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(54) **DOPED LUMINESCENT MATERIALS AND PARTICLE DISCRIMINATION USING SAME**

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USPC **250/459.1**

(58) **Field of Classification Search**

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See application file for complete search history.

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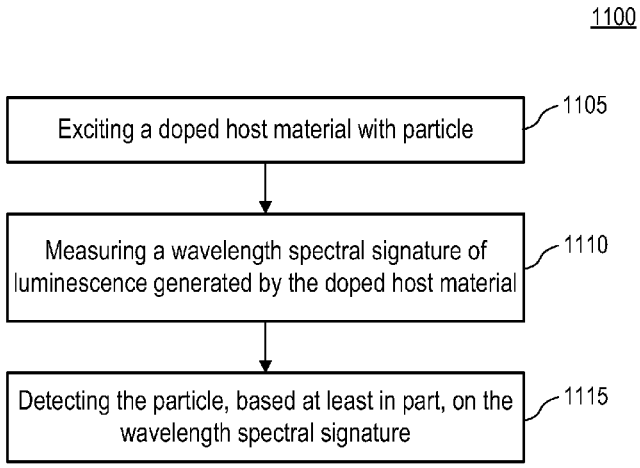
(57) **ABSTRACT**

Doped luminescent materials are provided for converting excited triplet states to radiative hybrid states. The doped materials may be used to conduct pulse shape discrimination (PSD) using luminescence generated by harvested excited triplet states. The doped materials may also be used to detect particles using spectral shape discrimination (SSD).

28 Claims, 14 Drawing Sheets