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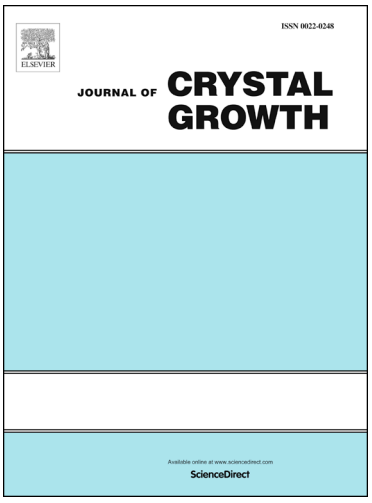

Control of ingot quality and solar cell appearance of cast mono-like silicon by using seed partitions

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Control of ingot quality and solar cell appearance of cast mono-like silicon by using seed partitions

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Abstract

The growth of mono-like ingot by directional solidification has suffered serious problems in defect control. We proposed a simple approach by using seed partitions, and the grown crystal had much lower defects and better orientation uniformity. Furthermore, the partitions allowed the much easier seed preparation, which had a significant advantage in production. The concept was demonstrated by a G1 experiment, and the detailed defect analyses were carried out. The wafers after gettering had the best lifetime of more than 1 ms after surface passivation. The color mismatch in the appearance of the solar cells made from the wafer was also significantly mitigated.

Key words: A1. Dislocation; A1: defect; A1: Directional solidification; B2. Silicon

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