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RESEARCH HIGHLIGHTS

1. Synthesis and Photoluminescence Properties of Hybrid ZnO and Carbon Nanomaterials for Solar Cell

Solar cell is too expensive for large scale electricity generation. Cost is important factor in the success of any solar technology. Potential of advancement in nanotechnology can produce cheap and more efficient solar cell. The increase of the conversion efficiency of solar cells is the use of thin film. Proposed solar cell properties has high efficiency, flexible, low cost, short installation and can cover large space. Transparent and highly conducting oxide films have attracted many researchers due to their wide range of applications in industry. Thin films are layers of a material whose thickness ranges from fractions of a nanometer to several micrometers. Thin films are especially appropriate for applications in microelectronics and integrated optics. Most of the functional materials are applied in thin film form due to their specific electrical, magnetic, and optical properties, or wear resistance.

2. Formation Carbon Nanostructures within Various Liquid Media in Pulse Laser Ablation

Graphene is 200 times stronger than a steel. Graphene is the thinnest material which is one atom thick. Graphene have fascinating physical properties and suitable for applications in nanoelectronics. It has band structure suitable for electronics properties. The band structure is very sensitive to its geometry, size, and edge structures, especially when the size of graphene is below the quantum confinement limit [1]. On top of that, graphene is an excellent conductor of heat and electricity and has interesting light absorption abilities [2].

Reference;

1. Tingting Zhang et al. Graphene: Nanostructure engineering and applications, Front. Phys. 12(1), 127206 (2017)
2. <https://www.graphene-info.com/graphene-introduction>