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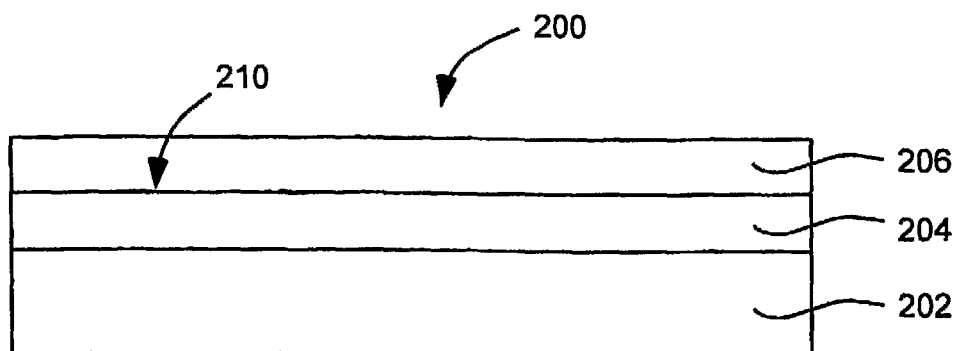
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(54) Title: SEMICONDUCTOR-ON-DIAMOND DEVICES AND METHODS OF FORMING



(57) Abstract: The present invention provides semiconductor-on-diamond devices (200), and methods for the formation thereof. In one aspect, a mold (220) is provided which has an interface surface (212) configured to inversely match a configuration intended for the device surface (210) of a diamond layer (204). An adynamic diamond layer (204) is then deposited upon the diamond interface surface (212) of the mold (220), and a substrate (202) is joined to the growth surface (222) of the adynamic diamond layer (204). At least a portion of the mold (220) can then be removed to expose the device surface (210) of the diamond which has received a shape which inversely corresponds to the configuration of the mold's diamond interface surface. The mold (220) can be formed of a suitable semiconductor material which is thinned to produce a final device. Optionally, a semiconductor material can be coupled to the diamond layer (204) subsequent to removal of the mold (220).

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