

## SPACE POWER SYMPOSIUM (C3)

## Poster Session (P)

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## FLEXIBLE AMORPHOUS SILICON SOLAR CELLS AND MODULES ON POLYIMIDE SUBSTRATE

**Abstract**

Flexible thin film solar cells promise high power/weight ratios and low stowage volume requirements, making them especially suitable for space and portable terrestrial applications. However, there are no standard processes for large area solar cells and monolithic modules on polymer substrate. In this paper, we reported the fabrication of large-area amorphous solar cells and monolithic modules on polyimide. Amorphous silicon solar cells were prepared on 300mm-wide polyimide substrate by roll-to-roll technology. Large area solar cells and monolithic modules were obtained by laser scribing and screen printing on polyimide substrate. Finally, a large area solar cell of aperture area 64cm<sup>2</sup> with conversion efficiency 6.5%, and a monolithic module of aperture area 67.2cm<sup>2</sup> with conversion efficiency 5.2% were obtained at AM0 spectrum.