

두 메인 상의 타겟을 사용하여 스퍼터링으로 증착한 **bismuth magnesium niobate**
박막의 유전특성

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**Dielectric properties of bismuth magnesium niobate thin films deposited by sputtering using two
main phase target in the system**

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Abstract : $B_2Mg_{2/3}Nb_{4/3}O_7$ (B_2MN) thin films and $Bi_{3/2}MgNb_{3/2}O_7$ ($B_{1.5}MN$) thin films were deposited as a function of various deposition temperatures on Pt/TiO₂/SiO₂/Si substrates by radio frequency magnetron sputtering system. Both of their thin films are shown to crystalline phase at 500°C, deposition temperature, using 100W RF power. The composition of them and structural micro properties are investigated by RBS spectrum and SEM, AFM. 200 nm-thick B_2MN thin films were deposited at room temperature had capacitance density of 151nF/cm² at 100kHz, dissipation factor of 0.003 and had capacitance density of 584nF/cm² at 100kHz, dissipation factor of 0.0045 at 500°C deposition temperature. Both of their dielectric constant deposited at room temperature and at 500°C were each approximately 40 and 100.

Key Words : Embedded capacitor, sputtering system, dielectrics, crystalline structure.