



FIG. 8.12 Contact resistivity  $\rho_c$  as a function of annealing temperature for two silver thin-film contacts (500 nm thick) deposited ex-situ on YBCO films (from Ekin et al. 1995). Annealing was carried out at atmospheric pressure in flowing oxygen for 10 min (after reaching annealing temperature). The contact resistivity starts to drop at an annealing temperature of about 250 °C and shows marked improvement to less than  $10^{-5} \Omega \cdot \text{cm}^2$  after annealing at approximately 400 °C. At higher annealing temperatures, thin silver films agglomerate and electrical continuity is lost. The initial contact resistivity depends mostly on the exposure time of YBCO to air, as well as on the cleaning procedure before coating the superconductor surface with silver.