

Supplementary Materials

- S-1.** Titanium dioxide production as a function of G0 PAMAM primary amine concentration (● phosphate buffer (100 mM, pH 7.5), ■ water)
- S-2.** Titanium dioxide production as a function of pH (all buffer concentrations were 100 mM)
- S-3.** Germanium dioxide production as a function of pH using TEOG as alkoxide precursor (all buffer concentrations were 100 mM)
- S-4.** SEM micrographs of titanium dioxide nanoparticles precipitated in phosphate buffer from: a) G0 PAMAM, b) G-2 PAMAM, c) G-4 PAMAM, d) G-6 PAMAM, e) G4-PPI f) G-5 PPI
- S-5.** SEM micrographs of titanium dioxide nanoparticles precipitated in water from: a) G-0 PAMAM, b) G-2 PAMAM, c) G-4 PAMAM, d) G-6 PAMAM, e) G4-PPI f) G-5 PPI
- S-6.** Infra-red spectra of titanium dioxide precipitated in phosphate buffer from: a) G-0 PAMAM, b) G-2 PAMAM, c) G-4 PAMAM, d) G-6 PAMAM, e) G4-PPI f) G-5 PPI
- S-7.** Infra-red spectra of titanium dioxide precipitated in water from: a) G-0 PAMAM, b) G-2 PAMAM, c) G-4 PAMAM, d) G-6 PAMAM, e) G4-PPI f) G-5 PPI
- S-8.** Variable temperature X-ray diffraction spectra of titanium dioxide precipitated in phosphate buffer from a) G-2 PAMAM, b) G-4 PAMAM, c) G-6 PAMAM, d) G4-PPI e) G-5 PPI (● anatase, ■ rutile, ♦ titanium phosphate)
- S-9.** Variable temperature X-ray diffraction spectra of titanium dioxide precipitated in water from a) G-2 PAMAM, b) G-4 PAMAM, c) G-6 PAMAM, d) G4-PPI e) G-5 PPI (● anatase, ■ rutile)
- S-10.** SEM micrographs of germanium dioxide nanoparticles precipitated in phosphate buffer using TEOG as alkoxide precursor from: a) G-0 PAMAM, b) G-2 PAMAM, c) G-4 PAMAM, d) G-6 PAMAM, e) G4-PPI f) G-5 PPI
- S-11.** SEM micrographs of germanium dioxide nanoparticles precipitated in water using TEOG as alkoxide precursor from: a) G-0 PAMAM, b) G-2 PAMAM, c) G-4 PAMAM, d) G-6 PAMAM, e) G4-PPI f) G-5 PPI
- S-12.** Infra-red spectra of germanium dioxide precipitated in phosphate buffer using TEOG as alkoxide precursor from: a) G-0 PAMAM, b) G-2 PAMAM, c) G-4 PAMAM, d) G-6 PAMAM, e) G4-PPI f) G-5 PPI

S-13. Infra-red spectra of germanium dioxide precipitated in water using TEOG as alkoxide precursor from: a) G-0 PAMAM, b) G-2 PAMAM, c) G-4 PAMAM, d) G-6 PAMAM, e) G4-PPI f) G-5 PPI

S-14. Variable temperature X-ray diffraction spectra of titanium dioxide precipitated in phosphate buffer from a) G-0 PAMAM, b) G-2 PAMAM, c) G-4 PAMAM, f) G-6 PAMAM, e) G4-PPI f) G-5 PPI (♦ α -phase)

S-15. Variable temperature X-ray diffraction spectra of titanium dioxide precipitated in water from a) G-0 PAMAM, b) G-2 PAMAM, c) G-4 PAMAM, d) G-6 PAMAM, e) G4-PPI f) G-5 PPI (♦ α -phase)

S-16. Variable temperature X-ray diffraction spectra of G4 PAMAM templated germanium dioxide using TEOG as alkoxide precursor in water

S-17. Variable temperature X-ray diffraction spectra of G4 PAMAM templated germanium dioxide in phosphate buffer using TEOG as alkoxide precursor

S-18. XRD of G4 PAMAM templated GeO_2 using TIPG as the precursor and phosphate buffer (100 mM, pH 7.5) as the solvent

S-19. XRD of G4 PAMAM templated GeO_2 using TIPG as the precursor and water as the solvent

S-20. XRD of PLL templated GeO_2 using TMOG as the precursor and phosphate buffer (100 mM, pH 7.5) as the solvent (♦ α -phase)

S-21. XRD of PLL templated GeO_2 using TEOG as the precursor and phosphate buffer (100 mM, pH 7.5) as the solvent (♦ α -phase)

S-22. XRD of PLL templated GeO_2 using TIPG as the precursor and phosphate buffer (100 mM, pH 7.5) as the solvent

S-23. GeO_2 production as a function of primary amine concentration using TMOG, TIPG, and TEOG as the precursor in phosphate buffer (100 mM, pH 7.5)

S-24. Infra-red spectra of germanium dioxide using TIPG as the precursor in a) water b) phosphate buffer (100 mM, pH 7.5)

S-25. Infra-red spectra of germanium dioxide using TMOG as the precursor in a) water b) phosphate buffer (100 mM, pH 7.5)

S-26. SEM of germanium dioxide using TIPG as the precursor in a) water b) phosphate buffer (100 mM, pH 7.5)

S-27. SEM of germanium dioxide using TMOG as the precursor in a) water b) phosphate buffer (100 mM, pH 7.5)

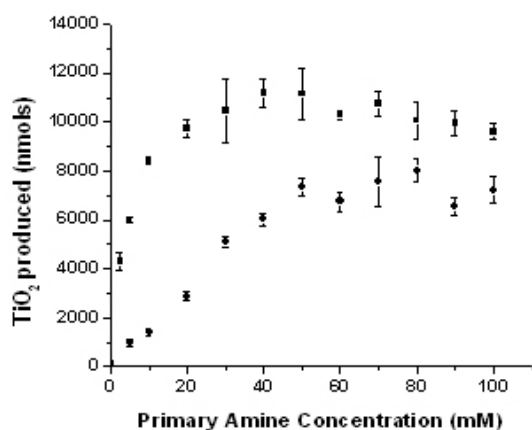
S-28. A) Light scattering profile of G4 dendrimer templated TiO_2 reaction in water. B) Light scattering profile of G4 dendrimer templated GeO_2 reaction in water (absorbance at 480).

S-29. A) Structure of amine terminated PAMAM dendrimer (G4-OH dendrimers have terminal OH groups and G4.5 has terminal carboxy groups). B) Structure of amine terminated PPI dendrimer

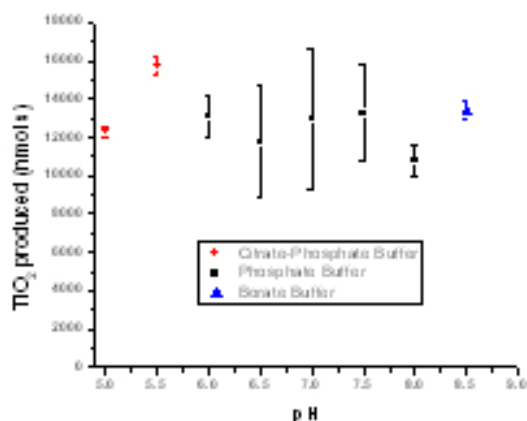
S-30. IR of G6 PAMAM dendrimer

S-31. IR of G6 PAMAM dendrimer and G6 PAMAM dendrimer templated TiO_2

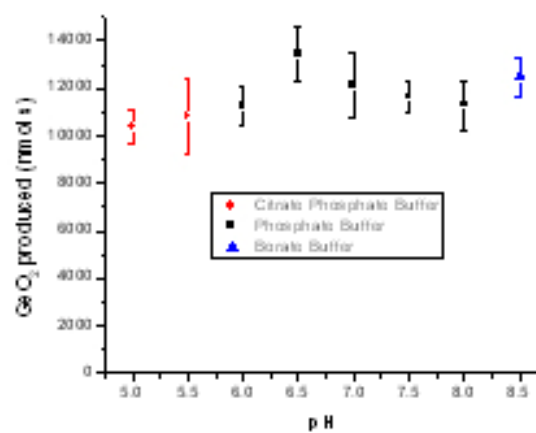
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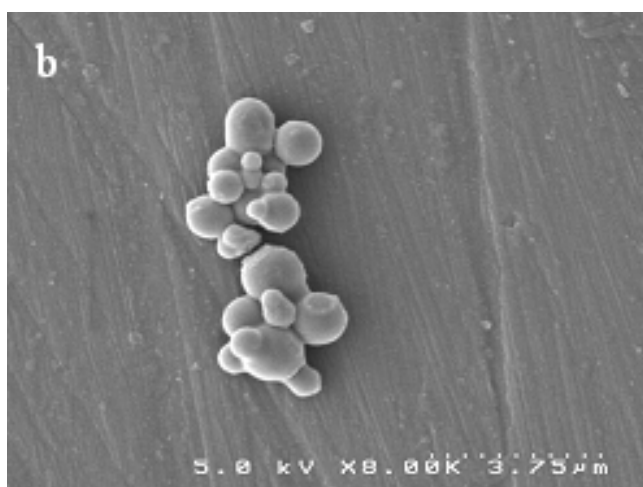
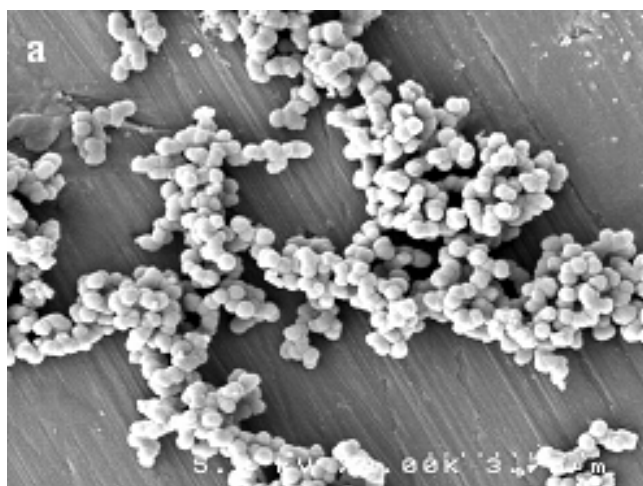
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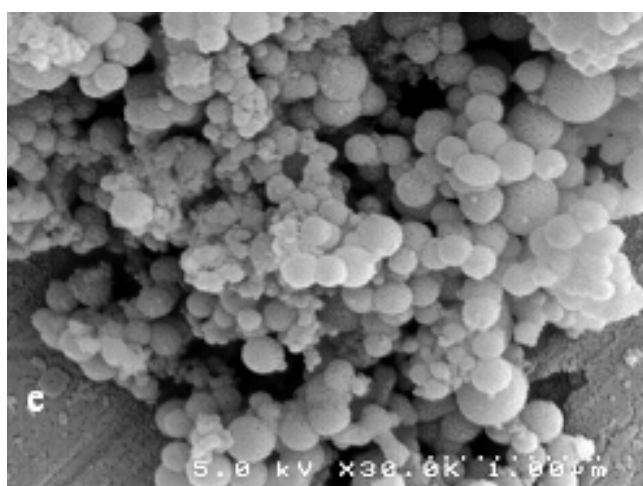
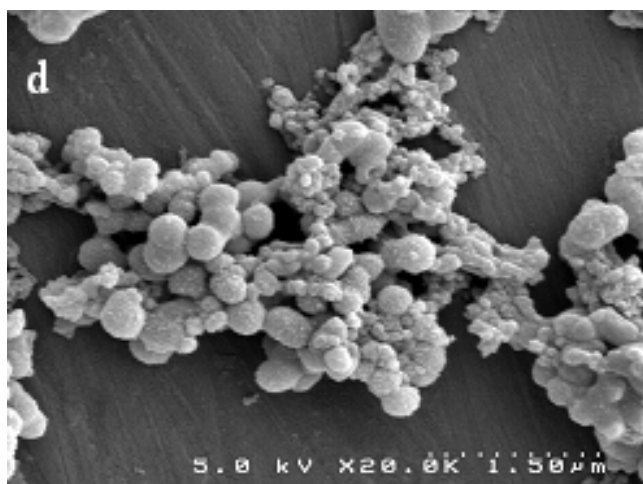
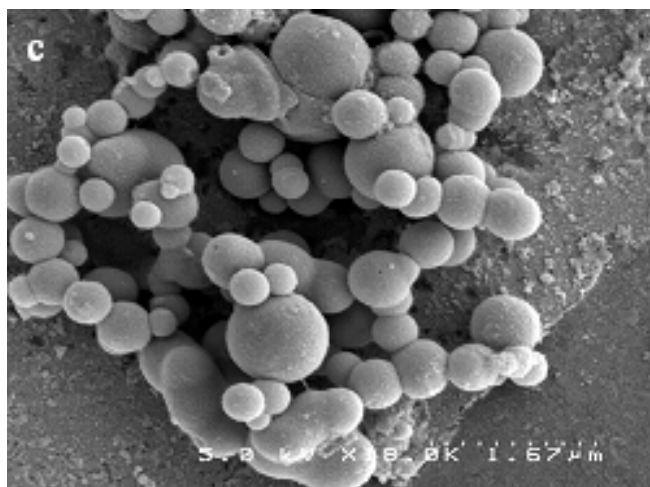


