

## Influence of CHF<sub>3</sub>/He plasma treatment on surface properties of polyimide film

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Plasma treatment of polyimide surfaces causes not only a structural modification during the plasma exposure, but also leaves active sites at the surfaces which are subject to post-reaction. Aging effects depend on external influences like an adsorption or an oxidation, and on the internal tendency to attain an energetically favorable state by restructuring processes and diffusion. Especially, a high-energy surface is prone to adsorb contaminants from the atmosphere in order to low its surface energy. In this work, the effect of CHF<sub>3</sub>/He plasma treatment on surface properties of polyimide thin film was investigated by using X-ray photoelectron spectroscopy (XPS), Fourier transform-IR (FT-IR) spectroscopy, atomic force microscopy (AFM), and contact angle measurement. From the results, the power was varied between 0 and 400W, namely PI-0, PI-100, PI-200, PI-300, PI-400. It was found that plasma treatment successfully introduced fluorine functional groups on the polyimide surfaces, resulting in the decrease in dielectric constant of polyimide films for PCB applications.