

Oxidative Polymerization of Phenol derivative in Water with Highly Efficient Complex Catalyst

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In this paper, we report highly region-selective oxidative coupling of phenol derivative catalyzed by SBA-15/copper complexes in water under oxygen. Amino acid was used as ligand for the copper complex catalyst. The structure and properties of polymers were studied by nuclear magnetic resonance spectroscopy (NMR), differential scanning calorimetry (DSC), thermo gravimetric analysis (TGA). The region-selectivity was enhanced when employing molecular sieves-supported copper catalyst. The influence of temperature, catalyst and sodium hydroxide concentration on the oxidation polymerization was also discussed. The high catalytic efficiency of the copper/ligand complex may have been due to the concentration effect of the catalyst and substrate.

Keywords: Catalysis; 4-phenoxy-phenol; Oxidation Polymerization

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