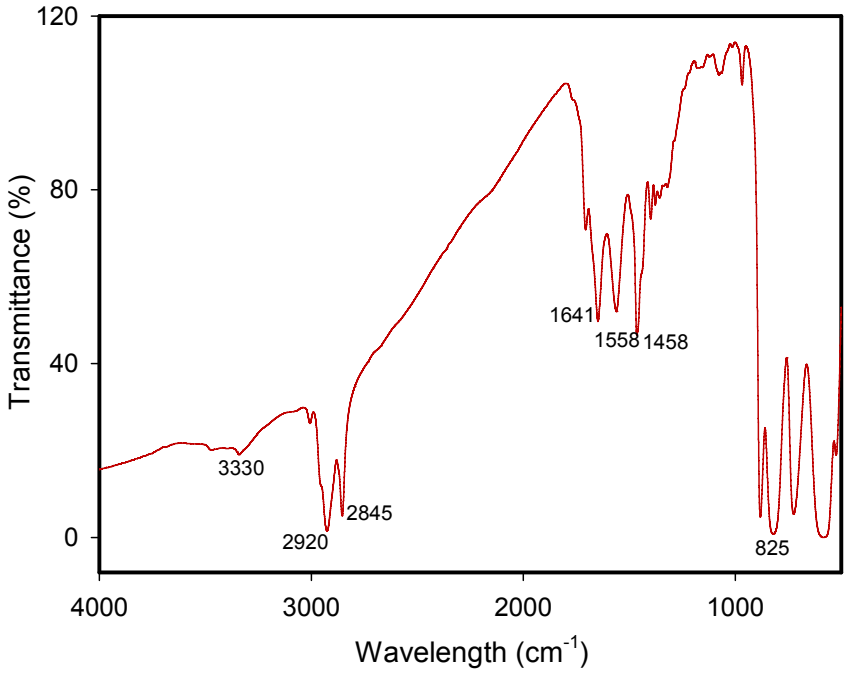

Fig. S6. FTIR spectrum of hexamethylenediamine-capped $MnWO_4$ nanobars.

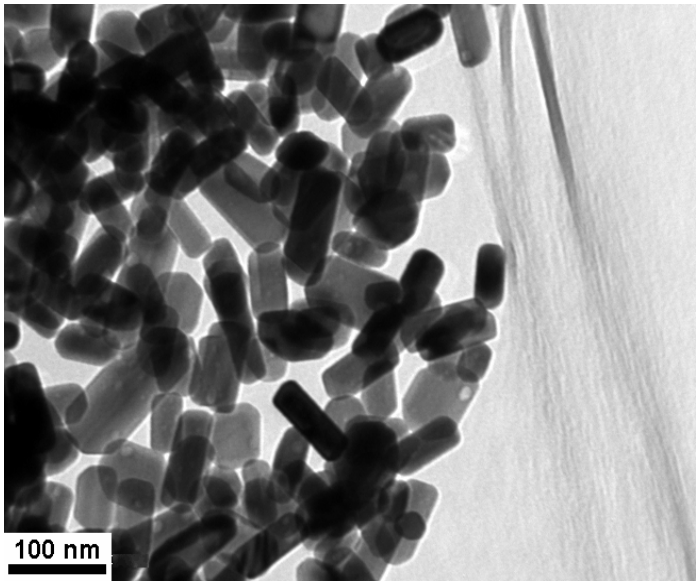

Fig. S7. TEM image of 25 nm x 50 nm-sized $MnWO_4$ nanobars synthesized using $[Mn^{2+}] = [WO_4^{2-}]$ of 0.305 M, 0.243 M of AHA, pH = 9, at 180 ^{o}C for 20 h.

