

A.A. 2016|17

Corso di Laurea:
Design del Prodotto Industriale

LSF A1 | **Product Design**

FOOD DESIGN: *Sustainability And Interaction*

Docenti:

Design di prodotto | **Giuseppe Mincolelli**

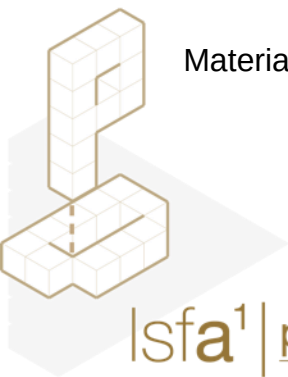
Ecodesign | **Davide Turrini**

Materiali per la sostenibilità ambientale | **Francesco Mollica**

Energie rinnovabili | **Michele Bottarelli**



Lsf_a
choose the future

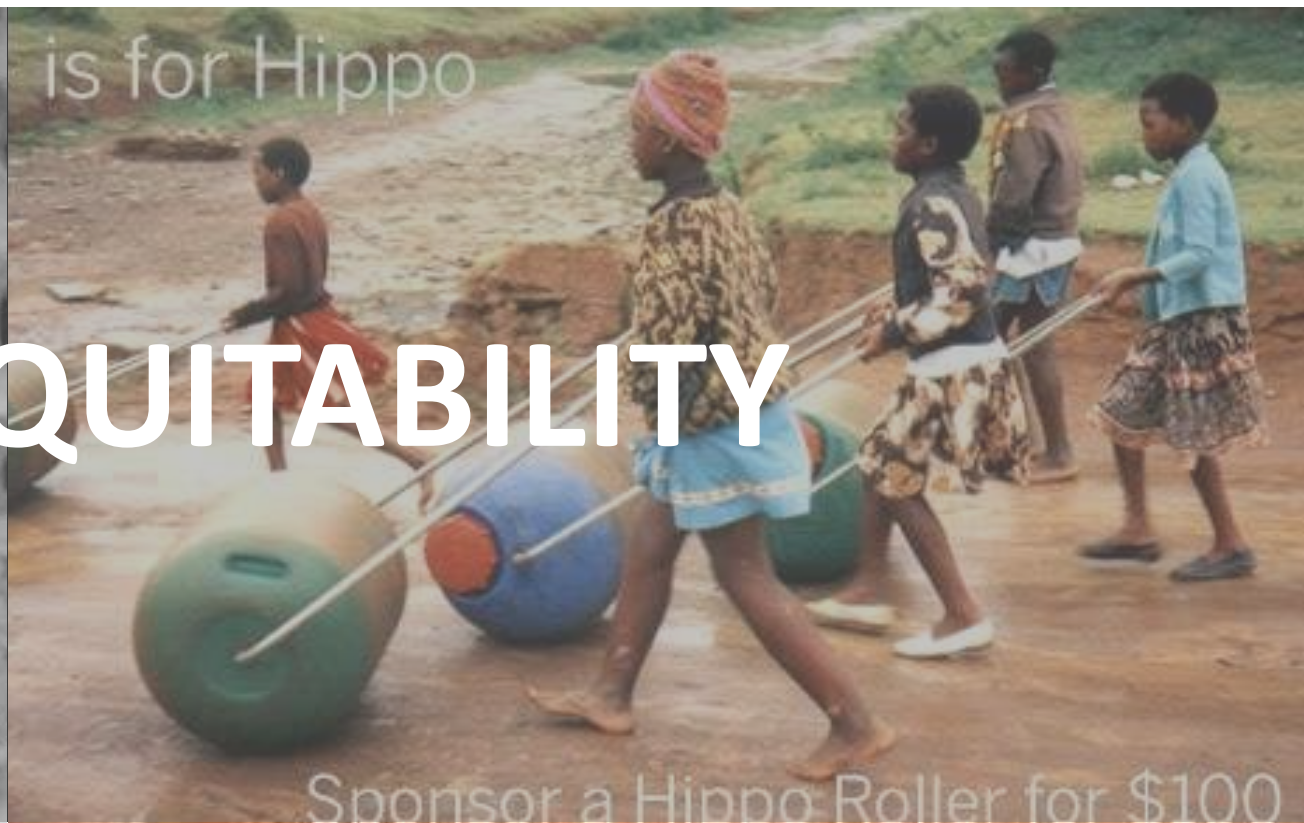






AWARENESS

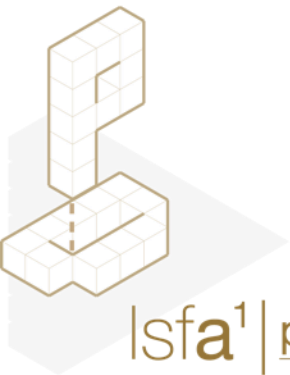
COMPATIBILITY



EQUITABILITY

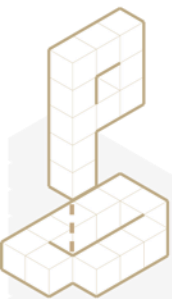








H is for Hippo



lsfa¹

Sponsor a Hippo Roller for \$1

A young girl with dark hair and a small gold hoop earring is drinking water from a clear glass. She is wearing a white short-sleeved shirt with dark suspenders. The background is a blurred outdoor setting with other people, including a man in a light-colored shirt and a child in a blue shirt, suggesting a public gathering or a community event. The word "WATER" is overlaid in large white letters on the left side of the image.

WATER



WATER FOOTPRINT

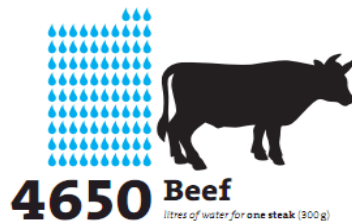
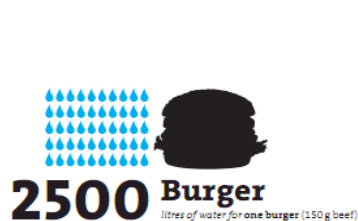
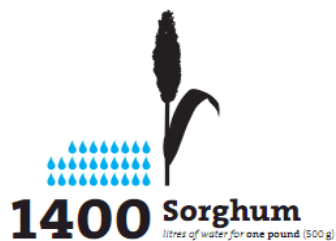
Virtual water embedded in products

one drop (shown in the illustrations) is equivalent to 50 litres of virtual water (production-site definition). All figures shown on this poster are based on **exemplary calculations** and may vary depending on the origin and production process of the product.

The water footprint of a product (a commodity, good or service) is the volume of **freshwater** used to produce the product, measured at the place where the product was actually made. It refers to the amount of the water used in the various steps of the production chain.

