Photovoltaic panels make network receiver

Can a solar-panel receiver be used for optical wireless communication?
Wang, Z. X. et al. Towards self-powered solar panel receiver for optical wireless communication. Proceedings of 2014 IEEE International Conference on Communications (ICC), 3348-3353 (IEEE, 2014). Wang, Z. X. et al. On the design of a solar-panel receiver for optical wireless communications with simultaneous energy harvesting.

Can a solar panel be used as a photodetector with simultaneous energy harvesting?
Abstract: In this paper,a solar panel utilized as a photodetector with simultaneous energy harvesting is proposed in visible light communication(VLC). The solar cell is a self-styled passive device,which can convert optical signals into electrical signals.

Are organic photovoltaics suitable for high-speed optical data receivers?
We show that organic photovoltaics (OPVs) are suitablefor high-speed optical wireless data receivers that can also harvest power. In addition,these OPVs are of particular interest for indoor applications,as their bandgap is larger than that of silicon,leading to better matching to the spectrum of artificial light.

Can a solar panel convert a modulated light signal into an electrical signal?
The solar panel can convert a modulated light signal into an electrical signalwithout any external power requirements. Furthermore,the direct current (DC) component of the modulated light can be harvested in the proposed receiver. The generated energy can potentially be used to power a user terminal or at least to prolong its operation time.

Are solar cells a high-speed data receiver?
Solar cells offer significant promise as high-speed data receivers,in addition to their main usage as energy-harvesting devices,as previously demonstrated in ref. 13,14,and more recently,data rates of up to 500 Mb/s from a single gallium arsenide (GaAs) solar cell have been reported by Fakidis et al. 7.

What is a photovoltaic system?
This dual function of photovoltaic (PV) systems is beneficially exploited for a wide variety of applications ranging from self-powered long-range free-space optical systems, where a large receiver exhibits significant advantages, to self-powered wearable devices as part of the future IoT 15.

Solar energy is the light and heat that come from the sun. To understand how it"s produced, let"s start with the smallest form of solar energy: the photon. Photons are waves and particles that are created in the sun"s core ...

In this paper, for the first time, we investigate the superiority of a solar panel used as a detector in a UWOC system. Compared with PIN diodes and APDs, the off-the-shelf ...

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Solar array mounted on a rooftop. A solar panel is a device that converts sunlight into electricity by using photovoltaic (PV) cells. PV cells are made of materials that produce excited electrons when exposed to light. The electrons flow ...

New PV installations grew by 87%, and accounted for 78% of the 576 GW of new renewable capacity added. 21 Even with this growth, solar power accounted for 18.2% of renewable power production, and only 5.5% of global power ...

In this work, we have designed, developed and deployed the world"s first optical wireless communication (OWC) system using off-the-shelf lasers and solar photovoltaics. Four bidirectional OWC prototypes have been ...

This paper explores the effects of sunlight on using a low-cost off-the-shelf silicon solar panel as an optical wireless communication (OWC) receiver. A receiver circuit ...