

innovations

from The University of Vermont

TITLE: AUTOMATED FRINGE COUNTING AND PROPERTY CALCULATION SYSTEM FOR BULGE TESTER

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DESCRIPTION: This invention is a computer-based system that automatically controls the operation of a bulge tester, while counting interference fringes from a Michelson interferometer, and automatically calculating material properties from the fringe count. This invention allows manufacturers to automatically determine the material properties of the thin films such as curvature measurement and nanoindentation.

APPLICATIONS: Bulge testing is a method of determining the material properties of thin films. Thin films are used in a variety of devices, including microelectronic circuits (computer chips), optical coatings, and protective wear resistant coatings such as bearing races.

ADVANTAGES: The bulge testing system is superior to existing methods such as curvature measurements and nanonindentation because of the convenience in operation and control.

PATENT STATUS: Provisional Patent

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