→ For the full poster featuring many more products and in-depth information, visit: www.virtualwater.eu

DATA: Hoekstra, A.Y., Chapagain, A.K. (2008) Globalization of water: Sharing the planet's freshwater resources Blackwell Publishing, Oxford, UK
www.waterfootprint.org
DESIGN: Timm Kekeritz, www.virtualwater.eu
TYPEFACE: TheSans and TheSerif, Lucas de Groot



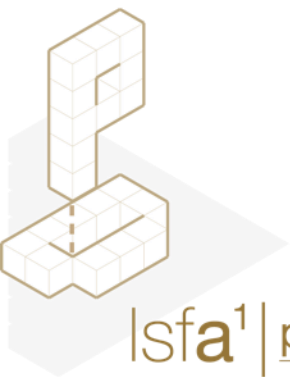
COOKING



Nakiri, Yanagi, Deba

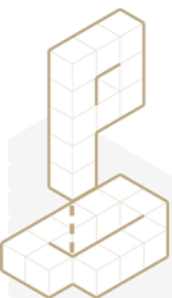


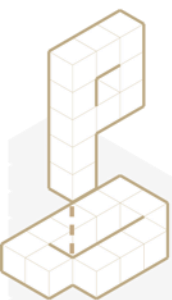












AWARENESS:INTERNET OF THINGS

CONSERVATION





ISTRUZIONI D'USO

1 ATTIVAZIONE



20°C

20°C



x 4 = 6L

2 TEMPERATURA E INSERIMENTO ALIMENTI



20°C

FRUTTA

10°C

VERDURA

3 MANTENIMENTO

Ogni 2/3 giorni circa

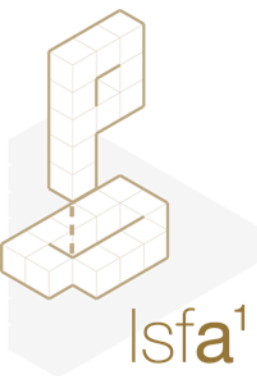


x 1 o 2

Come una pianta



Come un mini orto

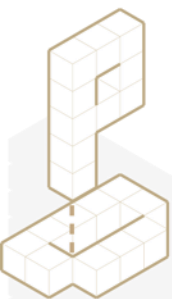


lsfa¹

FUNZIONAMENTO

 $T^{\circ} \text{ ext } 20^{\circ}\text{C}$ 

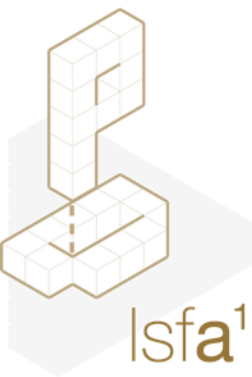
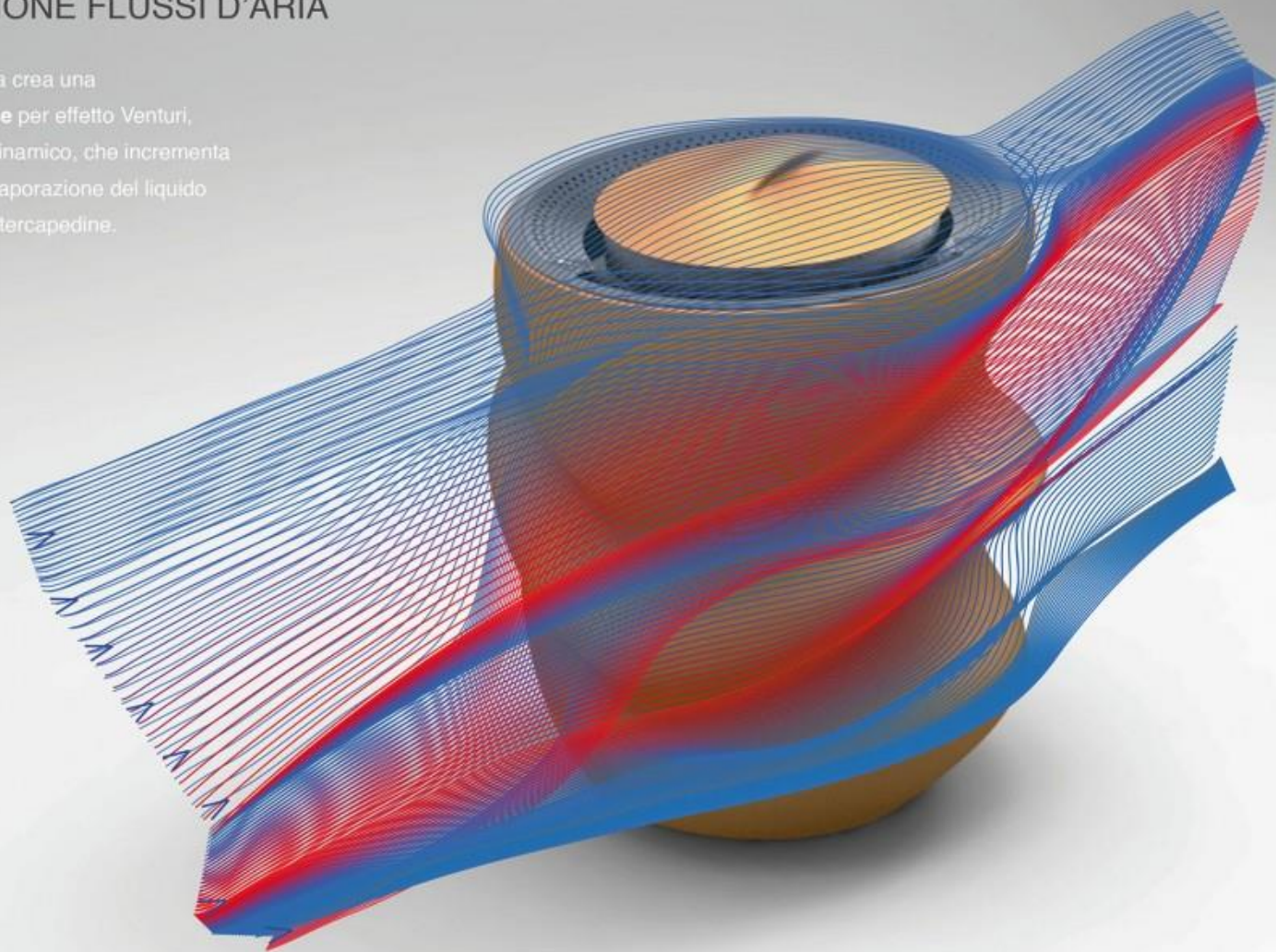
IRRAGGIAMENTO

CONVEZIONE
FORZATAlsfa¹



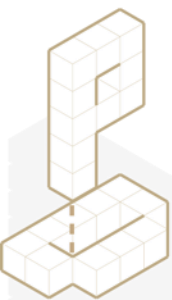
SIMULAZIONE FLUSSI D'ARIA

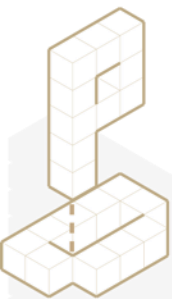
La forma esterna crea una
autoventilazione per effetto Venturi,
paradosso idrodinamico, che incrementa
il processo di evaporazione del liquido
contenuto nell'intercapedine.



A photograph of a food production facility. In the foreground, a worker in a white protective suit and mask is positioned behind a conveyor belt. The conveyor belt is moving green, packaged food items, possibly lemons or limes. In the background, another worker in similar attire is visible, working further down the production line. The factory environment is clean and industrial, with stainless steel machinery and equipment. The word "PRODUCTION" is overlaid in large, white, bold capital letters across the center of the image.

