

Electronic Supplementary Information

Hydrogen Bonding Directed Co-Assembly of Polyoxometalates and Polymer to Core-Shell Nanoparticles

Jing Zhou,^{ab} Jie Hu,^a Mu Li,^a Weiyu Wang,^a Yuzi Liu,^c Randall E. Winans,^d Tao Li,^{*de} Tianbo Liu,^{*b} and Panchao Yin^{*a}

^a *South China Advanced Institute for Soft Matter Science and Technology, and State Key Laboratory of Luminescent Materials and Devices, South China University of Technology, Guangzhou 510640, China*

^b *Department of Polymer Science, The University of Akron, Akron, Ohio 44325-3909, USA*

^c *Center for Nanoscale Materials, Advanced Photon Source, Argonne National Laboratory, Argonne, Illinois 60439, USA*

^d *X-ray Science Division, Advanced Photon Source, Argonne National Laboratory, Argonne, Illinois 60439, USA*

^e *Department of Chemistry and Biochemistry, Northern Illinois University, DeKalb, Illinois 60115, USA*

† E-mail: taoli@aps.anl.gov; tliu@uakron.edu; yinpc@scut.edu.cn

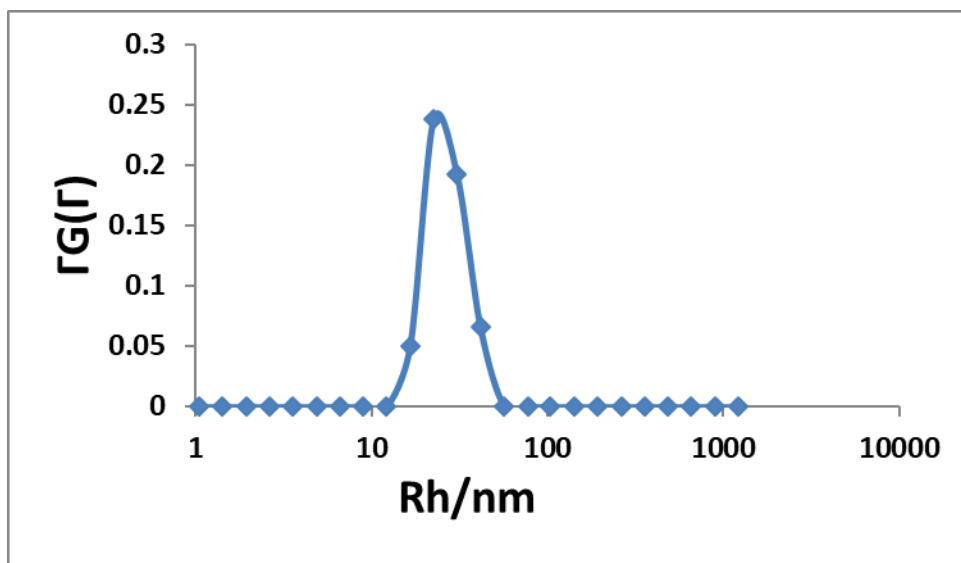


Fig. S1 DLS of P4VP-{SW} complex in aqueous solution.

