

IMPACT AND EDURANCE TEST ON SINGLE CRYSTALLINE SILICON WAFERS IN SOLAR PHOTOVOLTAIC CELL

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ABSTRACT

The data presented shows a dependence of natural frequencies, peak amplitudes and damping levels of four audio vibration modes in the different frequency range up to 1000 Hz on crack types and crack locations. Data from defective single crystalline wafers exhibit lower natural frequencies, higher damping levels, and lower peak amplitudes. From the results suggest an impact test method may be very useful for solar cell crack detection and quality control in the photovoltaic industry. The aim is to experimentally conduct and detect cracks from vibration measurements introduced by striking the single silicon wafer with an impact hammer. Such a method would reduce costs in the production of solar cells or photovoltaic industry.

KEYWORDS: *Single Crystalline Silicon Wafers, Cracked Silicon Wafers, Audible Detection, Vibration Measuring Instruments*

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