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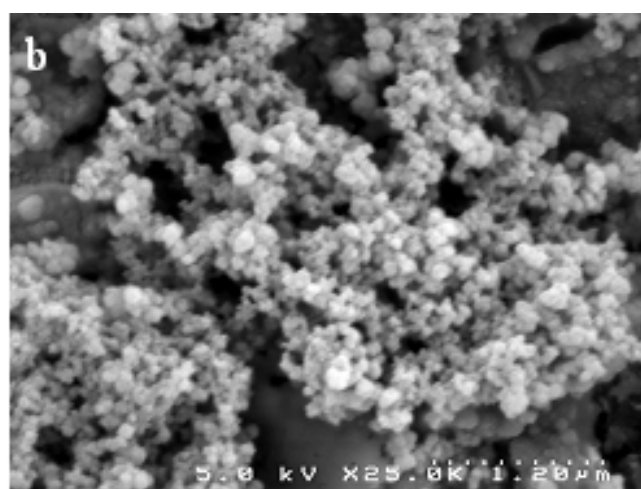
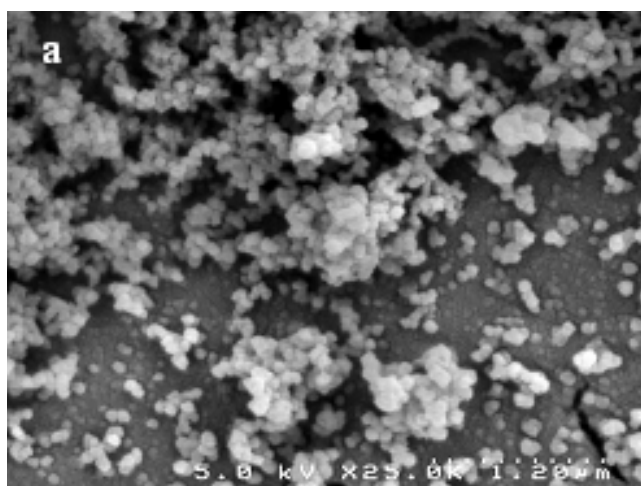
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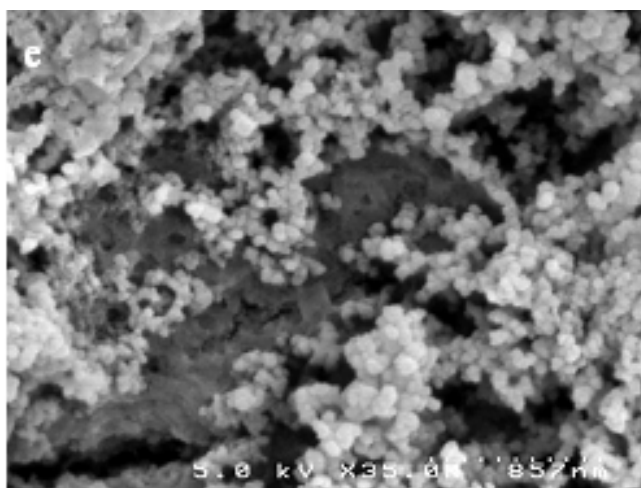
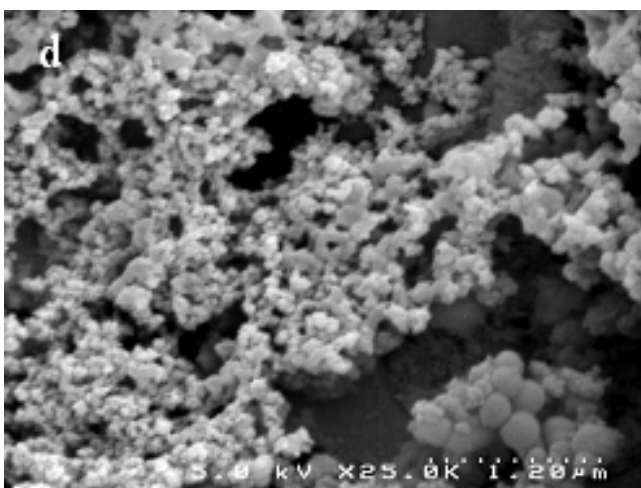
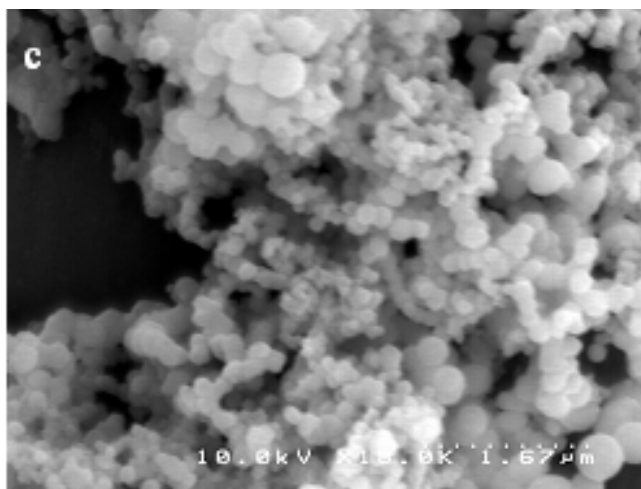


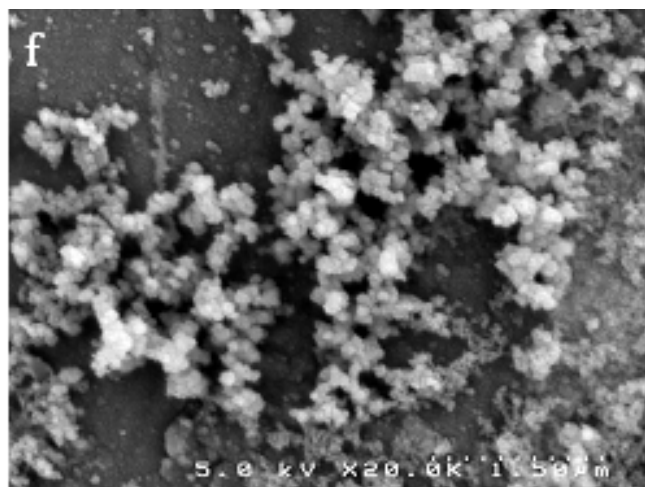




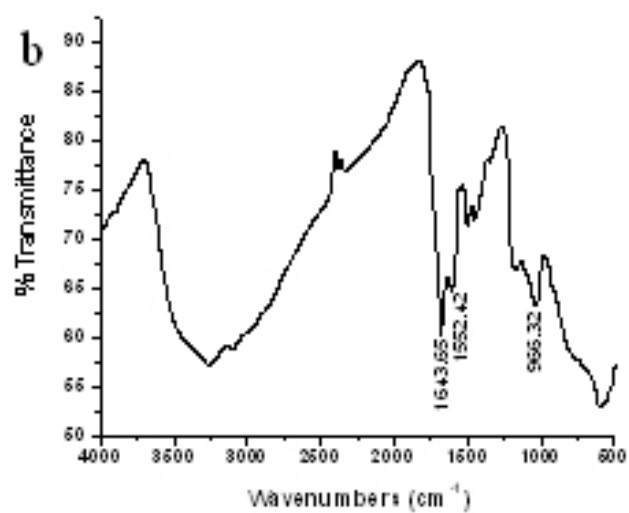
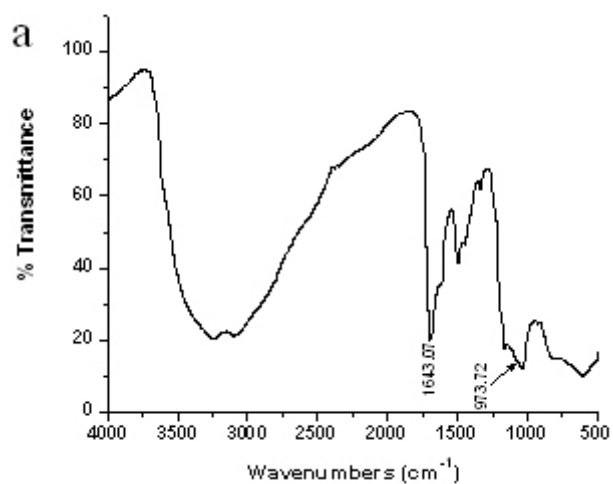
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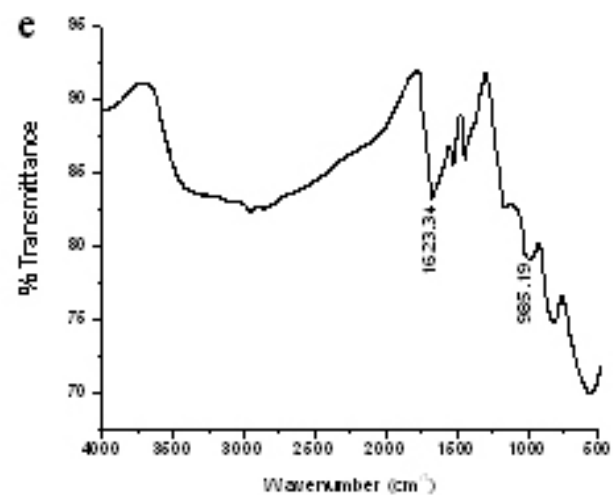
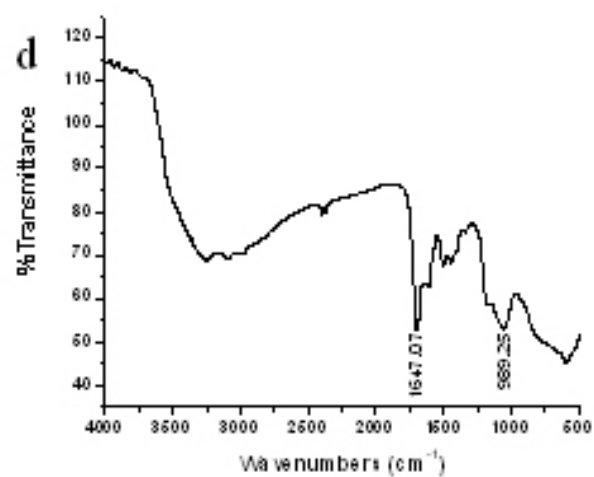
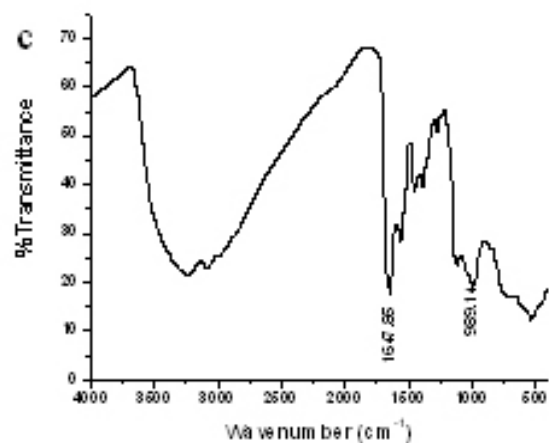


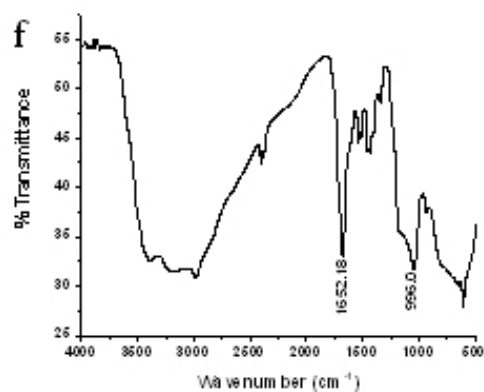




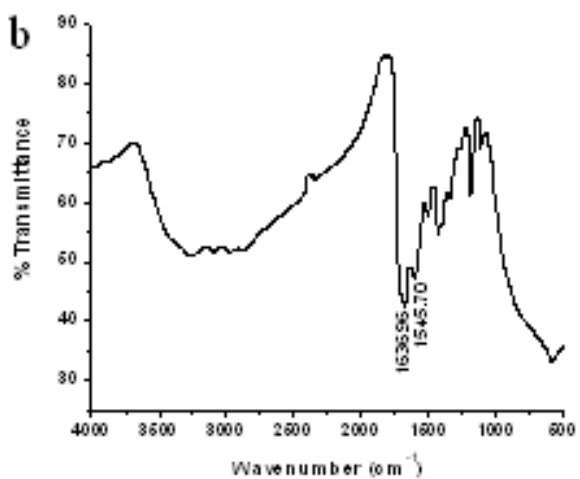
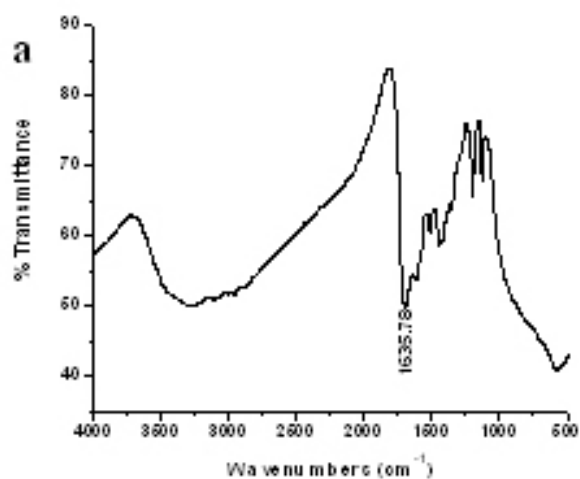
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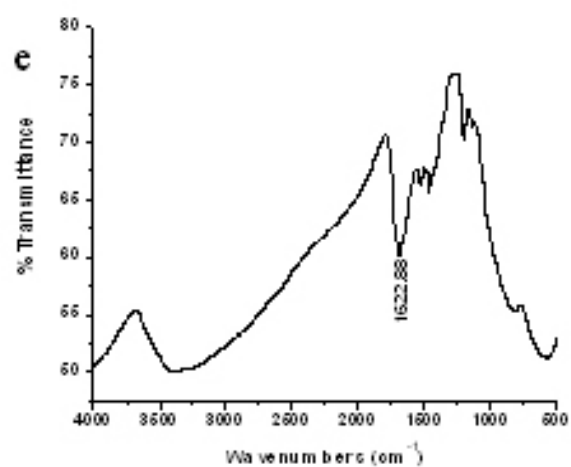
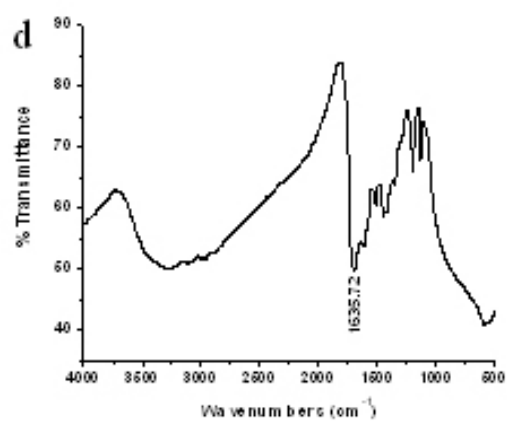
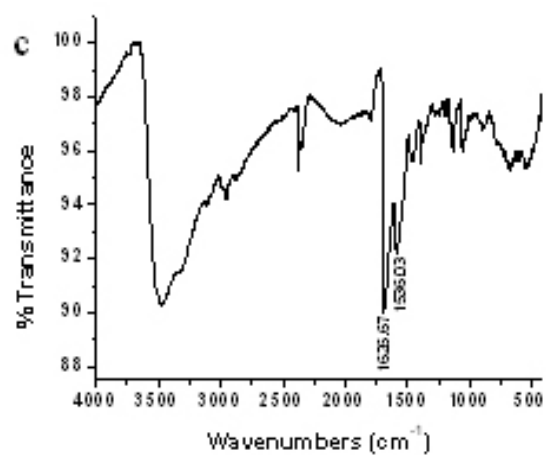


