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(54) Title: TMM POLARITON EMITTERS AND METHODS OF MAKING AND USE THEREOF

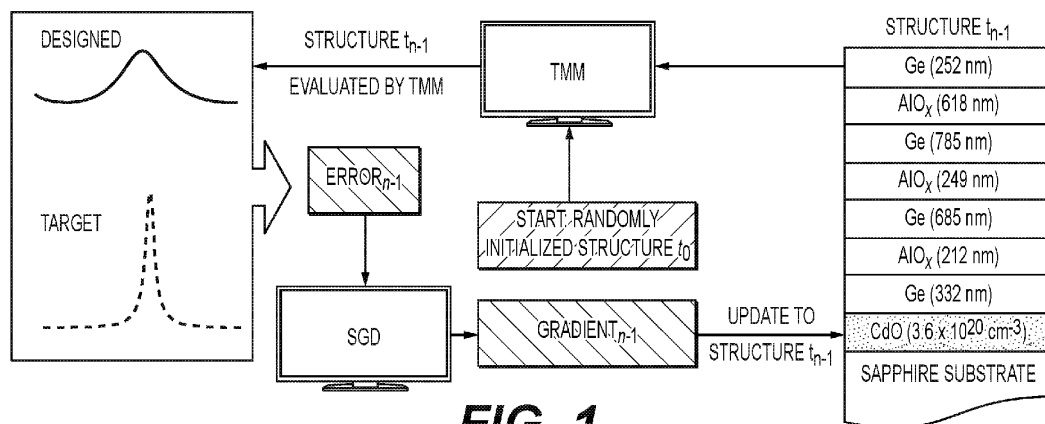


FIG. 1

(57) **Abstract:** Disclosed herein are Tamm polariton emitters and methods of making and use thereof. The Tamm polariton emitters disclosed herein comprise: a distributed Bragg reflector; and a layer comprising a conductive and/or polaritonic material; wherein the distributed Bragg reflector is disposed on the layer of the conductive and/or polaritonic material. The Tamm polariton emitters can further include a layer of a polar material. Also disclosed herein are non-dispersive infrared sensors comprising: any of the Tamm polariton emitters disclosed herein, wherein the Tamm polariton emitter is configured to selectively emit radiation at a frequency corresponding to a rotational or vibrational resonance frequency of an analyte of interest; and a detector configured to receive an electromagnetic signal from the Tamm polariton emitter and/or the analyte of interest. Also disclosed herein are methods for designing Tamm polariton emitters. The methods can, for example, comprise an inverse design protocol and/or machine learning.

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