

FROM WASTE TO PRODUCT



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BOOKLET : Abstract

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Introduction

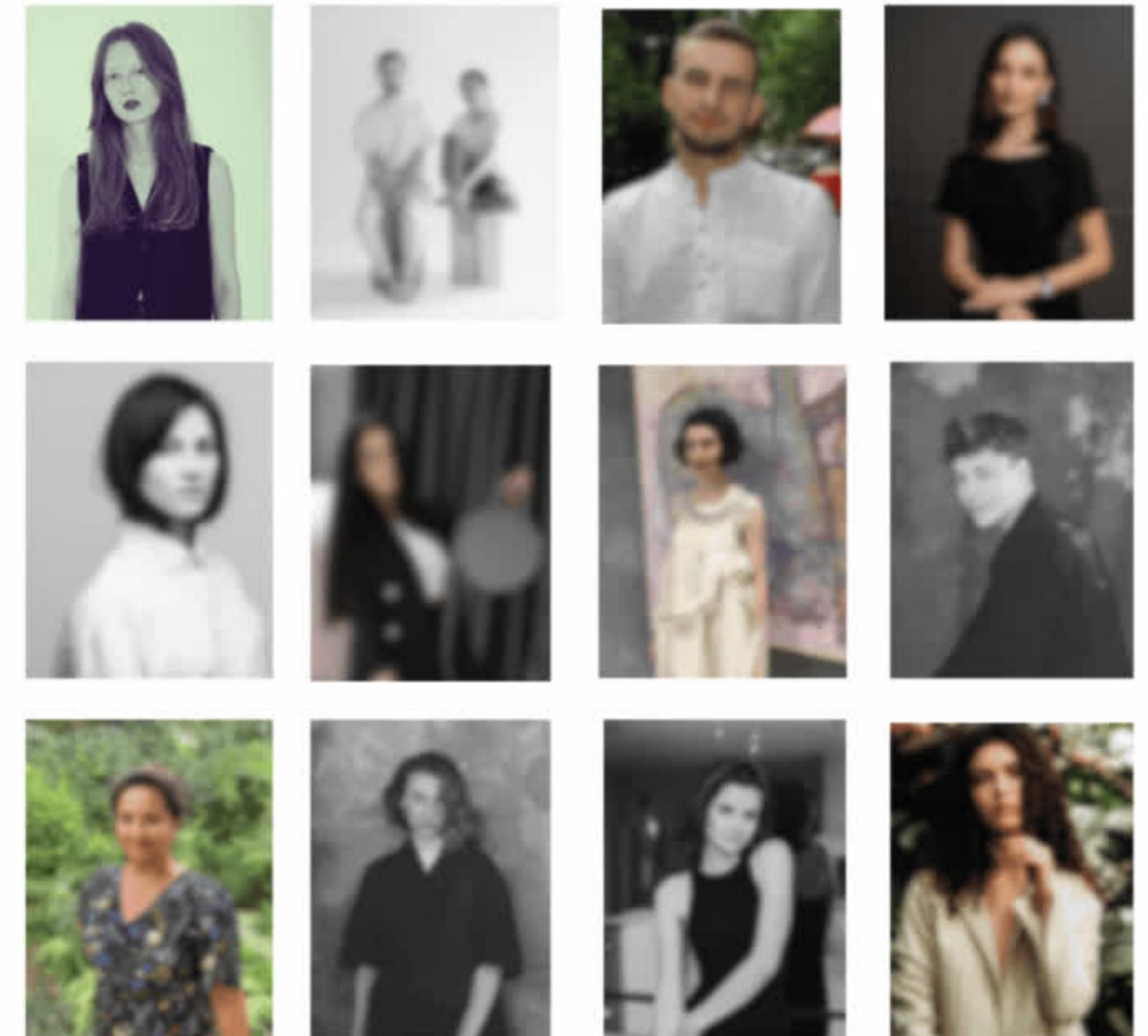
Our Hub is a the place that the community of designers perceives as a breeding ground for new ideas, projects and innovation.

However, we still need to work more on our impact as an organization that promotes sustainable values in the design community.

In our Hub there is the co-working space that serves as the first stage for textile and fashion startups.

The co-working space is a living organism which has inevitably left overs of fabrics, paper and so one.

In order to reduce it and rethink its discharge, I thought why not to use it as a raw material, combining it with bio-resins in order to create different objects.



