

ABSTRACT**Method for manufacturing three-dimensional nanostructures having a large aspect ratio**

The invention relates to a method for manufacturing a three-dimensional nanostructure, the method comprising the following steps:

- oscillating an injector (100) between a low position in contact with a substrate (20) and a high position out of contact with the substrate (20), the injector (100) comprising an ejection orifice (108) the diameter of which is greater than $0.1\text{ }\mu\text{m}$;
- depositing an ink on the substrate (20) by means of the injector during a contact of the ejection orifice (108) of the injector (100) with the substrate (20), the ink comprising, in % by volume relative to the total volume of the ink:
 - less than 15% nanoparticles chosen from metal nanoparticles, metal oxide nanoparticles, graphene oxide nanoparticles, or combinations thereof;
 - 0.5% to 5% dispersant,
 - at least 80% of a solvent capable of dispersing the metal nanoparticles in order to form the ink to be injected and sufficiently volatile to allow solidification of the ink once it is deposited; and
- withdrawing the injector (100) from the substrate (20) at a speed of less than or equal to $10\text{ }\mu\text{m/s}$ in a direction substantially perpendicular to the substrate while maintaining a flow of ink exiting from the injector.

The invention also relates to the nanostructures obtained by this method.

Figure for the abstract: Fig. 1