INCREMENT IN EFFICIENCY OF SOLAR CELL

Authors:

1. Jay Chauhan
2. Pears Patel
3. Avanish Verma

Email id:

1. cjay2191999@gmail.com
2. pearspatel1201@gmail.com
3. avanishverma644@gmail.com

Introduction

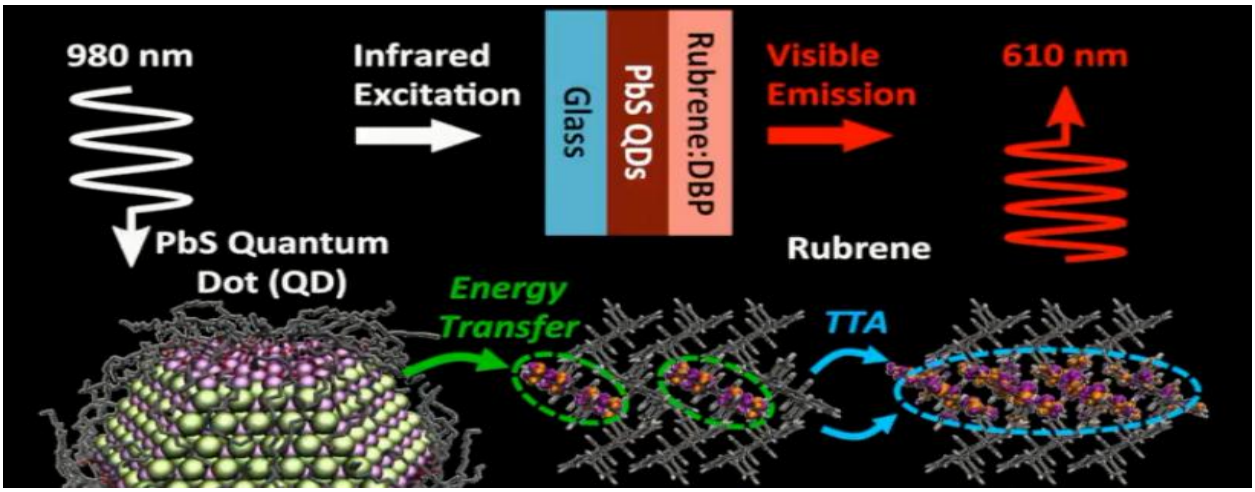
Normally solar cells only absorb visible light. Some cells use UV and IR too but they are not efficient. By changing IR in visible light, we can absorb more IRradiation and solar cell will work more efficiently by having more energy of heat radiations.

Abstract

There are many solar cells which can produce energy from IRradiation. But their efficiency is not as good as normal solar cells using visible light. So, if we need to utilize IRradiation and don't want to decrease efficiency then we can use some solar cells having a crystal that can change IR into visible spectra having sufficient energy for cell.

Innovative Idea

The material which can turn IR to visible light is composed mainly of Lead/tin and sulphur, coaxed into diamond shape and coated with organic ligands to bind them together. When Infrared passes through these crystals it come out other side in visible spectrum. By making their nanocrystals their stability increases up to 572-degreeF.



Design

This process only change wavelength so directions are unaffected. And it also increases the energy of light. So, we can use these nanocrystals on the upper part of solar cell from where it absorbs the light and these crystals will change IR into visible light which could be used by cell and wasted heat radiations are absorbed and used to produce energy.

Advantages

1. IR radiation will be utilized which will increase efficiency and that will absorb heat radiation which is in excess amount in our atmosphere due to global warming.
2. This process increases 10% efficiency of solar cell.

Keywords: *solar cell, IR to visible conversion*

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