

[II-2]

Characteristics of AlW thin film for TFT-LCD bus line

Dong-Sik Kim, Chong Ho Yi,* Kwan Soo Chung

Department of Electronics Kyunghee University, *Inha T. College

Recently low resistance of bus line is required for large screen size TFT-LCD panels. As a result, lower resistance Al-alloy is currently reviewed extensively. The resistivity is required smaller than $10 \mu \Omega \text{cm}$ and high resistance of chemical attack is required. In this paper, Al-W thin film were deposited on glass substrates by D.C. magnetron sputtering system under various condition for high chemical resistance. Its properties were characterized by SEM, AFM, XRD, 4-point-probe, and cyclic voltammetry. The optimal condition of Al-W was 100°C , 100W, 0.4Pa, 23 sccm(Ar) and 350°C , 20 min. annealing. At that condition the resistivity of Al-W(3 wt.%) was about $11 \mu \Omega \text{cm}$. And when wt.% of W in Al-W alloy was higher than about 3%, Al-W alloy thin film has high chemical resistance.