

액체운반용 유기금속화학증착법으로 제조된 SBT박막의 씨앗층에 의한  
강유전특성의 향상

**Improvement in Ferroelectric Properties of SrBi<sub>2</sub>Ta<sub>2</sub>O<sub>9</sub> Thin Films with seed  
Layer by Liquid Delivery Metal-Organic Chemical Vapor Deposition**

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Ferroelectric SrBi<sub>2</sub>Ta<sub>2</sub>O<sub>9</sub> thin films were deposited on the Bi<sub>2</sub>O<sub>3</sub> buffered Pt/Ti/SiO<sub>2</sub>/Si substrates using Liquid-Delivery Metalorganic Chemical Vapor Deposition technique. A thin Bi<sub>2</sub>O<sub>3</sub> buffer layer with the thickness of 7 nm was used to further decrease the annealing temperature and increases the remanent polarization of SBT thin films. The SBT thin films deposited on Pt/Ti/SiO<sub>2</sub>/Si substrate at 540°C were not crystallized, however, the SBT films with Bi<sub>2</sub>O<sub>3</sub> buffer layer were well crystallized at deposition temperature of 540°C, and with increasing annealing temperature, the SBT thin films showed stronger (115) orientation than those without Bi<sub>2</sub>O<sub>3</sub> buffer layer. The Bi<sub>2</sub>O<sub>3</sub> buffer layer plays an important role as a seeding layer, and we found that the Bi<sub>2</sub>O<sub>3</sub> buffer layers affect the crystallinity of SBT thin films. The value of the remanent polarization of SBT films with Bi<sub>2</sub>O<sub>3</sub> buffer layer was improved significantly in comparison with those for the films without Bi<sub>2</sub>O<sub>3</sub> buffer layer. The remanent polarization(2Pr) of SBT films without and with Bi<sub>2</sub>O<sub>3</sub> buffer layer annealed at 750°C were 14.7 and 22.5 μ C/cm<sup>2</sup> at an applied voltage of 5 V, respectively.