PECULIARITIES OF THE PHOTOCONVERSION IN MULTI- AND MICROCRYSTALLINE SILICON

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S u m m a r y

A three-dimensional model of the photoconversion in polycrystalline silicon is proposed. The model takes into account the recombination in the grain bulk as well as on the grain boundaries. The analysis is carried on for the parallelepiped and cylinder grain shapes. An agreement between the theoretical and experimental dependences of the short circuit current, open circuit voltage, and photoconversion efficiency in polycrystalline Si on the grain size is achieved. The peculiarities of photoconversion in multi- and microcrystalline silicon are analysed.