

MONOLITHIC INTEGRATION OF CYLINDRICAL SOLAR CELLS

ABSTRACT

A solar cell unit is provided that has a substrate having a first end and a second end, where at least a portion of the substrate is rigid and nonplanar. The solar cell unit has a plurality of photovoltaic cells linearly arranged on the substrate, including a first and second photovoltaic cell. Each photovoltaic cell in the plurality of photovoltaic cells comprises a back-electrode circumferentially disposed on the substrate, a semiconductor junction layer circumferentially disposed on the back-electrode, and a transparent conductive layer circumferentially disposed on the semiconductor junction. The transparent conductive layer of the first photovoltaic cell in the plurality of photovoltaic cells is in serial electrical communication with the back-electrode of the second photovoltaic cell in the plurality of photovoltaic cells.

Fig. 2K