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Topics

Bio Fabrication

Circular economy and
Modular connections

Textile Scaffolding

Open Source Hardware



BOOKLET : BoM

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Bill of Materials

Nr	Description	Price	Link	Notes
1	Gelatine	301.00 \$	https://profarm.md/gelatin-ewald-270-bloom	ordered 25 kg
2	Glycerine	58.00 \$	https://ecostup.md/product/glicerina-pharm-99-5/	ordered 5 kg
3	Wax	5.00 \$	https://www.albilux.md/rom/vosk.html	2 kg for testing
4	Pine resin	10.00 \$	https://ecochimie.md/	1 kg for testing
5	Wood	16.00 \$	https://supraten.md/placaj-neslefruit-415251525mm-c-24-belorusia-343135-ro	ordered
6	Wooden dowel	5.00 \$	https://sebas.md/shop/diblu-din-lemn-2/	ordered
7	Wooden dowel	5.00 \$	https://www.dedeman.ro/ro/diblu-fag-1000-x-8-x-8-mm/p/6033980	ordered
8	Wooden dowel	30.00 \$	https://supraten.md/lea-lemn-5050mm-l3-0m-342872-ro	6 pieces
9	Waterproof fabric	38.90 \$	https://linatextil.com/ro/textile-de-uz-casnic/duck-estur-hidrofug/estur-impermeabil-duck-culoare-gri-bej-dk276-clone-ro/	6 m

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Tools available

Shredder

The Shredder chops the plastic into small flakes that can be used by the other machines to melt. In my case I used it to shred textiles in order to get an omogenous look of the biomaterial.

Heat press

Heat press can be used in order to get plastic sheets of the needed thickness. It used to straighten bioplastic plates that slightly bent during the drying process.

Electric industrial knife

I used to cut the textile remnants in stripes.

Laser cutting machine

Used for cutting the modular details for assembling the stool.

Bio Lab

At ZIPHOUSE.

BOOKLET : Experimentations and Research process

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Topics	4	Bioresin Recipe <ul style="list-style-type: none">• Gelatine powder - 184 gr Functions as the polymeer (so it becomes a solid)• Glycerine - 32 gr Functions as plasticizer that bonds with the gelatine (makes it flexible).• Water - 980 ml/gr To dissolve and mix the polymeer and plasticizer• A large round coffee filter to absorb froth
BoM	5	
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Bibliography	15	1. Preparation <ul style="list-style-type: none">• Weigh your ingredients• Prepare the mold and find a place where you can leave it for a while, ideally near an open window where there's air flow.• Mixing and dissolving the ingredients
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BOOKLET : Experimentations and Research process

Abstract	2	Experimentations and Research process <ul style="list-style-type: none">• Bring the water to the boil• Optional: add natural dye if you wish to use color• Add the glycerine• Add the gelatine• Keep the temperature below 80 degrees celcius while stirring very very slowly and gently to avoid making bubbles.• Cooking the ingredients• Simmer and slowly stir the mixture between 60-80 degrees celcius for at least 20 minutes or up to an hour. Turn it lower when bubbles appear: you don't want the liquid to move. Don't boil it. <p>Longer cooking time allows more water to evaporate and will dramatically reduce shrinkage of the casted object. You will get a thicker liquid. To cast larger volumes and solids with this recipe, evaporate a lot of water, until it's very very thick. Sometimes it's worth reheating and melting scraps, they've already dissipated</p>
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BOOKLET : Experimentations and Research process

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Experimentations and Research process

a lot of water and result in nice castings.

- If froth appears on top of your liquid and doesn't go away, you can use a coffee filter to absorb it by covering the surface with it and then taking it off. In cooking this is called a cartouche, you can also make one from kitchen paper. Take a round coffee filter that fits into your pot. Absorb additional froth using some kitchen paper.
- Casting
- Let the liquid cool for a couple minutes until it gels a little but is still liquid and pourable.
- Cast into the mould slowly to avoid bubbles
- Pour from the middle and hold still, let the liquid distribute itself.

Put the mould away to dry in a cool place with lots of air flow (like near an open window). A warmer place might speed up the drying process but also allow bacteria to grow faster and

