LIST OF SCHEMES

Scheme 1.1: Synthetic steps for; (a) Complexes 1-9. R1 = CH₃(CH₂)₆COO; R2 = CH₃(CH₂)₈COO, R3 = CH₃(CH₂)₁₀COO, R₄ = CH₃(CH₂)₁₂COO and R₅ = CH₃(CH₂)₁₄COO; (b) Complexes 10-18, R₁ = p-CH₃(CH₂)₉OC₆H₄COO, R₂ = p-CH₃(CH₂)₁₁OC₆H₄COO, R₃ = p-CH₃(CH₂)₁₃OC₆H₄COO and R₄ = p-CH₃(CH₂)₁₅OC₆H₄COO

Scheme 2.1: Reaction equations for the formation of [Cu₂(RCOO)₄]

Scheme 2.2: Binding modes of carboxylate ions

Scheme 2.3: Classification of liquid crystals

Scheme 4.1: Synthetic steps for [Cu₂(RCOO)₄(bpy)₂], where R = CH₃(CH₂)ₙ

Scheme 4.2: Synthetic steps for [Fe(RCOO)₂(bpy)], where R = CH₃(CH₂)₈-₁₄

Scheme 4.3: Effect of heat on the structure and spin state of 6 (R = CH₃(CH₂)₈COO)

Scheme 4.4: Synthetic steps for [Cu₂(p-ROC₆H₄COO)₄(bpy)₂], where R = CH₃(CH₂)ₙ

Scheme 4.5: The change in the structure for 14 on heating