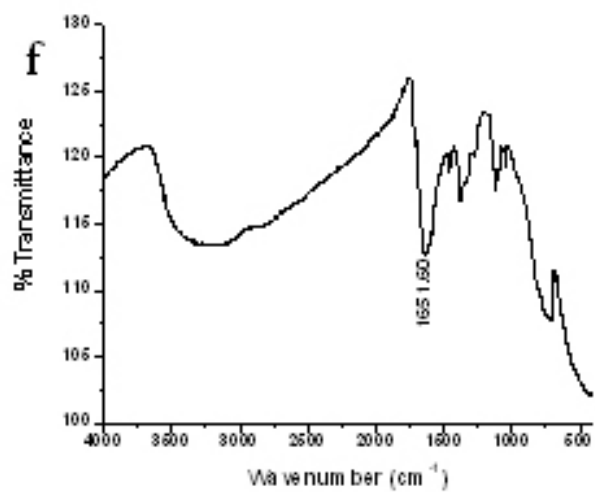




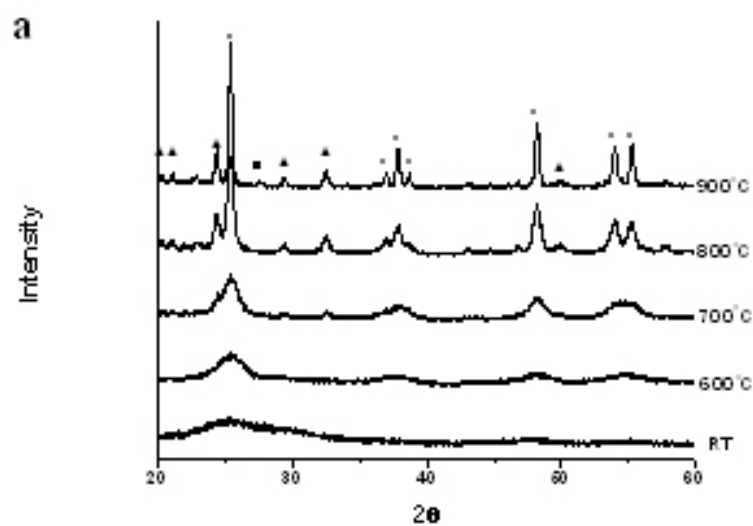
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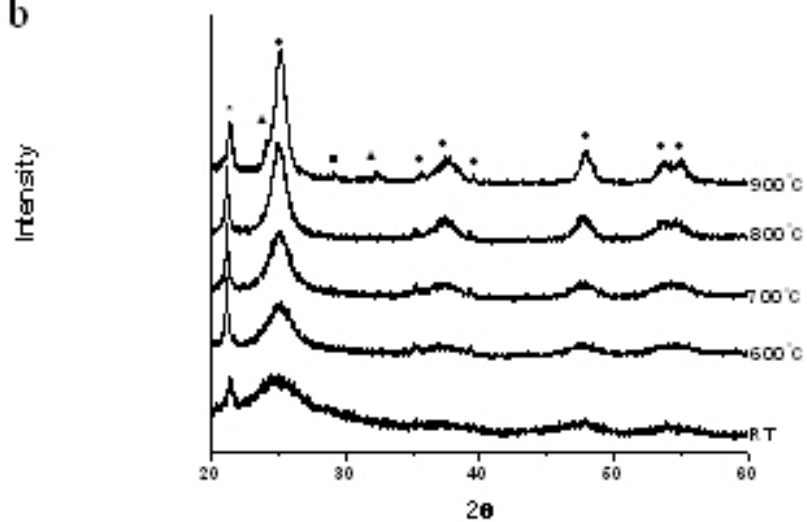


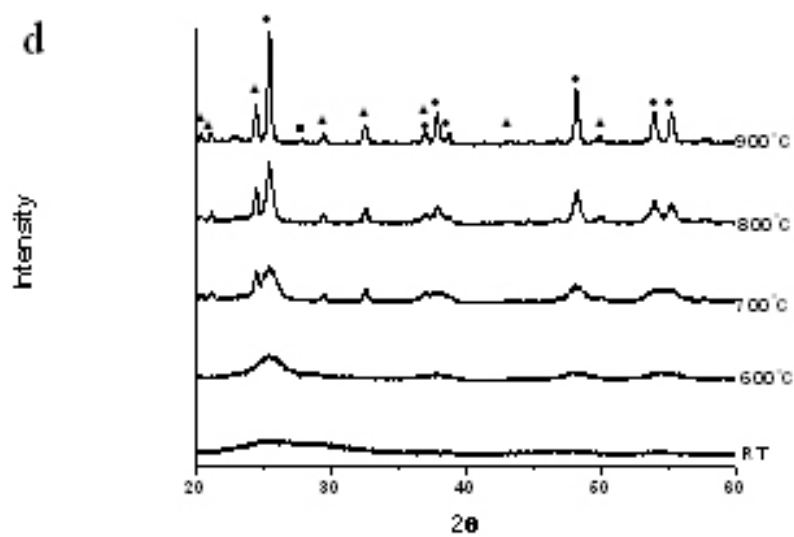
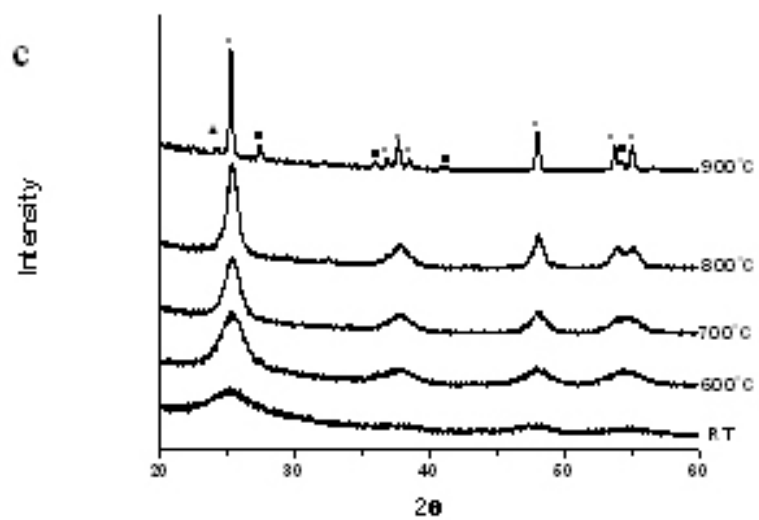


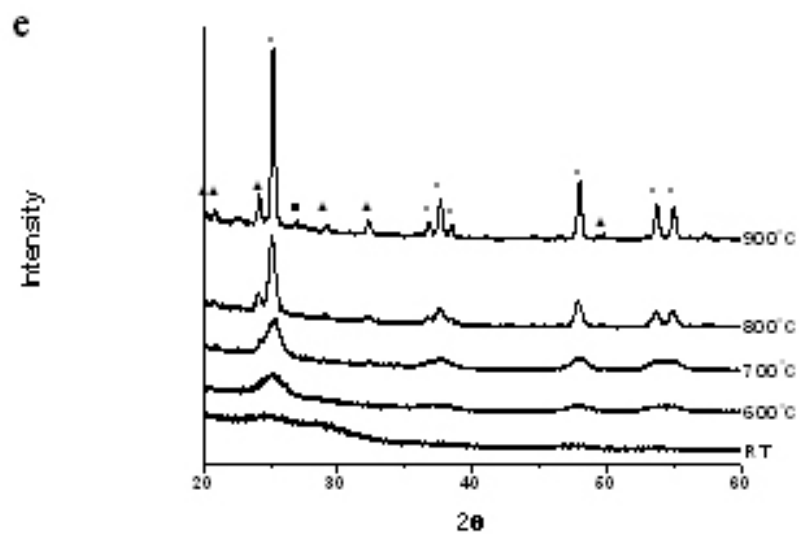
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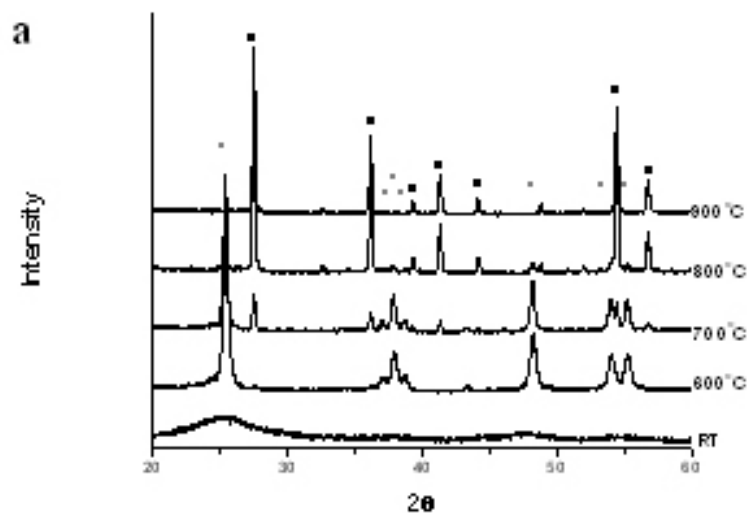
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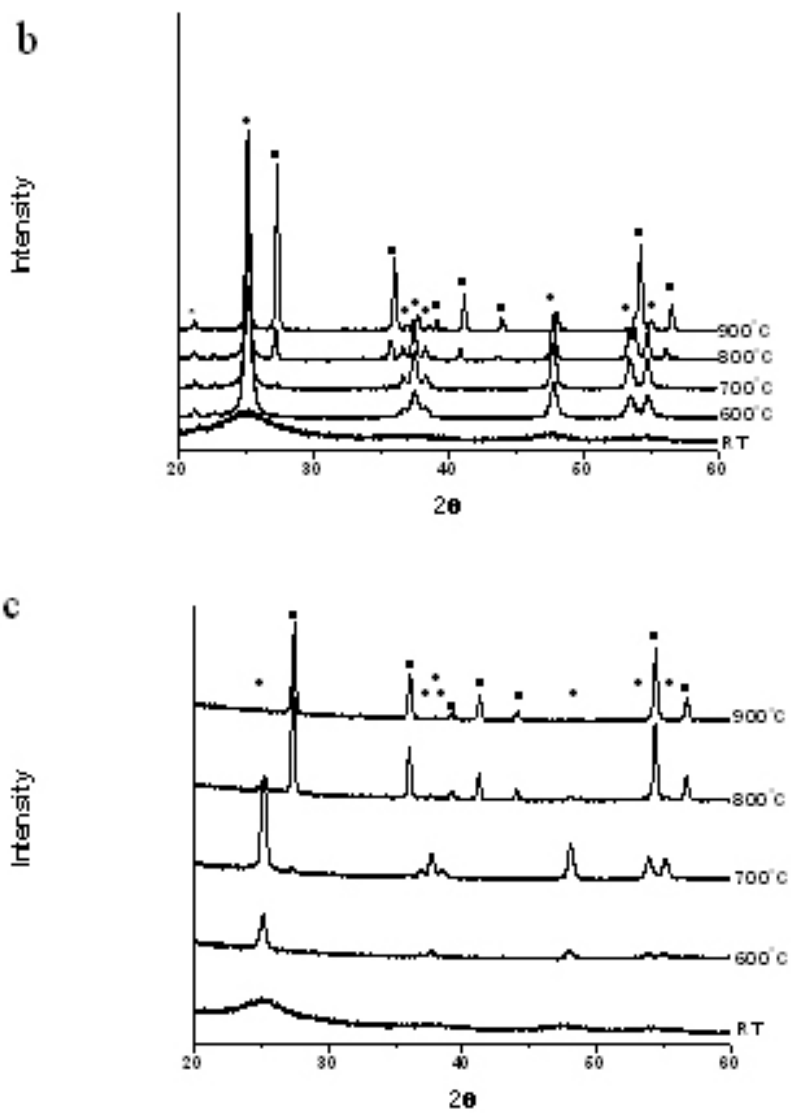


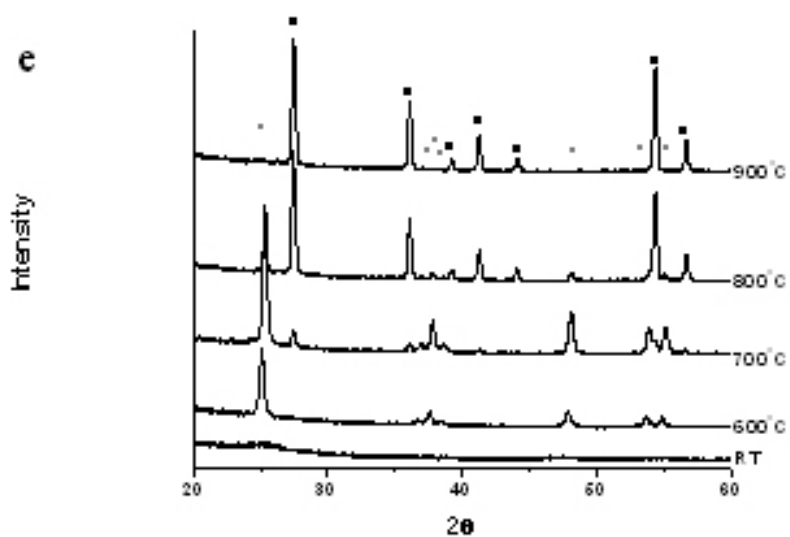
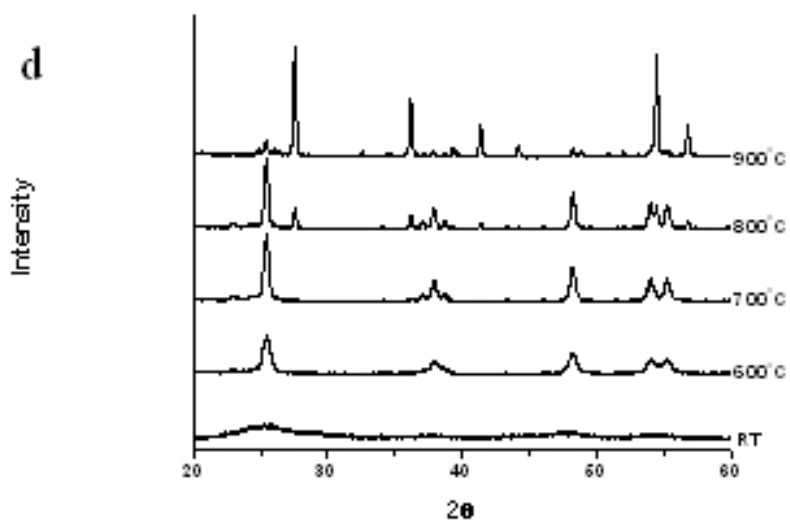




