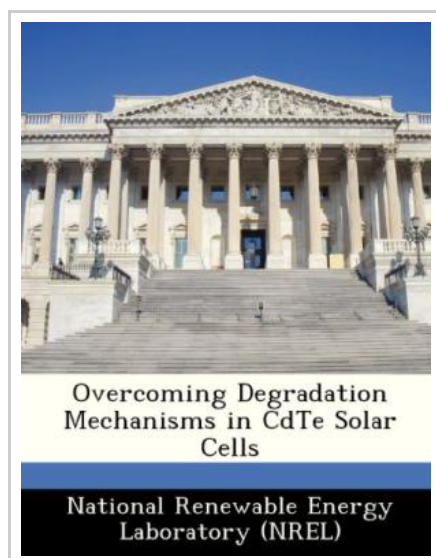




Overcoming Degradation Mechanisms in Cdte Solar Cells (Paperback)

By National Renewable Energy Laboratory (NREL)

Bibliogov, United States, 2012. Paperback. Book Condition: New. 246 x 189 mm. Language: English . Brand New Book ***** Print on Demand *****.This report describes the stability of CdTe solar cells, with special focus on possible effects of diffusion from the contact to the absorber towards other cell components. Both whole cells and test systems containing only the ohmic contact and the absorber or only the window were used. We found that NiTe₂ is a promising back-contact material. We also found that Cu as such is not the dominant factor in the most common and quickest type of degradation of these cells. An additional factor appears to be the formation of an oxide film on CdTe grains, which can be associated with the formation of the additional back-contact barrier that has been deduced from electrical characterization. Further observations were: Cell degradation appears to be promoted by H₂O, O₂, and illumination, in that order; less efficient cells are less stable than more efficient ones; some cells have been stabilized by heating in ultra-dry and O₂-free inert atmosphere (N₂ was used by us) before use, against subsequent degradation; and cells can recover by heating in dry N₂ or by sitting on the...



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