PRODUCTION

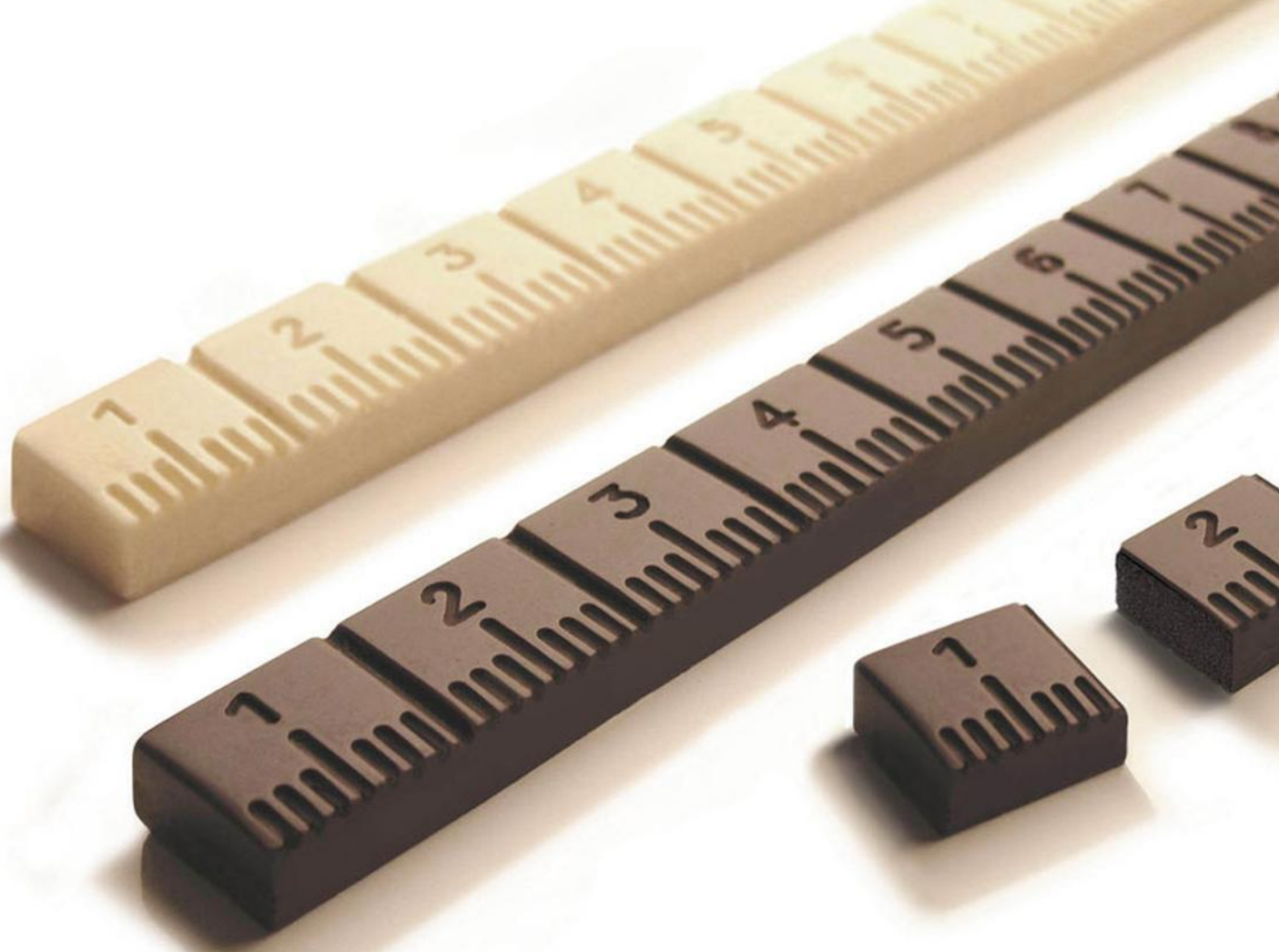






FOOD DESIGN







DISTRIBUTION



NESPRESSO®





192

1.59

191

2.99

190

2.49

189

2.79

188

2.29

187

2.09

186

2.09

184

1.99

183

1.89

182

1.79

181

1.69

180

1.59

179

1.49

178

1.39

177

1.29

176

1.19

175

1.09

174

0.99

173

0.89

172

0.79

171

0.69

170

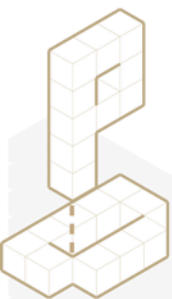
0.59



A close-up photograph of a person wearing a red shirt, seated at a table and eating. The person's hands are visible, holding a silver fork and knife. In the foreground, a glass of white wine is partially visible on the left. The main focus is a plate of food, which includes two large, cooked shrimp, a fresh salad with green and purple leaves, and a small portion of yellow and orange food in a white bowl. The word "EATING" is overlaid in large, white, bold, sans-serif capital letters across the center of the image.

EATING











TellSpec: What's in your food?

A revolutionary hand-held device that tells you the allergens, chemicals, nutrients, calories, and ingredients in your food.

Toronto, Ontario, Canada Technology

Story Updates 34 Comments 397 Funders 1,765 Gallery 1



11k 644 495

Share Tweet +1 Email Embed Link Follow

THANK YOU

\$386,392 USD
RAISED OF \$100,000 GOAL

386% 0 time left

This campaign started on Oct 01 and closed on November 30, 2013 (11:59pm PT).

Flexible Funding

CAMPAIGN CLOSED

This campaign ended on November 30, 2013

SELECT A PERK

\$250 USD

Featured

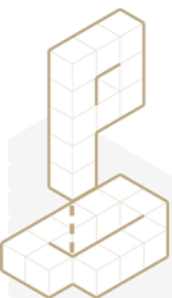
THIS IS IT!

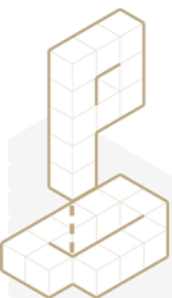
Be among the first people in the world to test and analyze your food with TellSpec. You'll get a TellSpec scanner in your choice of white, red, green, or turquoise blue—and



A close-up photograph showing a person's hand sorting through a large pile of vegetable waste on a blue surface. The waste includes green leafy vegetables, red tomatoes, and several whole onions. Several yellow plastic bags are scattered among the waste, some with printed text in Vietnamese. A large, clear plastic bag filled with onions is visible in the upper right corner. The word "WASTE" is overlaid in large, white, bold capital letters across the center of the image.

WASTE









1

RESEARCH PHASE: PROBLEM DETERMINATION



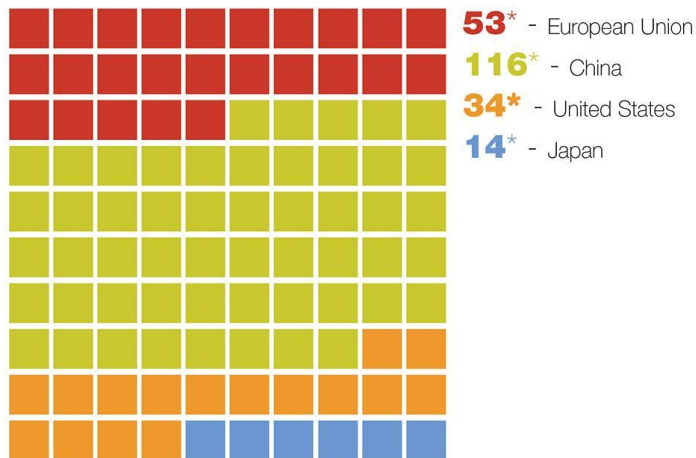
EU produces about 53 million tonnes of biodegradable waste representing between 30% and 45% of municipal solid waste.

This alarming amount, if stored in landfills, because of its natural degradation can produce pollutants both in soil and groundwater and releases large amounts of methane.

