



MASTER GRADUATION PROJECT

DESIGN OF AN APPEALING PREHENSOR FOR ADULTS

In the design and in the use of hand prostheses three requirements play a key role: cosmesis, comfort, and control. The traditional split hook prosthesis performs very poor in the cosmetic domain, but does well in the other domains. As a result the split hook is generally discarded. In an attempt to combine the advantages of the split hook with a more attractive appearance, some years ago the WILMER appealing prehensor was developed in two different sizes, one for children aged 4 – 9, and one for children aged 7 – 14. Clinical trials proved the design to be very successful. The appearance is very well accepted, and the overall design of the mechanism is very sturdy. Now, to complete the line of appealing prehensors, there is a demand for an adult version of this prehensor. This can be achieved by the application of the scaling laws. However, the outcome is not necessarily optimal in terms of energy efficiency, and in terms of overall mass.

ASSIGNMENT

Design, construct, and build an adult version of the WILMER appealing prehensor. Compare the results of a strict application of the scaling laws with other design pathways, especially with regard to energy efficiency and with regard to overall mass.

ADDITIONAL INFORMATION:

Dick H. Plettenburg

+31 (0)15 278 5615

d.h.plettenburg@tudelft.nl