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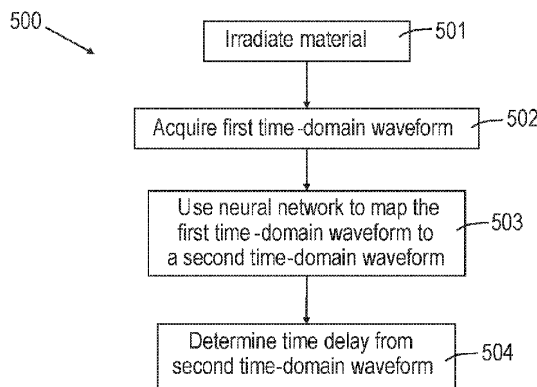


FIG. 11

(57) Abstract: A method of characterizing one or more layers of a material includes irradiating the material with a THz pulse such that at least a portion of the THz pulse is reflected from the material as a reflected THz signal; acquiring a first time-domain waveform of the reflected THz signal; and using a neural network to map the first time-domain waveform to a second time-domain waveform defined by a superposition of a plurality of peaked time-domain interface waveforms. Each peaked time-domain interface waveform has a peak corresponding to a reflection from an interface of the material. Proportional thickness of layers may be determined from the time shift between each peaked interface waveform.

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