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Structure and Magnetic Properties of Electron Doped YMnO₃

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— Combined local and long range structural measurements were conducted on the electron doped ferroelectric Y_{1-x}Zr_xMnO₃ system. Doping by Zr is found to maintain the hexagonal structure for a large range of x-values. The location of Zr in the lattice is identified and changes in structure with doping are followed. These details of the local structure are examined by x-ray diffraction and x-ray absorption spectroscopy and compared with detailed magnetic studies to correlate the impact of electron doping and atomic structure on the magnetic order in these systems. This work is supported by DOE Grant DE-FG02-07ER46402.

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