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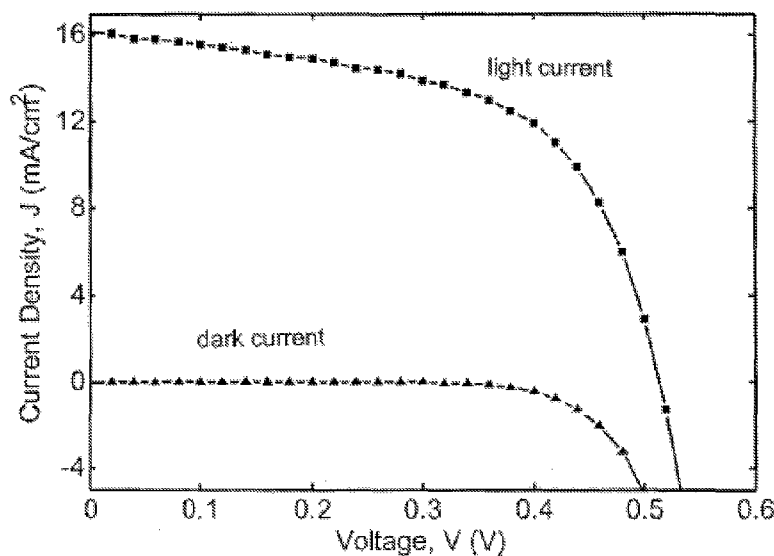
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(54) Title: PHOTOVOLTAIC DEVICES WITH DEPLETED HETEROJUNCTIONS AND SHELL-PASSIVATED NANOPARTICLES

**FIG. 1**

(57) Abstract: Photovoltaic cells are fabricated in which the compositions of the light-absorbing layer and the electron-accepting layer are selected such that at least one side of the junction between these two layers is substantially depleted of charge carriers, i.e., both free electrons and free holes, in the absence of solar illumination. In further aspects of the invention, the light-absorbing layer is comprised of dual-shell passivated quantum dots, each having a quantum dot core with surface anions, an inner shell containing cations to passivate the core surface anions, and an outer shell to passivate the inner shell anions and anions on the core surface.



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