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Subject: Physics

Subject Code: 102001213

Class: 2-CE-1

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| * | Experiment-6 Hall Effect | | | | |
|--------|---|--|--|--|--|
| | Objective: Measurement of the magnetic field of electromagnet using Gauss & Tebla meter & In As probe & also finding the poles of electromagnet with holp of In As probe. | | | | |
| | electromagnets with holp of InAs probe. | | | | |
| • | Equipments Electromagnet, Grauss & Tesla moter, hall heeded: probe (In As) & Constant current power Supply. | | | | |
| | Procedure: | | | | |
| 1 | Take Gauss & Tesla meters from the set of Hall | | | | |
| | Effect Trainers. | | | | |
| 2. | Connect Into probe & switch on the Crows & Toble meters. | | | | |
| 3. | Adjust zero reading on display by zero adjust potentiomoders & Keep range selector switch at X1 Now take Constant Current Power Supply & set Position. | | | | |
| • 4. | Now take Constant Current Power Supply & set Position. The current Adjust potentionalers at Fully anti- | | | | |
| | clockuse position. Connect electromagnet with Constant | | | | |
| | Current Powers Supply Such that two coils of electromagnet is in series i.e. the direction of current in both coils should be same atkerwise little or he magnetic field would results. | | | | |
| 5. | Sunter on the power supply & set some low | | | | |
| 6. | value of curorent. Meep Hall probe (In As) between electromagnet Such that the flat face of probe is kept per pendicular to disection of M.F. | | | | |
| | such that the flat face of probe is kept per condicular to direction of M.F. | | | | |
| Vision | | | | | |

| 7. | Incorase the current from the Constant Current Powers Supply & note the value of corresponding MF. If the M.F is greaters than 2k Crows then meters will indicate the overs range. Multiply the display reading by 10 to get the Magnetic field strength in both gauss & tesla. Record your readings in following table & plat graph between magnetic field & current. | | | | |
|----|--|--|--|--|--|
| | Power Supply & note the value of corresponding | | | | |
| | ME THE THE ME is compoled than DK Coours than | | | | |
| | inclea will indicate the max much | | | | |
| 9. | Multiply the declar anding he to the | | | | |
| 0, | Manager field the thing by | | | | |
| 0 | The state of the s | | | | |
| 1, | Record your seadings in tollowing table & glot | | | | |
| | graph between magnetic field & current. | | | | |
| | | | | | |
| | Ros 1+ | | | | |
| | Result:- | | | | |
| | | | | | |
| | The electromagnetic field increase with increasing | | | | |
| | the current of electromagnet. And for the | | | | |
| | The electromagnetic field increase with increasing the current of electromagnet. And for the direction of M.F. if causs meter indicate positive value (without sign) of MF, the pole facing the Sign of InAs probe maded N is "North pole 2 others Side is south pole. | | | | |
| | value Curthout sign of MF, the pole facing | | | | |
| | the sign of InAs probe marked N is "North | | | | |
| | pole & other side is south pole. | | | | |
| | | | | | |
| • | Conclusion: | | | | |
| | | | | | |
| | We can conclude that how up can measure | | | | |
| | MF of elector magnet using hours 2 Tesla moter. | | | | |
| | And also with use of In As probe. | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Vision

Observation Table:-

Signal

| So. No. | Current (A) | Magnetic field in | Magnetic field in | |
|---------|-------------|-------------------|-------------------|---|
| 1 | NO VALL | Causs | Tesla | |
| 1 | 0.5 | 383 | 0.0383 | |
| 2 | 6 54 0 p | 712 | 0.0712 | |
| 3 | 1.5 | 945 | 0.0945 | |
| 4 | 1.9 | 1150 to | 0.1150 | |
| | Lange to 3 | Act sto warred | acoust of dead | - |

The electromagnete told increase with increasing the state of the electromagnet and for the electromagnet and for the electromagnet and for the electromagnet and for the electromagnetes and for the electromagnetes and for the electromagnetes and the electromagnetes are electromagnetes and the electromagnetes and the electromagnetes and the electromagnetes are electromagnetes and the electromagnetes and the electromagnetes and the electromagnetes are electromagnetes and the electromagnetes are electromagnetes and the electromagne

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