

Title (en)
METHOD FOR THE IN SITU PRODUCTION OF MAJORANA MATERIAL SUPERCONDUCTOR HYBRID NETWORKS AND TO A HYBRID STRUCTURE WHICH IS PRODUCED USING THE METHOD

Title (de)
VERFAHREN ZUR IN-SITU HERSTELLUNG VON "MAJORANA-MATERIALIEN - SUPRALEITER" HYBRIDNETZWERKEN, SOWIE EINE DURCH DAS VERFAHREN HERGESTELLTE HYBRIDSTRUKTUR

Title (fr)
PROCÉDÉ DE FABRICATION IN SITU DE RÉSEAUX HYBRIDES « MATÉRIAUX DE MAJORANA-SUPRACONDUCTEURS », ET STRUCTURE HYBRIDE FABRIQUÉE PAR LE PROCÉDÉ

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Application
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Abstract (en)
[origin: WO2018171823A1] The invention relates to a method for producing a Majorana material superconductor hybrid structure. The superconductive material is applied onto the Majorana material using a shadow mask, wherein - a first mask (2, 3) for a structured application of the Majorana material (6) and an additional mask (shadow mask) (4, 5) for the structured growth of the superconductive material (7) are first generated on a substrate (1), said masks being aligned relative to each other, and - the Majorana material and the superconductive layers are applied without interruption in an inert atmosphere, preferably in a vacuum and particularly preferably in an ultrahigh vacuum. The produced hybrid structure comprises at least one structured Majorana material, at least one superconductive material arranged thereon, and a passivation layer. The structured Majorana material has a wire-type design with a length between 0.1 and 100 µm, a width between 10 and 200 nm, and a layer thickness between 12 and 260 nm, preferably between 15 and 50 nm. The boundary surface between the structured Majorana material and at least one superconductive material arranged thereon is advantageously free of contamination. The surface of the structured Majorana material is completely covered either by a preferably superconductive material or by a passivation layer.

IPC 8 full level
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