SYNTHESIS AND CHARACTERIZATION OF SUPERCONDUCTING $Dy_1Ba_2Cu_3O_{7-\delta}$ MATERIAL

ASGHARI MAQSOOD, M.SHAFQAT MAHMOOD AND ASIA TASNEEM

DEPARTMENT OF PHYSICS, QUAID-I-AZAM UNIVERSITY
ISLAMABAD, PAKISTAN

Attempts have been made to synthesize and characterize the superconducting material $Dy_1Ba_2Cu_3O_{7-\delta}$. The material was prepared using the solid-state reaction technique under normal atmosphere. Superconducting transition temperatures were measured with the four-probe electrical resistivity method. In the case of samples annealed in air, it appears as if two superconducting Phases with superconducting transition temperatures, T_c of about 97 and 87K exist coherently. The results were found to be in agreement with the x-ray diffraction analysis.