(Figure VI-31) or an internal redox process covering the entire molecule. This is consistent with the π-acidic nature of the 'phen' ligand; it is further verified by the ^{1}H NMR spectrum (Figure VI-23 and Scheme VI-8) of **1** where the 'phen' protons undergo shielding through coordination with the Zn(II) centre. The cyclic voltammograph of **1** (Figure VI-26) lacks any cathodic reduction peak (Epc) over the range -0.6V to -0.8V; this observation may be linked to the redox silent nature of the concerned metal centre [Zn(II)]. The fluorescence and EPR spectral data as well as the reactivity studies presented here, augment the inferences of earlier chapters.

Active site of the heme proteins/enzymes like Hb/Mb, cytP-450 and cyt c describe almost graphically how the same cofactor (iron-porphyrin) can be modulated for different purposes (ranging from oxygen carrier to electron carrier as well as monooxygenase activity) through selective coordination by donor atoms from the anchoring protein chain.

Such level of understanding about the structural control of function is yet to be achieved for the pterin-containing metalloenzymes.

Synthetic, physico-chemical and reactivity studies on new model coordination compounds, provide with suitable pathways for achieving such research goals. The present work is a sincere attempt in that direction.

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