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(54) Title: ATOMIC LAYER EPITAXY FOR SEMICONDUCTOR GATE STACK LAYER FOR ADVANCED CHANNEL DEVICES

(57) Abstract: Embodiments of the present disclosure provide methods and apparatus for forming an epitaxial layer on a substrate. The substrate is exposed to pulsed laser radiation to clean, anneal, and/or activate the surface of the substrate. The substrate is then exposed to a deposition precursor in a self-limiting deposition process. The substrate may again be exposed to pulsed laser radiation, and then exposed to a second deposition precursor in a second self-limiting deposition process. The process may be repeated as desired to form an epitaxial layer of very high quality one atomic layer at a time.

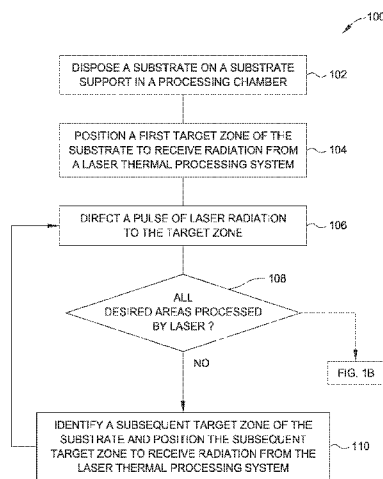


FIG. 1A



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