

Aufgabenbeschreibung

Studienarbeit/Masterarbeit

Improving Blood Draw Methods – MIT, Boston, USA Collaboration

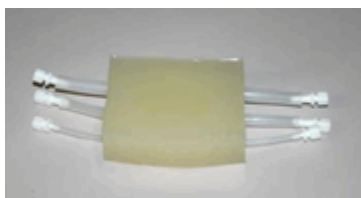
The collection of blood samples for diagnostic testing is a frequent procedure in both in- and out-patient. Although this is one of the most common invasive procedures performed in healthcare, complications, particularly around Hematoma and vein collapse, still arise. There is an ongoing need to improve blood collection, particularly by providing clinicians with information about the degree of blood vessel puncture and the state of a patient's venous walls.

Student Project: - *Realistic venipuncture phantom* - (Starting ASAP - Latest Beginning of March)

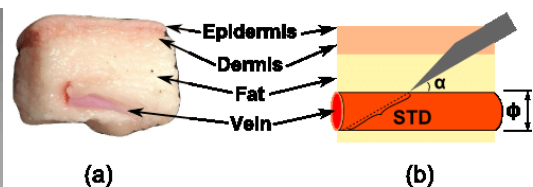
Before clinical validation of any developed measurement devices, evaluation in a lab setting needs to be performed. Moreover, to enable us to validate the functionality of future developed devices a realistic lab setup needs to be created. Therefore, this project is focused on creating a realistic venipuncture phantom, simulating different tissue layers, vein types and venous wall collapsing. The phantom will be designed to allow multiple punctures and vein properties easily changed. The final prototype will be evaluated by its ability to replicate a range of clinical situations and the assessment of clinicians. Supervision will be provided in English by a native English speaker (From New Zealand). As a result, the thesis should also be written in English.



<http://www.tessonics.com>



<http://supertech-to-go.com/thvetrph.html>



Cheng et al. 2017

Being involved this project will involve:

- A potential trip to MIT Boston.
- Insight into the world's best university for engineering*
- Collaboration with MIT Professors

*According to the 2018 QS World University Rankings



<http://news.mit.edu>

If interested, please send your CV and a cover letter of why you are suited for the project (Both in English) to:

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