

Project Publication

3D ECO Fashion

3D-ECO-Fashion - Circular Economy by Design

Project Identifier: Project Identifier:

2024-1-DE04-KA210-YOU-000243488

Initiative Mittel- und Osteuropa e.V. in collaboration with the Green Elephant Foundation



Co-funded by
the European Union



InMOE

Initiative Mittel- und Osteuropa e.V.

About this publication

- This publication presents a total of 65 pieces of clothing and accessories created within the framework of the project “3D-ECO-Fashion – Circular Economy by Design”, co-funded by the European Union through Erasmus+. It is a follow-up project of “3DECO”, which was also co-funded by the European Union through Erasmus+.

<https://erasmus-plus.ec.europa.eu/projects/search/details/2023-1-DE04-KA210-YOU-000155718>

- Around 30 professional designers, design students, and young people from art classes in Germany and Poland learned about the circular economy, modular design, and various tools for more sustainable ways of creating garments and accessories.



Co-funded by
the European Union



About this publication

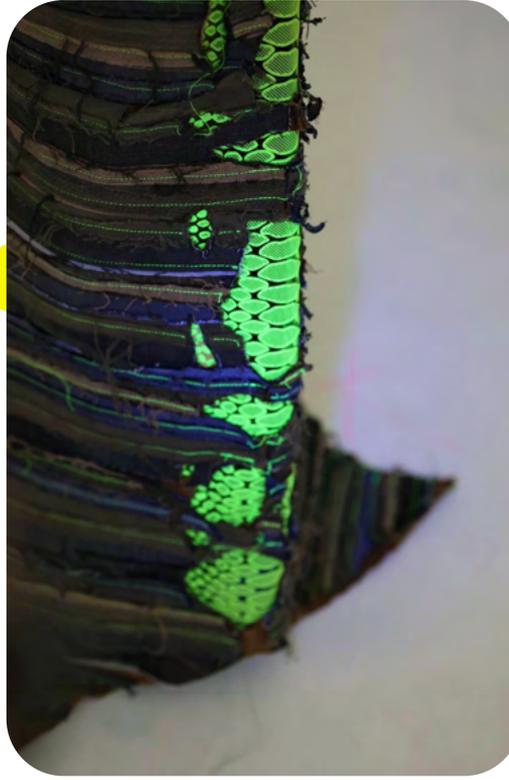
- One key aspect of the project was the introduction of new technologies such as 3D printing, combined with traditional methods like upcycling and patchwork.
- In particular, the following techniques were used:
 - Combination of upcycled fabric pieces (deadstock) and 3d printed elements
 - The 3d printed elements were used as patches to fill holes in a creative way
 - 3D printing on a mesh fabric and then sewed on other fabrics
 - usage of recycled filament (3d printing material)
 - usage of biodegradable filament
 - Designs made from only one material (TPU or PLA)
 - No usage of adhesives, instead sew parts together with filament
 - Zero waste approach by melting plastic into new shapes





