

Graphene as a Material for Solar Cells Applications

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Abstract:

Over the past few years, the solar cells industry and research interest has raised rapidly due to the improvements in the efficiency and the requirement for alternative energy resources. Traditional Commercial silicon solar cells with a power conversion efficiency of more than 20% plays a key role. However, many attempts have been made to reduce the silicon solar cells cost which is still most important issue for large-scale application. As result, new electrode materials with lower cost and comparable performance were developed. Recently, graphene material has received extensive research attention due to its extraordinary properties, such as optical, electrical, physical and chemical properties. This outstanding material is promising temple for the future research and nanotechnology particularly for electronics, optics, and energy-harvesting devices application. In this report, we review and compare the graphene electrodes and their applications in solar cell. Furthermore, the fabrication process of graphene and application in solar cells discussed in this report.

Keywords: Graphene, Solar Cells, CVD Graphene, Eenergy.