



Progress in solar PV technology: Research and achievement

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ABSTRACT

The development in solar PV technology is growing very fast in recent years due to technological improvement, cost reductions in materials and government support for renewable energy based electricity production. Photovoltaic is playing an important role to utilize solar energy for electricity production worldwide. At present, the PV market is growing rapidly with worldwide around 23.5 GW in 2010 and also growing at an annual rate of 35–40%, which makes photovoltaic as one of the fastest growing industries. The efficiency of solar cell is one of the important parameter in order to establish this technology in the market. Presently, extensive research work is going for efficiency improvement of solar cells for commercial use. The efficiency of monocrystalline silicon solar cell has showed very good improvement year by year. It starts with only 15% in 1950s and then increase to 17% in 1970s and continuously increase up to 28% nowadays. The growth in solar photovoltaic technologies including worldwide status, materials for solar cells, efficiency, factor affecting the performance of PV module, overview on cost analysis of PV and its environmental impact are reviewed in this paper.

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