Piece of clothing #1

Pants with fluoride Patches



| Piece of clothing #2

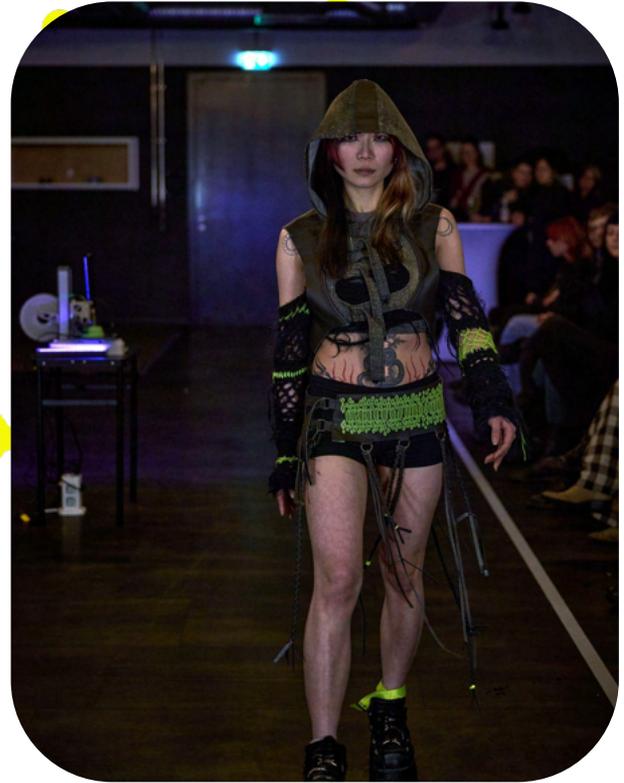
Hood with fluoride Patch



| Piece of clothing #3



Belt with fluoride Patch



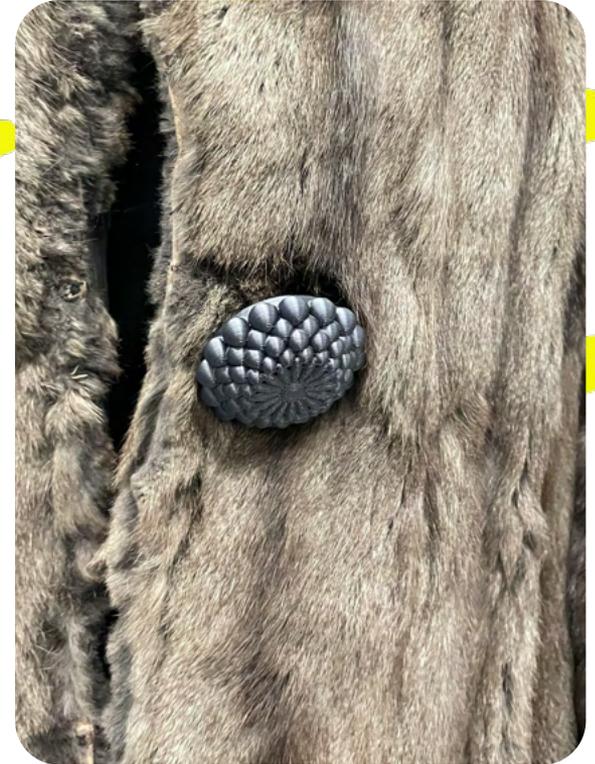
About piece of clothing #1, #2 and #3

- Combination of upcycled fabric pieces (deadstock) and 3d printed elements
- The 3d printed elements were used as patches to fill holes in a creative way
- The green parts are 3D printed on a mesh and then sewed to the upcycled pants, belt and hoodie



Piece of clothing #4

Jacket with missing buttons



| Piece of clothing #4

- The old fur coat was missing buttons
- Loud buttons were designed to match the bold fur coat aesthetic
- The material used for the buttons was recycled PLA



| Piece of clothing #5

Bottle bag



| Piece of clothing #6

Mobile phone bag



| Piece of clothing #7

Mobile phone bag



Piece of clothing #8

Mobile phone bag



Piece of clothing #9

Cards and cash bag



About piece of clothing #5, #6, #7, #8 and #9

- These bags are made from only one material (TPU)
- No adhesives were used to put the bags together, they were mostly sewn together with filament
- The construction of the bags allow an easy repair



