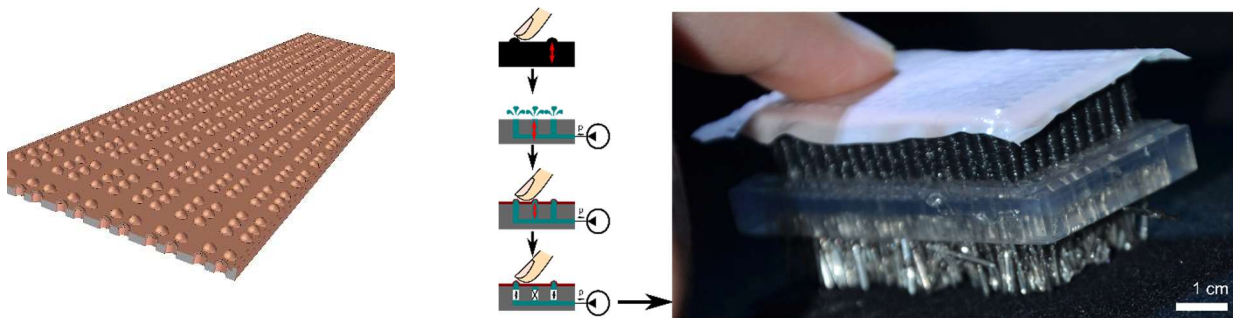


PhD thesis

# Development of a microfluidic Braille display for visually impaired people

According to the World Health Organization (WHO) more than 285 million people worldwide are considered to be visually impaired. For these people the primary means of accessing written information is Braille - a haptically readable format of text which encodes individual letters as a series of volumetric pixels (voxels). Braille is the standard format for encoding static text such as books. In order to display dynamic information such as, e.g., when displaying online content, dynamic Braille displays are required which can be set and erased electronically. The main disadvantage of state-of-the-art Braille displays is the fact that these systems are very expensive and thus unaffordable for most Braille users.



The NeptunLab has recently introduced a dynamic microfluidic actuator concept design which lends itself well to the generation of large number of individually addressable voxels. Besides numerous appearances in public media, the group also has a patent on this technology. Within this project, a microfluidic dynamic Braille display is to be set up, characterized and tested based on this actuator concept. The thesis is embedded in a cooperation project with the Study Center for the Visually Impaired (SZS) of KIT where prototypes of the display will be assessed by potential users.

You should have an excellent academic track record, ample experience in mechanical design and preferably in microsystem technology. Excellent knowledge of the English language as well as the ability to work in an inter-disciplinary environment are prerequisites for this position.

This offer is suitable for students in: Engineering (Mechanical, Chemical, Process Engineering)

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