Abstract

Electrical transport properties of superconducting materials are a widely studied area in superconductivity. In this study, the role of holes in determination of resistivity, Hall coefficient and Hall angle has been explored using a two-band model due to co-existence of holes and electrons in high-Tc YB2Cu3O7−δ and Bi2Sr2CaCu2O8+δ. The results obtained from this study show that hole resistivity (ρ p) decreases with increase in the ratio n p u ρ ρ = while the Hall coefficient (RH) is non-linearly dependent on the hole resistivity (ρ p). An increase in the hole scattering rate (p γ) causes a drop in the Hall scattering angle (θ H).