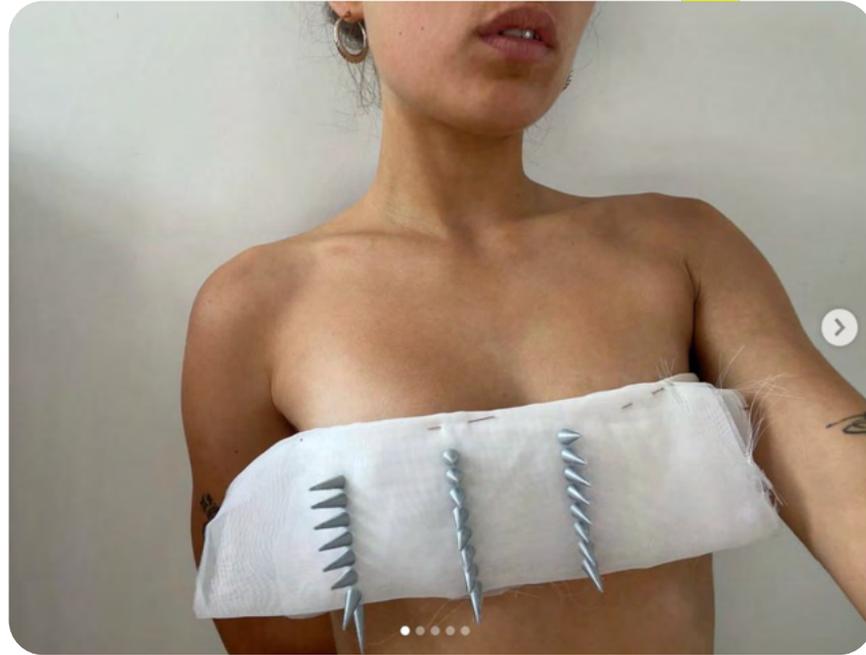
| Piece of clothing #10

Shorts



| Piece of clothing #11

Top



| Piece of clothing #12

Handler for a bag



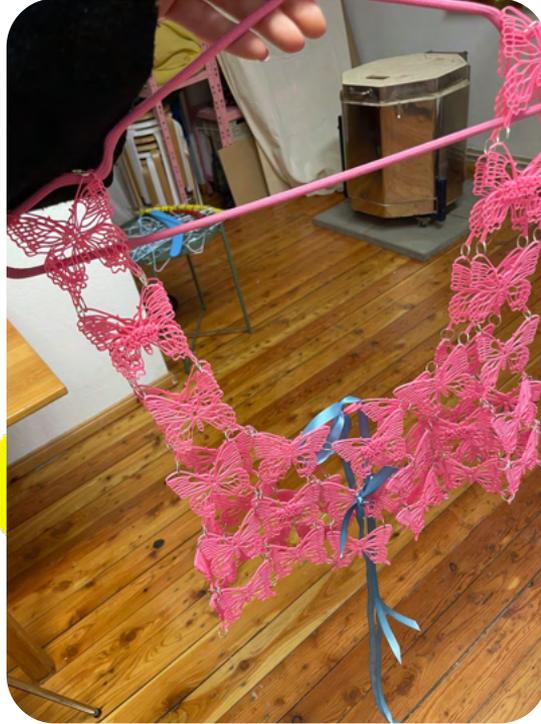
| About piece of clothing #12

- The bag was recycled from a discarded warning vest. The bag strap is made from an old jeans.
- To put the bag together, a personalised bag ring was designed to fit the different measurements perfectly
- Custom-designed and 3D-printed components allow the hardware to be tailored precisely to the bag's dimensions and aesthetic



Piece of clothing #13

Butterfly Top



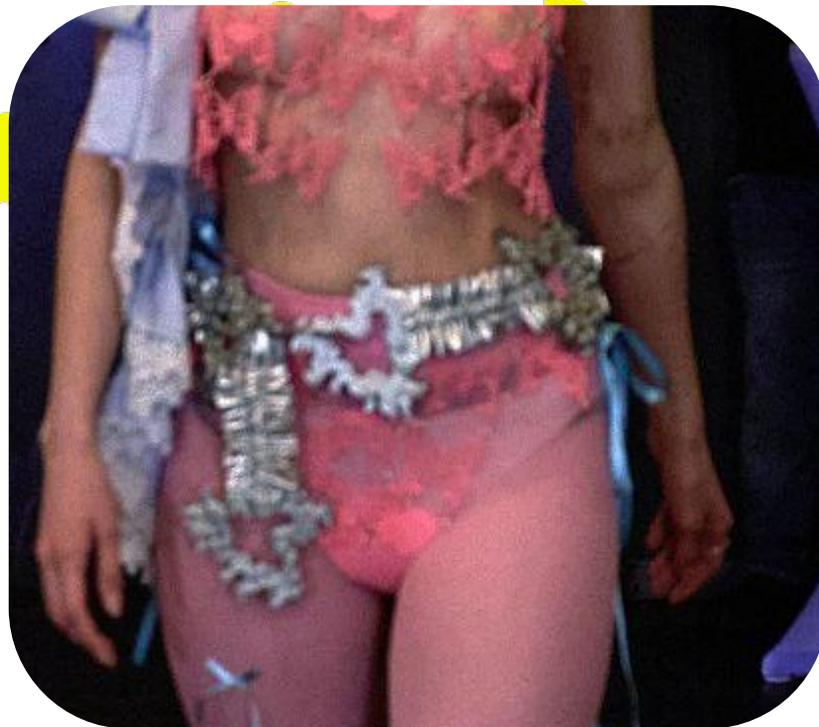
Piece of clothing #14

Butterfly Bottoms



| Piece of clothing #15

Heart Belt



About piece of clothing #13, #14 and #15

- The top and bottom were made from individual 3D-printed pieces.
- The pieces were linked together with metal rings
- The ring system allows the garments to be easily taken apart, adjusted, or repaired



