

Adhesion Characteristics of Polyimide Film Treated by Corona Discharge

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Plasma treatment has been widely utilized to modify surfaces of polymer films to increase material adhesion, to decrease the liquid contact angle, and to improve the compatibility of materials. In this work, the effect of corona discharge treatment on surface properties of polyimide film are investigated in terms of X-ray Photoelectron Spectroscopy (XPS) and contact angles. The adhesion characteristics of film are also studied in the peel strengths of polyimide/copper film. The input treatment power of corona is varied between 0 and 300 W, namely P-0, P-50, P-100, P-200, and P-300. As an experimental result, it is found that the development of oxygen-containing functional groups of polyimide film treated by corona discharge leads to the increase of polar component of the surface free energy, resulting in improving the adhesion characteristics of the polyimide/copper film.