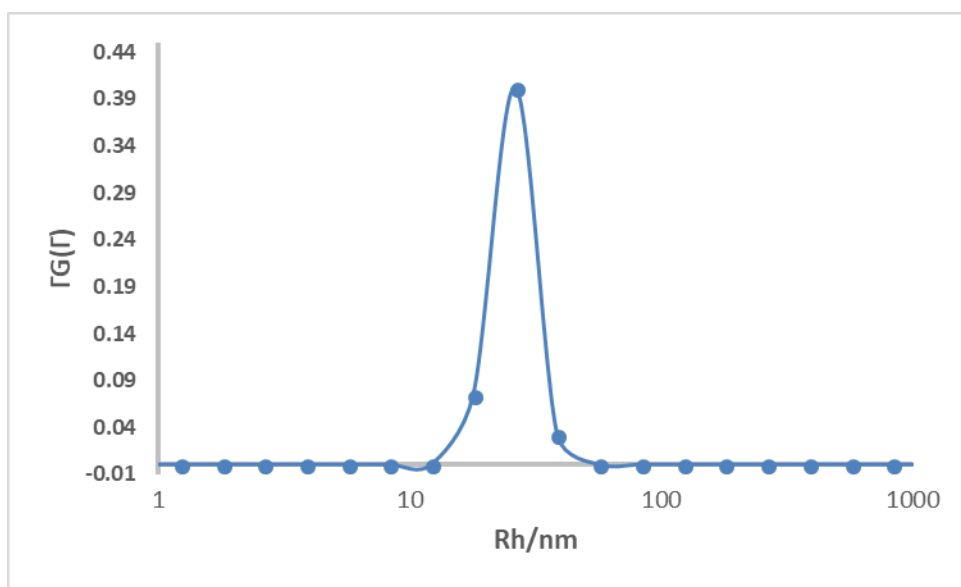


Figure S2 DLS of P4VP-{Mo₇₂V₃₀} complex in aqueous solution

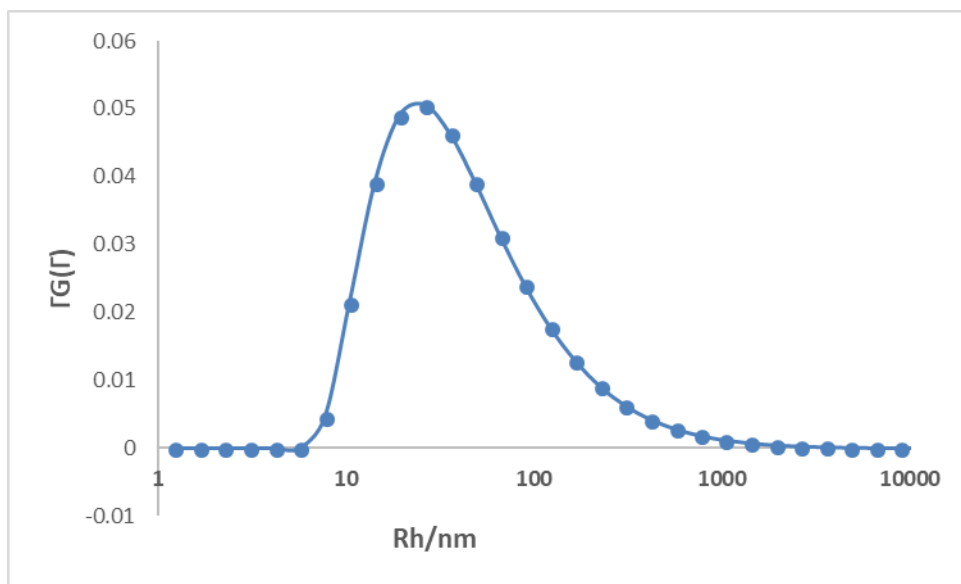
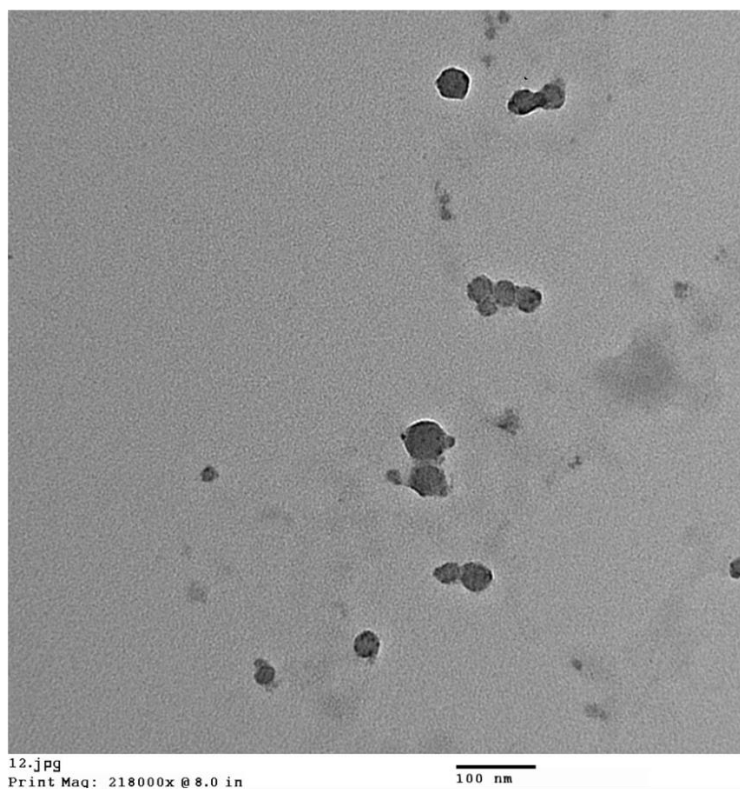
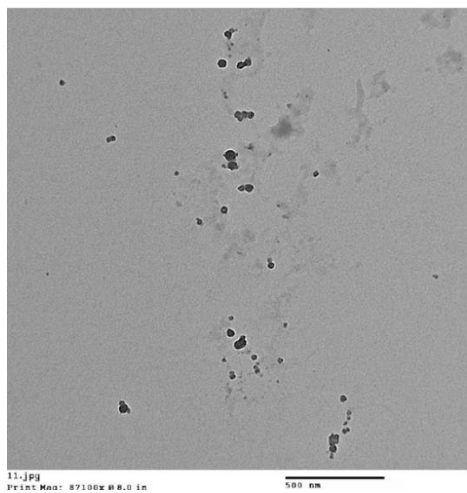
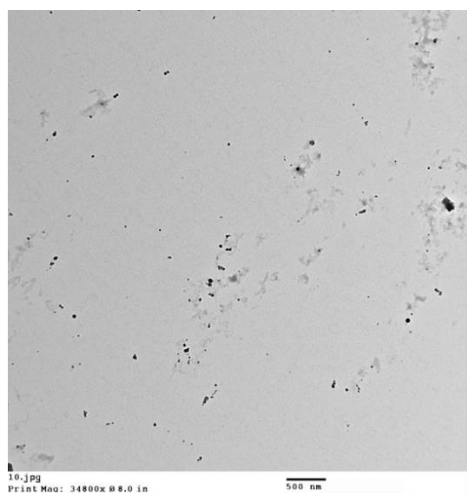
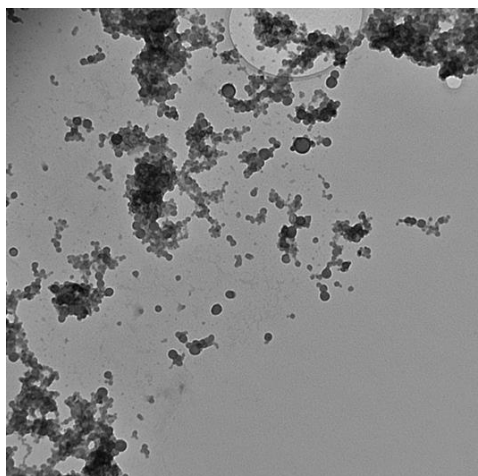