Piece of clothing #16

Modular Top



Piece of clothing #17

Modular Skirt



About piece of clothing #16 and #17

- The top and bottoms are entirely 3D printed, making recycling easier
- The pieces are assembled using self-constructed buttons
- The button system allows the garments to be easily disassembled and reconfigured



Piece of clothing #18 and #19

Modular Top - Faces



Skirt with 3D application

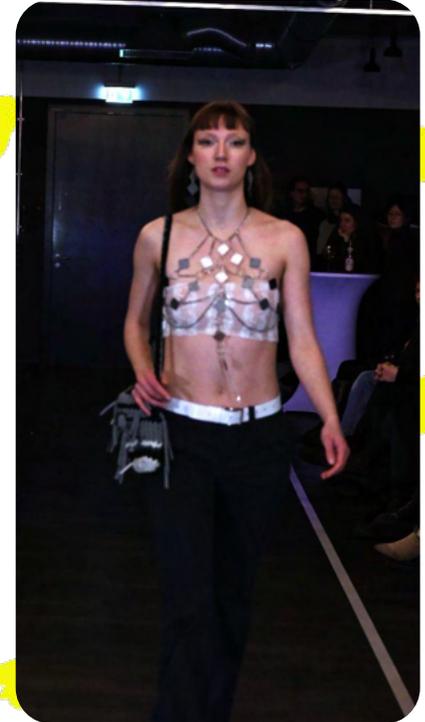
About piece of clothing #18 and #19

- The top is entirely 3D printed, allowing for easy recycling.
- The top is assembled without sewing or adhesive, making it easy to disassemble and reconfigure.
- The skirt is crafted from old handkerchiefs, giving new life to discarded textiles.



Piece of clothing #20

Body Chain BW



Crochet T-Shirt Bag

Piece of clothing #21

T-Shirt Skirt



Body Chain Orange

About piece of clothing #20 and #21

- The body chains were made out of existing filament color/material-swatches
- combined with metal chains making it easy to disassemble
- For the black and white bag and orange skirt, old T-shirts were taken apart and sewed and crochet into new shapes



Piece of clothing #22 and #23

Tie holder



Repaired heart dress

About piece of clothing #22 and #23

- Holes in an old knitted shirt were repaired with PLA hearts, combining functionality with decorative detail
- The shirt was repurposed into a dress, incorporating additional old fabrics
- A custom PLA tie holder was added to make tying a tie easier and more convenient.



| Piece of clothing #24

Skirt



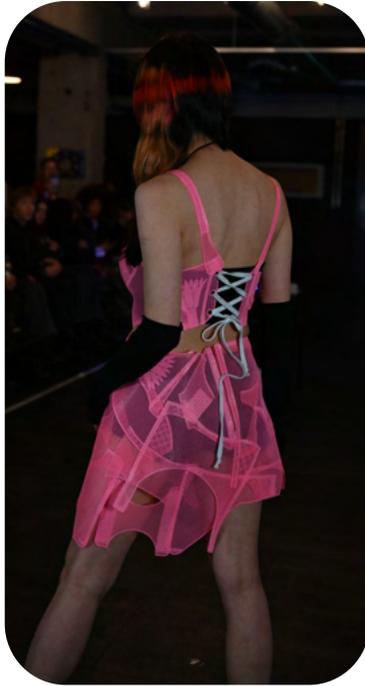
| About piece of clothing #24

- An old skirt that was too small was carefully taken apart
- TPU lace was 3D printed to fill in the missing measurements
- The combination of old fabric and printed lace allowed the skirt to be resized and reshaped.



