



Manufacturing of Ultra-High Efficiency Thin-Film Concentrator Cells

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 a research project to study developments required to expedite commercializing the GaAs solar cell concentrator technology. We baseline the GaAs concentrator cell and 1000X module design into pilot operation at Kopin Corporation. To attain these improvements, we will use Kopin s existing pilot line to produce cleavage of lateral epitaxial film for transfer (CLEFT) GaAs solar cells; these cells already exhibit efficiencies of about 24 percent at air mass 1.5. We will modify the CLEFT cell to form concentrators that perform well at 500--1000 suns. We will derive the know-how for this modification from an integration of Kopin and VS Corporation technologies. The pilot line will be broadened to include cell receiver and module assembly, using VS Corporation technology obtained from Varian as a baseline. A second-generation design will be formulated to address improvements in the module, and these will be incorporated into the pilot line along with the CLEFT concentrator cell. In parallel, we integrate Kopin s CLEFT GaAs cell technology with the advanced AlGaAs and InGaAs material technology obtained by VS Corporation from...



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