



## Synthesis of Substituted N<sub>4</sub>-macrocycle, Characterization and their Electrochemical Determination of Phenolic and Substituted Phenolic Compounds and Biological Applications

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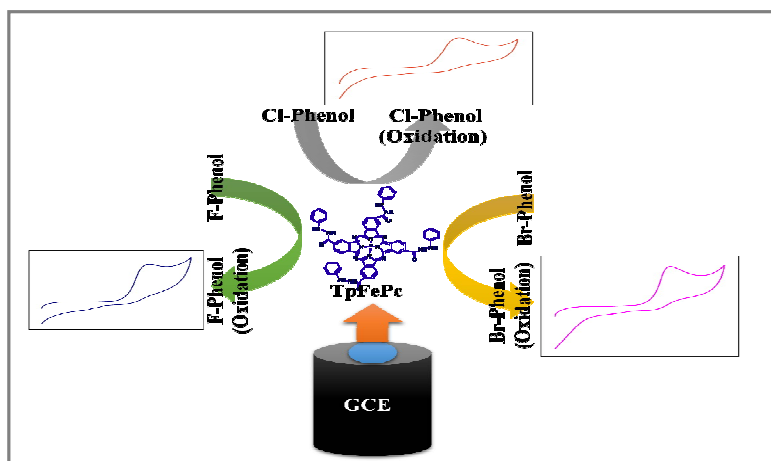
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### ABSTRACT

Novel polar, electroactive N<sub>4</sub> macrocycle with tetra phenyl hydrazine substituted metal phthalocyanine complexes (TpMPcs) have been reported for the first time and were characterized by elemental analysis, UV-Visible, FT-IR, and X-ray powder diffraction, thermo gravimetric (TGA) and differential scanning calorimetry (DSC) analysis. The synthesized N<sub>4</sub>- macrocycle compounds were screened for antimicrobial, antioxidant activity and electrochemical investigation using cyclic voltammetry. The TpCoPc modified glassy carbon electrode (GCE) was used for the detection of phenol and substituted phenols. Modified GCE increases the oxidation current of these species and increases the stability of the electrode and showed less fouling by the oxidation products than the unmodified GCE.

### Graphical Abstract



**Keywords:** Metallophthalocyanines, Spectroscopy, Antimicrobial, Antioxidant, Phenol, Substituted phenols, Cyclic voltammetry.