Piece of clothing #25 and #26

Top



Skirt

About piece of clothing #25 and #26

- The top and skirt were made from accumulated failed test prints
- The shapes were draped on a mannequin to explore new forms and silhouettes
- The process emphasizes recycling and repurposing materials with no waste



Piece of clothing #27, #28 and #29

Jacket



Shoes



Hat



| About piece of clothing #27, #28 and #29

- Existing garments were upgraded with 3D-printed elements, adding new textures, shapes, and visual interest
- The printed components can be taken off, allowing the garment to be worn in different ways
- Old garments are repurposed, giving them a new life while integrating modular 3D elements



| Piece of clothing #30

T-Shirt dress



| About piece of clothing #30

- An old oversized T-shirt was transformed into a new silhouette using TPU panels in the back for lacing
- A green 3D print was created and ironed onto the front of the shirt for added detail
- The alterations turned the T-shirt into an unusual, eye-catching dress



| Piece of clothing #31

Corset Top



| Piece of clothing #32

Chainmail Corset



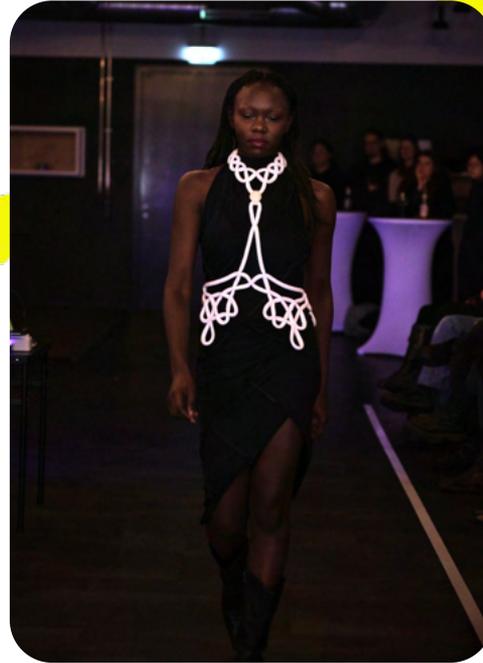
About piece of clothing #31 and #32

- The corsets are entirely made from TPU, demonstrating 3D printing's potential for flexible, wearable garments
- Individually printed pieces are assembled afterward, allowing precise shaping and customization
- Using only TPU makes the corsets easy to recycle, supporting a zero-waste approach



