原子能科学技术 2006 40 (5): 602-604 ISSN: 1000-6931 CN: 11-2044/TL

技术及应用

可变椭圆极化波荡器EPU10.0的传动控制

张继东[1]，周巧根[1]，张红辉[2]，欧阳联华[1]，李宇[1]

1.中国科学院 上海应用物理研究所，上海 201800

2.上海克林技术开发有限公司，上海200240

收稿日期 2004-11-22 修回日期 2005-2-23 网络版发布日期: 2006-10-20

摘要 可变椭圆极化波荡器EPU10.0是一种可产生多种极化模式相干太赫兹辐射的波荡器。EPU10.0的主要特点是波荡器内的磁块分上下各两排，上下气隙固定，一对对角线永磁块排列固定，另一对可独立做纵向移动，移动重复定位精度小于0.01 mm。对该波荡器的磁测结果显示：在水平线极化和圆极化模式下，磁场的两个横向分量的一、二积分分别为0.012 T•cm和0.7 T•cm^2，达到了设计指标。

关键词 波荡器 传动控制 磁场测量

分类号 TL503.8

Phase Driving System for Variable Elliptically Polarized Undulator EPU10.0

ZHANG Ji-dong[1], ZHOU Qiao-gen[1], ZHANG Hong-hui[2], OUYANG Lian-hua[1], LI Yu[1]

1 Shanghai Institute of Applied Physics, Chinese Academy of Sciences, Shanghai 201800, China;

2 Shanghai Kelin Co. Ltd, Shanghai 200240, China

Abstract A new type of coherent THz light source is being built in Shanghai Institute of Applied Physics. It will use the femto-second electron beam passing through a variable elliptically polarized undulator to produce the high bright THz radiation with various linear, elliptical or circular polarization. The gap-fixed variable elliptically polarized undulator EPU10.0 was built and its magnetic fields were measured and optimized. The details of the EPU10.0 control and magnetic measurement is presented in the paper.

Key words undulator _ control _ magnetic measurement

DOI

通讯作者