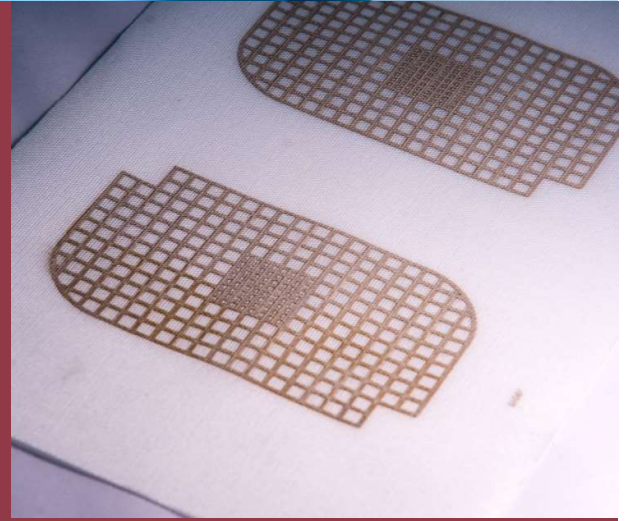


Flexible & Wearable Electronics Application Experiments



Company Profile

Born develops and produces Innovative technical textiles for a wide variety of Industrial applications as well as for the lifestyle and sports/ fitness market. Born has a large experience in the production of textiles for EMS (electrical muscle training) training purposes and compression clothing.



Problem to be solved

Textile electrodes are currently produced on the basis of the classic processes of the textile industry, such as knitting, embroidery or weaving. In this project a completely new approach is chosen by using screen-printing. The target of the project is to produce electrodes for EMS (Electrical Muscle Stimulation) only using the screen-printing process thus to develop a cheaper and more sustainable way of producing. The main performance indicators for a successful product are a less costly electrode and an easier or even faster method of integration of the electrodes in the final assembly to eventually solve the problems related to the electrical connection.

Solution provided by SmartEEs

The prototype developed consists of several electrodes in a body suit. These electrodes need to be on skin contact and have a rather sticky and not slippery surface in order to maintain the skin contact. Within the prototype each electrode is connected via a flexible cable to an electronic control unit driving the signals for a successful treatment of the persons muscles. Within the project the participating companies (Freudenberg, Born) successfully developed a process to replicate the knitted electrodes by a printing process. Therefore, a textile substrate with a heat-activable adhesive was chosen and afterwards the needed conducting paths and protective layer were screen printed on the material.

Business model & impact

When transferred to dry electrodes in clothing new markets are opened up. The business potential can be found in sports, medical and healthcare/prevention. All these markets were relatively new for the companies involved. SmartEEs helped to make the right connections.

