**【实验题目】 共振法测量杨氏模量**

1. 测试杆的尺寸和质量

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | 铜 | | | 不锈钢 | | |
| mm | **测量值** |  |  |  |  |  |  |
| **平均值** |  | | |  | | |
| mm | **测量值** |  |  |  |  |  |  |
|  |  |  |  |  |  |
| **平均值** |  | | |  | | |
|  | |  | | |  | | |

1. 测量共振频率

改变悬挂点与自由端的距离，测量对应的共振频率

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 材料 | x /mm | | | | | | | |
| 20 | 25 | 30 | 35 | 45 | 50 | 55 | 60 |
| 铜 |  |  |  |  |  |  |  |  |
| 不锈钢 |  |  |  |  |  |  |  |  |

1. 用插值法计算悬挂点在节点时的共振频率，计算材料的杨氏模量

|  |  |  |
| --- | --- | --- |
|  | 铜 | 不锈钢 |
| /Hz |  |  |
| **E**/GPa |  |  |

**指导老师：**

**实验日期：**