Figure S3 DLS of P4VP- $\{Keg\}$ complex in aqueous solution



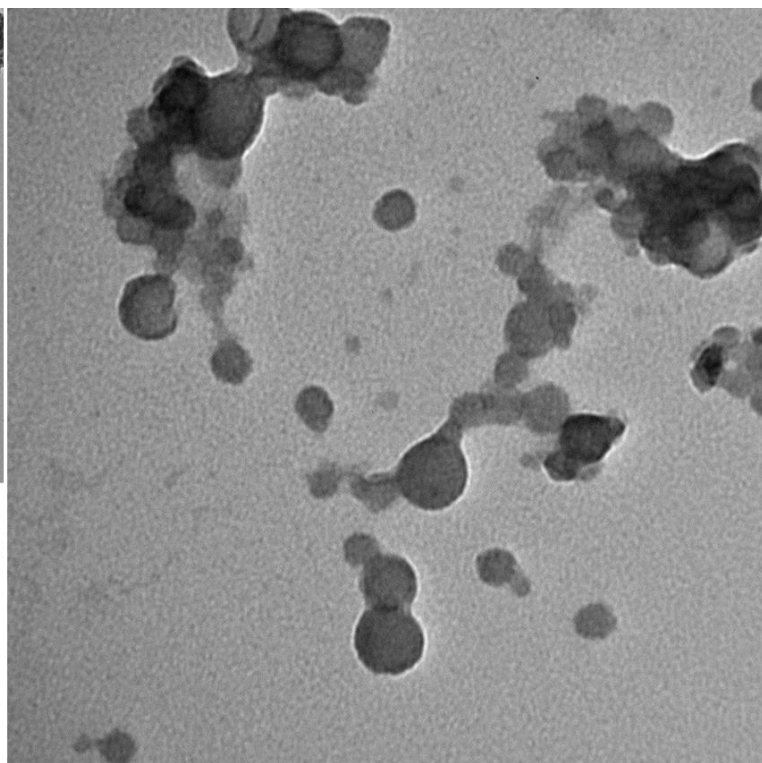
$\{PW\}$ /P4VP complex NP

Fig. S4 TEM images of $\{PW\}$ /P4VP complex NPs.



