SUPPORTING INFORMATIONS

Design of PNIPAAM Covalently Grafted on Halloysite Nanotubes as Support for Metal-Based Catalysts

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Figure S.1. ¹H-NMR spectrum of crude reaction mixture of 4-acetyl-1,1'-biphenyl. Reaction carried out in H₂O/EtOH at 25 °C, under microwave irradiation for 10 min (Table 1, entry 1).



Figure S.2. ¹H-NMR spectrum of crude reaction mixture of 4-acetyl-1,1'-biphenyl. Reaction carried out in H₂O/EtOH at 50 °C, under microwave irradiation for 10 min (Table 1, entry 2).



Figure S.3. ¹H-NMR spectrum of crude reaction mixture of 4-acetyl-1,1'-biphenyl. Reaction carried out in H₂O/EtOH at 120 °C, under microwave irradiation for 10 min (Table 1, entry 3).



Figure S.4. ¹H-NMR spectrum of crude reaction mixture of 4-acetyl-1,1'-biphenyl. Reaction carried out in H₂O/EtOH at 120 °C, under microwave irradiation for 10 min, catalyst 0.016 mol% (Table 1, entry 4).



Figure S.5. ¹H-NMR spectrum of crude reaction mixture of 4-acetyl-1,1'-biphenyl. Reaction carried out in H_2O at 70 °C, under microwave irradiation for 10 min, (Table 2, entry 1).



Figure S.6. ¹H-NMR spectrum of crude reaction mixture of 4-acetyl-1,1'-biphenyl. Reaction carried out in H_2O at 70 °C, under microwave irradiation for 15 min, (Table 2, entry 2).



Figure S.7. ¹H-NMR spectrum of crude reaction mixture of 4-acetyl-1,1'-biphenyl. Reaction carried out in H_2O at 70 °C, under microwave irradiation for 30 min, (Table 2, entry 3).



Figure S.8. ¹H-NMR spectrum of crude reaction mixture of 4-acetyl-1,1'-biphenyl. Reaction carried out in H₂O at 120 $^{\circ}$ C, under microwave irradiation for 10 min, (Table 2, entry 4).



Figure S.9. ¹H-NMR spectrum of crude reaction mixture of 4-acetyl-1,1'-biphenyl. Reaction carried out in H₂O at 120 °C, under microwave irradiation for 15 min, (Table 2, entry 5).



Figure S.10. ¹H-NMR spectrum of crude reaction mixture of 4-acetyl-1,1'-biphenyl. Reaction carried out in H₂O at 120 °C, under microwave irradiation for 2 min, additive TBAB (0.05 mmol) (Table 2, entry 6).



Figure S.11. ¹H-NMR spectrum of crude reaction mixture of 4-acetyl-1,1'-biphenyl. Reaction carried out in H₂O at 120 °C, under microwave irradiation for 10 min, additive TBAB (0.05 mmol) (Table 2, entry 7).



Figure S.12. ¹H-NMR spectrum of crude reaction mixture of 4-acetyl-1,1'-biphenyl. Reaction carried out in H₂O at 120 °C, under microwave irradiation for 10 min, additive TBAB (0.05 mmol) (Table 2, entry 8).





Figure S.14. ¹H-NMR spectrum of crude reaction mixture of 4-methoxy-1,1'-biphenyl. Reaction carried out in H_2O at 120 °C, under microwave irradiation for 10 min, additive TBAB (0.05 mmol), catalyst 0.016 mol% (Table 3, entry 2).





Figure S.15. ¹H-NMR spectrum of crude reaction mixture of 4-carbaldheyde-1,1'-biphenyl. Reaction carried out in H₂O at 120 °C, under microwave irradiation for 10 min, additive TBAB (0.05 mmol), catalyst 0.016 mol% (Table 3, entry 3).



Figure S.16. ¹H-NMR spectrum of crude reaction mixture of 4-methoxy-1,1'-biphenyl. Reaction carried out in H₂O at 120 °C, under microwave irradiation for 10 min, additive TBAB (0.05 mmol), catalyst 0.016 mol% (Table 3, entry 4).



Figure S.17. ¹H-NMR spectrum of crude reaction mixture of 3-carbaldheyde-1,1'-biphenyl. Reaction carried out in H₂O at 120 °C, under microwave irradiation for 10 min, additive TBAB (0.05 mmol), catalyst 0.016 mol% (Table 3, entry 5).



Figure S.18. ¹H-NMR spectrum of crude reaction mixture of 3-methoxy-1,1'-biphenyl. Reaction carried out in H₂O at 120 °C, under microwave irradiation for 10 min, additive TBAB (0.05 mmol), catalyst 0.016 mol% (Table 3, entry 6).



Figure S.19. ¹H-NMR spectrum of crude reaction mixture of 4-acetyl-1,1'-biphenyl. Reaction carried out in H₂O at 120 °C, under microwave irradiation for 10 min, additive TBAB (0.05 mmol), catalyst 0.016 mol% (Table 3, entry 7).



Figure S.20. ¹H-NMR spectrum of crude reaction mixture of 2-methyl-1,1'-biphenyl. Reaction carried out in H₂O at 120 °C, under microwave irradiation for 10 min, additive TBAB (0.05 mmol), catalyst 0.016 mol% (Table 3, entry 8).



Figure S.20. ¹H-NMR spectrum of 4-chloro-benzaldheyde. Reaction carried out in H₂O at 120 °C, under microwave irradiation for 10 min, additive TBAB (0.05 mmol), catalyst 0.016 mol% (Table 3, entry 9).



Figure S.21. ¹H-NMR spectrum of crude reaction mixture of 4-nitro-1,1'-biphenyl. Reaction carried out in H₂O at 120 °C, under microwave irradiation for 10 min, additive TBAB (0.05 mmol), catalyst 0.016 mol% (Table 3, entry 10).