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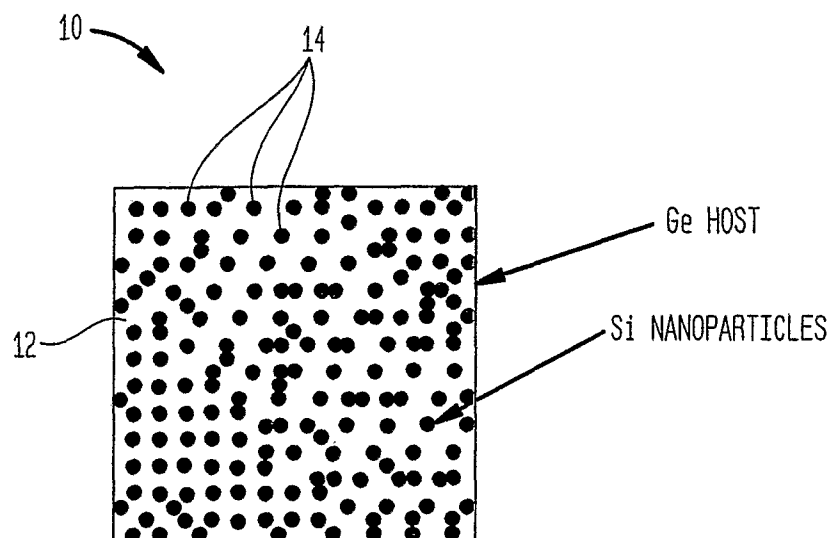
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(54) Title: NANOCOMPOSITES WITH HIGH THERMOELECTRIC FIGURES OF MERIT



(57) Abstract: The present invention is generally directed to nanocomposite thermoelectric materials that exhibit enhanced thermoelectric properties. The nanocomposite materials include two or more components, with at least one of the components forming nanosized structures within the composite material. The components are chosen such that thermal conductivity of the composite is decreased without substantially diminishing the composite's electrical conductivity. Suitable component materials exhibit similar electronic band structures. For example, a band-edge gap between at least one of a conduction band or a valence band of one component material and a corresponding band of the other component material at interfaces between the components can be less than about $5k_B T$, wherein k_B is the Boltzman constant and T is an average temperature of said nanocomposite composition.

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