**JAMES
DYSON
AWARD**

Amount of organic waste produced by industrialized countries every year (*million tonnes)

Organic waste produced per capita in the EU during 2010



95-115
Kg per person

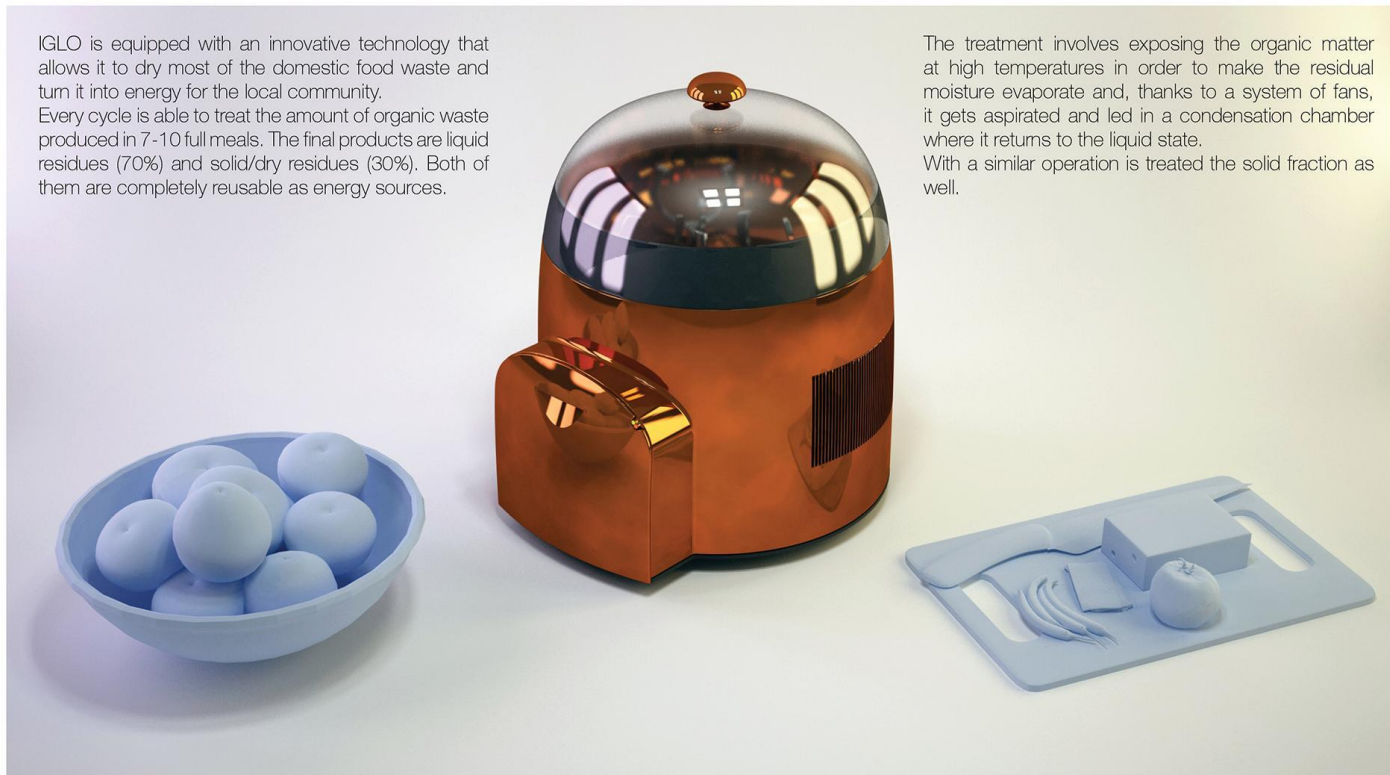


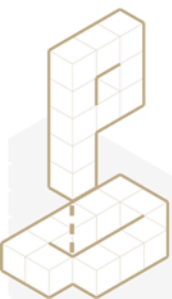
3 THE PRODUCT: IGLO, PT.I



IGLO is equipped with an innovative technology that allows it to dry most of the domestic food waste and turn it into energy for the local community. Every cycle is able to treat the amount of organic waste produced in 7-10 full meals. The final products are liquid residues (70%) and solid/dry residues (30%). Both of them are completely reusable as energy sources.

The treatment involves exposing the organic matter at high temperatures in order to make the residual moisture evaporate and, thanks to a system of fans, it gets aspirated and led in a condensation chamber where it returns to the liquid state. With a similar operation is treated the solid fraction as well.





**1. Materiali
polimerici**

**3. Elementi di
progettazione**

**5. Materie plastiche
di origine naturale e
biodegradabili**

**2. Tecnologia
delle materie
plastiche**

**4. Recupero delle materie
plastiche**

MODULO 001

**PRODUCT
DESIGN**

Prof. Mincoelli

MODULO 002

ECODESIGN

Prof. Turrini

MODULO 003

**ENERGIE
RINNOVABILI**

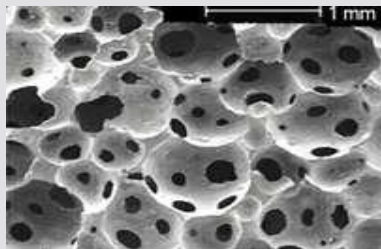
Prof. Bottarelli

MODULO 004

**MATERIALI PER
LA SOSTENIBILITA'
AMBIENTALE**

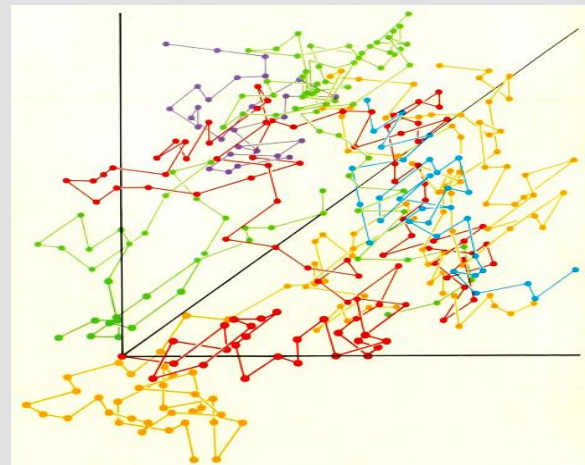
Prof. Mollica

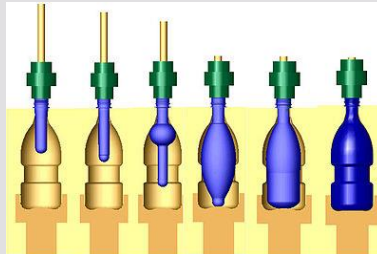




1. Materiali polimerici

- **Microstruttura**
- **Proprietà fisiche, meccaniche**
- **Morfologia**
- **Polimeri ed additivi**

