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## 用Walsh函数方法的阶梯波式DC/AC变换器的设计与实现

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## DESIGN AND IMPLEMENTATION OF A WALSH FUNCTION CONTROLLED DC/AC INVERTER

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摘要 讨论了阶梯波式 DC/AC 变换器的一种新的设计与实现方法, 即用 Walsh 函数方法及矢量合成原理分析、综合和设计。试验结果表明实现了逆变器结构的简化及其输出电压频率稳定, 幅值便于调节与自动稳定。给出了有关硬件、软件框图与说明、试验结果及进一步设想。

关键词: 沃尔什函数 电子学 换流器

**Abstract:** An investigation on staircase sine wave DC/AC inverter is described. The inverter is analysed and designed with Walsh function approach and vector summation scheme. The unique characteristics of walsh function make the inverter structure simplified and waveform quality improved, compared with those of the conventional inverter switch controlling method. The vector summation scheme makes the regulation and the automatic stabilization of the output magnitude easily realized. The system block diagram, the circuit of the switch transformer bridges, the concept of the software design and the test results of a 250VA laboratory prototype are given. The results are quite satisfactory.

Keywords: Walsh function electronics inverters

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