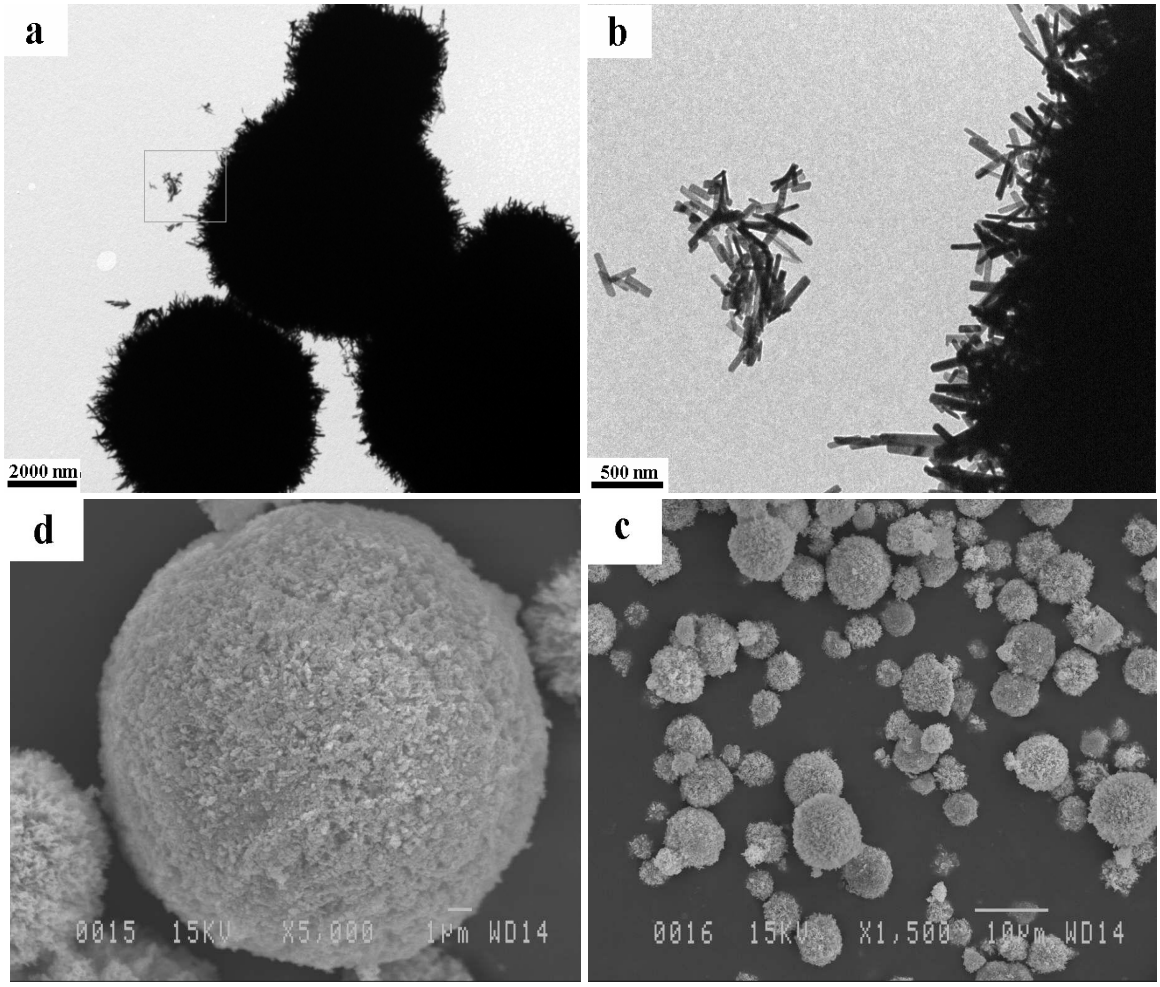

Fig. S8. Different-magnification TEM (a and b) and SEM (c and d) images of the self-assembled $MnWO_4$ microspheres synthesized using $[Mn^{2+}] = [WO_4^{2-}]$ of 0.012 M, AHA/(Mn+W) = 2.5:1, pH = 9, 180 ^oC for 20 h.

