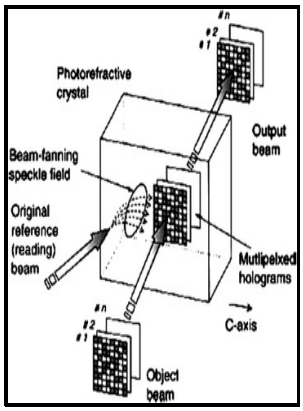
Holographic and electronic speckle pattern interferometry applied to the measurement of static and dynamic mechanical properties of elastomers

- - Holographic Interferometry: From History to Modern Applications



Description: -
-Holographic and electronic speckle pattern interferometry applied to the measurement of static and dynamic mechanical properties of elastomers
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Notes: Thesis(M.Phil.) - Loughborough University of Technology.
This edition was published in 1988

Tags: #Holographic #and #electronic #speckle #pattern #interferometry #applied #to #the #measurement #of #static #and #dynamic #mechanical #properties #of #elastomers #(1988 #edition)

A Combination of a 3 Step Temporal Phase Algorithm and a High Speed Interferometer System for Dynamic Profile Measurements

However, these algorithms are based on some assumptions and they may be working on some fringe patterns but fail on others. The number of intensity patterns of interference stored in a complete vibration cycle will depend on the natural frequency, , and on the exposure time of the CMOS camera,.

Electronic Speckle Pattern Interferometry

Experimental Result Figure 6 shows the intensity patterns of interference recorded by the HS ESPI. Although a fringe pattern representing distance, deformation, or distortion is readily obtained, expert interpretation is necessary to convert these fringes into the desired information.

A Combination of a 3 Step Temporal Phase Algorithm and a High Speed Interferometer System for Dynamic Profile Measurements

This allows high inter-beam angles in transmission recording and makes the material particularly suitable for the holographic recording of diffractive optical elements.

Dynamic Holographic

The COST action P8 has been initiated by a group of European Scientist and receives funding by the European Science Foundation ESF starting in March 2002 for four years. Based on the spatially encoded technique, a fiber-based prototype of 4-point self-synchronized LDV was developed. However, in the speckle interferogram, the fringe density cannot be too high due to the speckle noise and this limits the measurement.

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of elastomers (1988 edition)

Intensity patterns of interference coming from the HS ESPI. High speed cameras and continuous wave lasers give a very strong way for measuring real time vibrations; it can be a very interesting solution to be applied in industry. This technique converts a 2 x 2 superpixel into four phase-shifted pixels using micropolarizers, avoiding the registration of several phase-shifting fringe patterns.

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