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(54) **STACKED-FIN COLD PLATE WITH A 3D VAPOR CHAMBER**

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(57) **ABSTRACT**

A cold plate assembly includes a thermally conductive cold plate having a first surface attachable to a heat generating electronic component of an information processing system. An opposite second surface includes an array of hollow riser columns extending orthogonally and filled with a saturated working fluid for heat transfer. The cold plate assembly includes a stacked arrangement of fins physically attached perpendicularly to at least one of the riser columns. The vertical levels of fins are spaced apart, substantially in parallel with each other and the second surface to form a fin stack. An encapsulating lid of the cold plate assembly is attached to the second surface to form a liquid cooling cavity that encloses the fin stack. The encapsulating lid includes an intake port and an exhaust port that are laterally positioned and aligned with the fin stack to create liquid flow through the fin stack for liquid cooling.

