Method and device for making fingerprints associated to artifical fingers

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Invention

In the biomimetic robotics filed, artificial fingers have been studied and developed using MEMS-based tactile sensor arrays, aimed at detecting the surfaces roughness. The tactile sensors are associated with a fingertip of an artificial finger and then covered with silicone coating, emulating an artificial skin. As a consequence, there is an interface between the array of sensors and the surface. In addition, the known methods are not able to produce coatings which are appropriate to reproduce a human fingerprint.

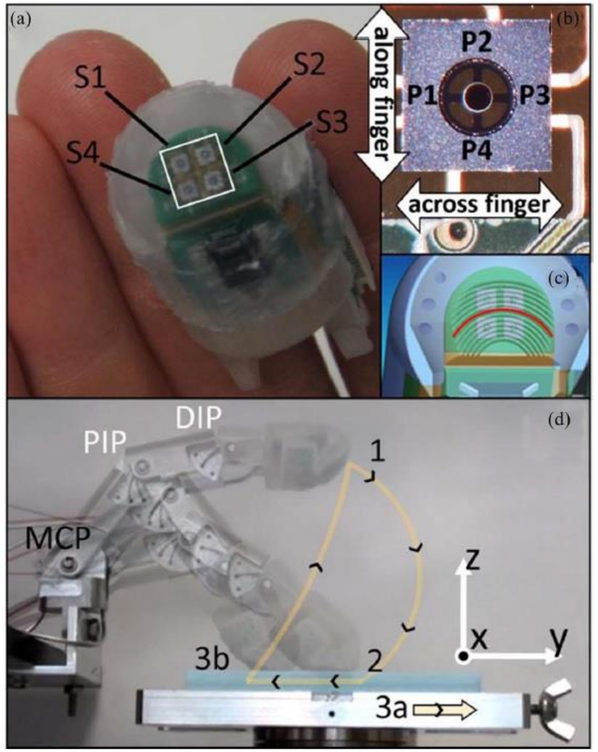
The invention proposes a method and a casting device for the application of a silicone coating device for the application a rigid sensorised item.

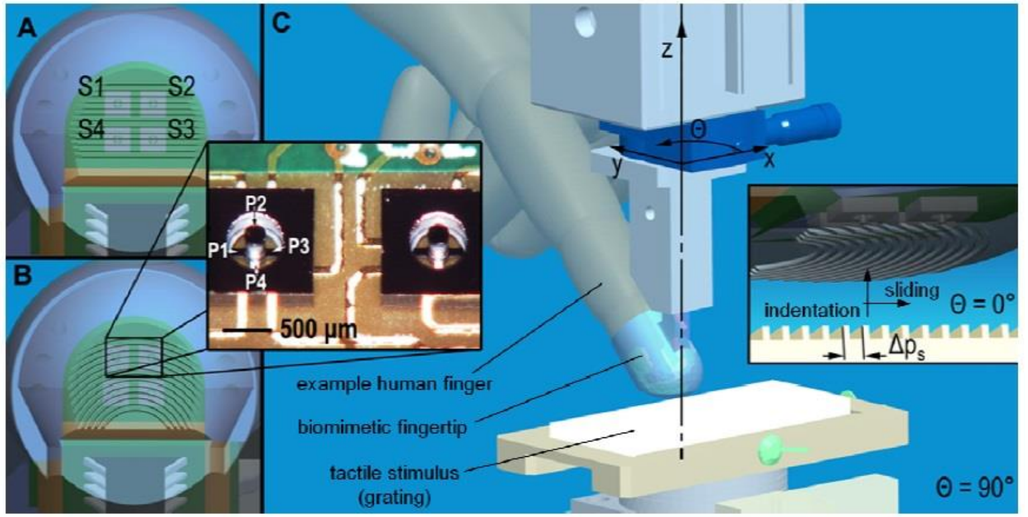
The casting device comprises a casting shell, in which the sensorised item can be suitably locked, and a die provided with a forming surface, aimed at forming a recessed and/or relief pattern.

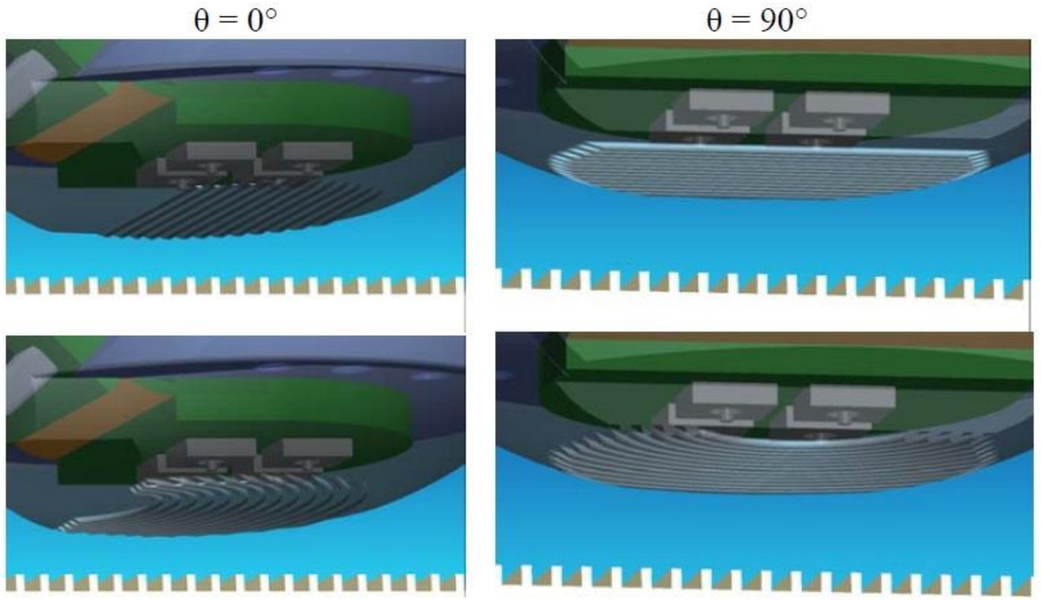
The main advantages of the current technology are:

- Flexibility: the device includes a plurality of casting dies, which can be assembled with the same casting shell, and each of them is dimensioned and shaped to form a casting chamber.
- Capability of obtaining coating in silicone having different layers, allowing for softer inner layers and harder outer layer
- Capability to have an external surface shaped with recessed and relief pattern, emulating human fingerprint pattern.

Drawings & pictures







Industrial applications

The main application is represented by the biomimetic robotics field.

Potential developments

The research group is interested in obtaining industrial collaborations aimed at increasing the technological maturity of the present invention or industrial partners interested in taking the license of the technology object of this patent.

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