

Title (en)

PHOTOVOLTAIC CELLS WITH PROCESSED SURFACES AND RELATED APPLICATIONS

Title (de)

PV-ZELLEN MIT BERARBEITETEN OBERFLÄCHEN UND ENTSPRECHENDEN ANWENDUNGEN

Title (fr)

CELLULES PHOTOVOLTAÏQUES AVEC SURFACES TRAITÉES ET APPLICATIONS APPARENTÉESUS2009053576

Publication

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Application

EP 09807234 A 20090812

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- US 8892108 P 20080814
- US 8893608 P 20080814
- US 8938908 P 20080815
- US 9253108 P 20080828
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- US 53698709 A 20090806
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Abstract (en)

[origin: WO2010019685A1] Photovoltaic cells and processes that mitigate recombination losses of photogenerated carriers are provided. To reduce recombination losses, diffuse doping layers in active photovoltaic (PV) elements are coated with patterns of dielectric material(s) that reduce contact between metal contacts and the active PV element. Various patterns can be utilized, and one or more surfaces of the PV element can be coated with one or more dielectrics. Vertical Multi-Junction photovoltaic cells can be produced with patterned PV elements, or unit cells. While patterned PV elements can increase series resistance of VMJ photovoltaic cells, and patterning one or more surfaces in the PV element can add complexity to a process utilized to produce VMJ photovoltaic cells, reduction of carrier losses at diffuse doping layers in a PV element increases efficiency of photovoltaic cells, and thus provide with PV operational advantages that outweigh increased manufacturing complexity. System to fabricate the photovoltaic cells is provided.

IPC 8 full level

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CPC (source: EP)

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See references of WO 2010019685A1

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