METALLIC CARRIER FOR LAYER TRANSFER AND METHODS FOR FORMING THE SAME

ABSTRACT

Embodiments relate to semiconductor structures and methods of forming them. In some embodiments, the methods may be used to fabricate a semiconductor substrate by forming a weakened zone in a donor structure at a predetermined depth to define a transfer layer between an attachment surface and the weakened zone and a residual donor structure between the weakened zone and a surface opposite the attachment surface. A metallic layer is formed on the attachment surface and provides an ohmic contact between the metallic layer and the transfer layer, a matched Coefficient of Thermal Expansion (CTE) for the metallic layer that closely matches a CTE of the transfer layer, and sufficient stiffness to provide structural support to the transfer layer. The transfer layer is separated from the donor structure at the weakened zone to form a composite substrate comprising the transfer layer the metallic layer.

Figs. 3A – 3B