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(57) Abstract :

A method 100 for doping a photovoltaic device comprises a passivated emitter and rear contact module (102), and a plurality of materials (106) wherein the module is double side doped through tunneling wherein the method (100) includes doping at least one material (106) directly above the front and rear tunnel layers, forming a hole tunnelling from a first material (106-9) to a second material (106-1) the hole selective contact at the rear side, and confirming that holes move from the tunnel from a first material (106-9) to a second material (106-1) for the rear contact and electrons tunnel directly through conduction band of the first material (106-9) to a third material (106-4) electrode for the front contact, and at the same time, the interfacial electric field will push minority carriers away from the front and back contact interfaces, respectively.

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