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Process chain for fabrication of external maxillofacial prosthesis using Additive Manufacturing

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External maxillofacial prostheses are presently fabricated through traditional manufacturing techniques in South Africa. The limited number of technologists with the necessary skill as well as the lengthy time it takes to produce a single prosthesis results in a significant backlog in the provision of these prostheses at especially state run hospitals. Although additive manufacturing (AM) has been used before as secondary process to manufacture these prostheses, no proper study has been done to determine which AM process is best suited to this application. An improved process chain to manufacture external maxillofacial prostheses can be developed using AM. These prostheses can be manufactured at reduced time and without the necessary skill required to first sculpt a pattern in wax. An investigation into determining which AM process is best suited to manufacture external maxillofacial prostheses will lead to more accurate and cost effective prosthetics.

Biography

Nneile Nkholise is pursuing her Master's Degree in Mechanical Engineering at Central University of Technology and completed her Under-graduate Degree at the same university. She is the Director of iMed Tech, a company that designs and manufactures medical prosthesis particularly segmented at the breast prosthesis. She has been recognized as World Economic Forum top female Innovator in Africa for her role in using additive manufacturing in prosthesis fabrication.

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