Effect of DNA-TiO2 Scaffold as Sensitize Absorber in Dye Sensitized Solar Cell

Abstract

To lower cost per watt demand, Photo-electrochemical (PEC) cell based Dye Sensitized Solar cell (DSSC) becomes one of promising alternative than currently market leading...
crystalline-silicon-based photovoltaic solar cell. DSSC fabrication cost is very low as it uses abundant and non toxic and non scarce materials and also has some properties like flexibility, semitransparent and aesthetic etc. DNA is very low cost nano-dimensional material with excellent nano-template and electrical properties. Also DNA has two most unique properties are its double strand recognition and a special structuring due to self assembly which improves optical utilization due to its symmetrical double-helix structure. The DSSC has low efficiency than crystalline silicon solar cell, so further improvement in DNA based DSSC efficiency and lifetime which further reduces cost/watt. Then it can be extensively used in various applications.

References

- Hartzell B., McCord B., Asare D., Chen H., Heremans J. J. and Soghomonian V. 2003 Comparative current-voltage characteristics of nicked and repaired l-DNA. Applied Physics Letters 82, 4800,
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Index Terms

Computer Science

Information Science

Keywords

Dna  Dye Sensitized Solar Cell  Double Helix  Dna Tiling  Dna Origami  Dna-ctma
Bsf