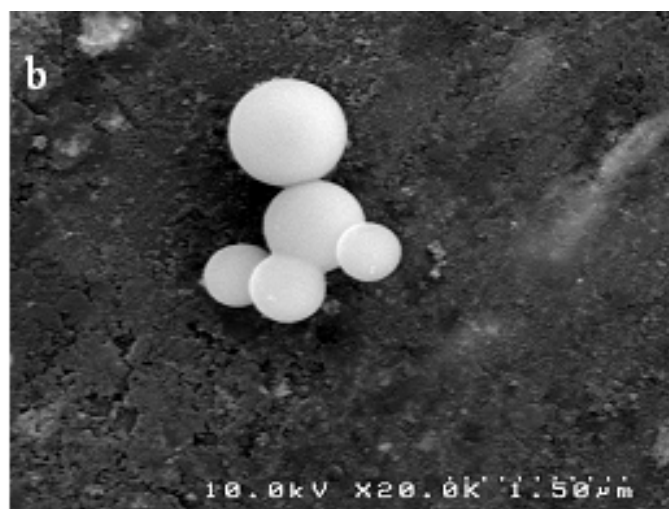
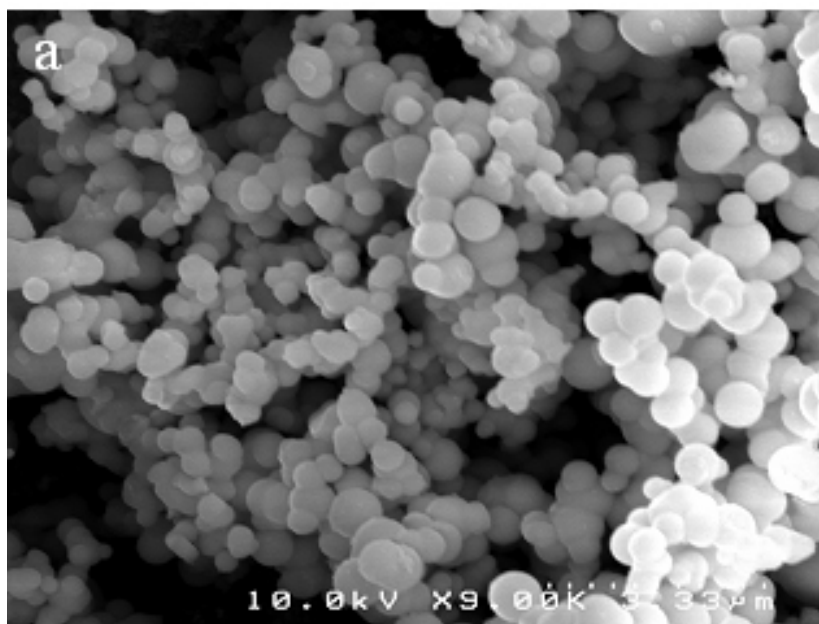
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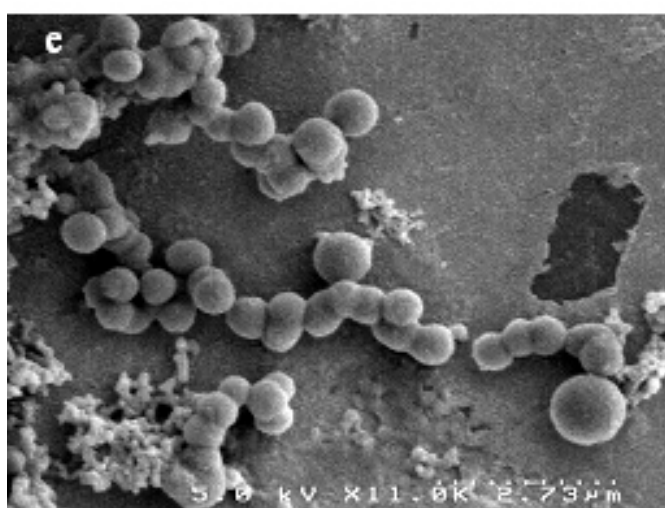
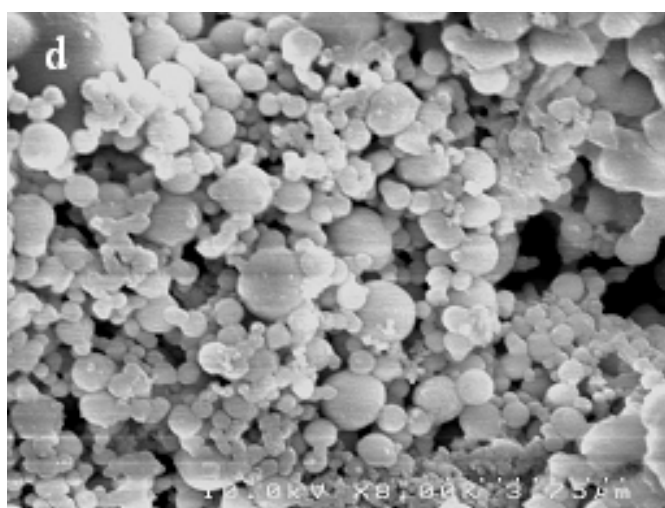
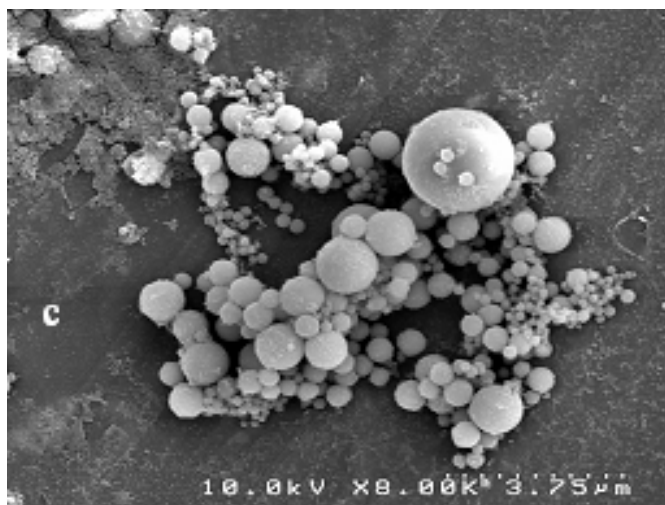


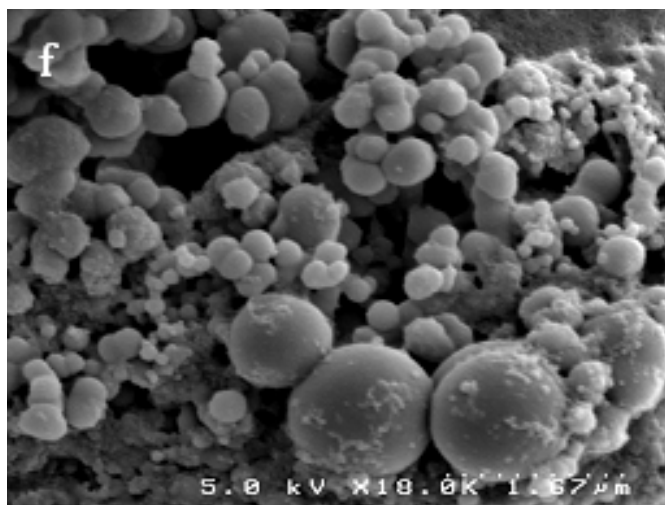




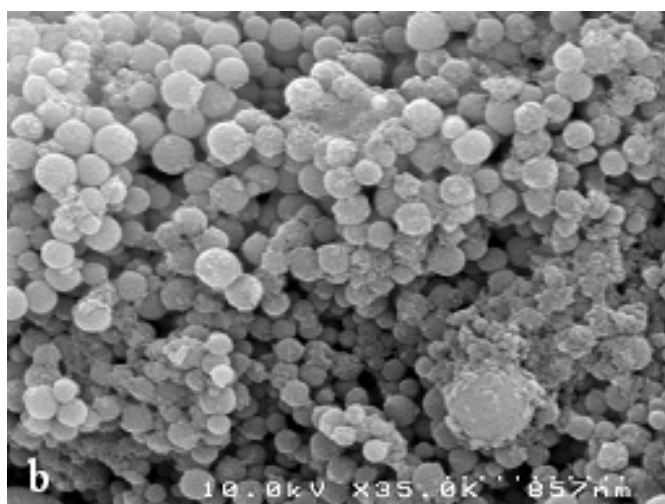
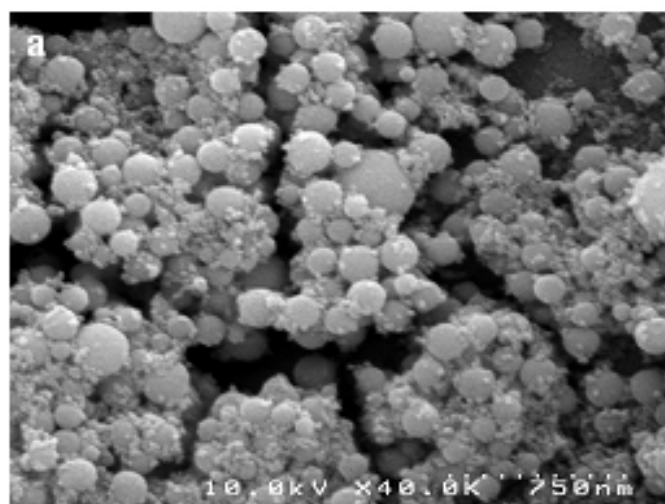
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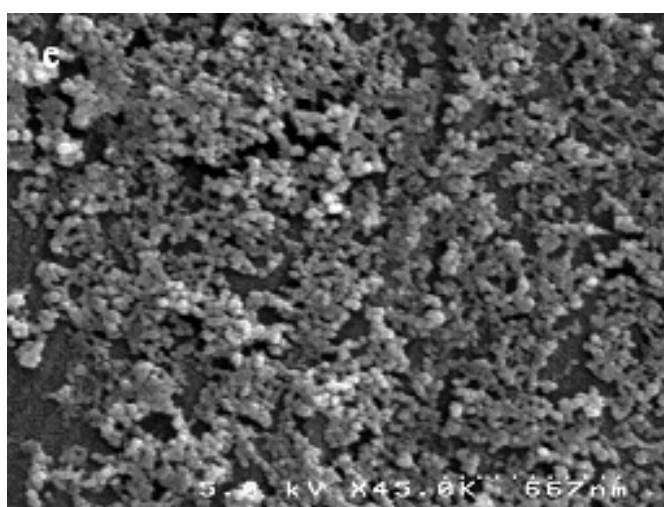
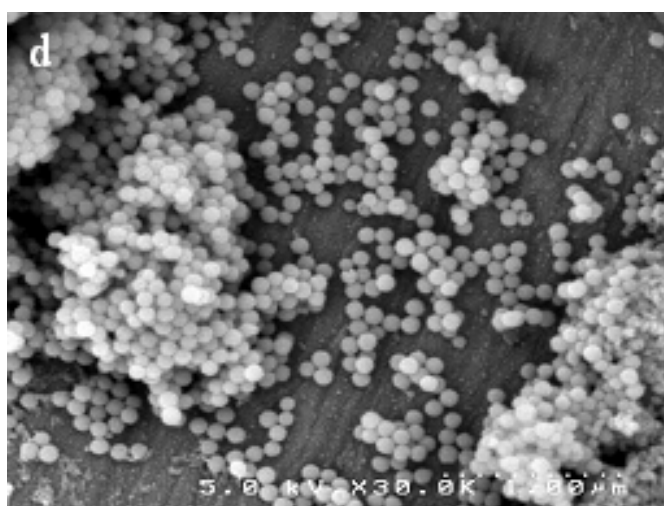
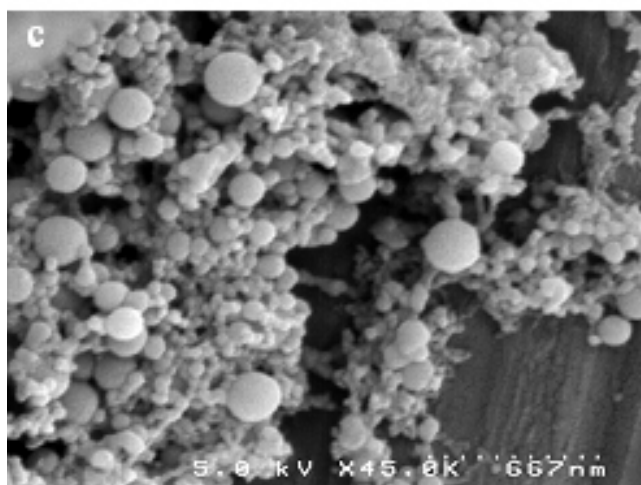


