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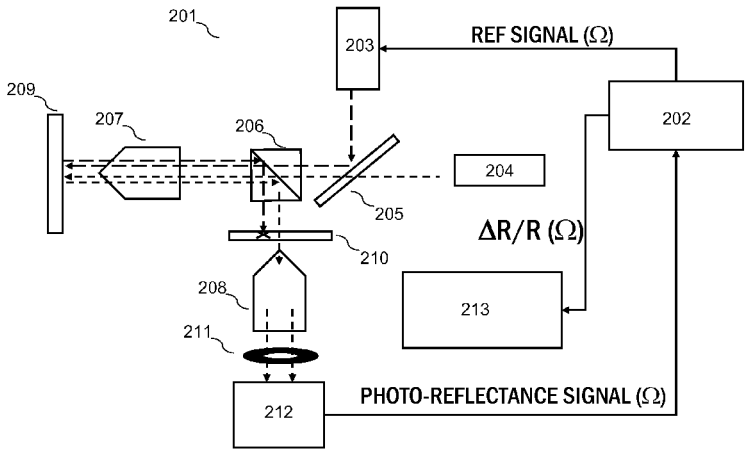
— *with international search report (Art. 21(3))*

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[Continued on next page]

(54) Title: METHOD AND APPARATUS OF Z-SCAN PHOTOREFLECTANCE CHARACTERIZATION

FIG. 2



(57) Abstract: A method of z-scan photo-reflectance characterization of semiconductor structures and apparatus for same has been developed. The method and apparatus provides the ability to independently measure electro-refractive and electro-absorptive nonlinearities that occur in conventional photo-reflectance signals. By performing a series of photo-reflectance measurements, each containing photo-modulated nonlinear optical signals, with the sample at a multiplicity of positions along the focal length of the probe light column, and with an aperture fixtured in the reflected probe path, precision characterization of both electro-refractive and electro-absorptive nonlinearities is attained. The Z-scan photo-reflectance method and apparatus characterizes spatial distortions of a coherent photo-reflectance probe light beam due to electro-refractive and electro-absorptive effects.

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