

## 펄스레이저 증착법을 이용한 대면적 BSTO 박막의 성장

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### Growth of Large Area BSTO Thin Films using Pulsed Laser Deposition

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**Abstract :** We have grown large area BSTO( $(\text{Ba}_{1-x}\text{Sr}_x)\text{TiO}_3$ ) thin films ( $x=0.4$ ) on 2 inch diameter MgO (001) single crystal substrates using a pulse laser deposition(PLD) system. Substrate temperature and oxygen pressure in the deposition chamber, and the laser optics for ablating a target have been controlled to obtain the uniform thickness and preferred orientation of the films. Results of x-ray diffraction and rocking curve analysis revealed that the BSTO films were grown on MgO substrates with a preferred orientation (002), and the full width half maximum of the rocking curve was measured to be 0.86 degree at optimum condition. Roughness of the films have been measured to be 3.42 Å rms by using atomic force microscopy. We have successfully deposited the large area BSTO thin films of 4000 Å thickness on 50 mm diameter MgO substrates.

**Key Words :** Pulsed laser deposition (PLD), BSTO