

Textile-integrated LED array on stretch circuit



Acrylic optics mounted on LEDs

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CANVAS – A TEXTILE LIGHT

Background

Canvas was developed by Stephanie Hornig within the project Lichten at the Berlin University of the Arts (UdK) in collaboration with Spectral Lichttechnik and Fraunhofer IZM.

The concept of Canvas was to design a flexible light which can be adopted to different shapes and rooms and combined with the help of snap fastener to larger sizes.

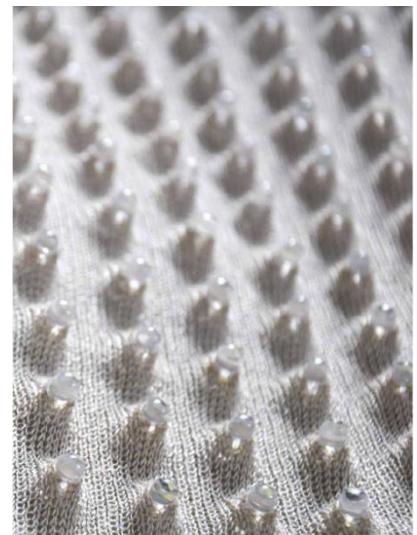
Technology

Canvas is composed of several layers which include optical, electrical and thermal design properties. The electrical layer consists of a stretchable substrate with 256 white LEDs and surface-mounted lenses made from acrylic glass that can be controlled by a dimmer. This layer is back-covered by a knitted fabric made of metalized yarn which is used to conduct the heat away from the electronics. For the top layer a non-conductive fabric that is structured by a deep drawing process is used to stabilize the underlying optics and to achieve a overall textile look and feel. The different layers are connected with TPU films in a lamination process.

Application

By using textile and stretchable circuit materials Canvas is very flexible and bendable. When Canvas is moved or conformed to different shapes new light patterns and thus light effects are formed, making the light useable for many in- and outdoor applications.

This project has been awarded in 2010 with the 3rd prize at the textil+mode Innovation Award of the German Textile and Fashion Industry Association.



Final design of Canvas