

Implications and Applications - ElectricThreads

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What - Bodysuit

Multi-functional bodysuit: Designed to be worn under cosplay costumes.

Shapewear functionality: Provides a seamless silhouette and enhances the fit and appearance of the costume.

Integrated electronics: Connects directly to the costume, ensuring seamless operation of electronic components.

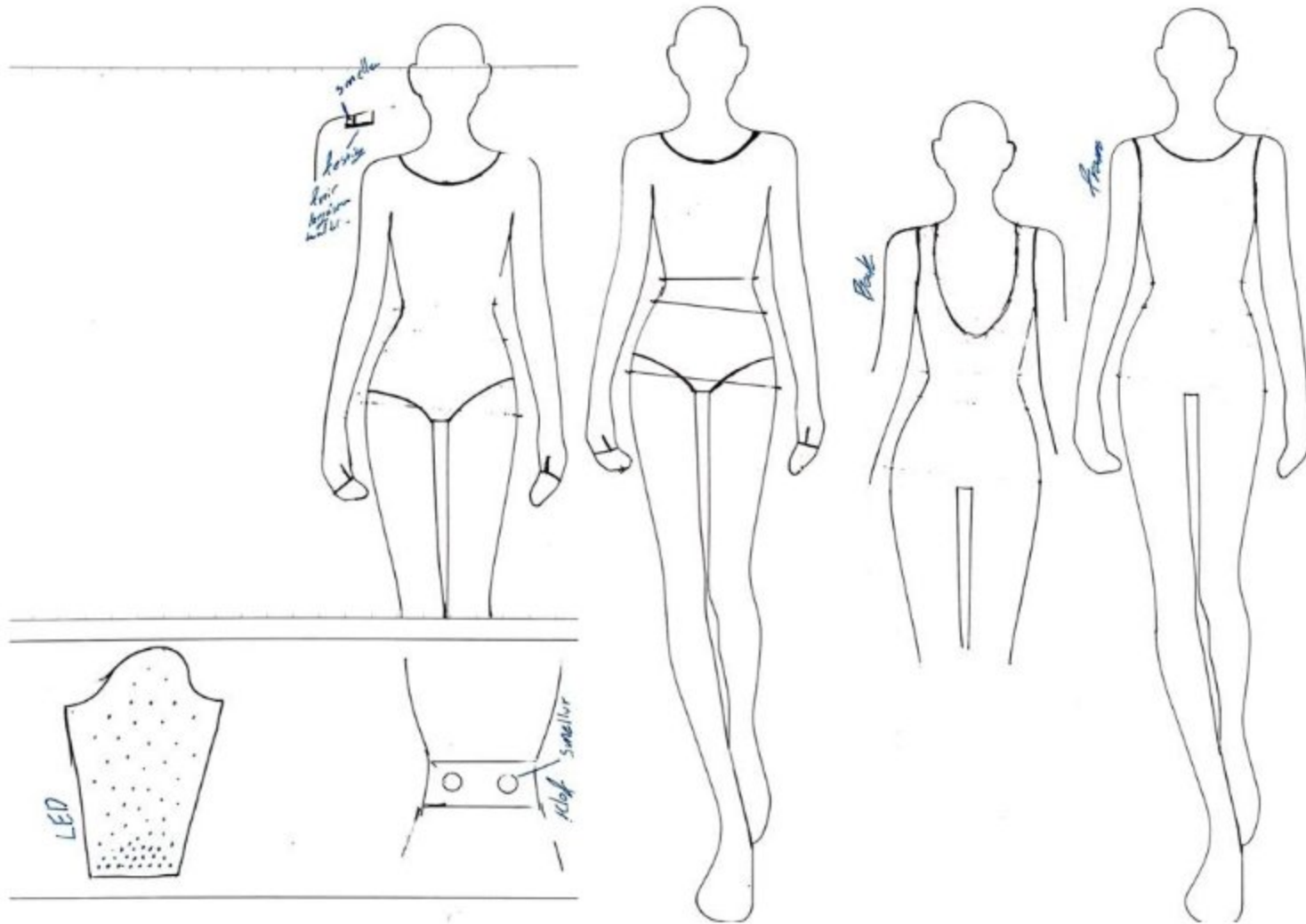
Built-in lights: Strategically placed to add extra flair and vibrancy to the costume.

Battery pack compartment: Includes a secure space to hold the battery pack, powering all electronic components.

Support for wings/backplate: Features a design that accommodates a durable backplate for wings or other large costume accessories.

