

Formation of ordered microstructure in a magnetic film

장태순, 전지훈, 구상균*
상명대학교 공업화학과
(skkoo@smu.ac.kr*)

Magnetic particles tend to align and make clusters along the magnetic field. Variation of the direction and intensity of the magnetic field enables us to control distribution of magnetic particles. This property has been utilized in ferrofluid and magnetorheological fluid. The present study is concerned with formation of solid magnetic film in which magnetic particles are orderly aligned in a continuum medium. First of all, the magnetic particles are dispersed in an acrylic liquid. Then the magnetic dispersion is cast on a transparent polyester film to form a thin liquid film. This liquid film is exposed in a magnetic field and then cured by UV radiation. The microstructure of the cured magnetic film is examined by optical microscope and scanning electronic microscope. We investigate the effect of microstructural change of the film on the macroscopic properties such as light transmittance.