Modeling and Predicting of Surface Roughness of Silicon Wafer Grinding

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ABSTRACT

Manufacturing of silicon wafer starts with growth of silicon ingots. Typical processes to turn a silicon ingot to silicon wafers include slicing, edge profiling, grinding, lapping, polishing, etching etc. Grinding lapping and polishing are used to flatten the rough surface of wafer caused by slicing. Lapping and polishing processed for flatting wafers. In this study models for predicting the roughness of silicon wafers are developed. The prediction models are based on the grinding parameters and grit size of the grinding wheel. Box-Benkhen experiment design is used to collect the require data. Try to find the relationship of cutting degrees and surface roughness. And collect the require data of cutting degrees. Power function is used to build the regression function. Finally find the relationship of all control factor and surface roughness.

Keywords : wafer , Box-Benkhen experiment design , surface roughness

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