

染料敏化太阳能电池综述

Review of dye-sensitized solar cells

摘 要

本文将主要研究染料敏化太阳能电池的发展历程、结构功能以及各部件的发展和制备方法，并对这种太阳能电池在众多太阳能电池中的优劣势进行分析，其中重点介绍了 DSSCs 电池中的重要部件，如光阳极、对电极等，的发展以及制备方法。此外，本文着重介绍了溶胶-凝胶法、气相沉积法等光阳极制备法，还以 FJL600E1 型装置对磁控溅射技术的操作流程进行了简要介绍。最后本文对目前的三代太阳能电池分类加以介绍，并分析了染料敏化太阳能电池的独特优势和发展前景。

关键词：染料敏化太阳能电池 光阳极 化学气相沉积 磁控溅射

Abstract

In this paper, the development process, structure and function of dye-sensitized solar cells, the development and preparation methods of various components are mainly studied, and the advantages and disadvantages of this solar cell in many solar cells are analyzed, especially the development and preparation methods of important components in DSSCs, such as photo anode and counter electrode. In addition, the preparation methods of photo anode such as sol-gel method and gas phase deposition method are emphatically introduced. The operation process of magnetron sputtering technology based on FJL600E1 device is also introduced briefly. Finally, this paper introduces the current three generations of solar cells, and analyzes the advantages and prospects of dye-sensitized solar cells.

Key words: Dye-sensitized solar cell, Photo anode, Chemical vapor deposition, Magnetron sputtering

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