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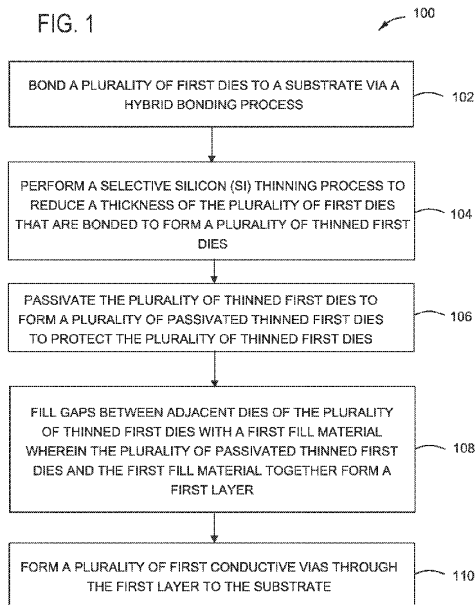
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(54) Title: METHOD OF MULTI-LAYER DIE STACKING WITH DIE-TO-WAFER BONDING

FIG. 1



(57) Abstract: Embodiments of methods of die stacking are provided herein. In some embodiments, a method of die stacking with die-to-wafer bonding includes: bonding a plurality of first dies to a substrate via a hybrid bonding process; performing a selective silicon (Si) thinning process to reduce a thickness of the plurality of first dies that are bonded to form a plurality of thinned first dies; passivating the plurality of thinned first dies to form a plurality of passivated thinned first dies to protect the plurality of thinned first dies; filling gaps between adjacent dies of the plurality of thinned first dies with a first fill material, wherein the plurality of passivated thinned first dies and the first fill material together form a first layer; and forming a plurality of first conductive vias through the first layer to the substrate.

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