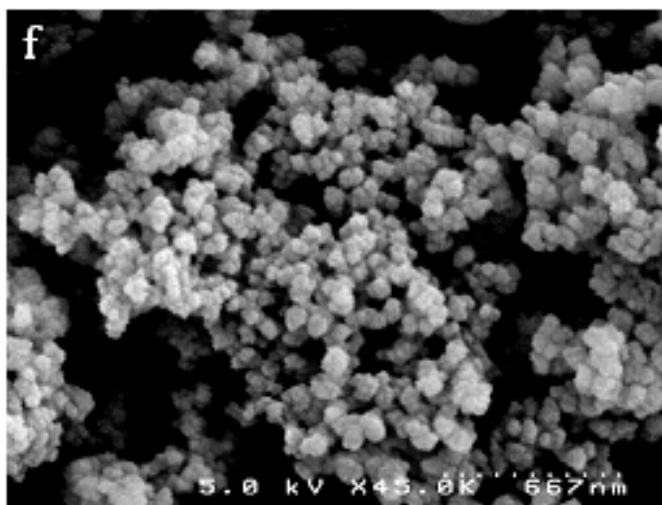




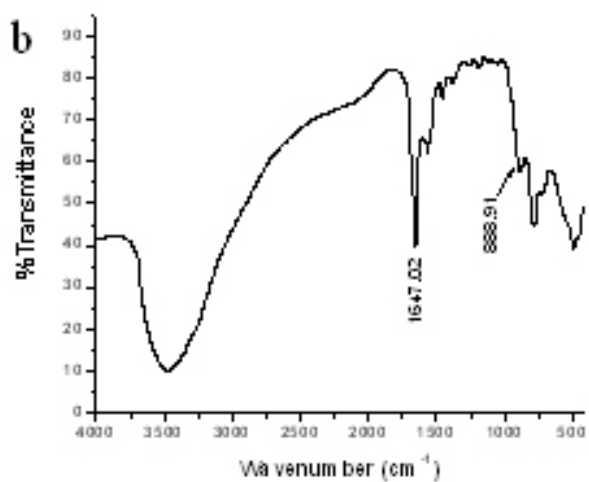
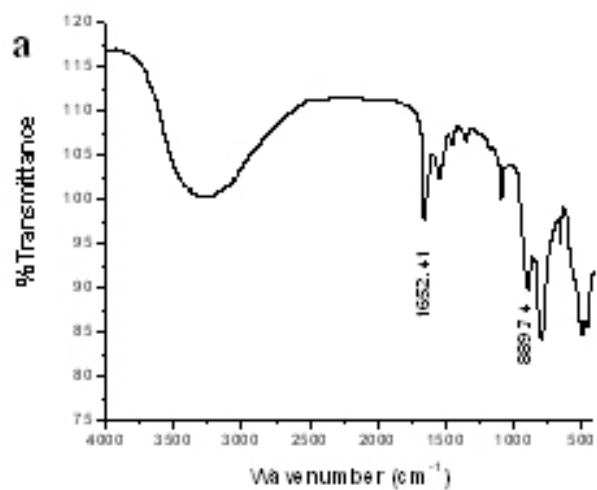
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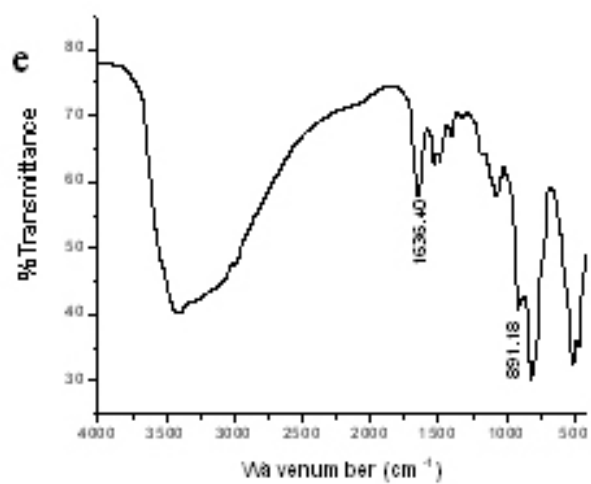
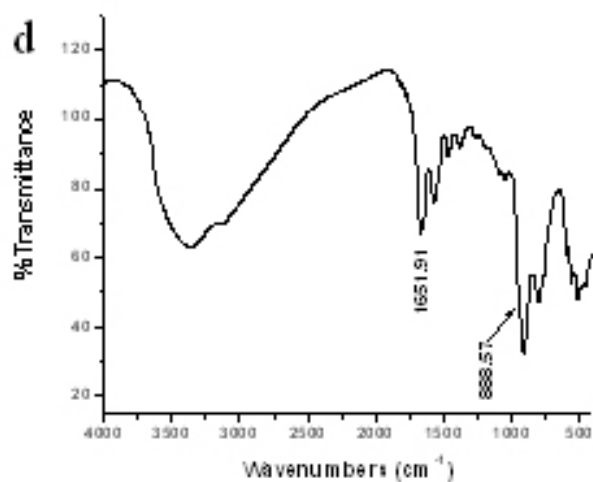
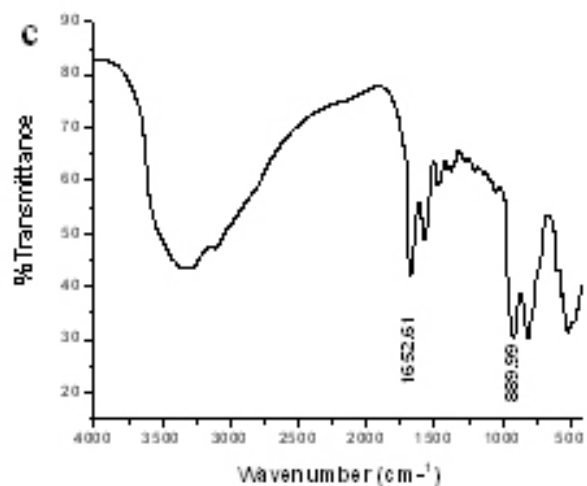


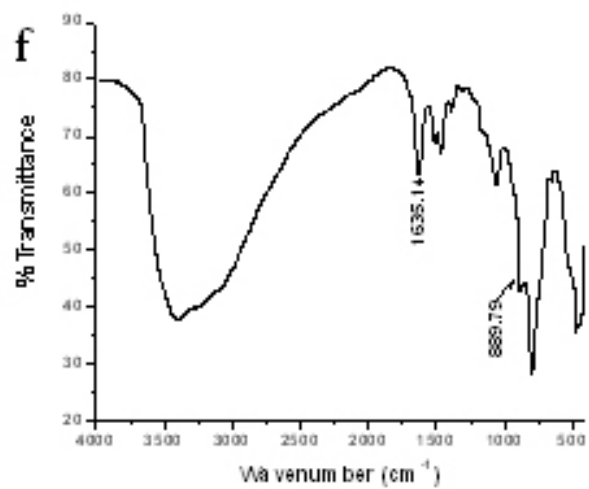




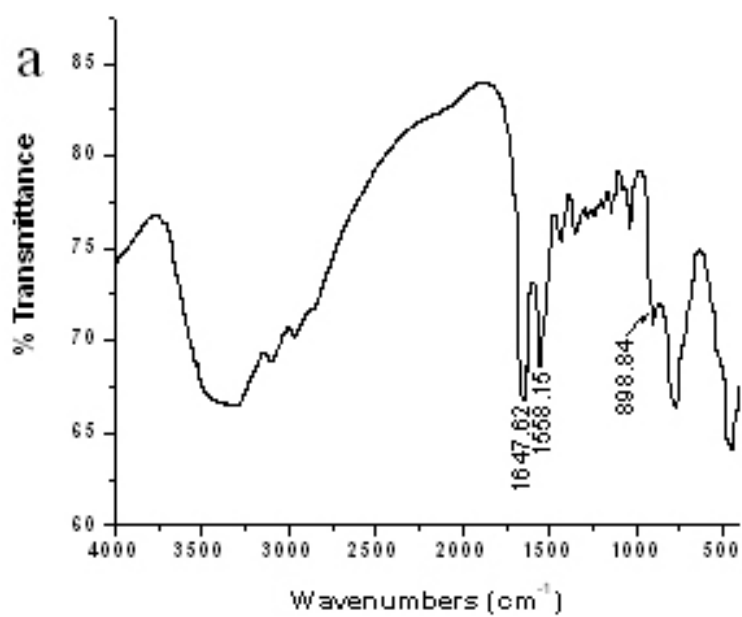
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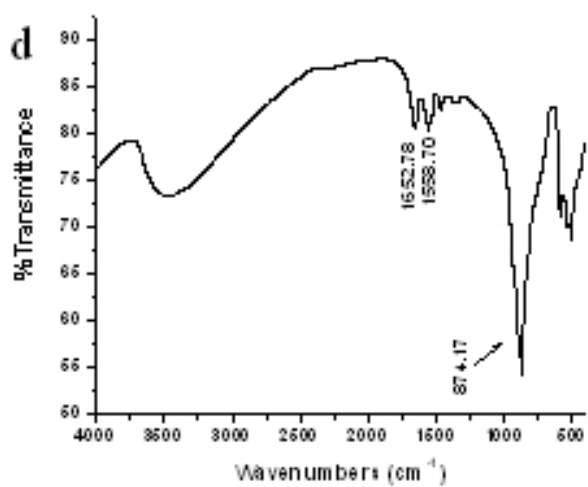
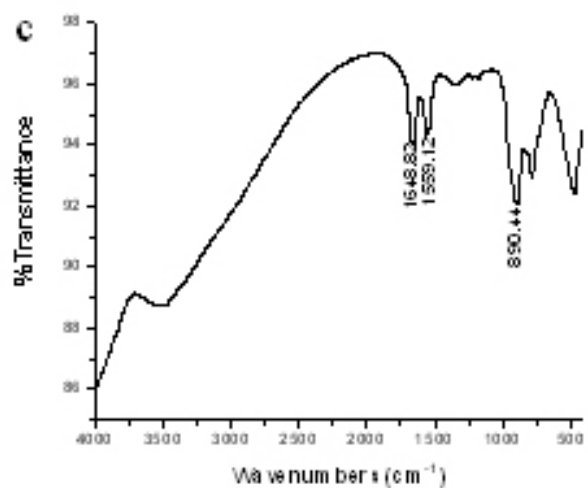
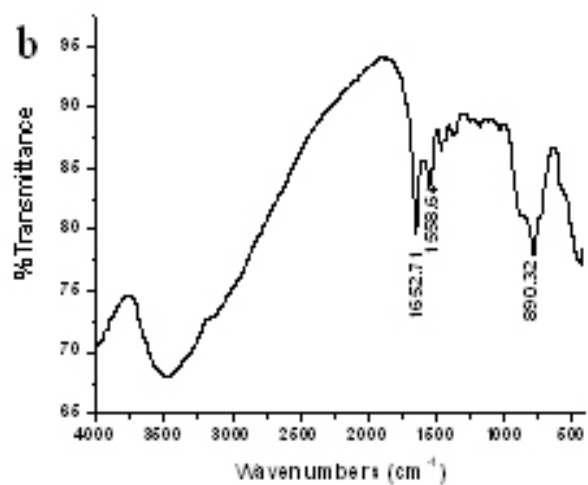