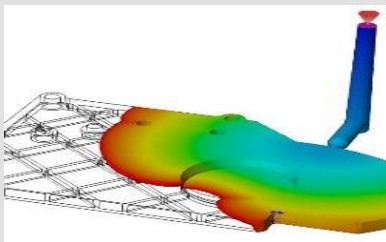




2. Tecnologia delle materie plastiche

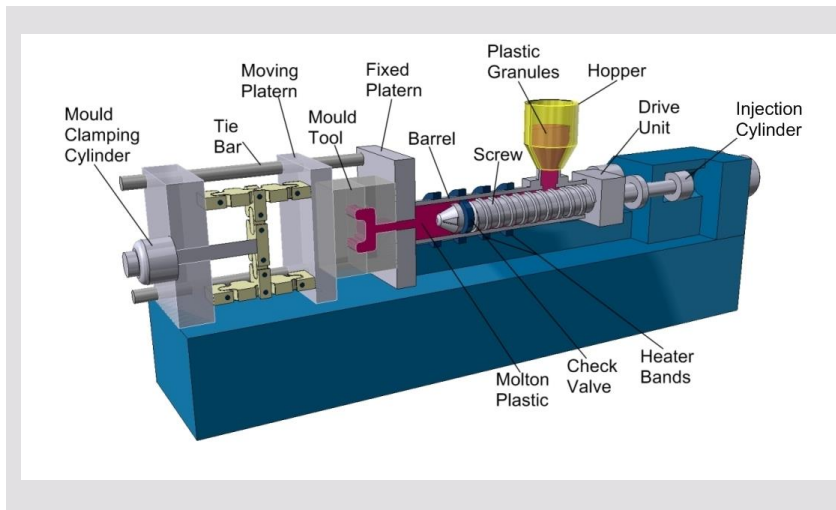
- Estrusione
- Stampaggio ad iniezione
- Termoformatura
- Soffiaggio di corpi cavi
- Stampaggio rotazionale





3. Elementi di progettazione

- Progettazione limitata dalla tecnologia
- Limitazioni su forme, dimensioni e spessori.
- Elementi costruttivi specifici
- Giunzioni





4. Recupero delle materie plastiche

- Recupero primario, secondario e terziario.
- Recupero del materiale
- recupero di materie prime (feedstock recycling)
- recupero di energia (incenerimento).





5. Materie plastiche di origine naturale e biodegradabili

- Poliesteri da amido o cellulosa
- Materiali di origine proteica
- Poliesteri biodegradabili



1. I principi

2. L'apparente
anomalia: il freddo

3. Calore

4. Innovazioni

MODULO 001

PRODUCT
DESIGN

Prof. Mincoelli

MODULO 002

ECODESIGN

Prof. Turrini

MODULO 003

ENERGIE
RINNOVABILI

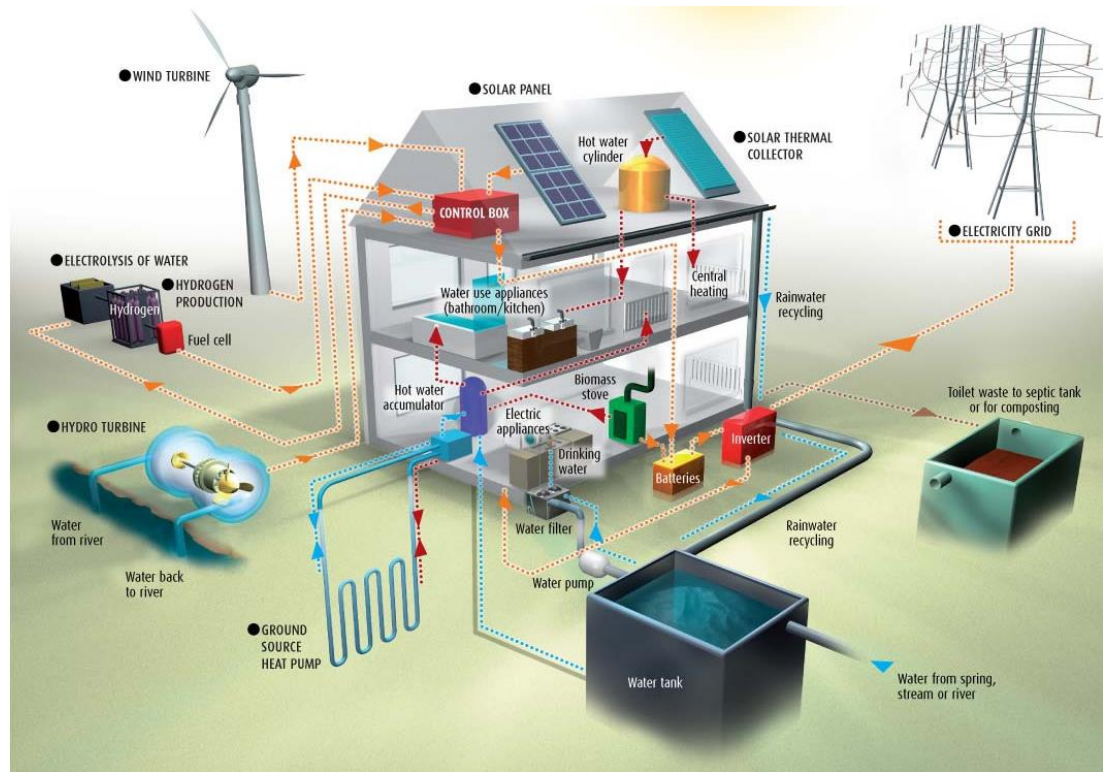
Prof. Bottarelli

MODULO 004

MATERIALI PER
LA SOSTENIBILITA'
AMBIENTALE

Prof. Mollica







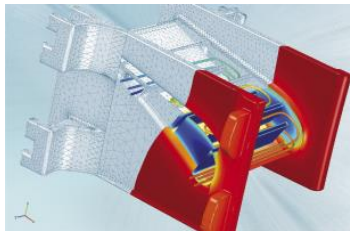
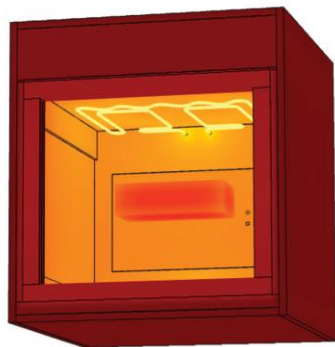
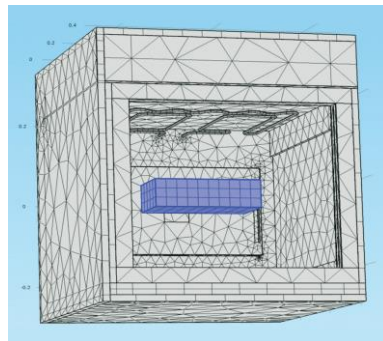
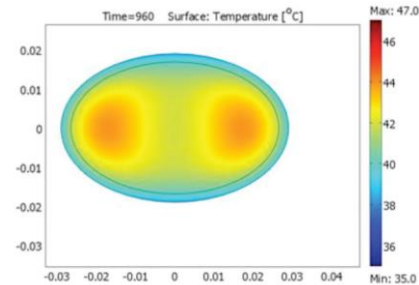