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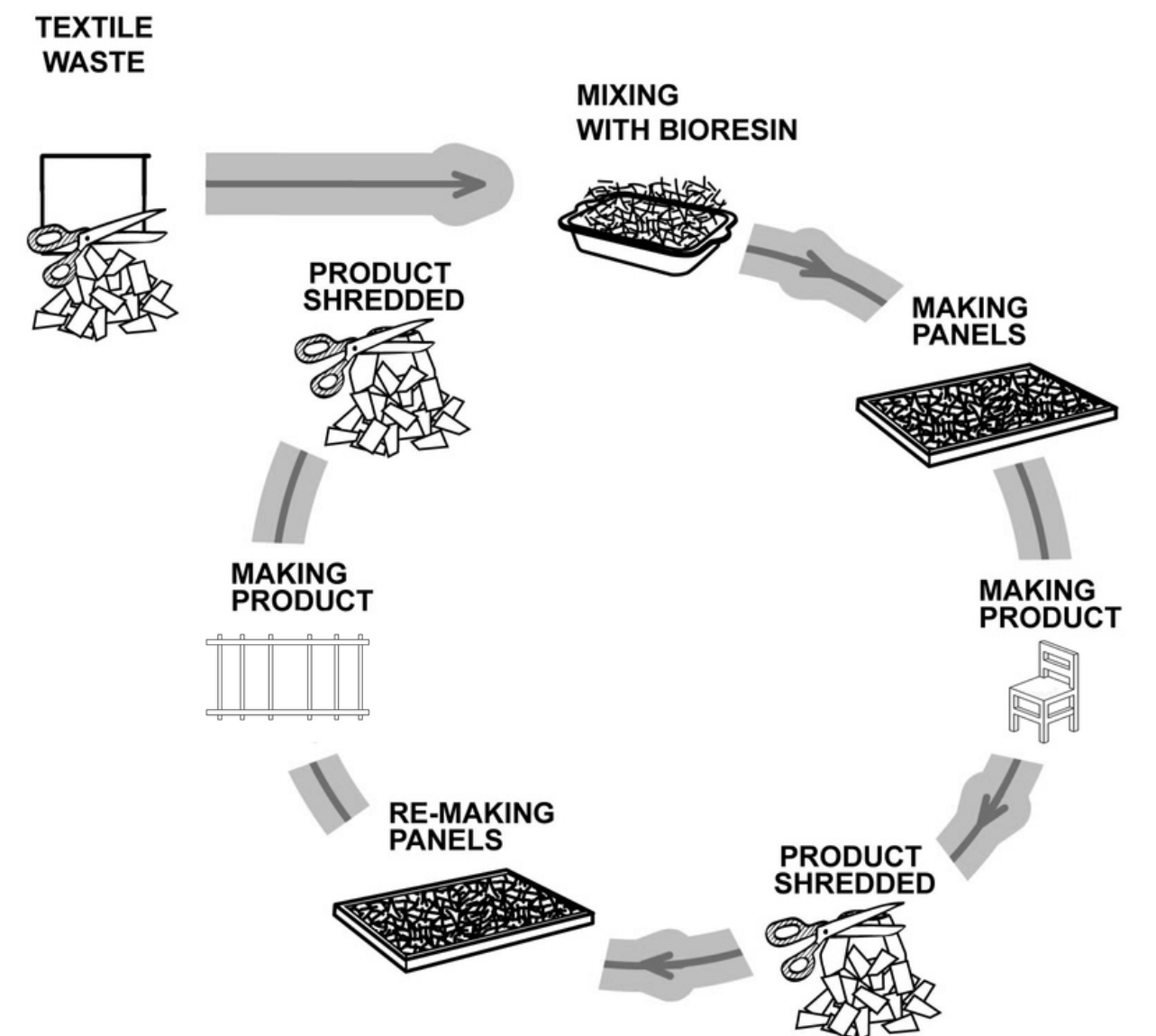
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Experimentations and Research process

can result in fungal growth.

- When using a flexible mould: let it dry without releasing to keep the form as much as possible. The resin will likely shrink and release itself from the mold. If it feels cold to the touch it is still drying. If you are using a rigid mold: release after 4-8 hours and dry flat.



BOOKLET : Experimentations and Research process

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Experimentations and Research process