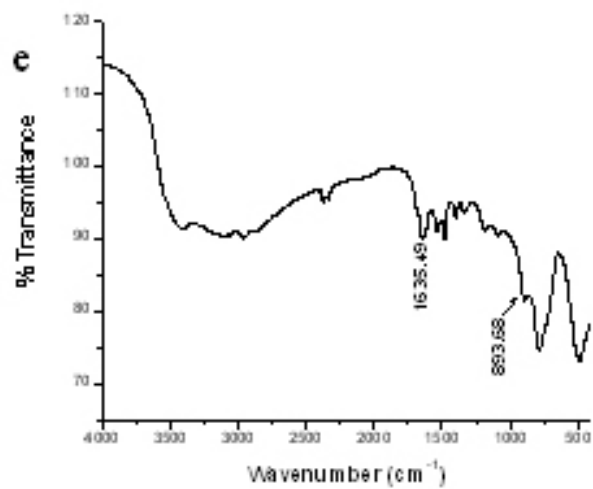




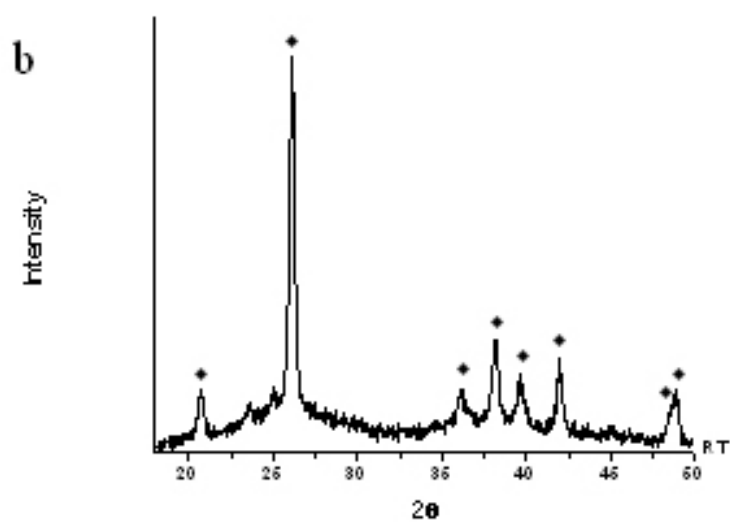
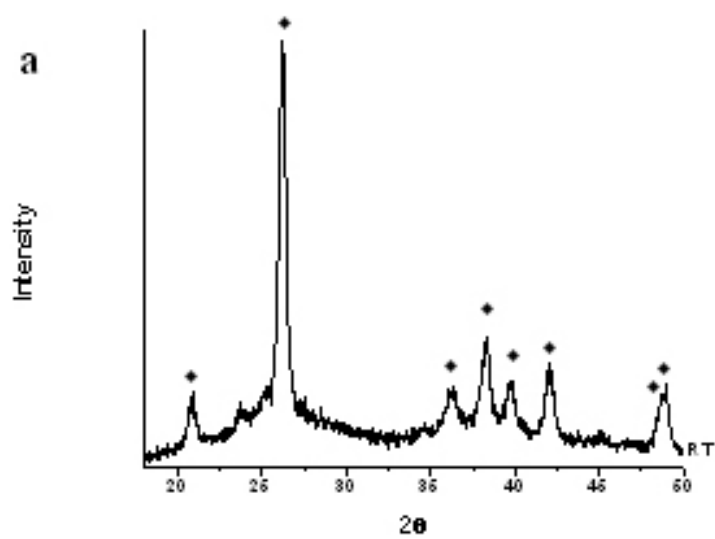
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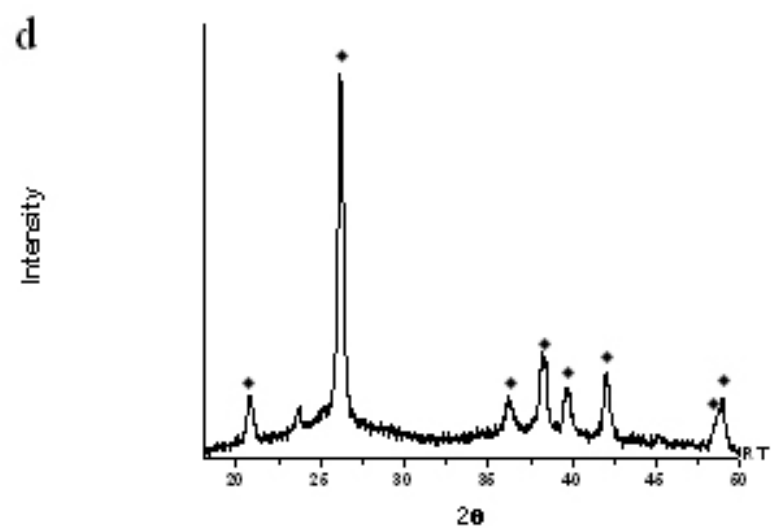
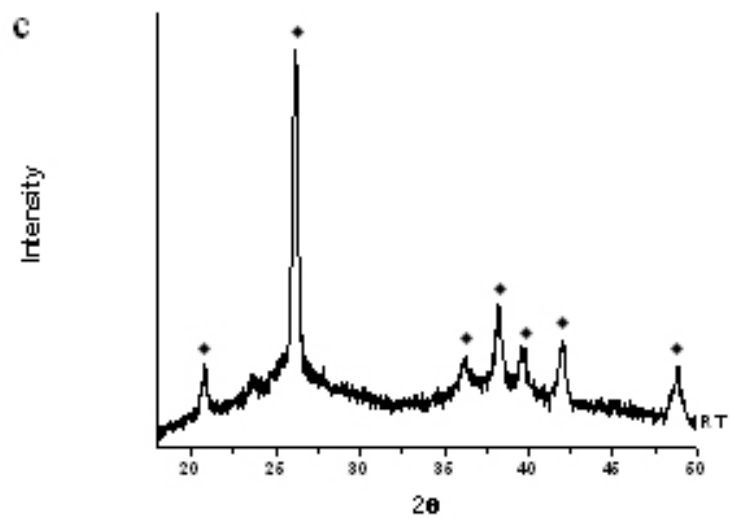


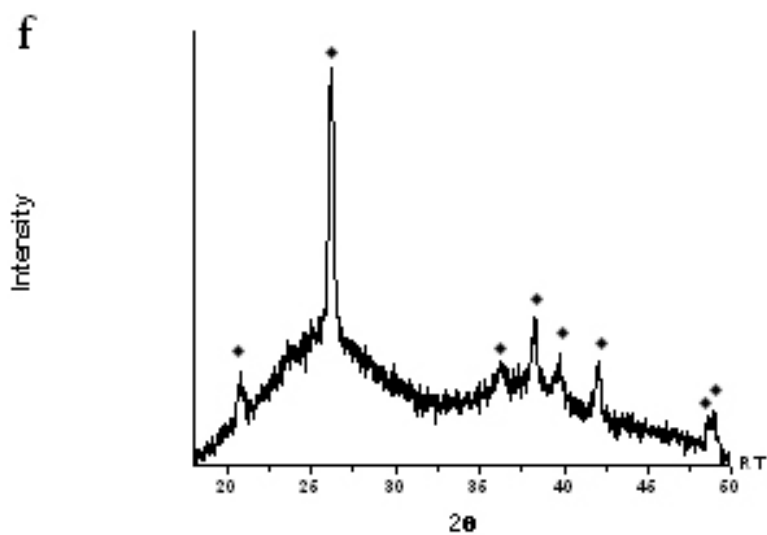
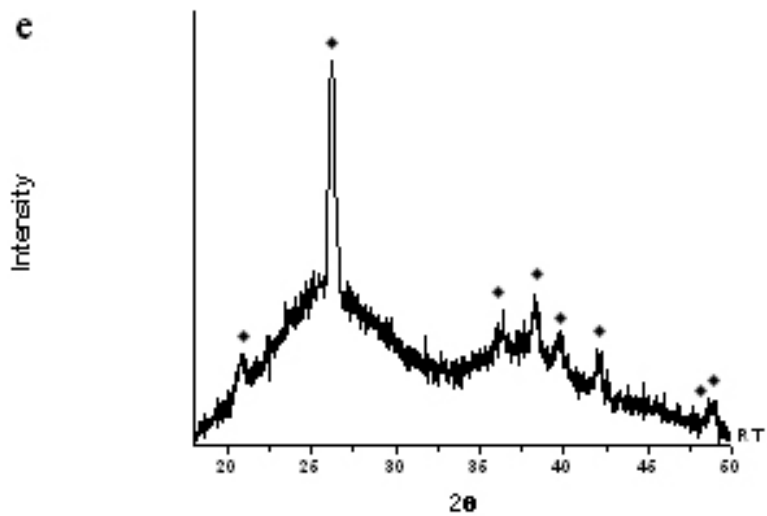




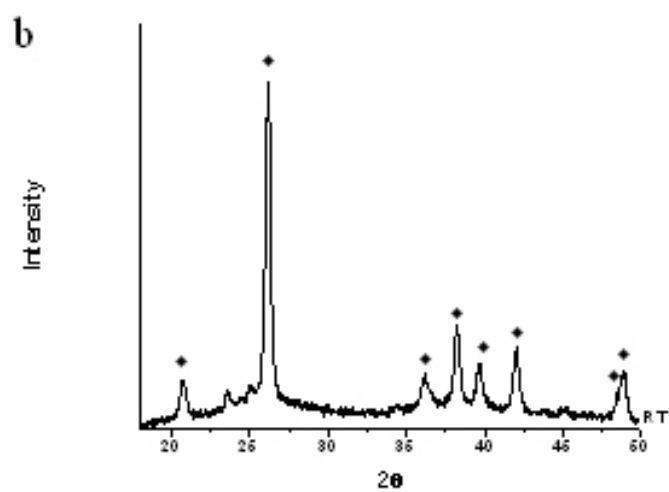
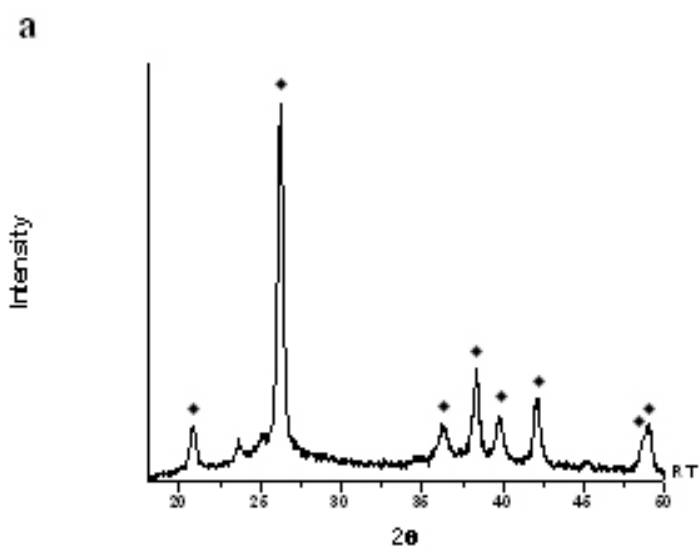
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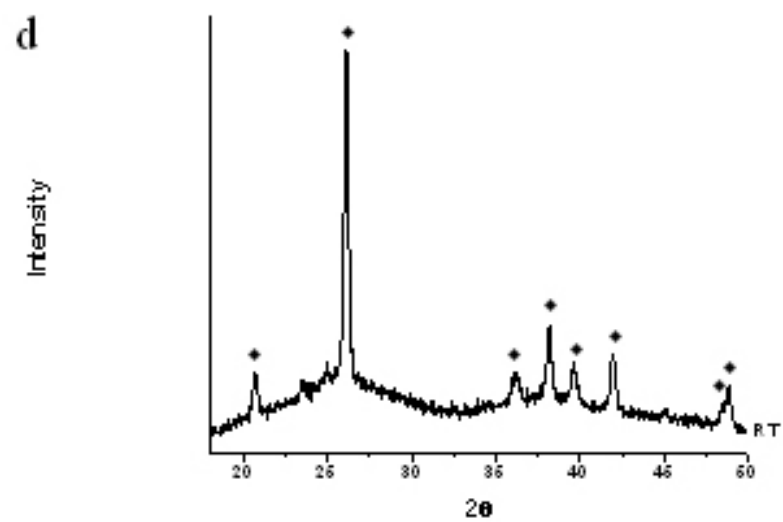
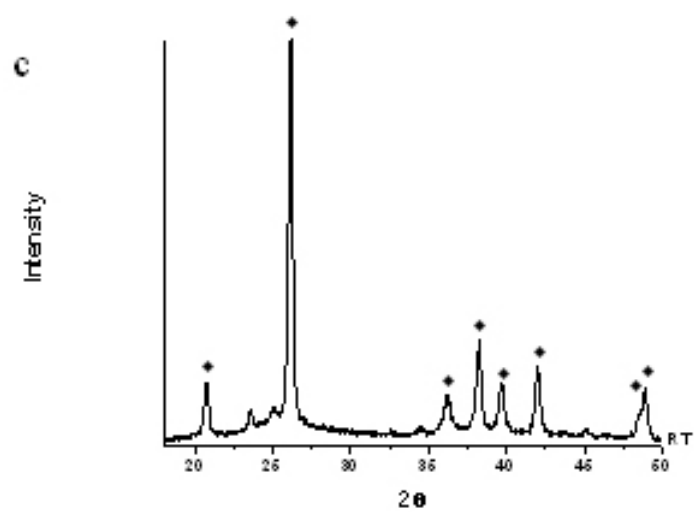


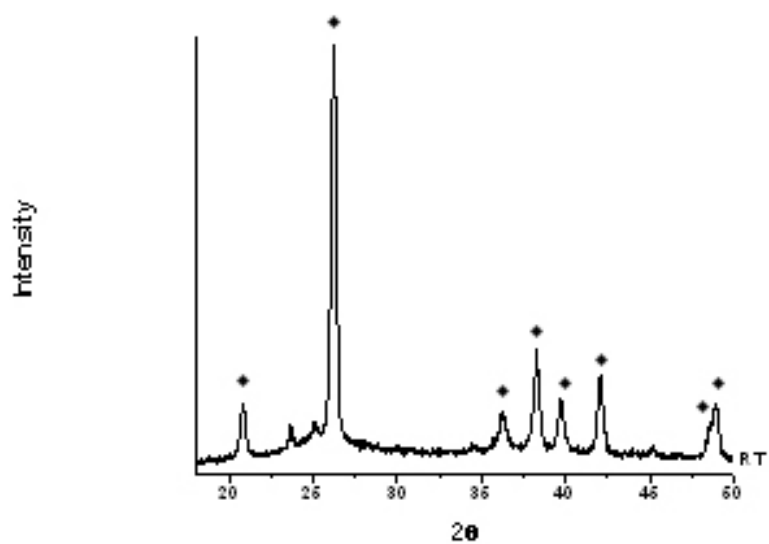
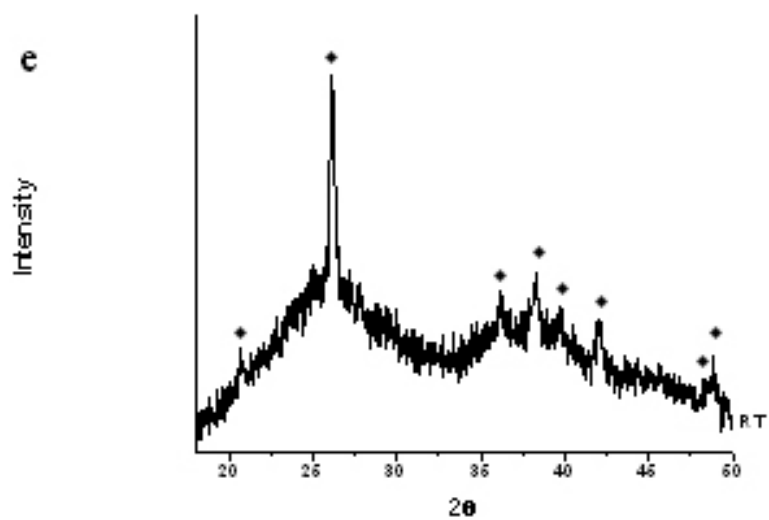




