

양극 산화법으로 형성된 다공질 3C-SiC 막의 특성

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Characteristics of porous 3C-SiC thins formed by anodization

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Abstract : This paper describes the formation of porous 3C-SiC by anodization. 3C-SiC thin films were deposited on p-type Si(100) substrates by APCVD using HMDS (Hexamethyldisilane: $\text{Si}_2(\text{CH}_3)_6$). UV-LED(380 nm) was used as a light source. The surface morphology was observed by SEM and the pore size was increased with increase of current density. Pore diameter of 70 ~ 90 nm was achieved at 7.1 mA/cm^2 current density and 90 sec anodization time. FT-IR was conducted for chemical bonding of thin film and porous 3C-SiC. The Si-H bonding was observed in porous 3C-SiC around wavenumber 2100 cm^{-1} . PL shows the band gap energy of thin film (2.5 eV) and porous 3C-SiC (2.7 eV).

Key Words : Porous 3C-SiC, Anodization, Polycrystalline 3C-SiC