<< 학술상 수상기념강연 >>

Growth and Properties of p-type Transparent Oxide Semiconductors

Young-Woo Heo

School of Materials Science and Engineering, Kyungpook National University

Transparent oxide semiconductors (TOSs) are. currently attracting attention for application to transparent electrodes in optoelectronic devices and active channel layers in thin-film transistors. One of the key issues for the realization of next generation transparent electronic devices such as transparent complementary metal-oxide-semiconductor thin-film transistors (CMOS TFTs), transparent wall light, sensors, and transparent solar cell is to develop p-type TOSs. In this talks, I will introduce issues and status related to p-type TOSs such as LnCuOQ (Ln=lanthanide, Q=S, Se), $SrCu_2O_2$, $CuMO_2$ (M=Al, Ga, Cr, In), ZnO, Cu_2O and SnO. The growth and properties of SnO and Cu-based oxides and their application to electronic devices will be discussed.

Keywords: Transparent oxide semiconductors, SnO, Cu-based oxides, transparent electronics