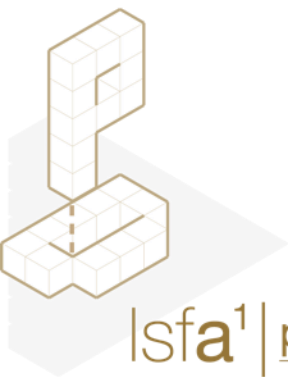




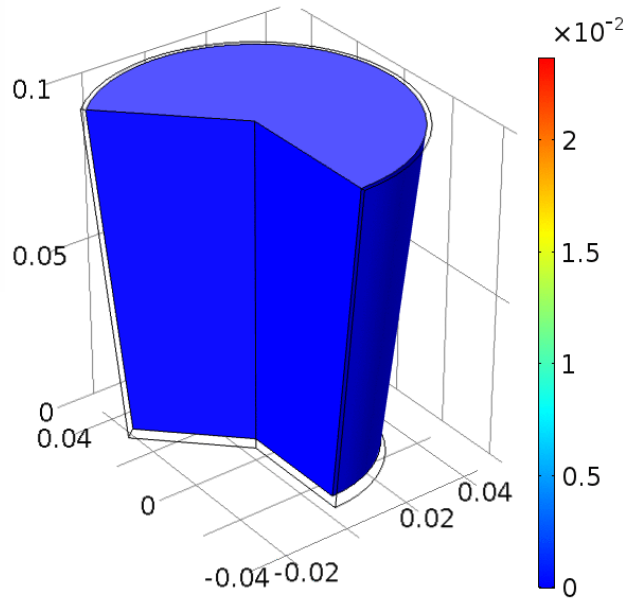




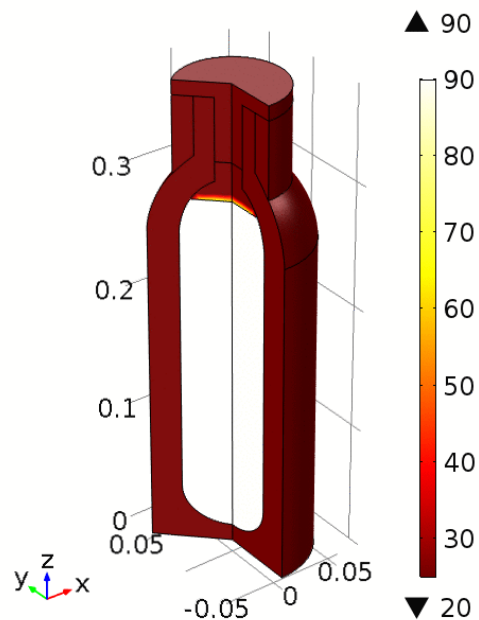
COMSOL
MULTIPHYSICS®

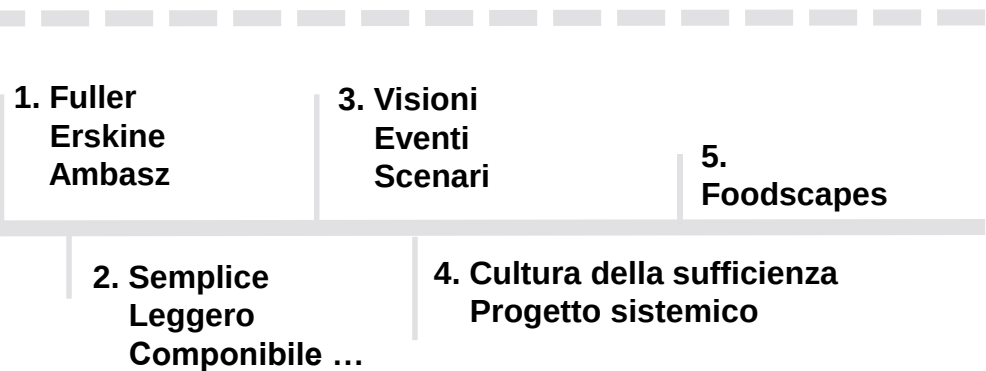


Time=0 s
Surface: Velocity magnitude (m/s)



Time=0 h Surface: Temperature (degC)





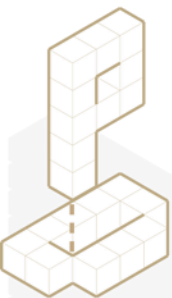
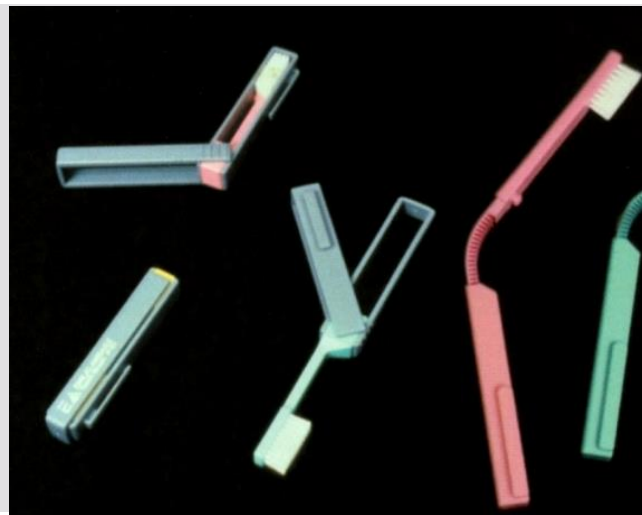
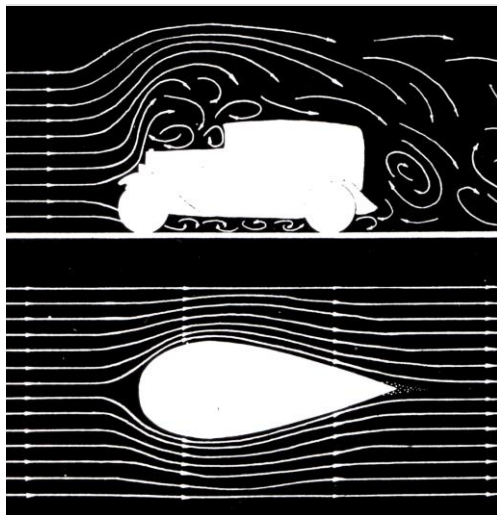
MODULO 001	PRODUCT DESIGN Prof. Mincoielli
MODULO 002	ECODESIGN Prof. Turrini
MODULO 003	ENERGIE RINNOVABILI Prof. Bottarelli
MODULO 004	MATERIALI PER LA SOSTENIBILITA' AMBIENTALE Prof. Mollica





1. Fuller Erskine Ambasz

Ambiente
Uomo
Tempo
Riduzione
Utilità
Partecipazione





2. Semplice Leggero Componibile Adattabile Durevole

.....

