

Formation of inverted-pyramid structure by modifying laser processing  
parameters and acid etching time

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Abstract

This paper is to investigate the possibility to fabricate the inverted pyramid structure on silicon wafer base solar cell by using laser scribing technology. The UV spectrometer and SEM had also been used to observe the reflectance and microstructure of the wafer surface. In this experiment, a Q-switched Nd:YAG laser operating at wavelength of 1064nm is used to scribe on the p-type wafer surface to produce inverted-pyramid structure. In order to remove the laser damage, we used acid etching and Alkaline etching solutions to smooth the damage region and inverted pyramid structure formed, simultaneously.

Keyword : modifying laser processing parameters, acid etching