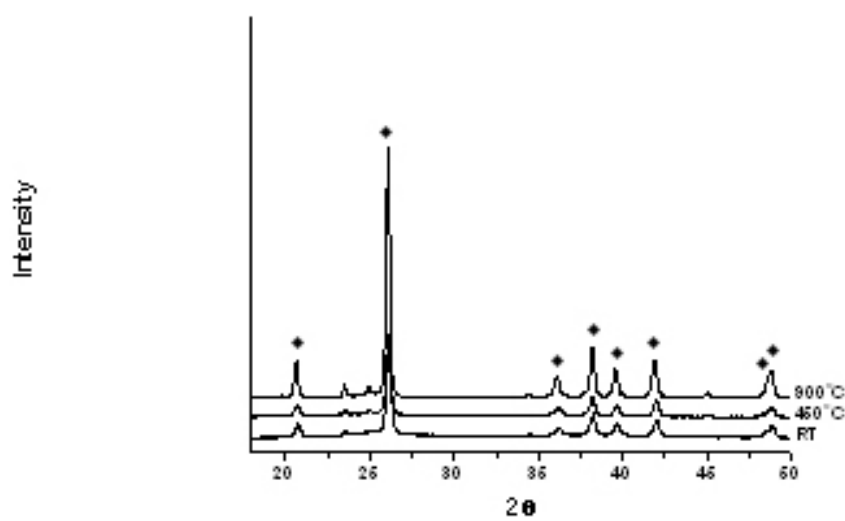
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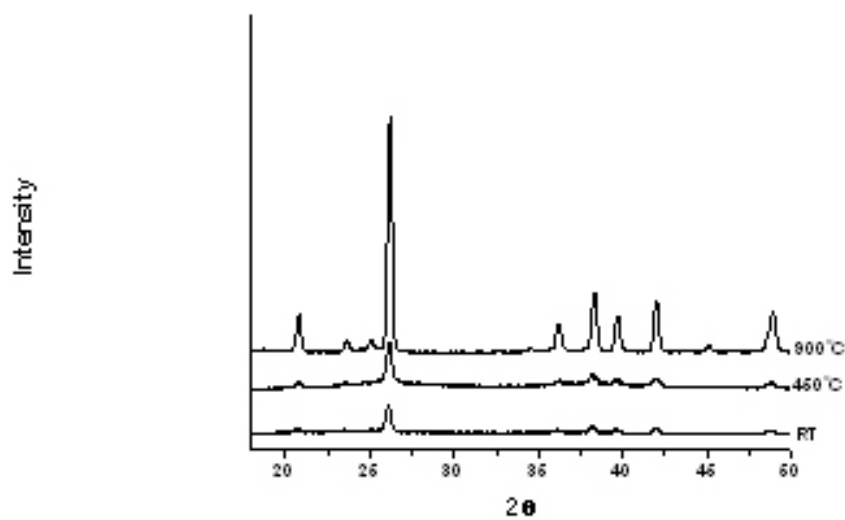




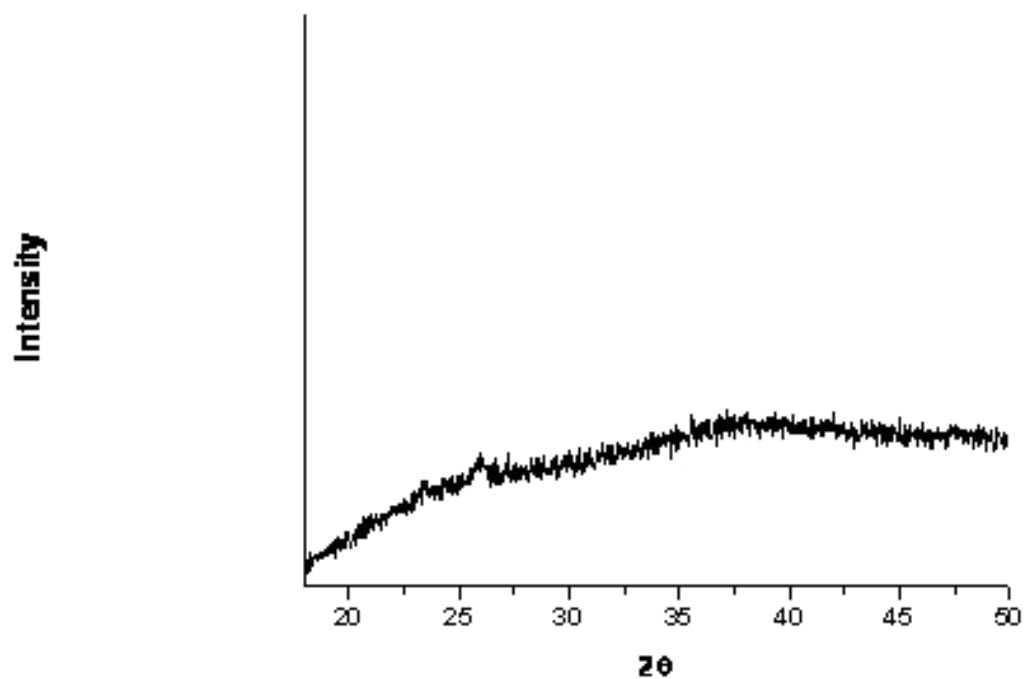
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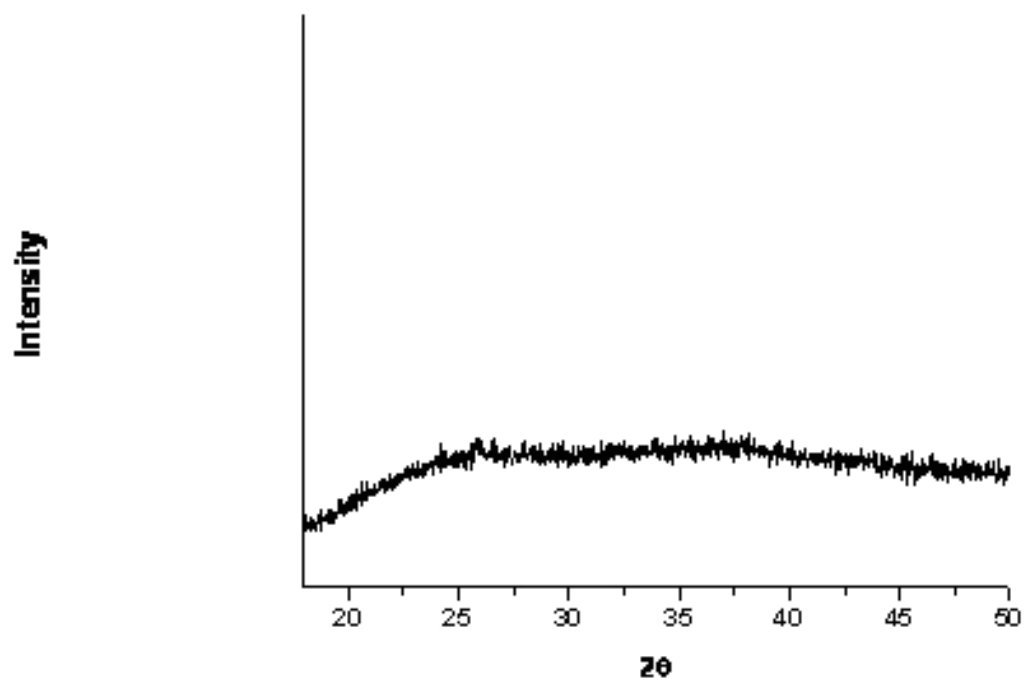
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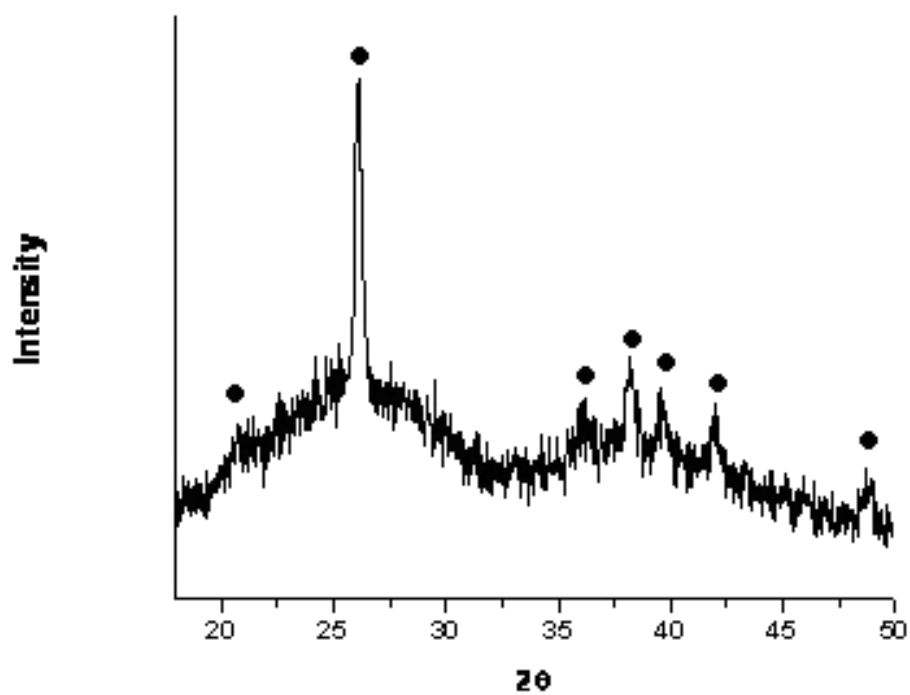
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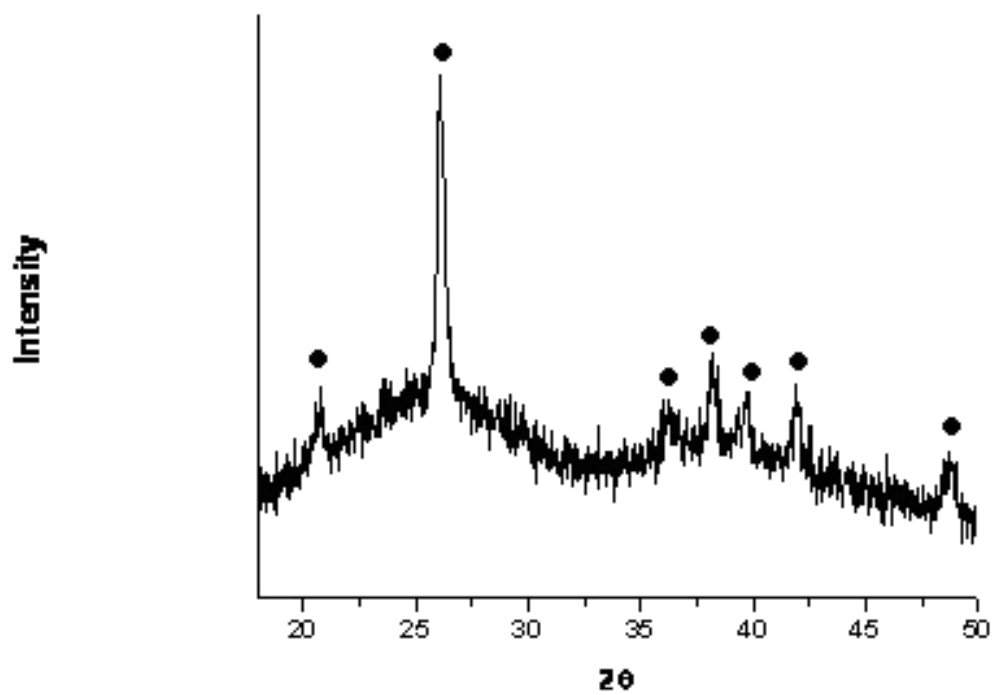
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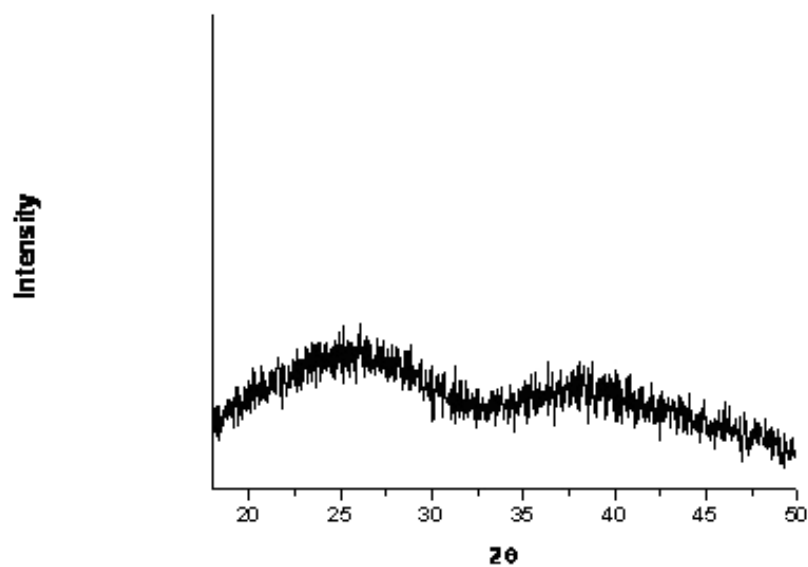
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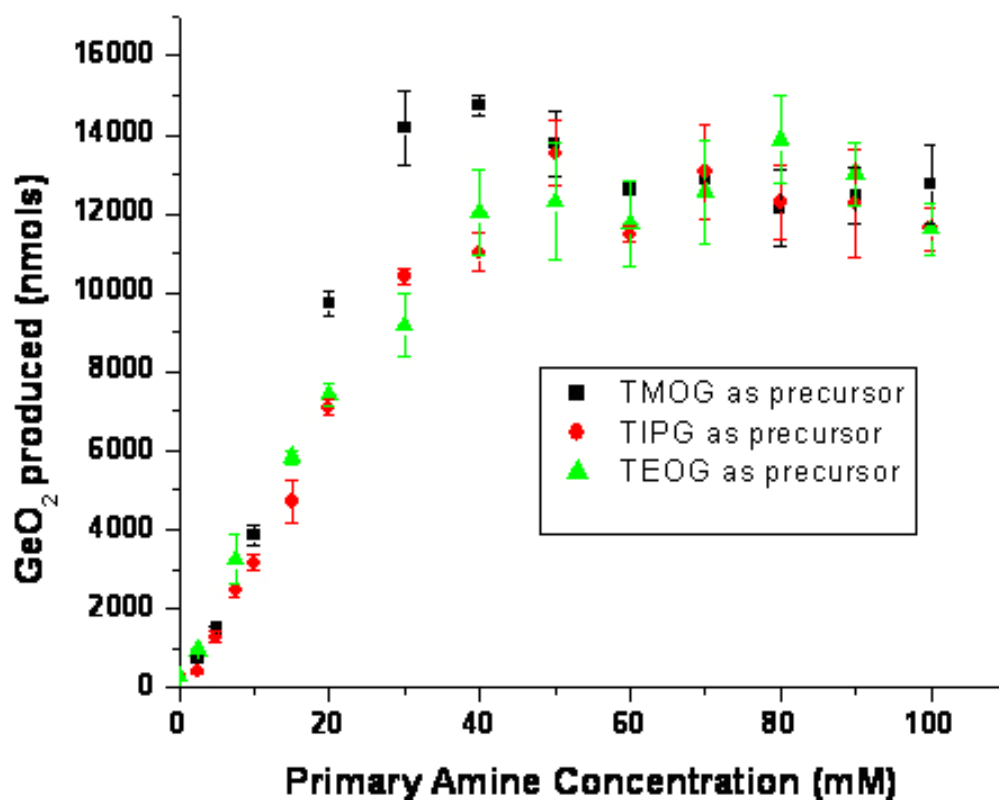
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S22

