
家用小型太阳能用电研究改造

摘要

太阳能作为新的能源，受到世界各国的关注。在当前环境污染和能源形势越来越严峻的情况下，作为有效利用太阳能的有效装置，具有广阔的发展前景。

随着太阳能电池板成本的降低和发电效率的提高，太阳能电池发电系统从当前补充能源的地位转向重要的替代能源，逐渐受到重视。根据目前太阳能发电的研究现状，总结了太阳能发电系统的研究概况、研究趋势和应用前景，开发了国产太阳能发电系统。

目前太阳能热水器等家庭用电设备已经逐渐增多，虽然太阳能光伏发电在家用电器中已经有一些实际应用，但目前仍然还是远远没有达到大规模使用的要求，不能满足目前家用电器的直接供电需求，所以对家用太阳能发电系统的进一步研究，提高光伏发电系统使用性能和光能的利用效率是一件很有意义的事情。

本项目研究开发的目的是和意义就是探索一条太阳能光伏发电在家庭供电设备应用的新型方式，充分展现太阳能分布式发电供给用电设备的优势，在交通阻塞的偏远山区和市电供应不变的地区进行推广使用，从而解决当地百万人口的光伏并网供电不足问题，为今后的农村太阳能光伏并网发电项目建设和推广打下坚实的基础。

关键词：太阳能，绿色能源，发电系统，光伏发电

Solar energy as a new type of energy has gradually attracted the attention of all countries in the world. Under the current severe environmental pollution and energy situation, photovoltaic cells, as an effective device for effectively using solar energy, have broad development prospects.

With the gradual reduction of the cost of photovoltaic panels and the continuous improvement of power generation efficiency, the solar photovoltaic power generation system has gradually transitioned from the existing supplementary energy status to an important alternative energy source, which has gradually been paid attention to. Based on the current research status of photovoltaic power generation, the research overview, research trends and application prospects of solar power generation systems are summarized, and domestic solar photovoltaic power generation systems are developed.

At present, household electrical equipment such as solar water heaters have gradually increased. Although solar photovoltaic power generation has some practical applications in household appliances, it is still far from meeting the requirements for large-scale use and cannot meet the current direct power supply needs of household appliances. Therefore, it is very meaningful to further study the domestic solar power generation system and improve the performance of the photovoltaic power generation system and the utilization efficiency of light energy.

The purpose and significance of the research and development of this project is to explore a new way of applying solar photovoltaic power generation to household power supply equipment, fully demonstrating the advantages of Taineng distributed power supply equipment, in the remote mountainous areas of traffic congestion and the city power supply unchanged To promote the use of the region in order to solve the problem of insufficient grid-connected photovoltaic power supply for millions of local people, and lay a solid foundation for the construction and promotion of rural solar photovoltaic grid-connected power generation projects in the future.

Key words: solar energy; green energy; power generation system; photovoltaic; power generatio

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