Master Thesis/Bachelor Thesis

Design & Development of a flexible transportation film

THESIS AT THE AUTOMATION TECHNOLOGY LAB

Prof. Dr.-Ing.
Andreas Schwung

Department of Electrical Energy Technology

Fachhochschule Südwestfalen
University of Applied Sciences

Motivation

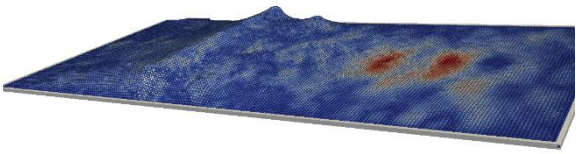
Imitation of bionic principles or soft robot technologies are new research fields with increasing importance. Flexible and soft robots provide more degrees of freedom and are more adaptable instead of conventional rigid technologies. These properties make them more popular for industrial purposes. To make use of this technologies appropriate soft and flexible materials are necessary. These materials are often made of plastic compounds or rubber and due to their constituents, the behaviour of the material changes.

https://mg.inf.tu-dresden.de/forschung/publikationen/depthtouch-elastic-surface-tangible-computing

The objective of this thesis is the design and development of a flexible material which is needed for a special bionic transportation system.

Task

During the thesis, the first step is to analyse the system behaviour of the desired machine type. After examining the analysis, the material characteristics of the flexible material has to be defined. Shore, density, tensile strength or tear resistance are only a few properties which have to be considered during the development. The choice of an adequate material, which provides all of these characteristics as well as a market and vendor research is another task during this work. To determine the behaviour of the chosen material and predict its applicability, a stress analysis is to be done. The thesis concludes with an optimal material which is validated on the real machine with expected conditions.



Requirements

Strong affinity towards innovative and modern technologies. Interest in mechanical design, material science and analysis.
We are looking for master or bachelor students of the South Westphalia University of applied sciences who want to complete their thesis.

Contact

Fabian Westbrink, M.Sc.
Lübecker Ring 2
59494 Soest

Tel.: 02921 378 3414
E-Mail:
Westbrink.fabian@fh-swf.de

or

Prof. Dr.-Ing.
Andreas Schwung
Lübecker Ring 2
59494 Soest

Tel.: 02921 378 3419
E-Mail:
schwung.andreas@fh-swf.de