

SiNx 무기 박막의 수직액정 배향 능력

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Abstract : The aligned liquid crystals (LCs) display on SiNx thin films using ion-beam (IB) irradiation was studied with controllability of pretilt angle depending on incident energies of the IB. Plasma-enhanced chemical vapor deposition (PECVD) was used to orient the LCs on SiNx alignment films. The LCs alignment property for the SiNx thin films were observed to verify the practical application potential (figure1). A good LCs alignment of vertical alignment LCs cells on SiNx thin film surfaces irradiated with incident IB energy of 1800eV was achieved. Also, a good LC alignment by the IB irradiation on the SiNx thin film surface was observed at an annealing temperature of 180°C. However, the alignment defects of the nematic liquid crystal was observed at an annealing temperature above 230°C. The atomic force microscopy (AFM) images of LCs on SiNx thin film surfaces irradiated with IB energy was used for the surface analysis.

Key Words : alignment, SiNx, Ion beam irradiation, Pretilt angle, PECVD

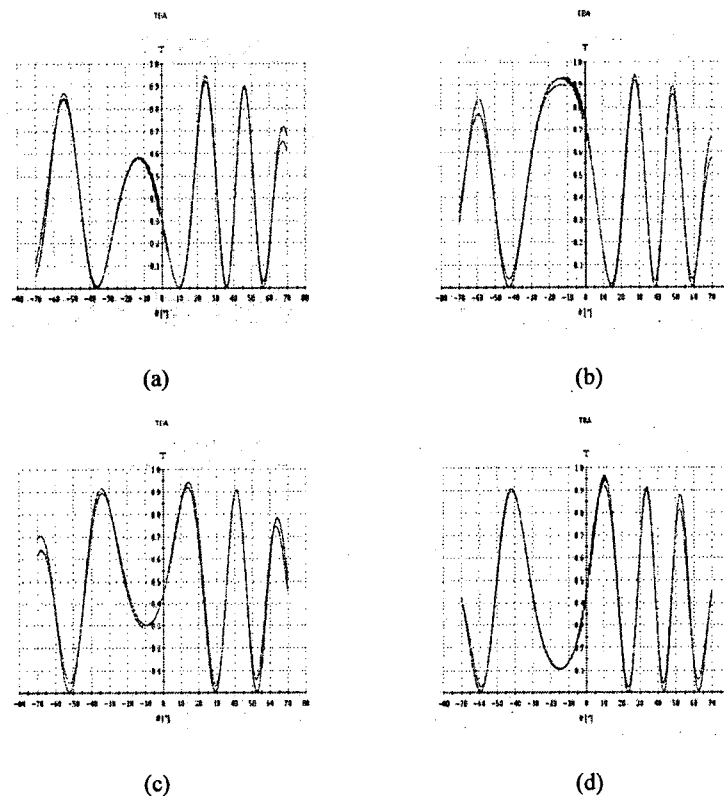


Figure 1. The relationship between transmittance and incidence angle on SiNx thin film of IB irradiation : (a) 600eV, (b) 1200eV, (c) 1800eV, (d) 2400eV.