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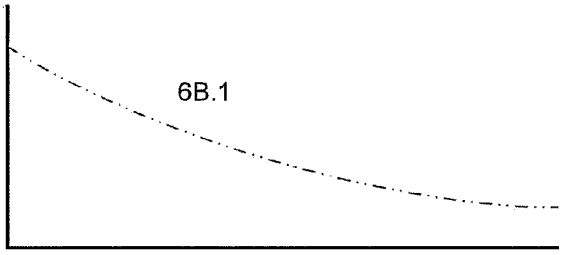


FIG. 6B

(57) Abstract: Methods and apparatus provide for forming a semiconductor-on-insulator (SOI) structure, including subjecting a implantation surface of a donor semiconductor wafer to an ion implantation step to create a weakened slice in cross-section defining an exfoliation layer of the donor semiconductor wafer; and subjecting the donor semiconductor wafer to a spatial variation step, either before, during or after the ion implantation step, such that at least one parameter of the weakened slice varies spatially across the weakened slice in at least one of X- and Y- axial directions.

WO 2010/059367 A3