

# Manufacturing and Clinically Testing Embedded Electrodes in Knitted Textiles for Neurorehabilitation

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**Abstract**—Functional Electrical Stimulation (FES) aims to induce programmed exercises in paralyzed limbs of people who suffered a stroke, in order to improve their rehabilitation process. Nowadays, surface pre-gelled transcutaneous electrodes are used to provide electrical pulses to the nerves which induce contractions to the targeted muscles. This paper presents a new type of electrodes which are embedded in knitted textiles which are easy to wear and to produce the same required muscles contractions. Their effectiveness has been clinically tested and the results show a good compliance with the patient’s needs.

**Keywords**—Functional electrical stimulation; embedded textile electrodes; neurorehabilitation; stroke; knitted textile electrodes

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