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## 重离子辐照效应检测系统的研制

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**摘要** 为进行静态随机存储器芯片和可编程外围接口芯片的单粒子效应研究,研发了重离子辐照效应检测系统。系统特点是人机界面友好,操作方便、直观,实现了可靠的控制与数据采集。在HI 13串列加速器上,利用此系统对静态随机存储器HM1 65642(SRAM8K×8bit)和可编程外围接口电路ID82C55A、56Fe、79的单粒子翻转效应和单粒子锁定效应成功地进行了试验研究,完成两种器件5种离子<sup>16</sup>O、<sup>35</sup>Br、<sup>127</sup>I及反冲<sup>197</sup>Au的单粒子效应的测量。

**关键词** [静态随机存储器](#) [可编程外围接口电路](#) [单粒子效应](#) [单粒子锁定](#) [串列加速器](#)

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## The Test System for the Study on Irradiation Effects Induced by Heavy Ions

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**Abstract** A test system was developed in order to study the single event effects (SEE) of the static RAM circuits and programmable peripheral interface circuits. The characteristics of the system are the good man-machine interaction, easy and visual operation. Therefore the reliable control and the data acquisition can be performed. This system is successfully applied to the investigation of SEE induced by the heavy ions produced by HI-13 tandem accelerator, such as the experimental studies of SEE for the HM1-65642 (SRAM 8K×8bit) and CMOS programmable peripheral interface ID82C55A. The SEE measurements for these two kinds of devices with 5 types of ions,~(16)O,~(35)Cl,~(56)Fe,~(79)Br, and~(127)I are carried out.

**Key words** [static RAM](#) [programmable peripheral interface](#) [single event effects](#) [single event latch-up](#) [tandem accelerator](#)

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