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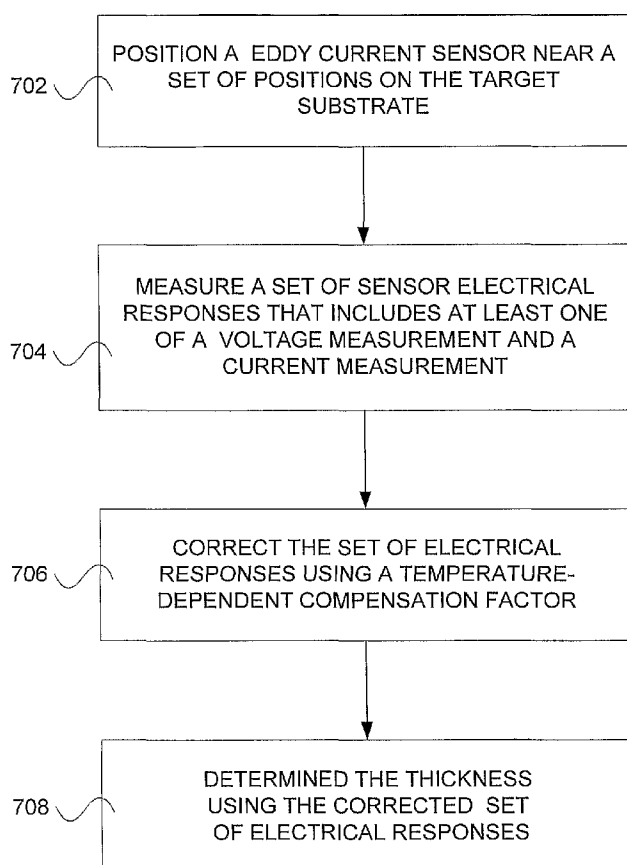
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(54) Title: METHODS AND APPARATUS FOR OPTIMIZING AN ELECTRICAL RESPONSE TO A CONDUCTIVE LAYER ON A SUBSTRATE



(57) Abstract: A method of determining a first thickness of a first conductive film formed of a first conductive material on a target substrate is disclosed. The method includes positioning a first eddy current sensor near a set of positions on the target substrate. The method also includes measuring, using the first eddy current sensor, a first set of electrical responses that includes at least one of a first voltage measurement and a first current measurement. The method further includes correcting the set of first electrical responses using a temperature-dependent compensation factor, thereby obtaining a corrected first set of electrical responses, the temperature-dependent compensation factor being obtained from a calibration substrate different from the target substrate, the calibration substrate having a second conductive film formed of a second conductive material that is substantially similar to the first conductive material of the target substrate; and determining the first thickness using the corrected first set of electrical responses.

WO 2007/005211 A3



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