

# Your personal Ellis

## A customizable bionic arm prosthesis

The Ellis arm is a customizable bionic arm prosthesis, designed for trans humeral amputees. The focus of the arm is on the inclusion of the users' personality by allowing loads of customizability options that is realised through a modular design.

### Osseointegrated

The prosthesis is osseointegrated in the humerus with an implant. The implant is connected to the peripheral nervous system which allows an output of signals towards the user.

With the use of myoelectric sensors the muscle contractions are measured, which allow the user to input signals to motors to operate the prosthesis.

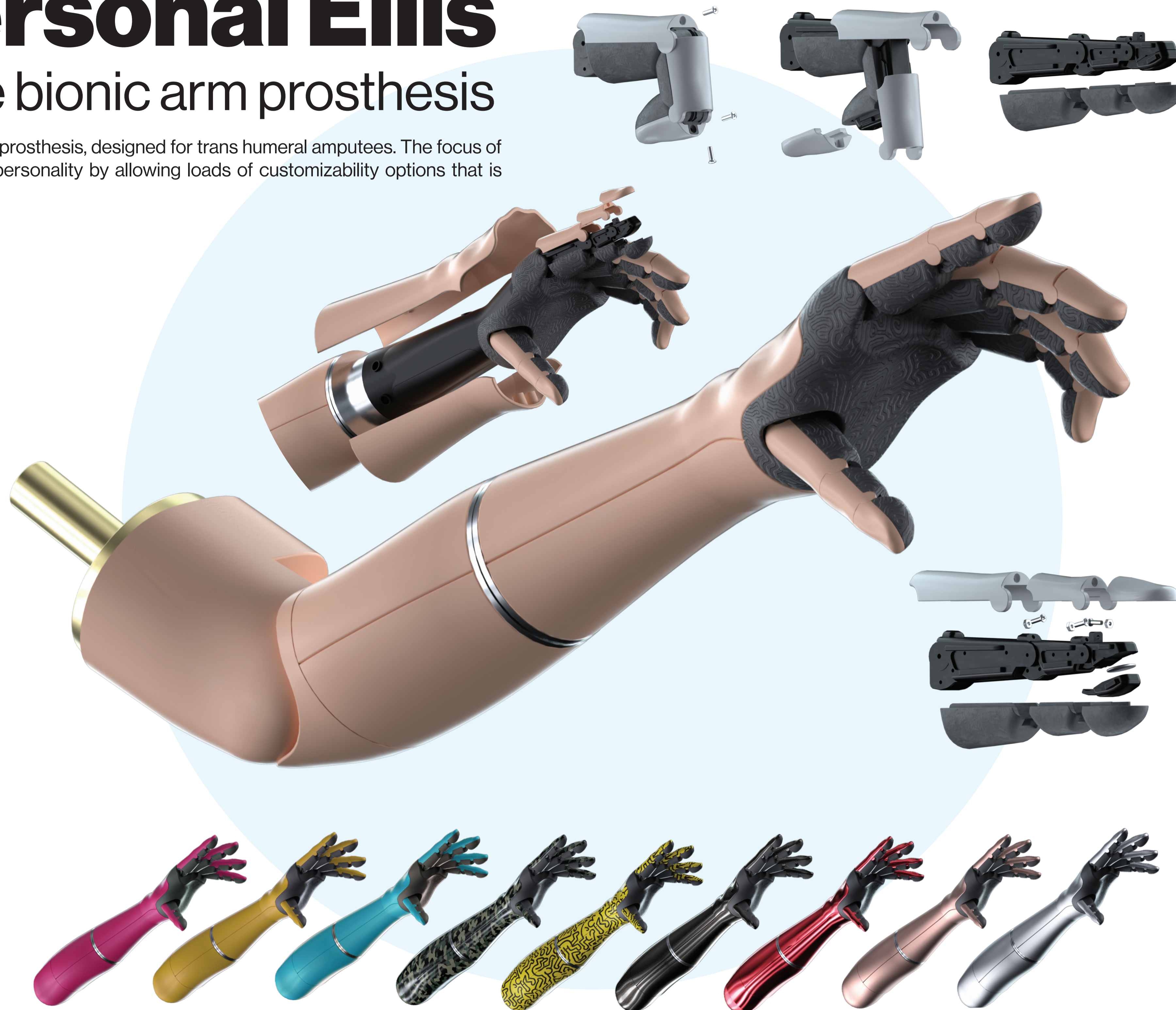
### Tailor-made

The use of additive manufacturing allows to build the prosthesis tailor-made to the dimensions of the user.

A 3D arm scan is made of the user and this scan serves as the foundation of the prosthesis model.

### Customizable

The Ellis is designed to be customized. The embodiment panels and grips can be personalized by the user in terms of color, form and texture, which enables them to express their identity with their prosthesis. In this way the prosthesis becomes more a part of them.



### Modular

The modular design allows the user to replace embodiment panels if they break down or need to be cleaned.

Or if the user decides to alter the appearance of the prosthesis it can do so at any given moment.

### Human mobility

The prosthesis is capable of finger flexion/ extension and abduction/ adduction. The fingers are actuated with motors located in the lower arm that are connected to the finger with a clever 'tendon' system.

The arm can perform a wrist rotation as well as an elbow flexion and extension with the use of motors.

### Exteroception

Integration of tactile sensors in the fingertips, and hand palm give amputees better control over the prosthesis and increase the sense of the prosthesis as being a part of the body.

### Bio inspired

The embodiment is designed to feature human characteristics in order to have a human-like appearance.

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#### Graduation date

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