Piece of clothing #33

Closure for Rope Body Chain



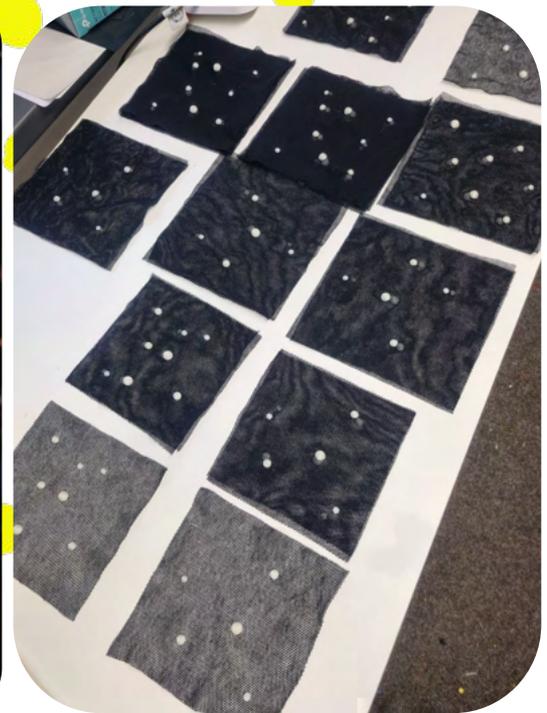
Piece of clothing #34

Blouson and Pants



Piece of clothing #35

Patchwork dress



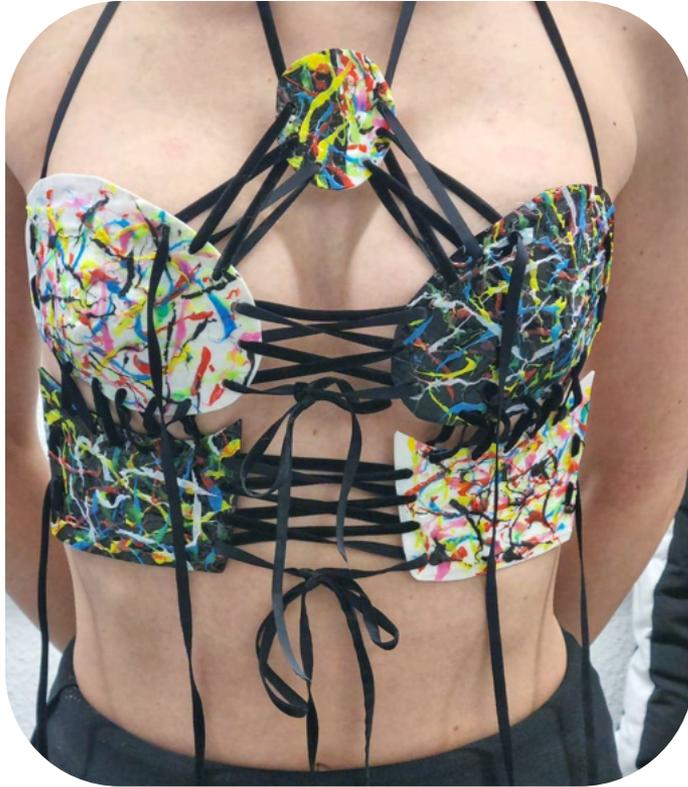
| About piece of clothing #33, #34 and #35

- These pieces are made from PLA + PHB, making them environmentally friendly and fully compostable
- Custom-designed buttons and closures allow modular assembly and easy disassembly
- Printing directly on mesh adds texture, structure, and sculptural possibilities to the clothing



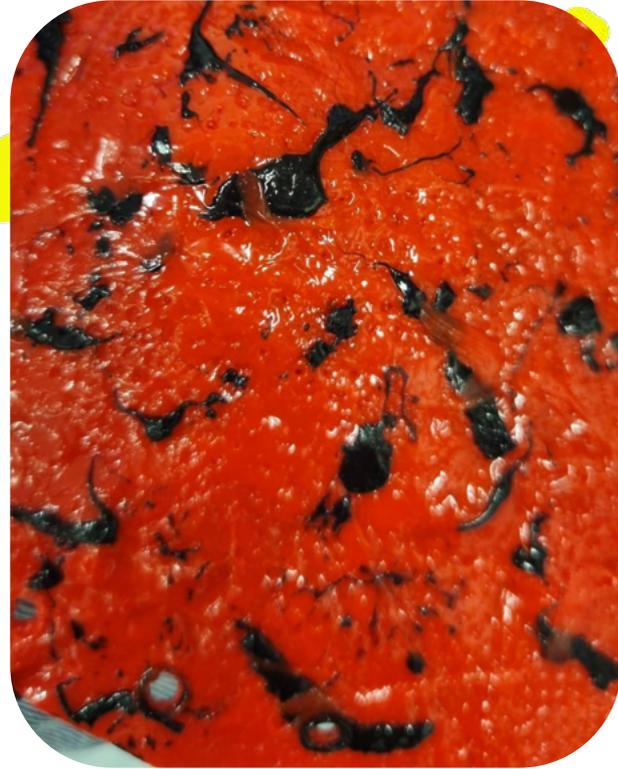
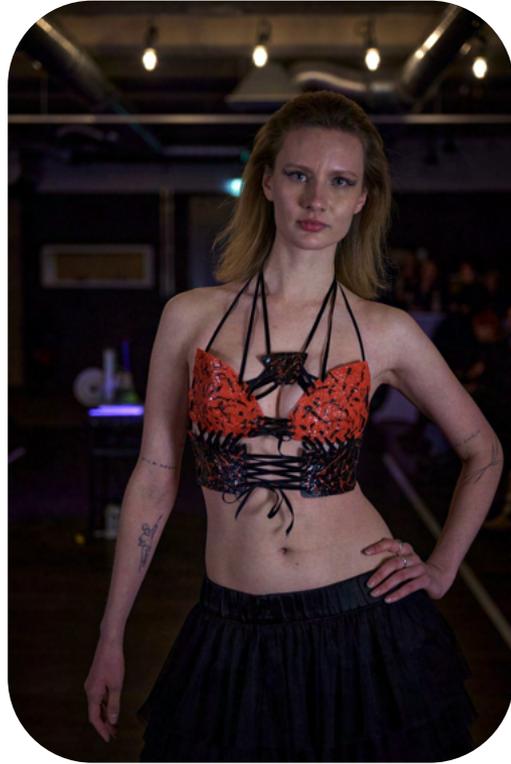
Piece of clothing #36

