Article title: An explicit $J–V$ model of a solar cell for simple fill factor calculation

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Abstract: The $J–V$ equation of a solar cell is implicit and requires iterative calculation to determine the fill factor and the maximum power point. Here an explicit model for $J–V$ characteristic is proposed which is applicable to a large variety of solar cell. This model allows an easy estimation of fill factor from four simple measurements of the bias points corresponding to V_{oc}, J_{sc}, and any two voltage values lying between 0 and V_{oc}, where V_{oc} is the open circuit voltage and J_{sc} is the short circuit current density.