

Microfabrication and printed electronics on flexible substrates

Authors:

Karsten Hansen, Tomasz Zawada

Affiliations Description:

Meggitt Sensing Systems, Hejreskovvej 18A, DK-3490 Kvistgård, Denmark.

Abstract:

This paper describes the development within Microflex project, which is currently carried out under the EU 7th Framework Program. The project is dedicated to micro fabrication and printed electronics on flexible substrates such as textiles or fabrics resulting in high-added value products becoming finally smart textiles. The developed flexible structures on fabrics are able to sense stimuli and react or adapt to them in a predetermined way. The devices developed within the project are based on fundamental micro fabrication production technologies such as thick film printing, inkjet printing and sacrificial etching for MEMS. These printing processes have many benefits including low-cost, flexibility and rapid way to manufacture a wide range of products for different applications. Research on active functions on textiles using e.g. piezoelectric effect is investigated, as well. This paper summarizes the current stage of development within Microflex giving examples of a number of smart structures on textiles.