

Title (en)  
PRODUCTION OF A SEMICONDUCTOR DEVICE HAVING AT LEAST ONE COLUMN-SHAPED OR WALL-SHAPED SEMICONDUCTOR ELEMENT

Title (de)  
HERSTELLUNG EINER HALBLEITEREINRICHTUNG MIT MINDESTENS EINEM SÄULEN- ODER WANDFÖRMIGEN HALBLEITERELEMENT

Title (fr)  
FABRICATION D'UN DISPOSITIF À SEMI-CONDUCTEURS COMPRENANT AU MOINS UN ÉLÉMENT SEMI-CONDUCTEUR EN FORME DE COLONNE OU DE PAROI

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Application  
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Priority

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Abstract (en)  
[origin: WO2013068125A1] Described is a method for producing a semiconductor device (100), in which at least one column-shaped or wall-shaped semiconductor device (10, 20) extending in a main direction (z) is formed on a substrate (30), wherein at least two sections (11, 13, 21, 23) of a first crystal type and one section (12, 22) of a second crystal type therebetween are formed in an active region (40), each section with a respective predetermined height (h1, h2), wherein the first and second crystal types have different lattice constants and each of the sections of the first crystal type has a lattice strain which depends on the lattice constants in the section of the second crystal type. According to the invention, at least a height (h2) of the section (12, 22) of the second crystal type and a lateral thickness (D) of the active region (40) is formed perpendicular to the main direction, in such a manner that the lattice strain in one of the sections (11) of the first crystal type also depends on the lattice constants in the other section (13) of the first crystal type. A semiconductor device (100) is also described, having at least one column-shaped or wall-shaped semiconductor element (10, 20) on a substrate (30), which can be produced in particular by means of the stated method.

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