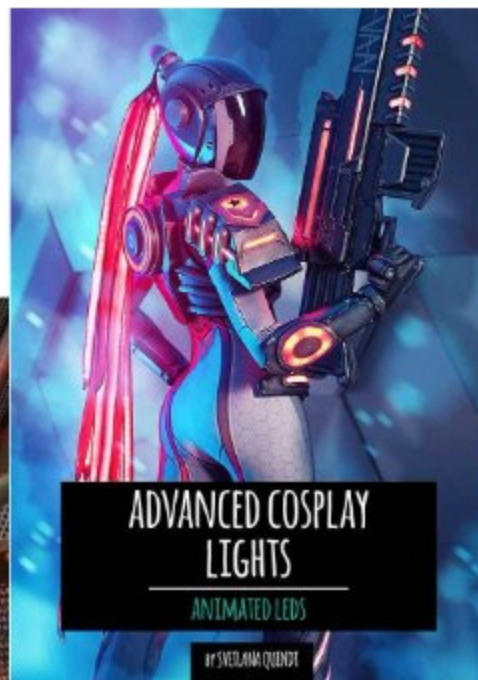
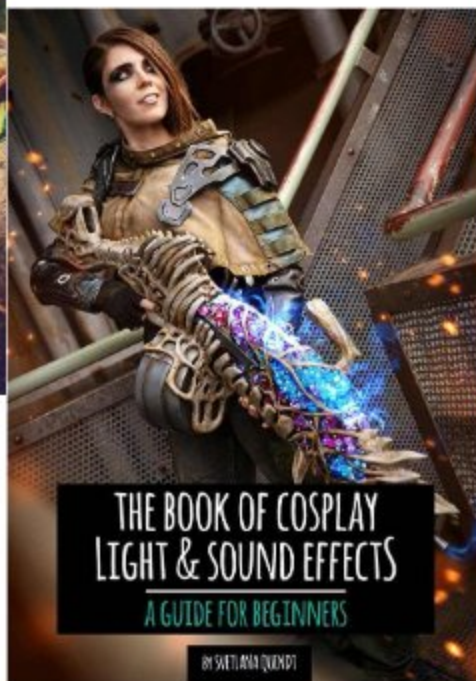
Enhanced comfort and mobility: Streamlines setup and improves wearability for the user.

Sketches



Research and Inspiration

- ▶ Traditional cosplay costumes attach elements directly, causing weight and mobility issues.
- ▶ Belts and straps over shapewear often make costumes restrictive and bulky.
- ▶ Integrating shapewear with electronics creates a lighter, more comfortable design.
- ▶ Attaching items directly to a bodysuit improves mobility and simplifies construction
- ▶ Cosplayer Svetlana Quindt integrates shapewear into her costumes, but her designs, like most, are meant for standing poses, making sitting and movement difficult.



Who - Sister

Accessible Design: Costumes are adapted for wheelchair use and seated positions.

Safety First: Avoid sharp elements to prevent skin irritation or injury.

Electronics Placement: Attach components to a bodysuit instead of the costume's interior.

Ease of Use: Designs allow smooth transitions into character poses.

Inclusive Costumes: Focus on comfort, functionality, and visual appeal.

When and Where

- ▶ **Designed for:**
 - ▶ Cosplay competitions on stage.
 - ▶ Comic-Con floor use in a wheelchair.
- ▶ **Key features:**
 - ▶ Easy reattachment of removed costume parts for photos.
 - ▶ Maintains authentic character appearance.

why

- ▶ Few cosplay makers use bodysuits for hidden attachments.
- ▶ Hiding electronics' stitching required extensive hand-stitching.
- ▶ A bodysuit streamlines the process and enhances both functionality and appearance.

How

- ▶ Create a custom bodysuit tailored for my sister's shapewear needs.
- ▶ Dye the bodysuit to match her exact skin tone for a seamless look.
- ▶ Integrate a battery pack to power electronic components.
- ▶ Attach programmable LED lights using conductive thread on the reverse side of the costume.
- ▶ Add functionality for customizable lighting patterns and optional sound effects.
- ▶ Connect all electronics to a backplate designed during Fab Academy 2024, which will also support wings.
- ▶ Design the backplate to be attachable and detachable from the bodysuit.
- ▶ Ensure the bodysuit is washable and easy to maintain without damaging the electronics.



Materials



Bodysuit

Fabric

Conductive thread

Electronic components

Spandex

Spandex net

LED

Back-Plate and PCB
Fab Academy 2024

Lilypad LED

LED 0603
White/Warm white

LED 0805
White/Warm white

LED 1206
White/Warm white





Thank you

