

APPARATUS AND METHOD TO MEASURE TEMPERATURE OF 3D SEMICONDUCTOR STRUCTURES VIA LASER DIFFRACTION

ABSTRACT

Embodiments of the present invention generally relate to apparatus for and methods of measuring and monitoring the temperature of a substrate having a 3d feature thereon. The apparatus include a light source for irradiating a substrate having a 3d feature thereon, a focus lens for gathering and focusing reflected light, and an emissometer for detecting the emissivity of the focused reflected light. The apparatus may also include a beam splitter and an imaging device. The imaging device provides a magnified image of the diffraction pattern of the reflected light. The method includes irradiating a substrate having a 3d feature thereon with light, and focusing reflected light with a focusing lens. The focused light is then directed to a sensor and the emissivity of the substrate is measured. The reflected light may also impinge upon an imaging device to generate a magnified image of the diffraction pattern of the reflected light.

Fig. 1