

Li₂O 첨가에 따른 (Na_{0.47}K_{0.47}Li_{0.06})NbO₃ 세라믹스의 압전특성과 미세조직의 변화

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Piezoelectric Properties and Microstructures of Li₂O excess (Na_{0.47}K_{0.47}Li_{0.06})NbO₃ Ceramics

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Abstract : As a candidate for lead-free piezoelectric materials, dense (Na_{0.47}K_{0.47}Li_{0.06})NbO₃ (LNKN6) ceramics were developed by conventional sintering process. Sintering temperature was lowered by adding Li₂O as a sintering aid. Abnormal grain growth in the LNKN6 ceramics was observed with varying Li₂O content. The electrical properties of LNKN6 ceramics were investigated as a function of Li₂O concentration. When the sample sintered at 1000°C for 4h with the addition of 1 mol% Li₂O, electromechanical coupling factor (k_p) and piezoelectric coefficient (d_{33}) of LNKN6 ceramics were found to reach the highest values of 0.40 and 184 pC/N, respectively.

Key Words : piezoelectric, ceramics, lead-free, sodium-potassium niobate