

## Studies on polymer supported metalloporphyrins with modified electronic properties

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Metalloporphyrins (MP) which are versatile catalysts could be immobilised on solid polymer matrix (P\*) to generate systems (P\*-MP) that can function heterogeneously. Covalent linking of functionalised metalloporphyrins onto a suitably modified polymer support is found to bring about electronic modification in MP. Divinylbenzene-crosslinked polystyrene which is surface-functionalised by chloromethylation is used as the polymer support. 5, 10, 15, 20-tetra (aminophenyl) porphyrins and 5, 10, 15-triphenyl, 20-aminophenylporphyrins are the porphyrins employed. Free-base porphyrins and their  $\text{Cu}^{2+}$ ,  $\text{Ag}^{2+}$  and  $\text{Co}^{2+}$  derivatives are grafted on the support by condensation. The ability of the polymer matrix to sterically cause distortion in a porphyrin framework is made use of to develop P\*-MP that have porphyrins distorted to varying extents. The strategy in bringing about such systematic variation involves the use of the above MP which have the amino functions either at ortho-, meta- or para-positions on the phenyl group(s). The relative orientation of porphyrin plane with respect to polymer surface is found to cause varying degrees of electronic modification in MP. Both electronic and ESR spectra are studied to evaluate the electronic modifications. The results are discussed.

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