

Non-Contact Capturing of Burn Victims for Individual Combustion Supply

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Abstract

For the treatment of combustion sore the patient receives compression therapy on the reconstructed skin to reduce the intensity of scars. In the public funded BMBF-research project "Smart Scar Care", the project consortium targets industrial produced burn garments regarding fitting, compression, pore structure, and micro air-conditioning, while keeping the individuality of the treatment. The required make-to-order process consists of several sub processes: (1) Capturing individual body measurements with 3D-scanning technologies, (2) Product configuration, (3) Transfer of product data, (4) Interpreting geometry and configuration to calculate 3D-flat knitting model, (5) 3D-simulation to review compression results and product quality, and (6) fully automated production of individual burn garment. The talk under consideration will cover the first two aspects of this workflow.

For clinical environments, especially within emergency room situations, a stationary full-body scanner is not feasible. On the other hand, using a mobile, handheld scanning device brings its own challenges. We will address the feasibility of such a system in the targeted environment and show example cases. Especially for the body parts targeted in this project a motion-restricting pose is possible, both to reduce reproduction dispersal and keep a contact- and, therefore, painless relationship to the patient.

Afterwards, for configuring the individual burn garment the scanning results are used additionally. This implies a second layer of individualization, adding individual configuration to individual body shape. We will investigate the necessary set of interaction tools and illustrate their use. The resulting product configuration is then embedded into the previously mentioned make-to-order process, which will be briefly addressed, here.