

Title (en)
METHODS OF FORMING MULTI-DOPED JUNCTIONS ON A SUBSTRATE

Title (de)
VERFAHREN ZUM BILDEN VON MEHRFACH DOTIERTEN SPERRSCHICHTEN AUF EINEM SUBSTRAT

Title (fr)
PROCÉDÉS DE FORMATION DE JONCTIONS MULTIDOPÉES SUR UN SUBSTRAT

Publication
EP 2345062 A1 20110720 (EN)

Application
EP 08877854 A 20081029

Priority
US 2008081558 W 20081029

Abstract (en)
[origin: WO2010050936A1] A method of forming a multi-doped junction on a substrate is disclosed. The method includes providing the substrate doped with boron, the substrate including a first substrate surface with a first surface region and a second surface region. The method also includes depositing a first set of nanoparticles on the first surface region, the first set of nanoparticles including a first dopant. The method further includes heating the substrate in an inert ambient to a first temperature and for a first time period creating a first densified film, and further creating a first diffused region with a first diffusion depth in the substrate beneath the first surface region. The method also includes exposing the substrate to a diffusion gas including phosphorous at a second temperature and for a second time period creating a PSG layer on the first substrate surface and further creating a second diffused region with a second diffusion depth in the substrate beneath the second surface region, wherein the first diffused region is proximate to the second diffused region. The method further includes exposing the substrate to an oxidizing gas at a third temperature and for a third time period, wherein a SiO₂ layer is formed between the PSG layer and the substrate surface, wherein the first diffusion depth is substantially greater than the second diffusion depth.

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