**Abstract**

**SEMICONDUCTOR DEVICE AND METHOD OF FORMING TSV INTERPOSER WITH SEMICONDUCTOR DIE AND BUILD-UP INTERCONNECT STRUCTURE ON OPPOSING SURFACES OF THE INTERPOSER**

A semiconductor device has a substrate with first and second opposing surfaces. A plurality of conductive vias is formed partially through the first surface of the substrate. A first conductive layer is formed over the first surface of the substrate electrically connected to the conductive vias. A first semiconductor die is mounted over the first surface of the substrate. The first semiconductor die and substrate are mounted to a carrier. An encapsulant is deposited over the first semiconductor die, substrate, and carrier. A portion of the second surface of the substrate is removed to expose the conductive vias. An interconnect structure is formed over a surface of the substrate opposite the first semiconductor die. A second semiconductor die can be stacked over the first semiconductor die. A second semiconductor die can be mounted over the first surface of the substrate adjacent to the first semiconductor die.
(Fig.5)