Corset Top Multicolor



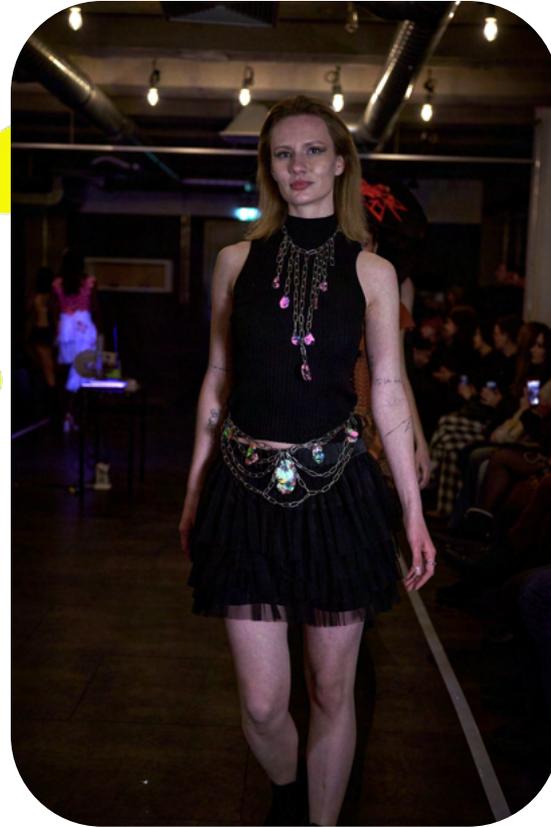
Piece of clothing #37

Corset Top Red



Piece of clothing #38

Body Chains Multicolor



| About piece of clothing #36, #37 and #38

- TPU prints were melted and repurposed, minimizing material waste
- Old or discarded elements were incorporated, giving them a new life in the designs
- New textures were created, including custom accessory designs and gem replicas



Piece of clothing #39

Mesh dress and hat



| About piece of clothing #39

- The pieces combine upcycled fabric (deadstock) with 3D-printed elements
- The printed elements add texture, form, and visual expression to the garments
- The red 3D-printed parts were printed on mesh and sewn directly onto the fabric