ESERCITAZIONE

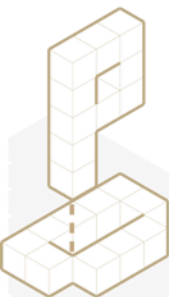
|sfa¹| product design



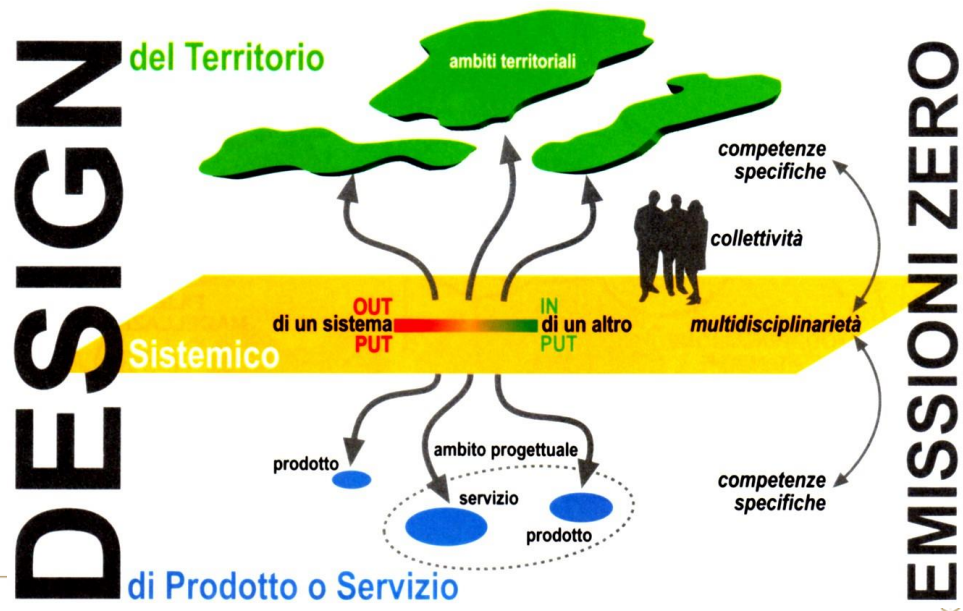


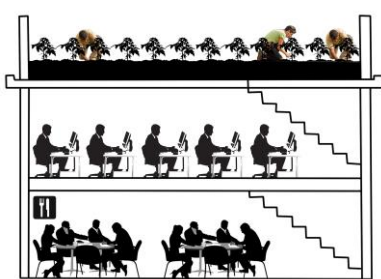
4. Cultura della sufficienza

Progetto
sistemico



|Sfa¹| product design

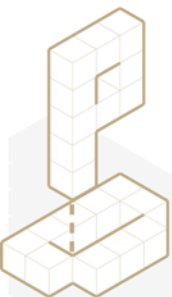




5. Foodscapes

Progettare nuove culture
ed esperienze del cibo

ESERCITAZIONE
L'orto urbano
Il punto vendita
La cucina
La tavola



caffè
decaffeinato

Difficoltà di preparazione:
1/5 molto facile!

Ingredienti:

- 80 g di spaghetti
- 200 g di pomodoro
- 2 fettine di cipolla
- olio
- sale
- basilico

Informazioni energetiche

- 50% GDA
- 340 kcal
- 13% valore proteico
- 70% carboidrati complessi

Condividi

f t g+ p

1. INSIGHTS

3. SYSTEM

2. UCD - QFD

4. INTERACTION - IOT



MODULO 001

PRODUCT
DESIGN**Prof. Mincoielli**

MODULO 002

ECODESIGN
Prof. Turrini

MODULO 003

ENERGIE
RINNOVABILI
Prof. Bottarelli

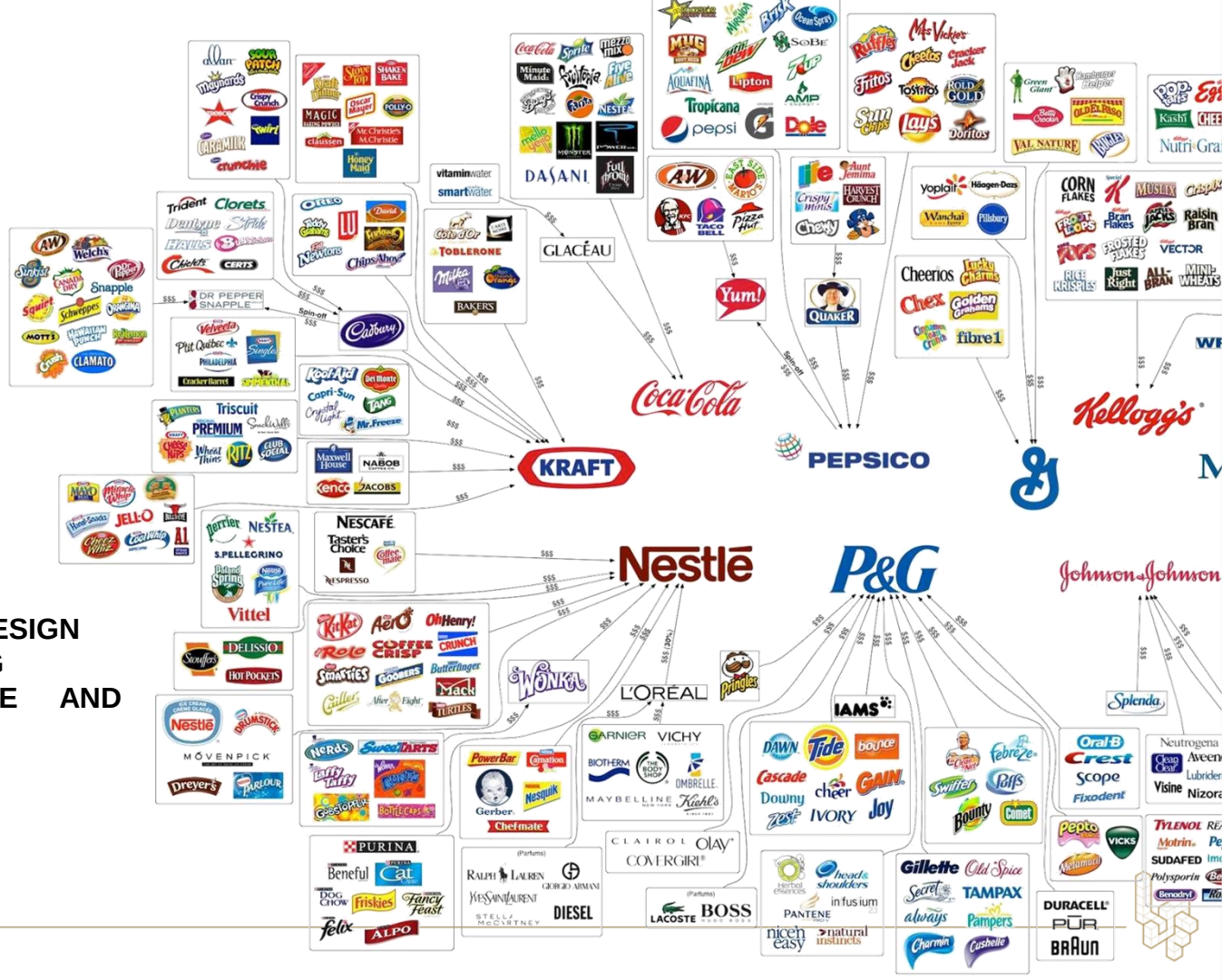
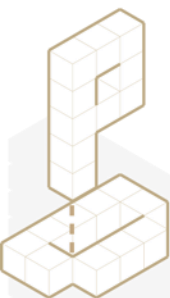
MODULO 004

MATERIALI PER
LA SOSTENIBILITA'
AMBIENTALE
Prof. Mollica

Insight

food awareness

- FOOD DESIGN
- SUSTAINABLE DESIGN
- FOOD BRANDING
- FOOD CULTURE AND BEHAVIOURS



User centered design- QFD

- **NEEDS ANALYSIS**
- **GOALS AND FRUSTRATIONS**
- **CHARACTERISTICS**
- **QUALITY DEFINITION**



Sam is a bit of a character, she is interested in many things that her classmates find boring or weird. She likes sci-fi and plays videogames, she likes more “girly” stuff too but she finds it boring after a while. She suffers from dyslexia and that as caused her to be very insecure at school, she tries hard but soem-times thinks that she just can’t get it. Her friends try to be nice, but they forget some-times and she doesn’t like reminding them, so she might not understand stuff and ask mom at home.

