ABSTRACT

METHOD AND SYSTEM FOR INSPECTING TRANSPARENT WAFERS FOR ELECTRONICS, OPTICS OR OPTOELECTRONICS

The invention relates to a method for inspecting a wafer for electronics, optics or optoelectronics, comprising:

- rotating the wafer about an axis of symmetry perpendicular to a main surface of said wafer,

- emitting, from a light source (20) coupled with an interferometric device (30), two quasi-collimated incident light beams, so as to form, at the intersection between the two beams, a measurement volume containing interference fringes extending transversally to the path of rotation of the wafer and having a variable inter-fringe distance within the measurement volume, the time signature of the passage of a defect through the measurement volume depending on the value of the inter-fringe distance at the location where the defect passes through the measurement volume, said wafer being at least partially transparent at the wavelength of the light source,

the interferometric device (30) and the wafer being arranged in relation to one another so that the measurement volume extends into a region of the wafer, the thickness of said region being less than the thickness of the wafer,

- collecting at least a portion of the light scattered by said region of the wafer,

- capturing the collected light and emitting an electrical signal representing the variation in the light intensity of the collected light as a function of time,

- detecting, in said signal, a frequency component in the variation of the intensity of said collected light, said frequency being the time signature of the passage of a defect through the measurement volume,

- determining, based on the value of the inter-fringe distance at the location where the defect passes, the position of said defect in the radial direction and/or in the thickness of the wafer.

Figure 4B