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Waste corn-cob cellulose supported bio-heterogeneous copper nanoparticles for aza-Michael reactions†

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Bio-heterogeneous poly(amidoxime) copper nanoparticles were prepared on the modified surface of waste corn-cob cellulose through a graft copolymerization process. The Cu-nanoparticles (0.05 mol% to 50 mol ppm) selectively promoted the aza-Michael reaction of aliphatic amines to give the corresponding alkylated products at room temperature in methanol. The supported nanoparticles were easy to recover and reused eight times without a significant loss of their activity.