

유연성 기판위에 스퍼터링법으로 제조한 CdS 박막의 전자파차폐 특성평가

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Flexible CdS Films for Selective control of Transmission of Electromagnetic Wave

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Abstract : Non-stoichiometric CdS:H films grown on polyethersulfon (PES) flexible polymer substrates at room temperature by R.F. sputtering technique. They exhibited a dark- and photo-sheet resistance of 2.7×10^5 and $\sim 50 \Omega$ /square, respectively. These values were realized by an optimum control of both hydrogen doping-levels and the surface morphologies of the films. The comparison between the real and the simulated results for the shielding and the transmission by the free space measurement system in the X-band frequency range (8.2 - 12.4 GHz) was also addressed in this study. Samples overlapped with 13 layers of CdS:H/PES were consistent with the transmission results of pure aluminum metal films (0.1Ω /square) deposited on PES substrates. As a result, by the simple tacking of the CdS:H/PES layers, the perfect control of the shielding and the transmission of the EM wave in the range of X-band frequency is possible by visible light alone, and their results are especially very outstanding findings in the stealth function of the radome(Radar+Dome) such as aircrafts, ships, and missiles.

Key Words : Radome, CdS:H, Flexible film

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