TITLE
Variable Stiffness Device and Method of Manufacturing the Same

INVENTORS
Stefano Mintchev, Dario Floreano, Alice Tonazzini

DESCRIPTION
The solution describes a variable stiffness thread (VST) with self-healing capability (nearly 100% healing efficiency) that transitions from silicone-like to metallic-like mechanical properties and vice versa. Transition from soft to rigid state is controlled by electrical current. In its soft state the VST shows additional abilities of shape recovery. Being a thread, it can be knitted or easily embedded in different structures for enriching them with variable stiffness capability forenhanced adaptability, safety and controllability.

APPLICATIONS
Rehabilitation devices, bone injuries

KEYWORDS
Differential stiffness, fluidic actuators, variable stiffness thread, flexibility

BIBLIOGRAPHIC DATA
Variable Stiffness Device and Method of Manufacturing the Same
Application Number US 15/093799
Priority Date April 8, 2016
Applicants École polytechnique fédérale de Lausanne, Fondazione Istituto Italiano di Tecnologia

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