Holographic Interferometry (H.I)

- The Laser
  - the development of 3-d images
  - “Weird patterns”
- Fringes
  - Actual motion the object has experienced
Holographic Methods

- Holography

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Holographic Methods (cont.)

- Holographic Interferometry
Experiment: The interference created by PZT (Peizo electric tube)

- Objective
- Setup
- Methodology
- Results
- Conclusion
The setup of the components used to conduct the experiment
The result and the setup used

Chelliah, Vijay
An explanation on the concept of H.I from the experiment

Chelliah, Vijay
Another Useful Technique: ESPI

- Laser speckle
- Digitized images
Comparison of H.I and ESPI

- Recorded Information
- Information results from,
- Measuring range
- Recording media
- Light source
- Evaluation Method
- Time for Recording and evaluation
Application of H.I

- Bending of a bar or beam (stress analysis)
- Thermal expansion of an aluminum cube
- NDT, irreplaceable artifacts
- Changes in phase of light beam
- Density of Gas, Fluids and solids
- Frozen fringe patterns
Application of H.I
Application of H.I (cont.)
Advantages and Disadvantages of H.I

• Advantages
  – Clear graphical representation
  – Simple data conversion
  – Improved efficiency

• Disadvantages
  – Small movements
  – No fixed distance
Conclusion

• Benefits to the various fields
• Efficiency and standards have been improved
• This tool is a very powerful ally