Piece of clothing #40

Bracelet



Suspenders

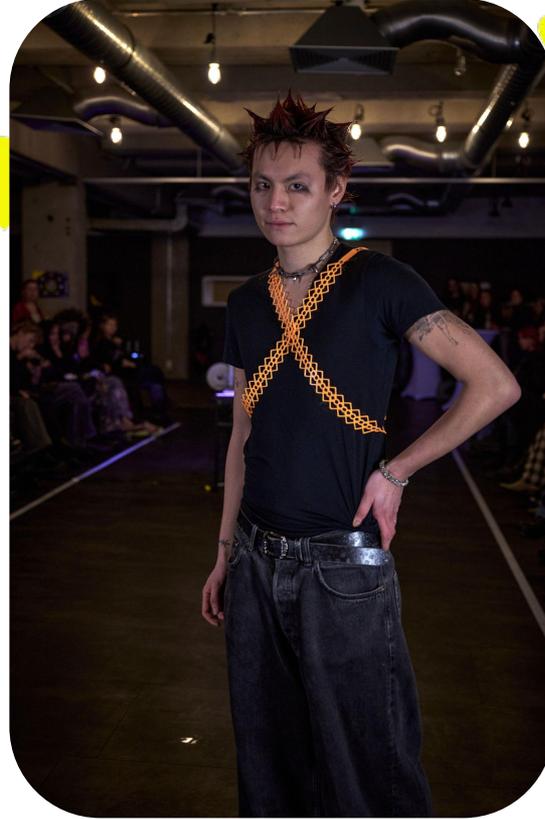
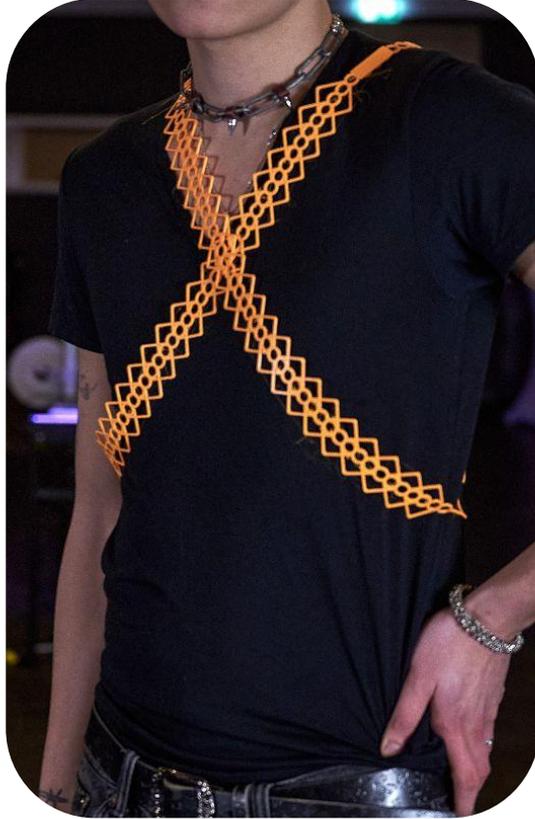
Piece of clothing #41

Corset



Piece of clothing #42

Harness



About piece of clothing #40, #41 and #42

- All pieces are made from TPU, making them easy to recycle
- Smart closure techniques allow the parts to be connected modularly without glue or sewing
- The modular pieces let casual looks be experimented with and made more visually interesting



| Piece of clothing #43

Repaired pants



| Piece of clothing #44

Shirt



| About piece of clothing #43 and #44

- Stains were covered with patches
- This technique prolongs the time of wears of a garment
- At the same time, it makes the pieces visually more interesting and personalized



| Piece of clothing #45

Shirt



| Piece of clothing #46

Jacket



| Piece of clothing #47

Shorts



Piece of clothing #48

Sweater

#3DFashion #Erasmus+ #CircularEconomyClothes



"Upcycling" czyli naprawa ubrań drukiem 3D!

A



Przed

B



Po



Projekt Erasmus+ "3D-ECO-Fashion - Circular Economy by Design"
nr 2024-1-DE04-KA210-YOU-000243488.
Sfinansowane ze środków UE. Wyrażone poglądy i opinie są jedynie opiniami autora lub autorów i niekoniecznie odzwierciedlają poglądy i opinie Unii Europejskiej lub FRSE. Unia Europejska ani podmiot udzielający dotacji nie ponoszą za nie odpowiedzialności.

 Dofinansowane przez Unię Europejską

About piece of clothing #45, #46, #47 and #48

- Plain garments and some with stains were transformed into new pieces with character
- 3D Prints were ironed and sewn on to the fabric
- Holes were also covered with this technique



Piece of clothing #49

- A broken case was repaired with the help of a 3D Print
- A thin layer was printed to but inside
- Buttons were added to fit the aesthetic

Case



Piece of clothing #50 and #51

Bag



Necklace

Piece of clothing #52 and #53

Hair- Cuff



Ear-Cuff



Piece of clothing #54, #55 and 56



Tie



Necklace



Earrings

Piece of clothing #57, #58 and #59



Necklace



Ring



Pin

Piece of clothing #60, #61, #62, #63 and #64



Hairband + Earrings



Necklace + Ring



Earrings

Piece of clothing #65, #66, #67, #68 and #69



Glasses + Necklace



Bowtie + Arm Cuff



Bracelet

Piece of clothing #70, #71, #72 and #73

Hairband



Hairband + Earring

Piece of clothing #74, #75, #76 and #77



Ring



Crown + Ring



Hairband

| About piece of clothing #50 - #77

- Accessories and jewellery were fully 3D printed
- All of them were made from PLA, making easy recycling possible
- The individual pieces let casual looks be experimented with and made more visually interesting

