METHOD OF FORMING A SEMICONDUCTOR STRUCTURE INCLUDING A VERTICAL NANOWIRE

ABSTRACT OF THE DISCLOSURE

A method comprises providing a semiconductor structure comprising a substrate (100) and a nanowire (114) above the substrate. The nanowire comprises a first semiconductor material (105) and extends in a vertical direction of the substrate. A material layer (115) is formed above the substrate. The material layer (115) annularly encloses the nanowire. A first part of the nanowire is selectively removed relative to the material layer. A second part of the nanowire is not removed. A distal end (119) of the second part of the nanowire distal from the substrate is closer to the substrate than a surface of the material layer so that the semiconductor structure has a recess at the location of the nanowire. The distal end (119) of the nanowire is exposed at the bottom of the recess. The recess is filled with a second semiconductor material (120). The second semiconductor material is differently doped than the first semiconductor material.

Fig. 10c