

## Metal coordinated macrocyclic complexes in different chemical transformations

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### ABSTRACT

Macrocyclic ligand chemistry is seen by a growing number of scientists as a tool for designing new molecules with inherently selective properties. Metal coordinated macrocyclic rings are featured with exceptionally stable  $\pi$ -conjugated cyclic systems containing the metal ion in the central cavity. The cyclic tetra dentate framework of the four central nitrogen atoms makes these macrocyclic rings system unique chelating agents, in addition, these conjugated double bonds impart a vital effect in electrons transportation. Because of inimitable characteristics, these metal coordinated macrocyclic compounds have been effectively applied as catalysts in various important organic transformations. Hence, this review portrays the overview of metal coordinated macrocyclic molecules, classifications, and their catalytic application in redox reactions. This comprehensive and up-to-date review is particularly aligned toward the catalytic applications of four types of metal-coordinated macrocyclic rings, i.e., porphyrin, porphyrazine, corrole, and corrolazines, in different organic transformations. The different synthetic approaches for the preparation of metal coordinated macrocyclic rings and their UV spectrums are also outlined in this review.

### KEYWORDS

Catalysis; Corrolazine; Corrole; Macrocyclic; Porphyrazine; Porphyrins

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