



ISTITUTO ITALIANO  
DI TECNOLOGIA

#### TITLE

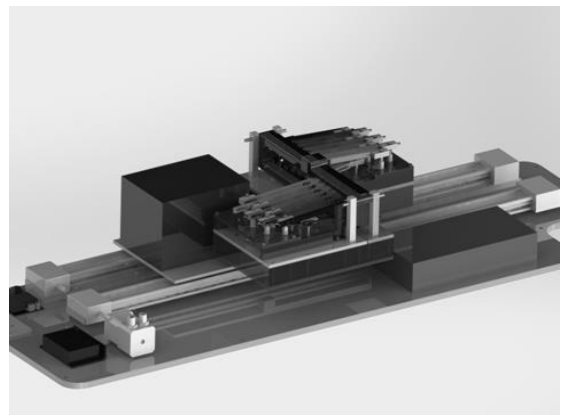
Autonomous Reconfigurable Dynamic Investigation Test-rig on haptics

#### INVENTORS

Ferdinando CANNELLA, Maria Laura D'ANGELO, Alessandro CHIOLERIO

#### DESCRIPTION

The mechanical structure of the invention is composed by an array of 28 metallic laminae, each of which has an independent actuation system comprising a stepper motor and a lever. An algorithm controlling the actuation enables the production of a wide variety of sinusoidal tactile stimuli, fully customizable in terms of wavelength, frequency, amplitude and time duration. A stack of piezoimpeditive nanocomposite, which allows to study the fingertip pressure distribution at contact, is positioned on top of the laminae. A slider inserted below the mechanical structure enables a horizontal movement of the laminae array, permitting the activation of the human proprioceptive system.



#### APPLICATIONS

Screening and diagnosis of peripheral neuropathy diseases, human tactile sensitivity degeneration investigations

#### KEYWORDS

tactile stimuli, piezoimpeditive sensing, stepper linear actuators

#### BIBLIOGRAPHIC DATA

Dispositivo per la rilevazione della sensibilità tattile di un utente

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Applicants Fondazione Istituto Italiano di Tecnologia, Università degli Studi di Genova

#### CONTACTS

Technology Transfer Office

Matteo Centonze

+39 010 71781 321

matteo.centonze@iit.it