Electronic Supplementary Material (ESI) for New Journal of Chemistry.

Supporting Information

Hydrogenation of hydrophobic substrates catalyzed by gold nanoparticles embedded in Tetronics/cyclodextrins-based hydrogels

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Fig. S1 Photographs of reaction medium for each step of the synthesis of AuNP@α-CD/Tetronics®90R4 hydrogel.

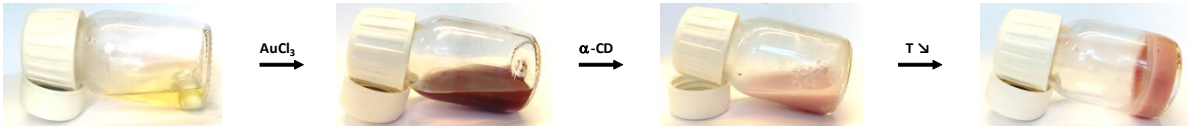


Fig. S2 TEM image of Au NPs embedded in Tetronics®90R4 after a) 30 min, b) 60 min, and c) 90 min.

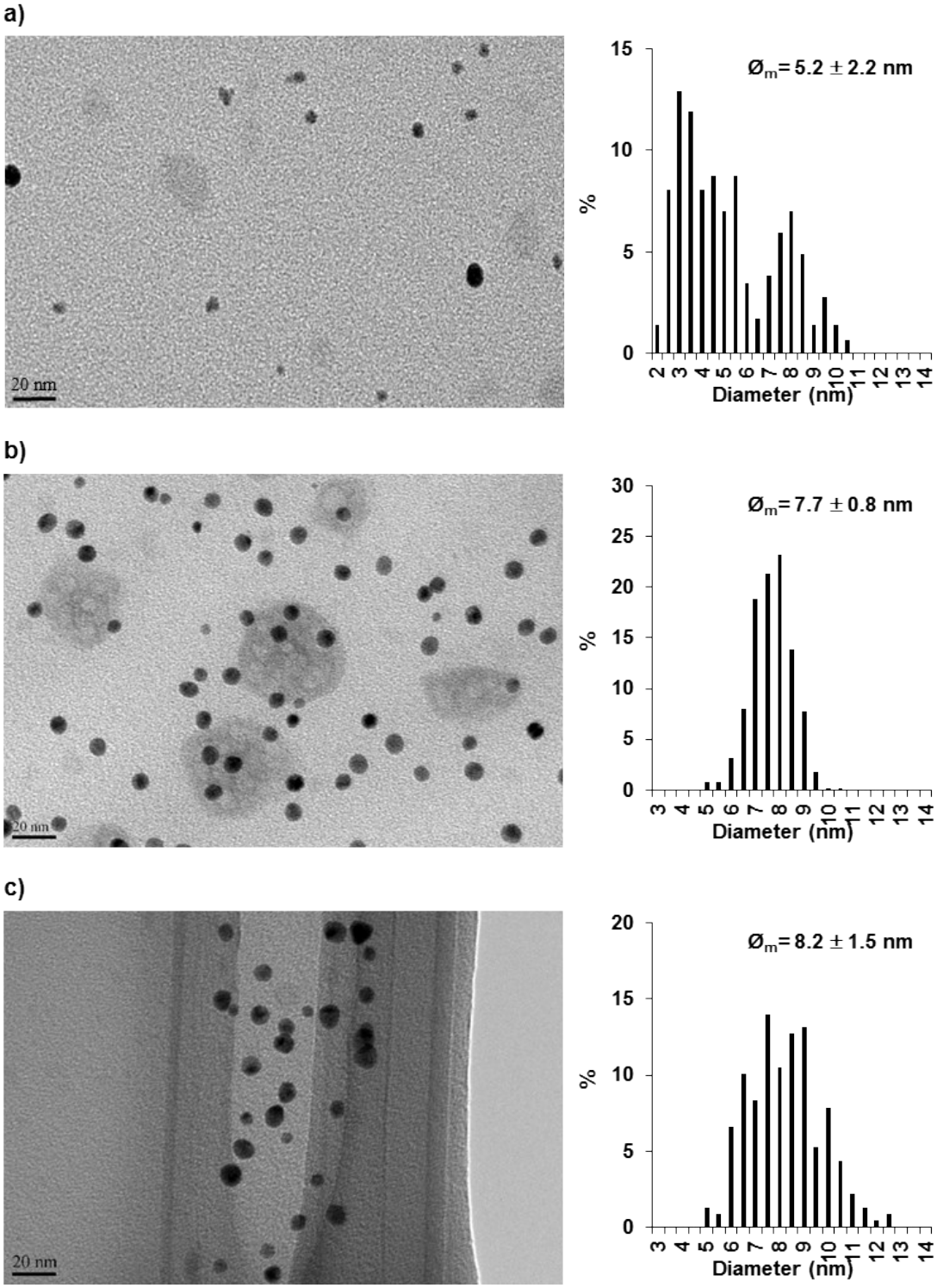
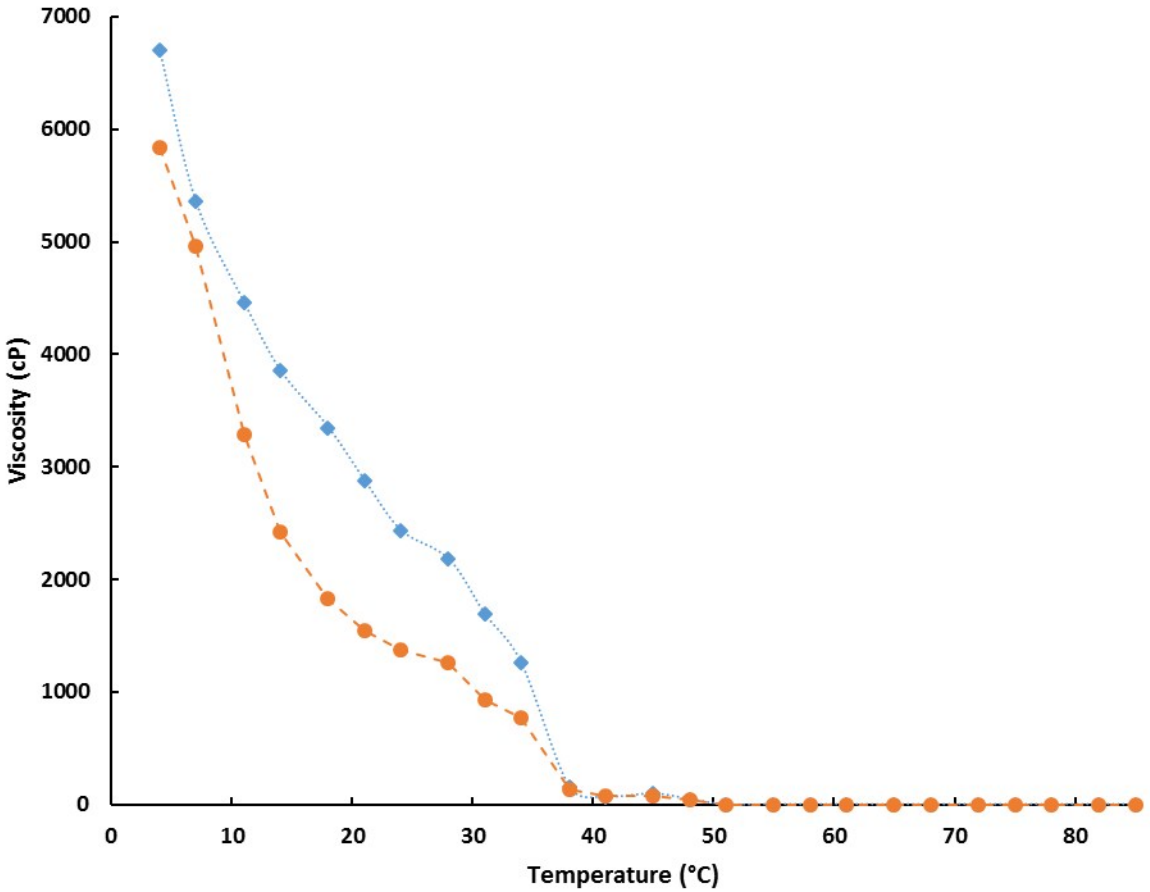


Fig. S3 Viscosity curves as a function of temperature of α-CD/Tetronics®90R4 hydrogel without AuNP (◆) and α-CD/Tetronics®90R4 hydrogel with AuNP (●).



While a small drop of viscosity could be observed below the sol/gel transition temperature upon addition of AuNPs, no variation was noticed above. Accordingly, the viscosity did not influence the catalytic performance.

