Photonic energy storage and photonic heat storage

What is photonic energy?

Photonic energy is defined as the energy produced from light interactions with materials,particularly through processes involving photosensitive materials and photocatalysts,as well as thermodynamic analyses of energy conversion in systems like photovoltaic cells. How useful is this definition?

What is photonic science & why is it important?

Photonic sciences,dealing with the manipulation of photons,the most fundamental energy carrier,have already played a crucial role in such energy transition,and are increasingly doing so. This is the focus of this special issue. One salient example is photovoltaics (PV).

What is photonics & how does it work?

Other than the sun itself,photonics allows harnessing energy from any object that has a nonzero temperature. Due to the emission of thermal radiation,one can envision harnessing heat emitted as thermal photons with thermophotovoltaic systems (TPVs).

What is a photonic material?

A photonic material can typically be made of a block of transparent dielectric materialcontaining a number of minute pores,holes,or gaps arranged in a periodic lattice pattern. In this way,a dielectric interspersed with regions of low-reflecting index is generated.

Can photon energy and ambient heat be stored together?

In particular,we show that photon energy and ambient heat can be stored togetherand released on demand as high-temperature heat,enabled by room-temperature photochemical crystal<->liquid transitions of engineered molecular photoswitches.

Does photon energy drive the upgrading of thermal energy?

Significantly,the ambient heat that is harvested during photochemical melting into liquid of the low-melting-point,metastable isomer can be released as high-temperature heat by recrystallization of the high-melting-point,parent isomer. This reveals that photon energy drives the upgrading of thermal energyin such a hybrid energy system.

Photonic energy storage and photonic heat storage

Contact us for free full report

Web: https://solarcomplete.co.za/contact-us/
Email: energystorage2000@gmail.com
WhatsApp: 8613816583346