

$\text{Pb}(\text{Mg}_{1/3}\text{Nb}_{2/3})\text{O}_3$ 의
B-site 양이온 질서에 미치는 Pr 첨가효과

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Influences of Pr Addition
on the B-site Cationic Ordering of $\text{Pb}(\text{Mg}_{1/3}\text{Nb}_{2/3})\text{O}_3$

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Pyrochlore-free undoped and 10 mole % Pr-doped $\text{Pb}(\text{Mg}_{1/3}\text{Nb}_{2/3})\text{O}_3$ ceramics were fabricated using a Columbite precursor method. In their x-ray diffraction patterns, only normal diffraction peaks were observed for the undoped $\text{Pb}(\text{Mg}_{1/3}\text{Nb}_{2/3})\text{O}_3$, while superlattice reflections resulting from the unit cell doubling are also observed for the 10 mole % Pr-doped $\text{Pb}(\text{Mg}_{1/3}\text{Nb}_{2/3})\text{O}_3$. In their electron diffraction patterns, furthermore, $(h/2, k/2, l/2)$ (h, k, l odd) superlattice reflections became stronger when Pr was doped into $\text{Pb}(\text{Mg}_{1/3}\text{Nb}_{2/3})\text{O}_3$. It was therefore experimentally assured that the Pr-doping enhances the 1:1 ordering of Mg^{2+} and Nb^{5+} ions in $\text{Pb}(\text{Mg}_{1/3}\text{Nb}_{2/3})\text{O}_3$.