Fig. S4 TEM image of Au NPs embedded in α-CD/Tetronics®90R4 hydrogel after ten consecutive heat and cool cycles (from room temperature to 50 °C).

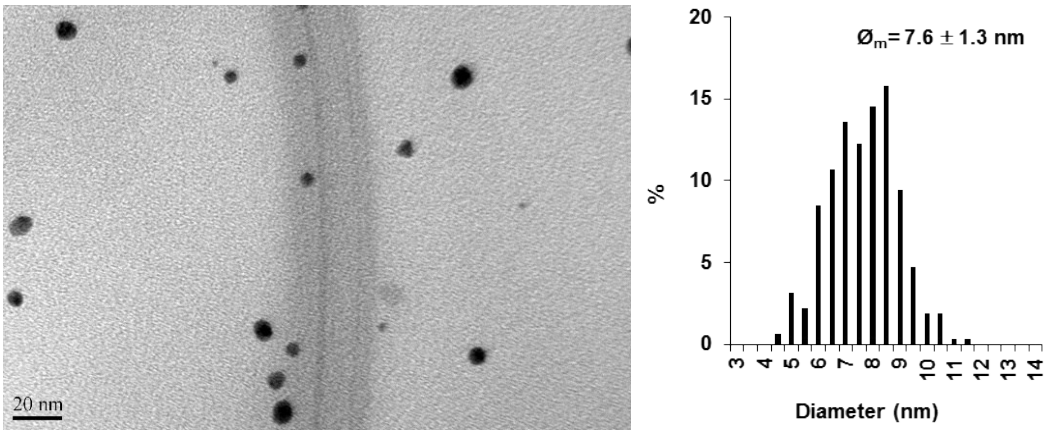
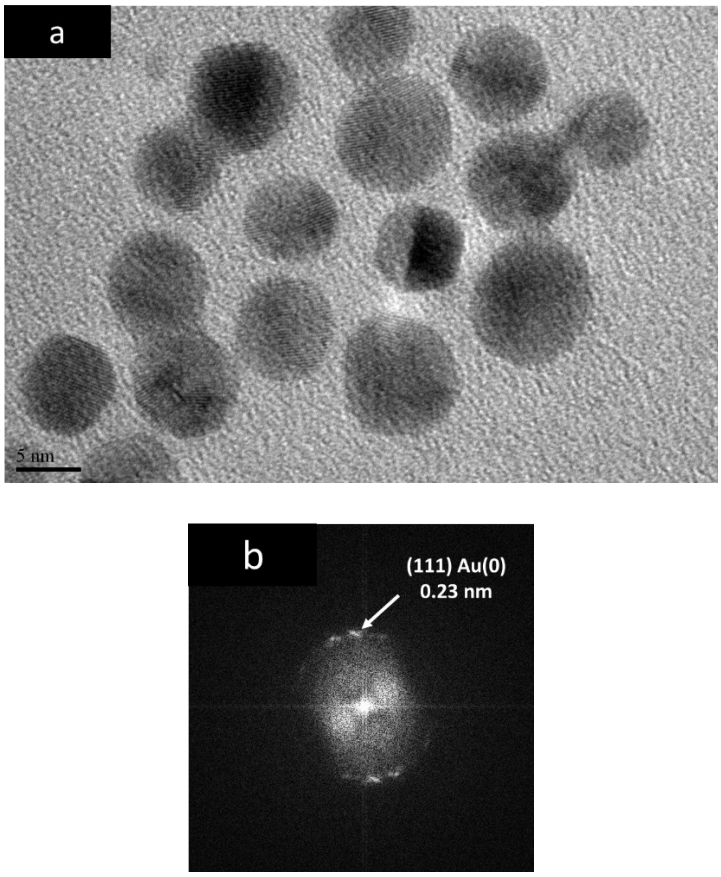


Fig. S5 a) TEM image of Au NPs embedded in α-CD/Tetronics®90R4 hydrogel at a magnification of 490K. b) Reduced FFT-derived diffraction pattern in a typical crystalline region.



Characterization of the organic phase

The characterization of the organic phase during a catalytic run and for the recyclability study was done by gas chromatography. The reaction composition was determined after taking 0.25 mL of the reaction mixture which was diluted in 1 mL of water. The organic products were extracted with 0.5 mL of chloroform and analyzed by gas chromatography using a Varian 3900 gas chromatograph, equipped with a CP-Sil-5B (30 m × 0.25 mm x 0.25 μm) and a flame ionization detector, using decane or dodecane as external standard.