

Title (en)
METHOD FOR PRODUCING NON-CONTIGUOUS METAL OXIDE NANOSTRUCTURES OF UNIFORM AND CONTROLLED SIZE AND DENSITY

Title (de)
VERFAHREN ZUM PRODUZIEREN VON NICHT ZUSAMMENHÄNGENDEN METALLOXID-NANOSTRUKTUREN MIT EINHEITLICHER UND KONTROLLIRTER GRÖSSE UND DICHT

Title (fr)
PROCÉDÉ DE RÉALISATION DE NANOSTRUCTURES D'OXYDE MÉTALLIQUE, NON JOINTIVES, DE TAILLE ET DE DENSITÉ HOMOGÈNES ET CONTRÔLÉES

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Application
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Abstract (en)
[origin: WO2021105273A1] The invention concerns a method for producing nanostructures having a metal oxide shell and carried by a top face of a substrate whose largest dimension is not less than 100 mm by metal-organic chemical vapour deposition MOCVD, characterized in that the method comprises the following successive steps carried out in a reactor configured for deposition by MOCVD: a. a nucleation step comprising: i. a step of forming non-contiguous metallic nuclei by metal deposition by MOCVD using an organometallic precursor on said top face of the substrate, then ii. a step of oxidizing the metal of the metallic nuclei, which is configured to form oxidized nuclei and is intended to stabilize the nuclei, b. at least one growth step comprising: i. a step of depositing a metal by MOCVD using the organometallic precursor, which is intended to form non-contiguous nanostructures by growth of the oxidized nuclei, then ii. a step of oxidizing the deposited metal of the nanostructures formed in the preceding step, which is configured to form oxidized nanostructures. The invention is employed with particular advantage in the field of emergent RRAMs (Resistive Random Access Memories) or else in chemical sensors.

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