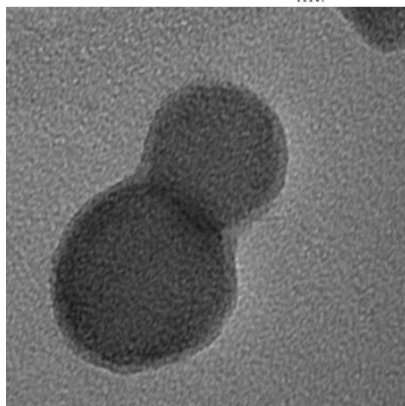
2.1.tif
Print Mag: 87100x @ 8.0 in
13:48 10/30/13
TEM Mode: Imaging

500 nm
HV=120kV
Direct Mag: 10000x
Tilt:



5.tif
Print Mag: 436000x @ 8.0 in
13:50 10/30/13
TEM Mode: Imaging

100 nm
HV=120kV
Direct Mag: 50000x
Tilt:
University of Akron

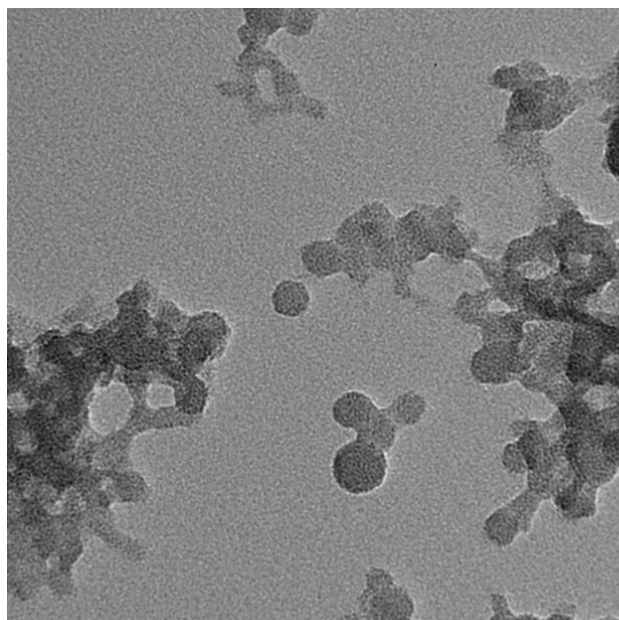


11.1.tif
Print Mag: 1740000x @ 8.0 in
13:55 10/30/13
TEM Mode: Imaging

20 nm
HV=120kV
Direct Mag: 200000x
Tilt:
University of Akron

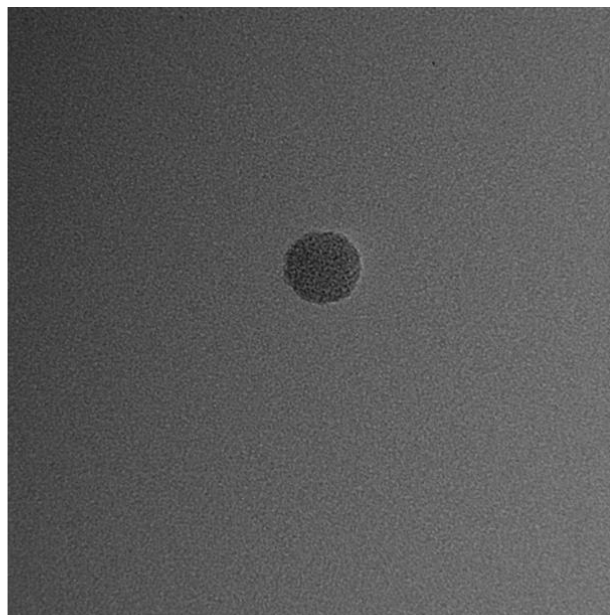
{Keg}/P4VP complex NPs

Fig. S5 TEM images of {Keg}/P4VP complex NPs.



8.jpg
Print Mag: 697000x @ 8.0 in
14:22 09/26/13
TEM Mode: Imaging

20 nm
HV=120kV
Direct Mag: 80000x
Tilt:
University of Akron

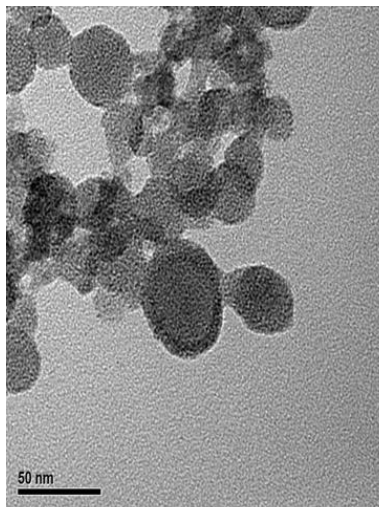


9.jpg
Print Mag: 1050000x @ 8.0 in
14:23 09/26/13
TEM Mode: Imaging

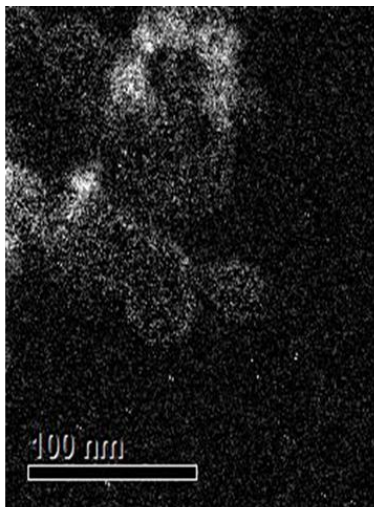
20 nm
HV=120kV
Direct Mag: 120000x
Tilt:
University of Akron

