SUMMARY

Tinkering with and for Advanced Textiles. Material Tinkering as a source for the creative practice.

Developed by:

POLITECNICO MILANO 1863

DIPARTIMENTO DI DESIGN

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Introduction

Material Tinkering
Exploration and manipulation of physical materials in a naive, playful, and imaginative way with experimental and learning purposes.

DIY-Materials
Do-It-Yourself Materials are created through individual or collective self-production experiences, often with unconventional or reclaimed resources, or by techniques and processes of the designer's own invention, as a result of a process of Material Tinkering.

Cover picture:
Greenet, by Helga Aversa, Simona Bettoni, Aysecan Ertin, Muyun Wang. POLIMI, course “Designing Materials Experience”, 2016, tutored by: Valentina Rognoli, Stefano Parisi, Camilo Ayala Garcia.

Material Tinkering as:

A conversation

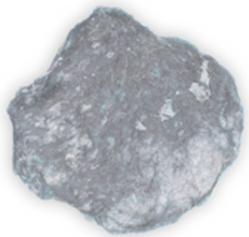
Materials “speak” playing an active role by suggesting ways of interaction and manipulation. They co-perform in the process of tinkering.

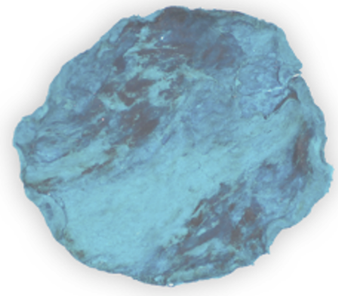
An Experiential Learning process

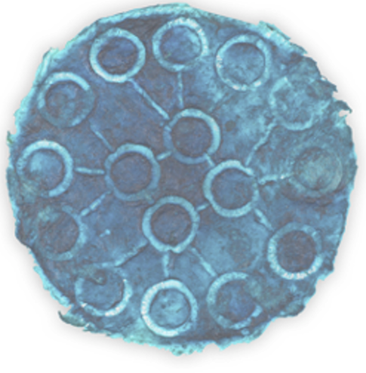
Designers acquire and apply knowledge, skills and feelings by being involved in a direct encounter with the phenomena rather than merely thinking about the encounter.

An iterative process

Driven by curiosity, designers are encouraged to do continuous development and perpetual prototyping.



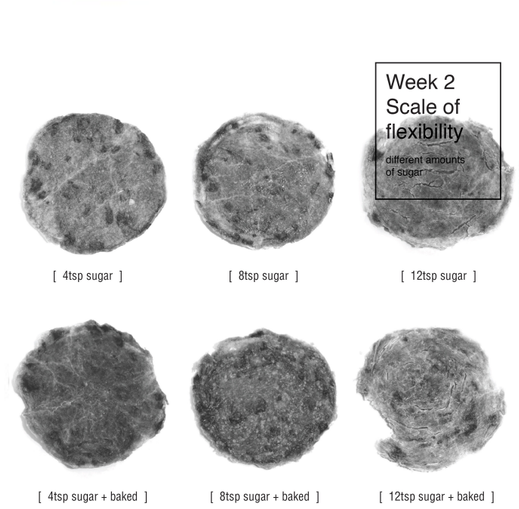




Fluff, by Valeria Munda, Valentina Maino, Eileen Krüger, Setareh Salehi, Juuso Koski. POLIMI, Design School, course “Designing Materials Experience”, 2016. Tutored by: Valentina Rognoli, Stefano Parisi, Camilo Ayala Garcia. Further developed by Valentina Maino e Valeria Munda. POLIMI, Design School, Master thesis, 2017. Tutor: Valentina Rognoli. Co-tutors: Stefano Parisi, Camilo Ayala Garcia.

