Highlights

- Copper containing macromolecules, viz., (CuTCPP) and (CuTPP) were synthesized.
- The ^{1}H NMR, mass spectral and elemental (CHN) analyses confirmed the structure of CuTCPP and CuTPP.
- CuTCPP and CuTPP were grafted on the amino functionalized SBA-15.
- The catalysts used for the hydroxylation of phenolic compounds.
- CuTCPP showed comparable conversion of phenol (72 %) with an activation energy of 26.03 KJ/mol.

Copper based macromolecular catalysts for the hydroxylation of phenols

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Abstract

Copper containing macromolecules, viz., Copper-*meso*-tetrakis-(4-carboxyphenyl)porphyrin (CuTCPP) and Copper-*meso*-tetra-phenylporphyrin (CuTPP) complexes were synthesized and heterogenized on the surface of aminated SBA-15 molecular sieves. The ^{1}H NMR, mass spectral and elemental (CHN) analyses were performed to confirm the formation of these copper complexes (CuTCPP and CuTPP). The absence of ^{1}H NMR signal, characteristic of N-H bond (-2.79 *ppm* in TCPP and -2.74 *ppm* in TPP) in CuTCPP and CuTPP clearly confirms the