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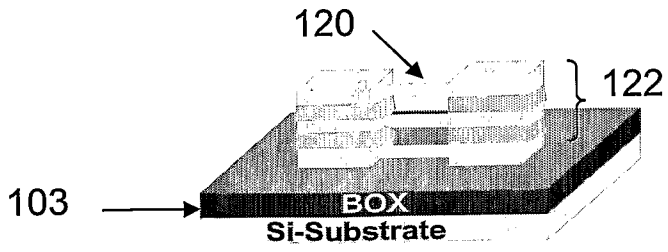
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(54) **Title:** A STACKED SILICON-GERMANIUM NANOWIRE STRUCTURE AND A METHOD OF FORMING THE SAME



(57) **Abstract:** A method of forming a stacked silicon-germanium nanowire structure on a support substrate is disclosed. The method includes forming a stacked structure on the support substrate, the stacked structure comprising at least one channel layer and at least one interchannel layer deposited on the channel layer; forming a fin structure from the stacked structure, the fin structure comprising at least two supporting portions and a fin portion arranged there between; oxidizing the fin portion of the fin structure thereby forming the silicon-germanium nanowire being surrounded by a layer of oxide; and removing the layer of oxide to form the silicon-germanium nanowire. A method of forming a gate-all-around transistor comprising forming a stacked silicon-germanium nanowire structure that has been formed on a support substrate is also disclosed. A stacked silicon-germanium nanowire structure and a gate-all-around transistor comprising the stacked silicon-germanium nanowire structure are also disclosed.

WO 2008/069765 A1