**三线摆和扭摆测转动惯量实验数据记录**

实验题目：

姓名： 学号 实验组号： 实验台号： 实验日期

1.用三线摆测量转动惯量

查表记录：

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 摆盘编号 | 摆盘质量*m*  （ ） | 摆盘半径*R*  （ ） | 上圆盘半径*r*  （ ） | 三孔所在圆环半径*R*1  （ ） |
|  |  |  |  |  |

(1)三线摆摆盘转动惯量

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 测量次序 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 平均 |
| 距离*H*（ ） |  |  |  |  |  |  |  |  |  |
| 计时周期数*n* |  |  |  |  |  |  |  |  |  |
| 摆动计时*t*0（ ） |  |  |  |  |  |  |  |  |  |

(2)小钢球对其质心轴的转动惯量

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 测量次序 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 平均 |
| 千分尺零位读数（ ） |  |  |  |  |  |  |  |  |  |
| 小钢球直径*D*1（ ） |  |  |  |  |  |  |  |  |  |
| 小钢球质量*m*（ ） |  |  |  |  |  |  |  |  |  |
| 距离*H*1（ ） |  |  |  |  |  |  |  |  |  |
| 计时周期数*n* |  |  |  |  |  |  |  |  |  |
| 摆动计时*t*1（ ） |  |  |  |  |  |  |  |  |  |

(3)大钢球对其质心轴的转动惯量

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 测量次序 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 平均 |
| 千分尺零位读数（ ） |  |  |  |  |  |  |  |  |  |
| 小钢球直径*D*1（ ） |  |  |  |  |  |  |  |  |  |
| 小钢球质量*m*（ ） |  |  |  |  |  |  |  |  |  |
| 距离*H*1（ ） |  |  |  |  |  |  |  |  |  |
| 计时周期数*n* |  |  |  |  |  |  |  |  |  |
| 摆动计时*t*1（ ） |  |  |  |  |  |  |  |  |  |

2.验证平行轴定理

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 测量次序 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 平均 |
| 距离*H*2（ ） |  |  |  |  |  |  |  |  |  |
| 计时周期数*n* |  |  |  |  |  |  |  |  |  |
| 摆动计时*t*2（ ） |  |  |  |  |  |  |  |  |  |

3.用扭摆测定转动惯量及金属丝的切变模量

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 测量次序 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 平均 |
| 圆环质量*m*（ ） |  |  |  |  |  |  |  |  |  |
| 圆环内径*D*1（ ） |  |  |  |  |  |  |  |  |  |
| 圆环外径*D*1（ ） |  |  |  |  |  |  |  |  |  |

(1)大圆环转动惯量

(2)扭摆转动惯量和金属丝的切变模量

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 测量次序 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 平均 |
| 千分尺零位读数（ ） |  |  |  |  |  |  |  |  |  |
| 钢丝直径*D*（ ） |  |  |  |  |  |  |  |  |  |
| 悬丝长度*L*（ ） |  |  |  |  |  |  |  |  |  |
| 三爪盘计时周期数*n* |  |  |  |  |  |  |  |  |  |
| 三爪盘摆动计时*t*0（ ） |  |  |  |  |  |  |  |  |  |
| 复合体计时周期数*n* |  |  |  |  |  |  |  |  |  |
| 复合体摆动计时*t*（ ） |  |  |  |  |  |  |  |  |  |

(3)小圆环转动惯量

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 测量次序 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 平均 |
| 圆环质量*m*（ ） |  |  |  |  |  |  |  |  |  |
| 圆环内径*D*1（ ） |  |  |  |  |  |  |  |  |  |
| 圆环外径*D*1（ ） |  |  |  |  |  |  |  |  |  |
| 复合体计时周期数*n* |  |  |  |  |  |  |  |  |  |
| 复合体摆动计时*t*（ ） |  |  |  |  |  |  |  |  |  |