

技术及应用

兰州重离子深层治癌终端脉冲电源研究与设计

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收稿日期 修回日期 网络版发布日期:

摘要 研制了兰州重离子加速器深层治癌脉冲开关电源, 阐述了双闭环的控制原理, 给出了电流环与电压环的开环伯特图。进行了仿真, 并在1台电源上进行了比较研究和试验, 电流误差与单电流环脉冲电源相比明显减小。对测试结果进行了分析, 表明主电路结构和双闭环控制方案是切实可行的。

关键词 [脉冲](#) [伯特图](#) [双闭环](#) [电流误差](#)

分类号

Research and Design of Pulsed Switching Power Supply for Deep Tumor Therapy Facility With Heavy Ions Accelerator in Lanzhou

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Abstract The pulsed switching power supply was developed for deep tumor therapy facility with heavy ions in cooler storage ring of the heavy ions research facility in Lanzhou (HIRFL CSR). The control principle of the dual closed loop scheme was described and the open loop Bode diagrams were given. The results of simulation and prototype experiment show that the current error gets much smaller than that of the single closed loop pulsed switching power supply. Moreover, the simulation and test results were analyzed, and the circuit configuration and dual closed loop strategy selected are practicable.

Key words [pulse](#) [Bode diagram](#) [dual closed-loop](#) [current error](#)

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