

快报

## 用于静电加速器的计算机控制系统

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**摘要** 为提高静电加速器控制系统的智能化水平, 采用PLC以及红外和光纤传输技术, 将网络通信融入其中, 研制出一套静电加速器自动化控制系统。在阐述该系统结构的基础上, 分析了干扰源的类型, 对控制系统进行了抗干扰设计。在硬件方面, 分别采取限制电晕针位置、使用浪涌电流吸收器、屏蔽、接地以及稳压措施; 在软件设计方面, 采取互锁保护、软限位、延时器以及诊断保护程序。这样, 有效地提高了控制系统的电磁兼容性。目前, 该系统工作稳定, 除偶尔丢失信号外, 未见其它故障发生。

关键词

[PLC](#) [静电加速器](#) [控制系统](#) [电磁干扰](#)

分类号 [TP273](#) [TL505](#)

## Control System With Computer for Electrostatic Accelerator

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### Abstract

For improving the intelligence level of accelerator, an automatic control system of electrostatic accelerator was developed by adopting PLC control technique, infrared and optical-fiber transmission technique and net communication. On the basis of introducing the control system's structure, interference sources were analyzed and some measures against interference are adopted. The measures in hardware include restricting the position of corona needle, using surge arresters, shielding, connecting ground and stabilizing voltage; the measures in software include inter-blocking protection, soft-spacing, time delay and diagnosis protective program. These effectively improve the electromagnetic compatible ability of the control system. The system works steadily at present. The breakdowns don't happen again except that signals are lost occasionally.

**Key words** [PLC](#) [electrostatic](#) [accelerator](#) [control](#) [system](#) [electromagnetic](#) [interference](#)

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