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Results/ Portfolio

<https://class.textile-academy.org/2023/elena-bannaia/project/>

https://www.youtube.com/watch?v=DFR2UwJwD_c



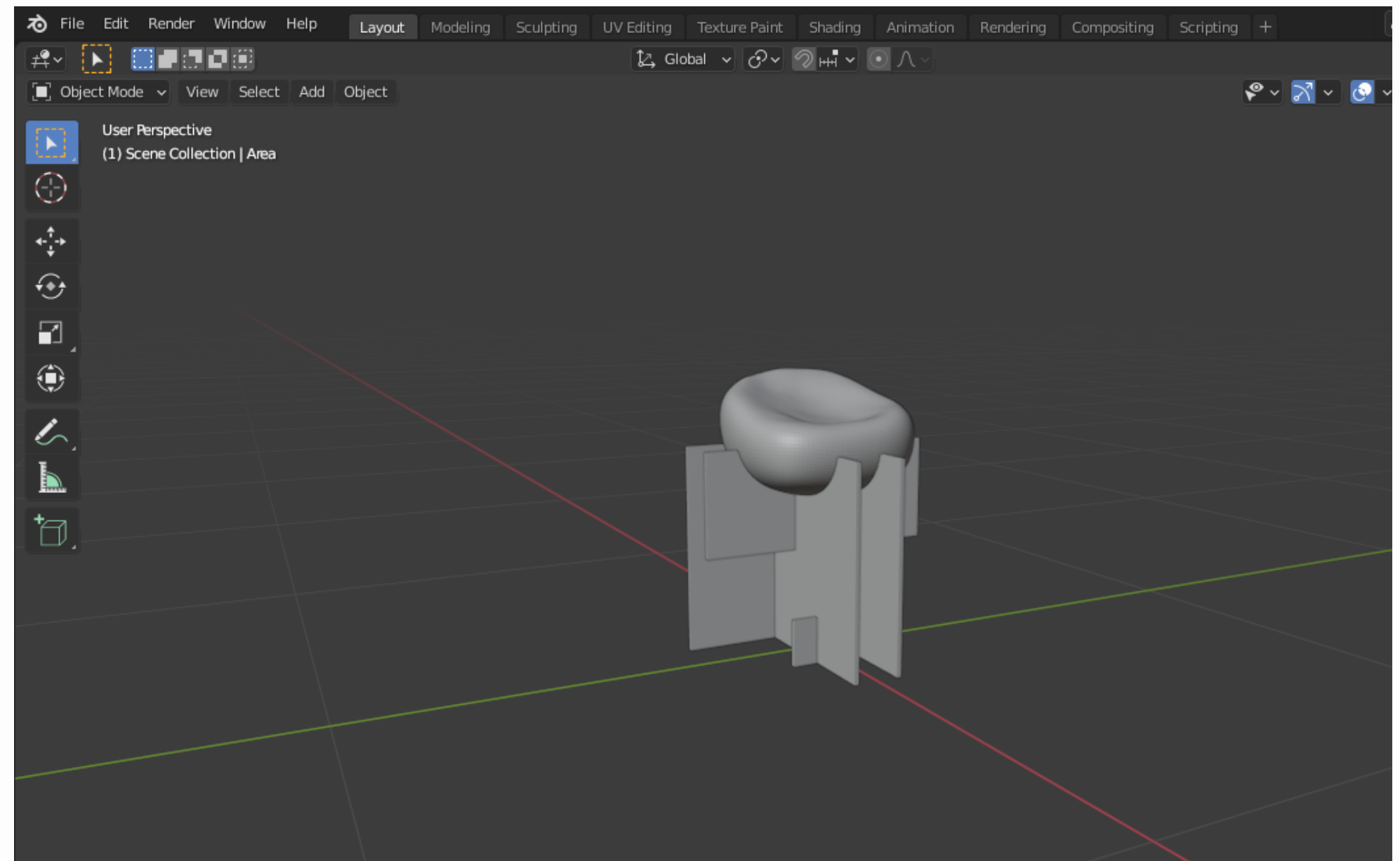
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Schematics

The modular pattern consist from 5 hard pieces and one pillow.

In addition to the stool, there are a series of modular shelves that I am looking forward to experiment on.



BOOKLET : Conclusion

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Conclusion

The rest of the objects will be displayed at our Hub, at the entrance holl to set a showcase area with the results of Fabricademy journey. It will intrigue and engage people who visit our Hub to interact with these objects.



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Topics	4	https://vimeo.com/763840595/4eb57ac00d
BoM	5	
Tools	6	https://issuu.com/miriamribul/docs/miriam_ribul_recipes_for_material_a/7
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Bibliography	15	https://class.textile-academy.org/2020/loes.bogers/assignments/week06/
Biography	16	https://www.plasticpollutioncoalition.org/blog/2017/1/30/what-is-the-role-of-bioplastics-in-a-circular-economy?rq=bioplastic

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Bannaia Elena

I am a project manager at ZIPHOUSE FASHION INNOVATION HUB and a clothing designer based in Chisinau, Republic of Moldova.

Back in time, I graduated at the State Pedagogical University

"Ion Creanga" of Chişinău,

Faculty Fine Arts and Design: Bachelor and Master degree.

The work with different types of textiles and search for improving their properties was always part of my working research.



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BOOKLET :



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