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(54) Title: FIBER-OPTIC ASSAY APPARATUS BASED ON PHASE-SHIFT INTERFEROMETRY

(57) Abstract: Apparatus and method for detecting the presence or amount or rate of binding of an analyte in a sample solution is disclosed. The apparatus includes an optical assembly having first and second reflecting surfaces separated by a distance "d" greater than 50 nm, where the first surface is formed by a layer of analyte-binding molecules, and a light source for directing a beam of light onto said first and second reflecting surface. A detector in the apparatus operates to detect a change in the thickness of the first reflecting layer resulting from binding of analyte to the analyte-binding molecules, when the assembly is placed in the solution of analyte, by detecting a shift in phase of light waves reflected from the first and second surfaces.

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