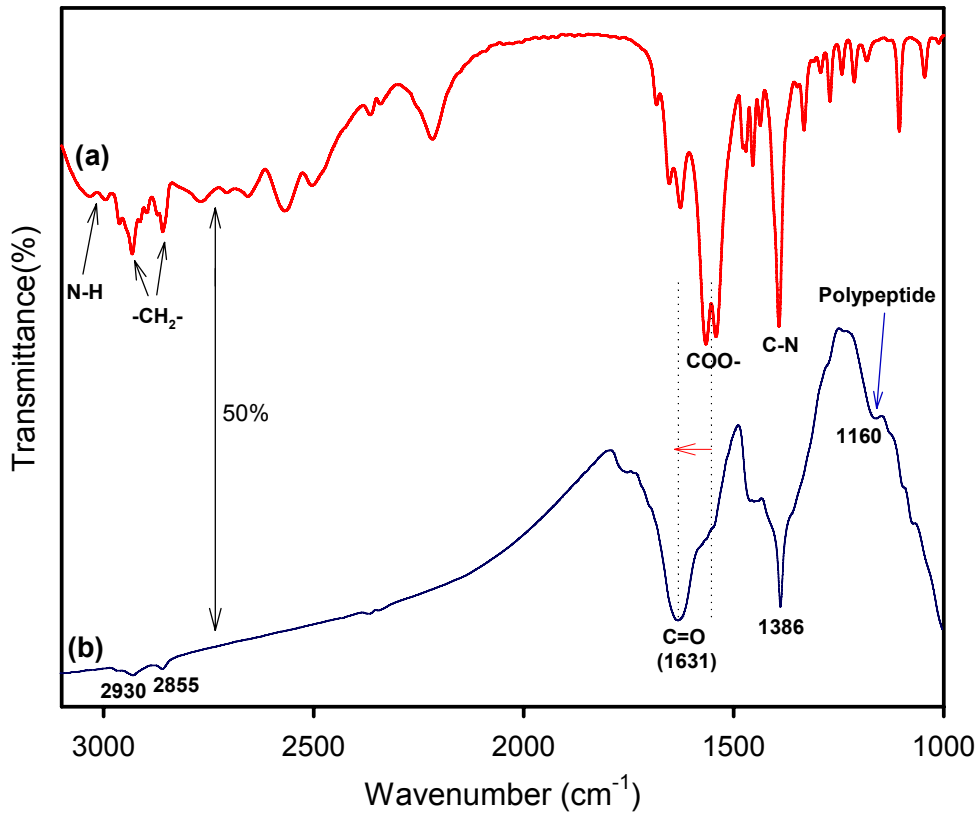

Fig. S9. FTIR spectra of (a) free 6-aminohexanoic acid (AHA) and (b) AHA-capped $MnWO_4$ microspheres (sample 9 in Table 1).

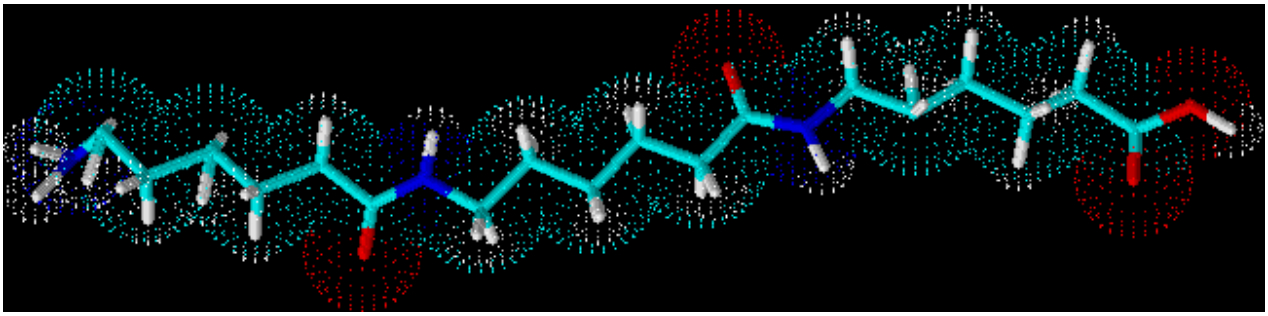

Fig. S10. Structural simulation of a polypeptide chain as protein molecule producing by the peptide process of 6-aminohexanoic acids.