{Mo₇₂V₃₀}/P4VP complex NPs

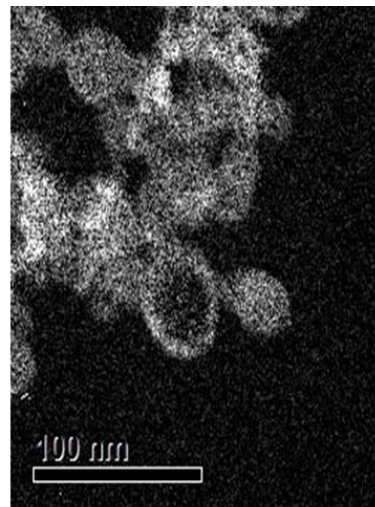
Fig. S6 TEM images of {Mo₇₂V₃₀}/P4VP complex NPs.



morphology



Mapping Fe



Mapping Mo

Fig. S7 more EFTEM images of {Mo₇₂Fe₃₀}/P4VP complex NPs.

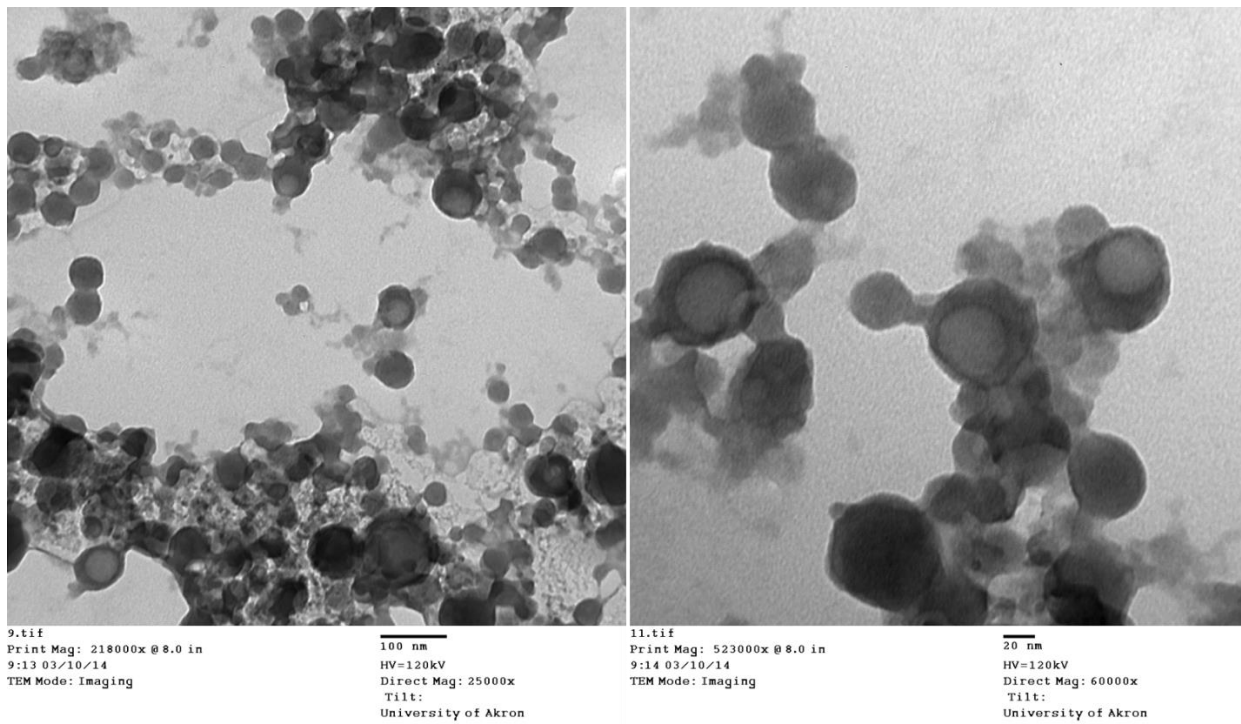


Fig. S8 TEM images of {SW}/P4VP complex NPs with extra 14 mg NaCl in the system.