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600kV毫微秒脉冲中子发生器研制

@中子发生器研制组\$中国原子能科学研究院!北京 102413 @吕建钦\$北京大学重离子物理研究所!北京 100871 @谢大林\$北京大学重离子物理研究所!北京 100871 @全盛文\$北京大学重离子物理研究所!北京 100871 @陈佳洱\$北京大学重离子物理研究所!北京 100871

收稿日期 2002-5-14 修回日期 网络版发布日期:

摘要 研制了600kVns脉冲中子发生器(CPNG 6)。CPNG 6由高压电源(输出电压为600kV,电流为15mA,高压稳定性和纹波均 $\leq 0.1\%$)、2214mm \times 1604mm \times 1504mm不锈钢高压电极及安装在内的高频离子源、预加速间隙透镜、初聚焦系统、切割器、90°磁分析器等构成的头部设备,均匀场加速管,漂移管,偏转磁铁,0°直流束和45°脉冲束流管道,无油分子泵真空系统等组成。在脉冲束流管道上安装有强流毫微秒脉冲化聚束装置。阐述了该器的方案要点和各部件的主要技术性能及特点。

关键词 [中子发生器](#) [高压电源](#) [束流](#) [脉冲调制](#)

分类号 [TL51](#)

Development of 600 kV ns Pulse Neutron Generator

Development Group of Neutron Generator 1, LU Jian qin 2, XIE Da lin 2, QUAN Sheng wen 2, CHEN Jia er 2 (1. China Institute of Atomic Energy, Beijing 102413; 2. Institute of Heavy Ion Physics, Peking University, Beijing 100871, China)

Abstract The 600 kV ns pulse neutron generator (CPNG 6) is developed. CPNG 6 consists of high voltage power supply with highest output voltage 600 kV, direct current 15 mA, stability and ripple $\leq 0.1\%$, 2 214 mm \times 1 604 mm \times 1 504 mm stainless steel high voltage electrode, head equipment including RF ion source, clearance lens, elementary focusing system, chopper and magnetic analyzer etc., uniform field accelerating tube, excursion tube, deflect magnet, 0°direct beam current and 45° pulse beam current piping, turbomolecular vacuum pump system. A ns pulse beam device is installed at pulse beam current piping. The project speciality and the performance of CPNG 6 are introduced in the paper.

Key words [neutron generator](#) [high voltage power supply](#) [beam current](#) [pulse modulation](#)

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通讯作者

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