

Wettability and surface roughness study on RIE treated aluminium deposited surface

Abstract

Design of Experiment (DOE) is a technique for optimizing process which has controllable inputs and measurable outputs. As a method of DOE, 2^4 Full Factorial design is used to study the effect of Reactive Ion Etch towards the surface roughness of aluminum pad and effect of the roughness produced towards the contact angle. Surface roughness analysis is done using Atomic Force Microscop (AFM). Contact angle is measured using AutoCad software from the images captured from droplet test. This contact angles must be more than 90° for non-wetting profile or less than 90° for wetting profile. This work is also done to understand the interaction between the process parameters and how each parameters will affect the etch rate. The results are analyzed which shows that the increase in surface roughness produces an increase on the contact angle and vice versa.

Keywords; Design of Experiment (DoE), RIE, Wettability