

SELF-POWERED SENSOR AND METHOD OF FORMING THE SAME

Abstract

Various embodiments provide a self-powered sensor. The self-powered sensor includes a solar cell having a transparent or semi-transparent electrode, wherein the solar cell is configured to at least substantially absorb light of a first wavelength range for generating electrical energy and configured to at least substantially transmit light of a second wavelength range. The self-powered sensor further includes an energy storage configured to store the electrical energy generated by the solar cell; and a detector electrically connected to the energy storage to receive the electrical energy and configured to detect the transmitted light of the second wavelength range. The electrode of the solar cell is configured to have at least one of a selected thickness or a selected material dependent on a desired absorptance of the solar cell for light of the first wavelength range and a desired transmittance of the solar cell for light of the second wavelength range.

FIG. 1A and 1B