Tinkering WITH materials

- To understand material qualities and properties
- To recognize sensory and performative potential and constraints
- Resulting in “Material Drafts“, underdeveloped samples



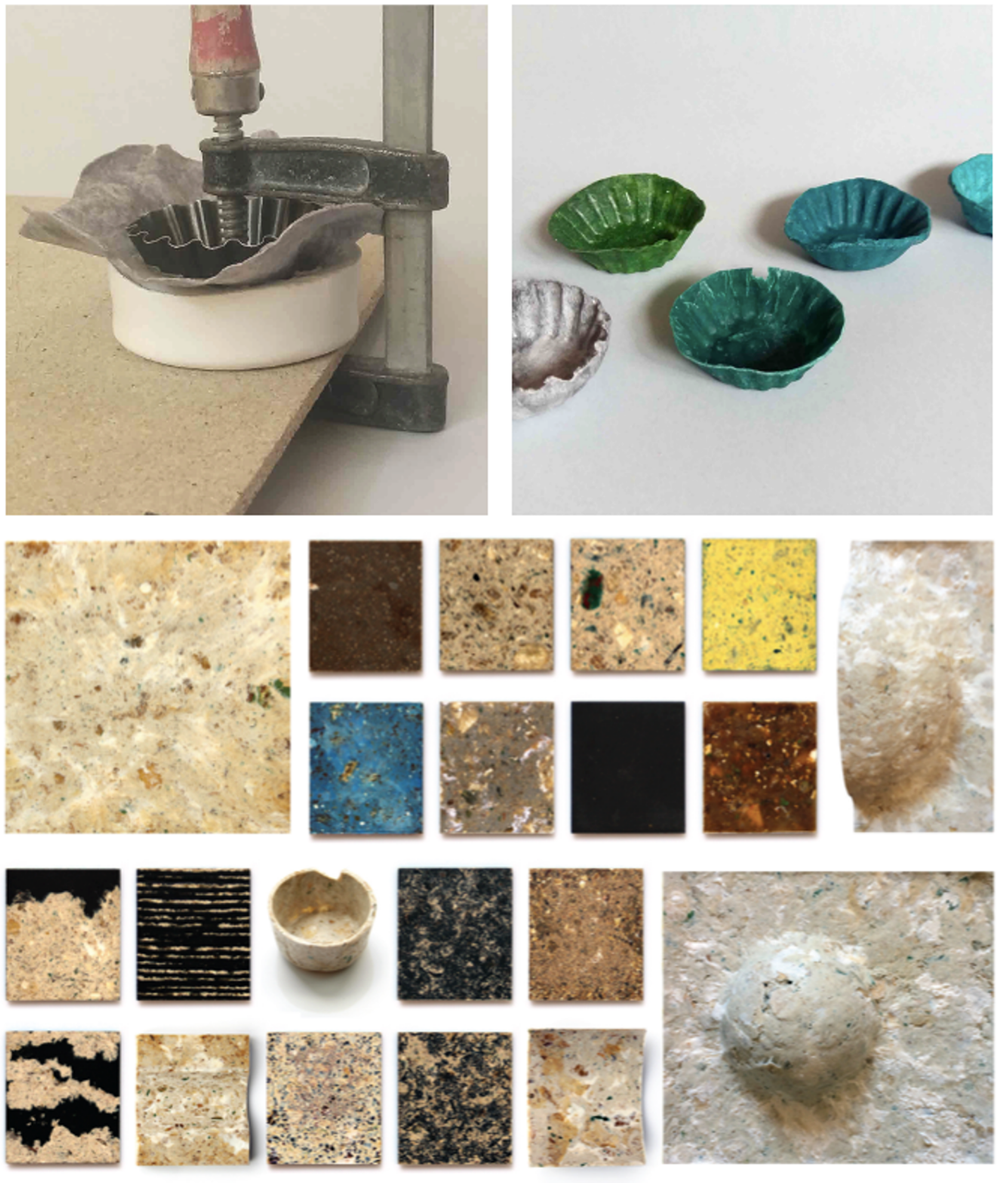
Marbile by Ioanna Oikonomou, Marina Psimikaki, Yudan Yan, Marta Ziminska. POLIMI, Design School, course “Designing Materials Experience”, 2016. Tutored by: Valentina Rognoli, Stefano Parisi, Camilo Ayala Garcia.

