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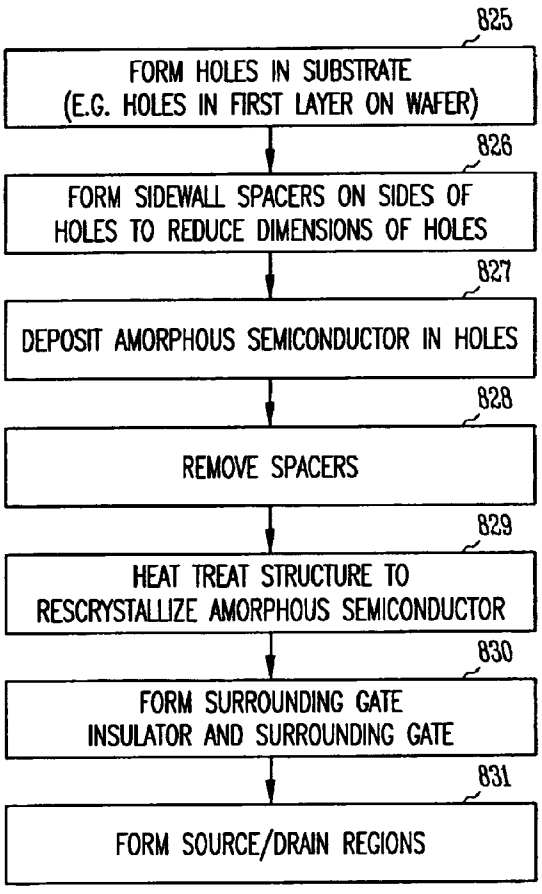
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(54) Title: NANOWIRE TRANSISTOR WITH SURROUNDING GATE



(57) Abstract: One aspect of the present subject matter relates to a method for forming a transistor. According to an embodiment of the method, a pillar of amorphous semiconductor material is formed on a crystalline substrate, and a solid phase epitaxy process is performed to crystallize the amorphous semiconductor material using the crystalline substrate to seed the crystalline growth. The pillar has a sublithographic thickness. A transistor body is formed in the crystallized semiconductor pillar between a first source/drain region and a second source/drain region. A surrounding gate insulator is formed around the semiconductor pillar, and a surrounding gate is formed around and separated from the semiconductor pillar by the surrounding gate insulator. Other aspects are provided herein.

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