

A Design of Anisotropic Wet Etching System to Reduce Hillocks on Etched Surface of Silicon Substrate

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Abstract : This research aims to design and build a wet etching system, which is suitable for anisotropic wet etching, in order to reduce etching time, to reduce hillocks on the etched surface (to reduce roughness), and to create a 45-degree wall angle (micro-mirror). This study would start by designing a wet etching system. There are four main components in this system: an ultrasonic cleaning, a condenser, a motor and a substrate holder. After that, an ultrasonic machine was modified by applying a condenser to maintain the consistency of the solution concentration during the etching process and installing a motor for improving the roughness. This effect on the etch rate and the roughness showed that the etch rate increased and the roughness was reduced.

Keywords : anisotropic wet etching, wet etching system, hillocks, ultrasonic cleaning

Conference Title : ICIME 2019 : International Conference on Industrial and Manufacturing Engineering

Conference Location : Tokyo, Japan

Conference Dates : December 04-05, 2019