Tinkering FOR materials

- To foster materials further development

- To reinforce the designer's material vision or hypothesis

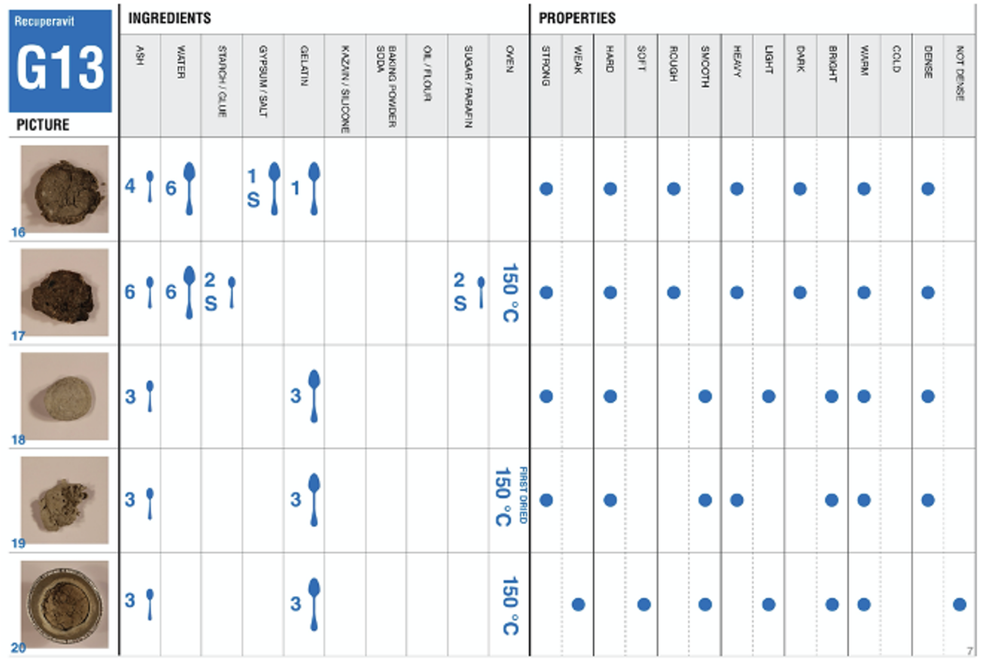
- Resulting in "Material Demonstrators" showing qualities, properties, and form variations



Top: Fluff, by Valeria Munda. POLIMI, Design School, Master thesis, 2017. Tutor: Valentina Rognoli. Co-tutors: Stefano Parisi, Camilo Ayala Garcia. **Bottom: Re-Surface**, by Helga Aversa, 2018. POLIMI, Design School, Master Thesis, 2018. Tutor: Valentina Rognoli. Co-tutors: Mario Malinconico, Carla Langella, Andrea Ratti.

Material Tinkering phases

- Tinkering applied to the formula, process, and/or sample
- Test qualities and properties by lab/home experiments or embodied/tactual experience.
- Documentation with diaries, logbook, abacus, and videos



Documentation by Dorota Balewicz, Hwansung Park, Tessie van der Voort Maarschalk, and by Valeria Munda, Valentina Maino, Eileen Krüger, Setareh Salehi, Juuso Koski. POLIMI, Design School, course ‚Designing Materials Experiences', 2016-2017, tutored by Valentina Rognoli, Stefano Parisi, Camilo Ayala.

Some recommendations and tips

- **Be inspired** by techniques and “recipes“ from other fields, cultures, and traditions.

- **Enhance authenticity**, showing the raw ingredients or qualities (colours and textures).

- **Reconnect with material provenance**: show the spatial and temporal coordinates of the material by enhancing or transferring information about the season or place they are extracted, for example with colours.

- **Cede control to material agency**: support the material instead of concealing and restraining it. Appreciate materials dynamism and changes. Establish a “dialogue” with the material and be inspired by it.

- **Value imperfection** and embrace the unexpected.

Material Tinkering with conductive and smart bio-yarn

A combination of a bio-yarn based on sodium alginate and calcium chloride with smart materials (thermochromic inks) and conductive materials (activated charcoal).

Explorations by Elena Balbarau, Eva Constance Beite Vadala, Giulia Bonfante, Yiying Huang, Yuhe Zhao. POLIMI, Design School, workshop Coded Bodies by Giulia Tomasello with the support of Stefano Parisi, coordinated by Prof. Paola Bertola, 2020.

This was a summary of an open educational resource. Please visit http://destexproject.eu/ to see the full amount of intellectual outputs of the project.

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