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Analysis of Aluminum Back Surface Field on Different Wafer Specification

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The purpose of this work is to investigate a back surface field (BSF) on variety wafer resistivity for industrial crystalline silicon solar cells. As pointed out in this manuscript, doping a crucible grown Cz Si ingot with Ga offers a sure way of eliminating the light induced degradation (LID) because the LID defect is composed of B and O complex. However, the low segregation coefficient of Ga in Si causes a much wider resistivity variation along the Ga doped Cz Si ingot. Because of the resistivity variation the Cz Si wafer from different locations has different performance as know. In the light of B doped wafer, we made wider resistivity in Si ingot; we investigated the how resistivities work on the solar cells performance as a BSF quality.

Keywords: Metallization, Screen printing, wafer resistivity, Al back contact, solar cells