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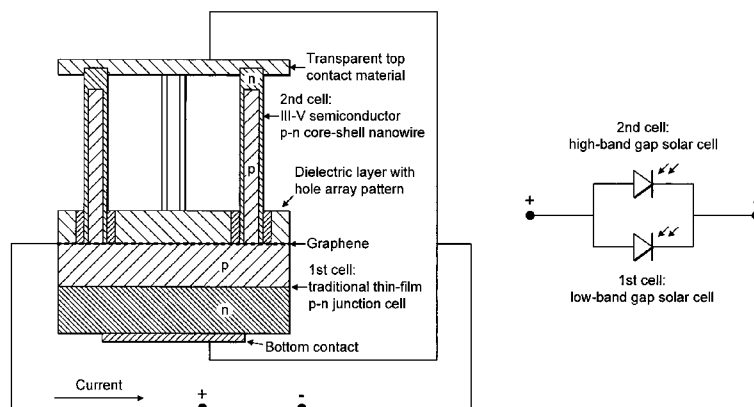


FIG. 8

(57) **Abstract:** A composition of matter, in particular a photovoltaic cell, comprising: at least one core semiconductor nanowire on a graphitic substrate, said at least one core nanowire having been grown epitaxially on said substrate wherein said nanowire comprises at least one group III-V compound or at least one group II-VI compound or at least one group IV element; a semiconductor shell surrounding said core nanowire, said shell comprising at least one group III-V compound or at least one group II-VI compound or at least one group IV element such that said core nanowire and said shell form a n-type semiconductor and a p-type semiconductor respectively or vice versa; and an outer conducting coating surrounding said shell which forms an electrode contact.