ISTITUTO ITALIANO
DI TECNOLOGIA

TITLE

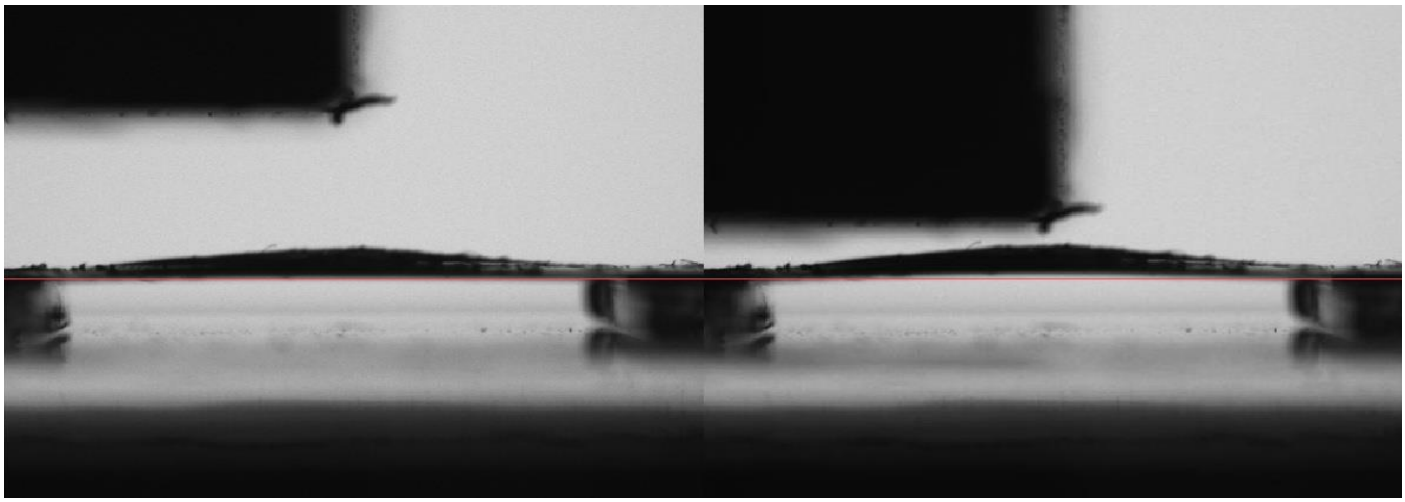
Nanocomposite active membrane

INVENTORS

Athanassia Athanassiou, Massimo De Vittorio, Despina Fragouli, Simona Petroni, Gabriele Nanni, Massimiliano Amato, Daniela Lorenzo, Roberto Cingolani

DESCRIPTION

In the field of micro-nano actuators we have developed a thin flexible nano-composite membrane, biocompatible, magnetically actuated and deflected by planar microcoils, integrated under the membrane on a conductive silicon substrate. The membrane is composed by a biocompatible plastic film with magnetic nano-particles inside the polymer matrix. The membrane is deflected by an array of micro-coils embedded in the substrate under the membrane itself.



APPLICATIONS

The active membrane can find wide applications as tactile display (in particular as support for navigation and communication for visually impaired people), micro-fluidic devices (offering the possibility to control a fluid flow, for example in biomedical diagnosis), acoustic diaphragms (to realize microphones and loud speakers of smaller dimensions and high sound quality).

KEYWORDS

active membrane, magnetic actuated membrane, membrane microcoils actuation

BIBLIOGRAPHIC DATA TO2011A000347

Attuatore magnetico con membrana nanocomposita

Application Number	TO2011A000347
Priority Date	April 20, 2011
Applicants	Fondazione Istituto Italiano di Tecnologia

CONTACTS

Technology Transfer Office	Lorenzo Rossi	+39 010 71781 489
		lorenzo.rossi@iit.it