Effects of lanthanum doping on ferroelectric properties of direct-patternable Bi$_{4-x}$La$_x$Ti$_3$O$_{12}$ films prepared by photochemical metal-organic deposition

Hyeong-Ho Park, Hyuncheol Kim, Hyung-Ho Park, *Tae Song Kim
Yonsei Univ., *Korea Institute of Science and Technology

Abstract: The ferroelectric and electric properties of UV-irradiated bismuth lanthanum titanate (BLT) films prepared using photosensitive starting precursors were characterized. The effects of lanthanum doping on ferroelectric and electric properties were investigated by polarization-electric field hysteresis loops and leakage current-voltage measurements. X-ray diffractometer and ellipsometry were served to provide the information about the crystalline structure and thickness of the films after annealing. The images of the surface microstructure and direct-patterned BLT films were observed by using scanning electron microscopy. The effects of lanthanum doping on the electric properties of direct-patternable BLT films and their direct-patterning were studied.

Key Words: BLT; Photochemical reaction; Direct-patterning; UV exposure