

Analysis on surface roughness and surface reflectance through DOE

Abstract

The Lambda 950 spectrometers are designed to investigate and examine surface coating on test specimen by using the light source. The objective of this research is to investigate the factors that affect the surface roughness and reflectance after different parameter of Reactive Ion Etching (RIE) process. There are four parameters to control the RIE process which is temperature, vacuum, RF (Radio Frequency) power and gas flow. The parameters in this research are using a Full Factorial Experimentation technique, the Design of Experiment (DOE). The AFM (Atomic Force Microscope) and Lambda 950 spectrometer are used to analyse the surface roughness and light reflectance of the specimen. The result showed all four parameters of RIE were give effect on surface roughness and surface reflectance. The parameter of gas flow is the most influence factor for surface roughness and surface reflectance compared to other parameters in this work.

Keywords; AFM, DOE, Lambda 950, Light, Reflectance, RIE