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(54) Title: PHOTOVOLTAIC MODULES WITH WAVELENGTH SHIFTING PHOSPHOR-GLASS COMPOSITE LAYER

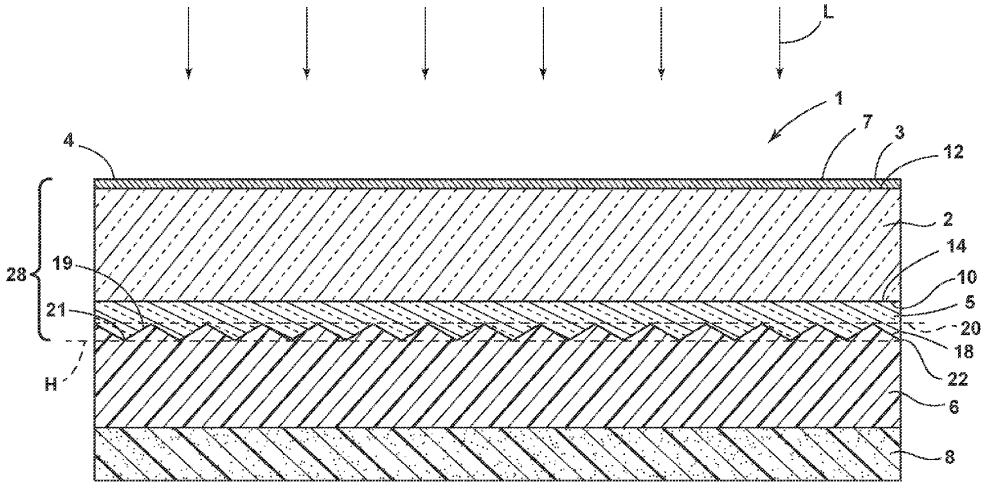


FIG. 1

(57) Abstract: A photovoltaic module includes a phosphor-glass composite layer for wavelength shifting of UV light into visible light to increase the efficiency and/or output of the photovoltaic module. Phosphor particles are embedded in a glass encapsulant material that may be refractive index matched to the phosphor particles. The phosphor-glass composite layer may be formed by coating a glass frit including phosphor particles onto cover glass. The glass encapsulant material may comprise low-Tg glasses with refractive indices from about 1.65-1.85. The low Tg of the glass encapsulant materials permits them to be sintered together with the phosphor particles at a temperature that does not degrade the phosphor particles. The Tg of the encapsulant glass may be less than the Tg of the cover glass whereby the composite frit can be sintered after the composite frit has been deposited on the cover glass.

[Continued on next page]

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