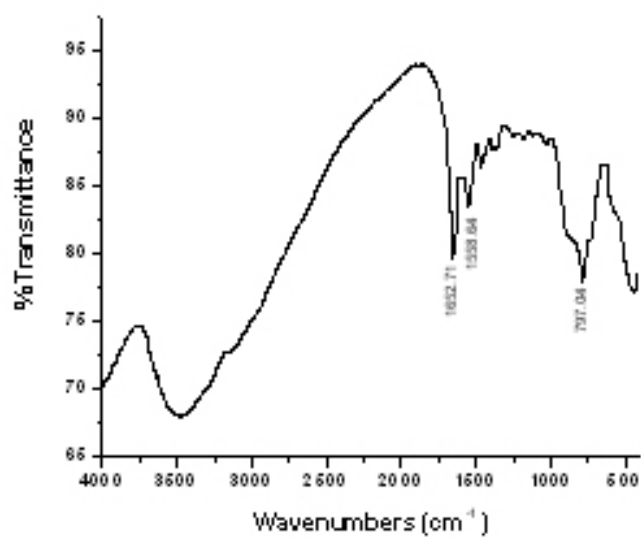


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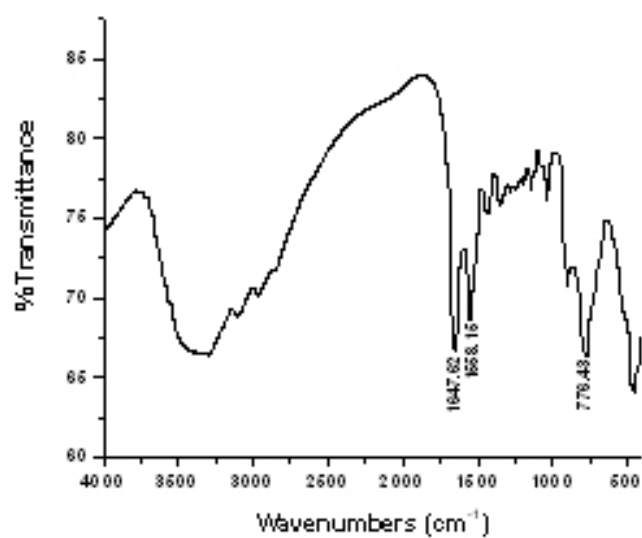


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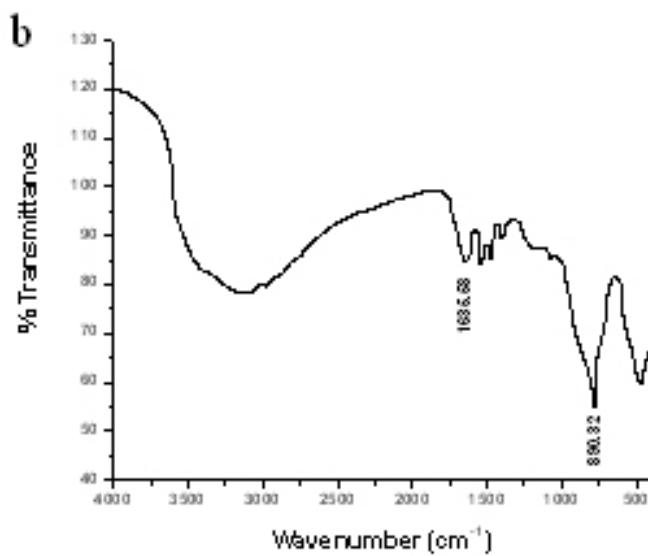
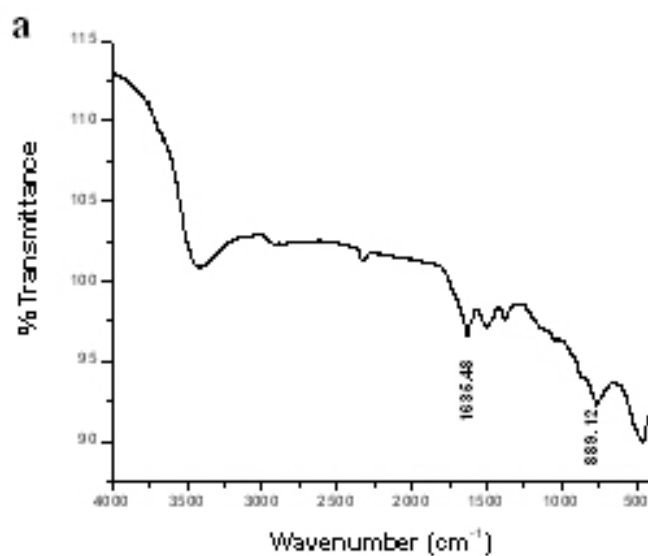
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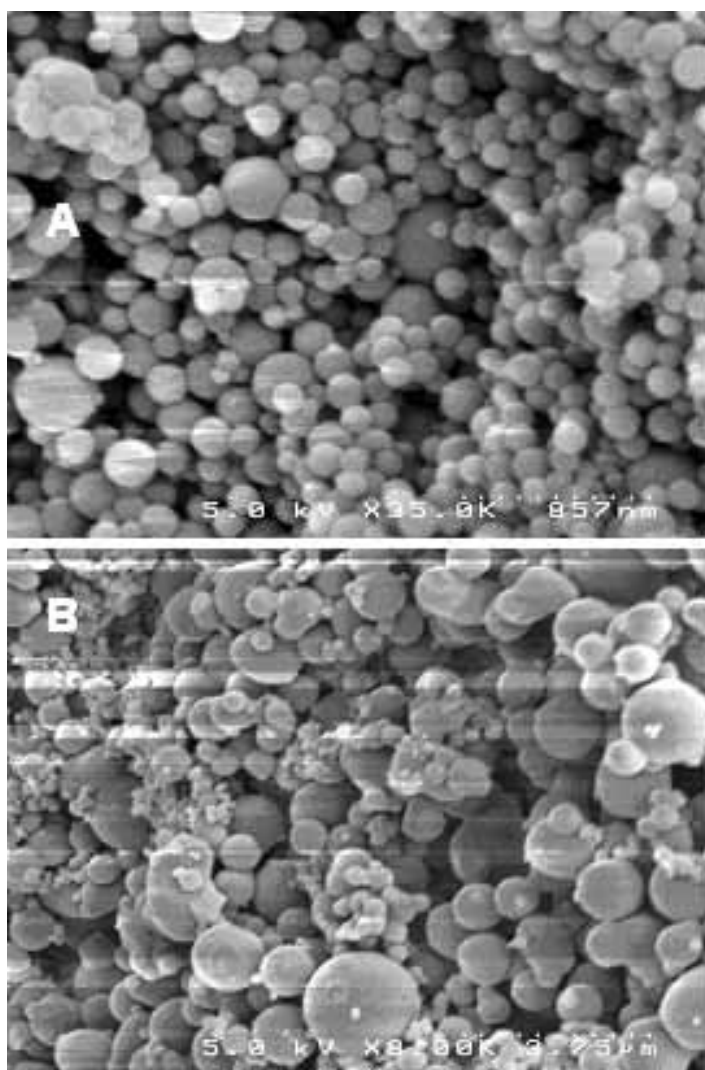
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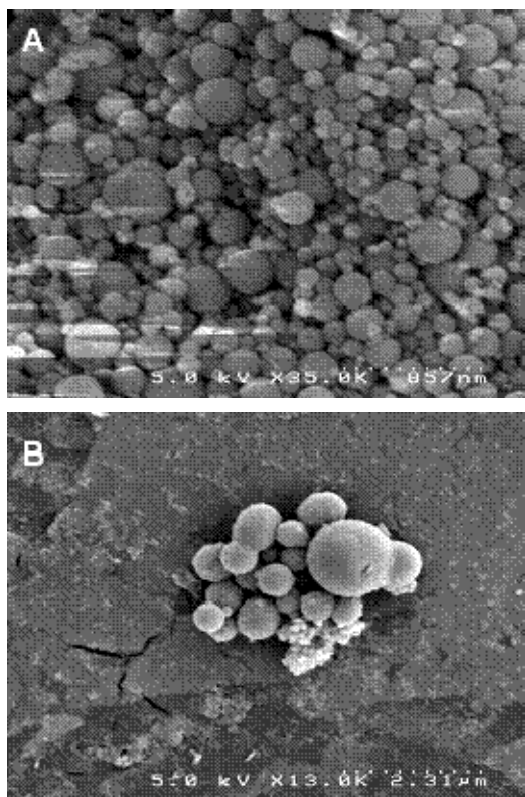
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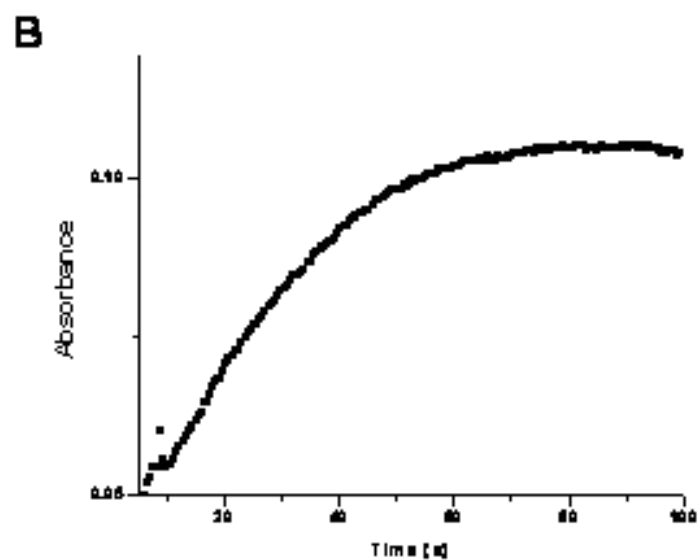
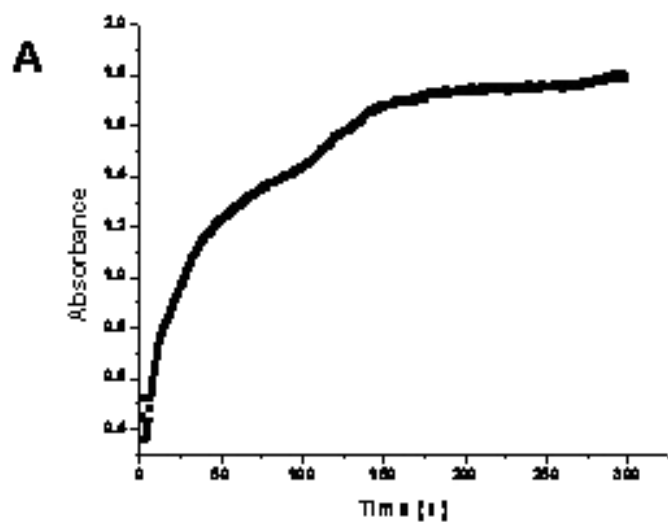
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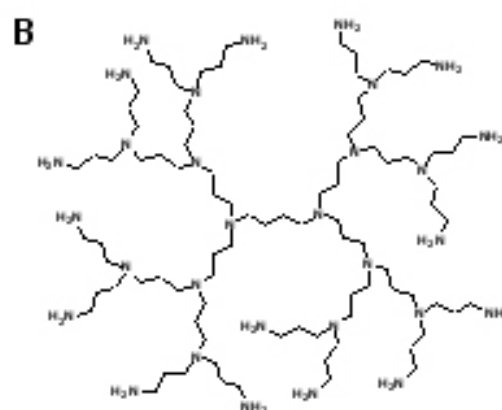
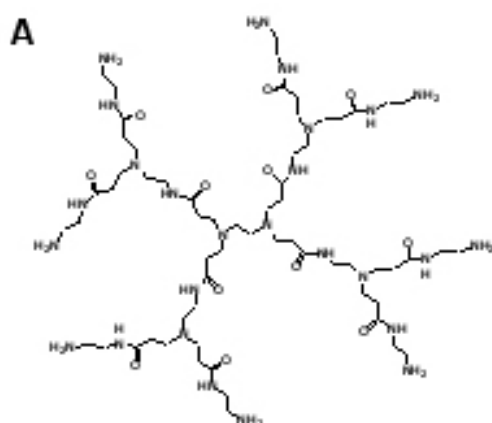
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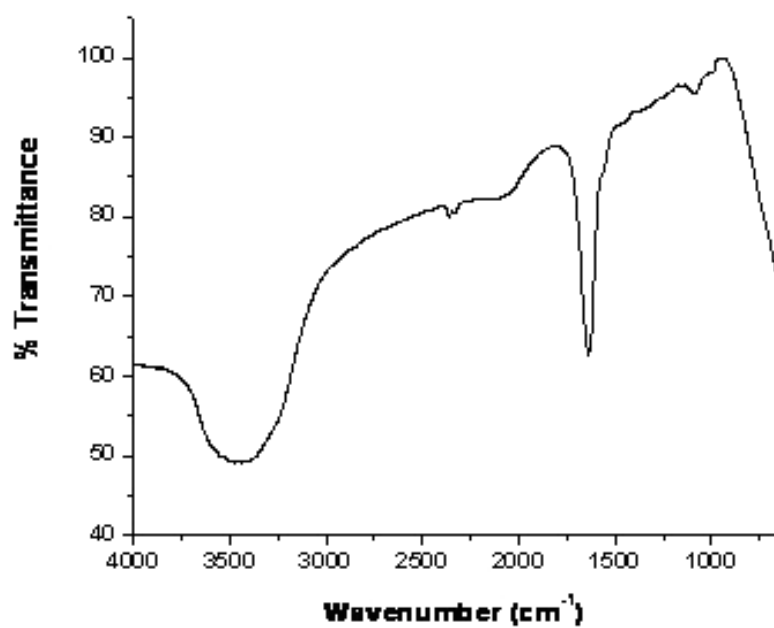
S28



S29



S30



S31

