

# Structural Phase Transitions in BaTiO<sub>3</sub> Studied via Perturbed Angular Correlations

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Phase transitions in the ferroelectric perovskite BaTiO<sub>3</sub> were studied for <sup>111</sup>In-implanted polycrystalline samples by measuring the electric field gradients by means of Perturbed Angular Correlation spectroscopy. The phase transitions between the orthorhombic ⇔ rhombohedral ⇔ tetragonal ⇔ cubic lattices were investigated in 2 - 10 K steps, for increasing and decreasing temperatures, in order to determine their hysteresis. The transition parameters are compared with results from measurements of the spontaneous polarization, electric susceptibility and neutron scattering.

*Key words:* Perturbed Angular Correlations; BaTiO<sub>3</sub>; Phase Transitions; Hysteresis; <sup>111</sup>In.