



LECTURE 10

Eddy Current

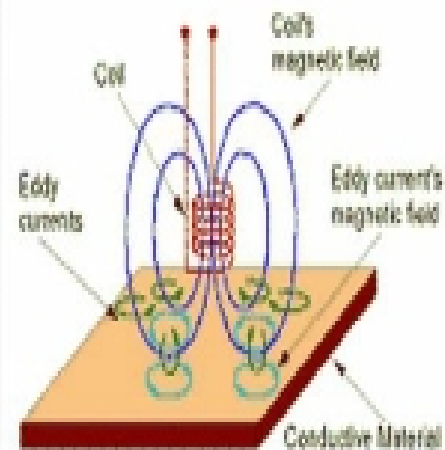


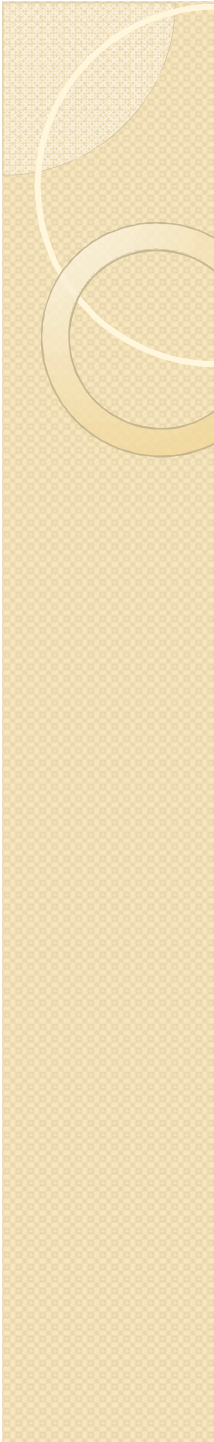
Topics to be covered

- Eddy current
- Hysteresis loss

Basic Principles of Eddy Current Inspection

- Eddy current inspection is one of several NDT methods that use the principal of "electromagnetism" as the basis for conducting examinations.
- Electromagnetic induction





Eddy current can perform variety of inspections and measurements.

- **Crack Detection**
 - **Material Thickness Measurements**
Thin materials such as; Tube, sheet stock
 - **Coating Thickness Measurements**
 - **Conductivity Measurements**
 - **Heat Treatment Monitoring**
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Some of the advantages of eddy current inspection

- **Sensitive to small cracks and other defects**
- **Detects surface and near surface defects**
- **Immediate results**
- **Equipment is very portable**
- **Test probe does not need to contact the part**
- **Inspects complex shapes and sizes of conductive materials**

Eddy current inspection has some disadvantages or limitation

- **Only conductive materials can be inspected**
- **Skill and training required is more extensive than other techniques**
- **Surface finish and roughness may interfere**
- **Reference standards needed for setup**
- **Depth of penetration is limited**