Sam

student

age :11

Goals :

- . Get good marks
- . Be more helpful in class
- . Read a book without help
- . Be better at something in class, something that doesn’t require reading and writing

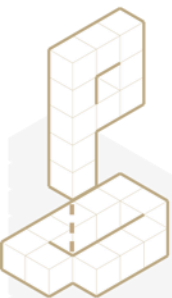
Frustrations

- . Having to ask for help all the time
- . Feel like she’s missing out on something
- . Having to work so hard for the same results as others



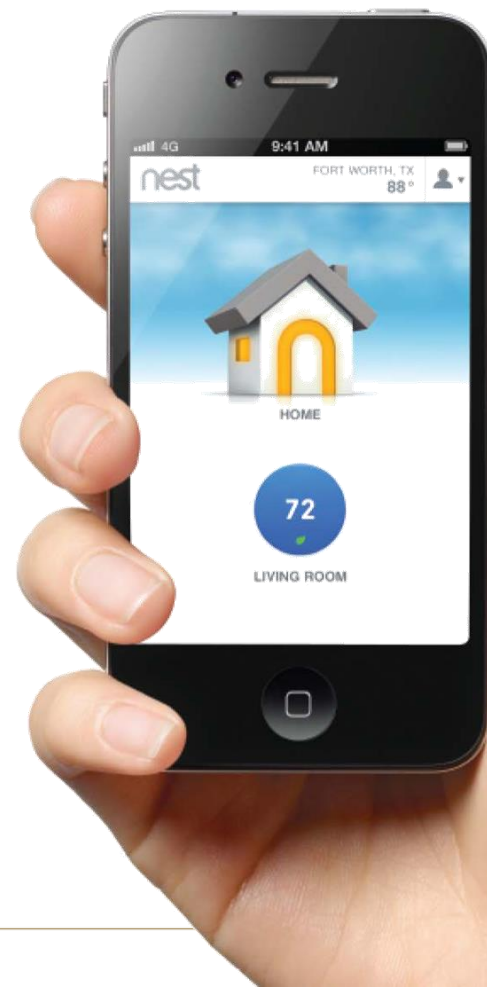
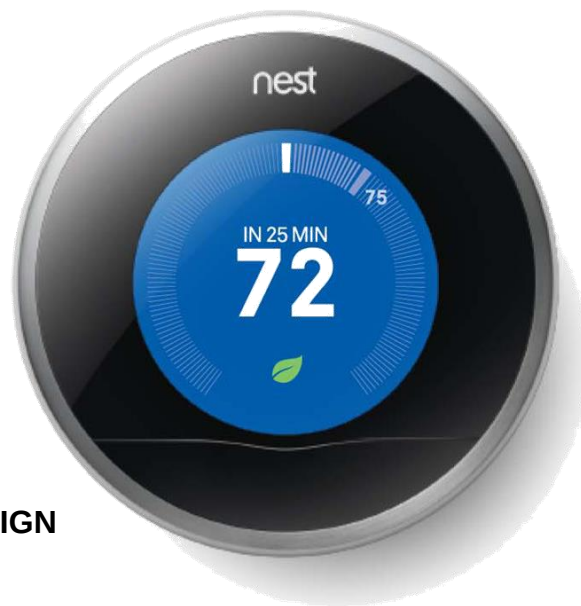
System-layout

- ENVIRONMENTS
- ACTORS
- RELATIONS
- SYSTEM DESIGN



Awareness interface

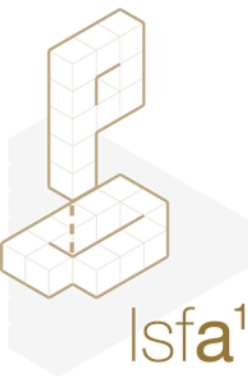
- INTERACTION DESIGN
- FRAME
- CONSTRAINTS
- PLAY
- INTERNET OF THINGS



**Prof.
Mincoelli**

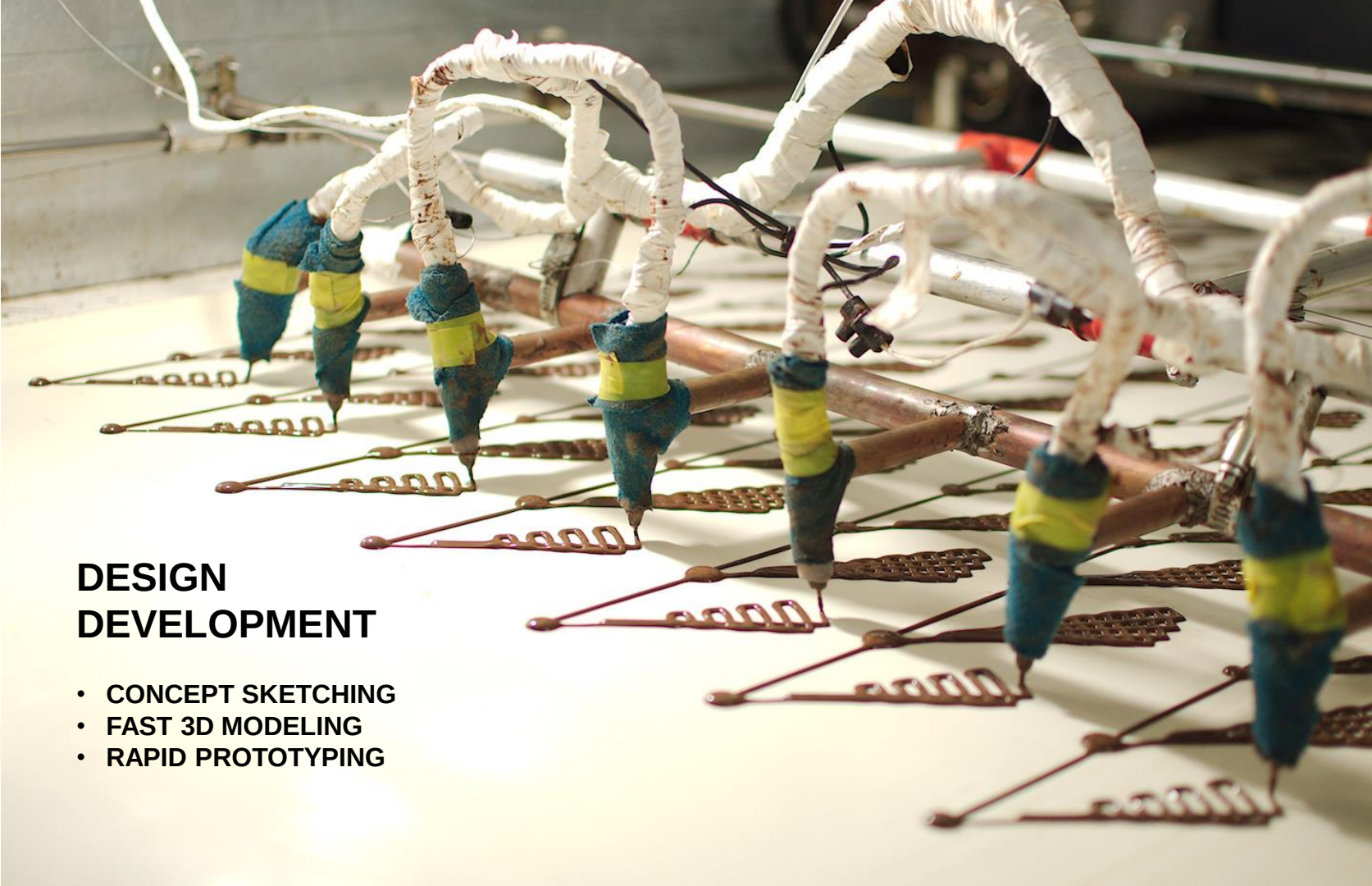
PRODUCT
DESIGN

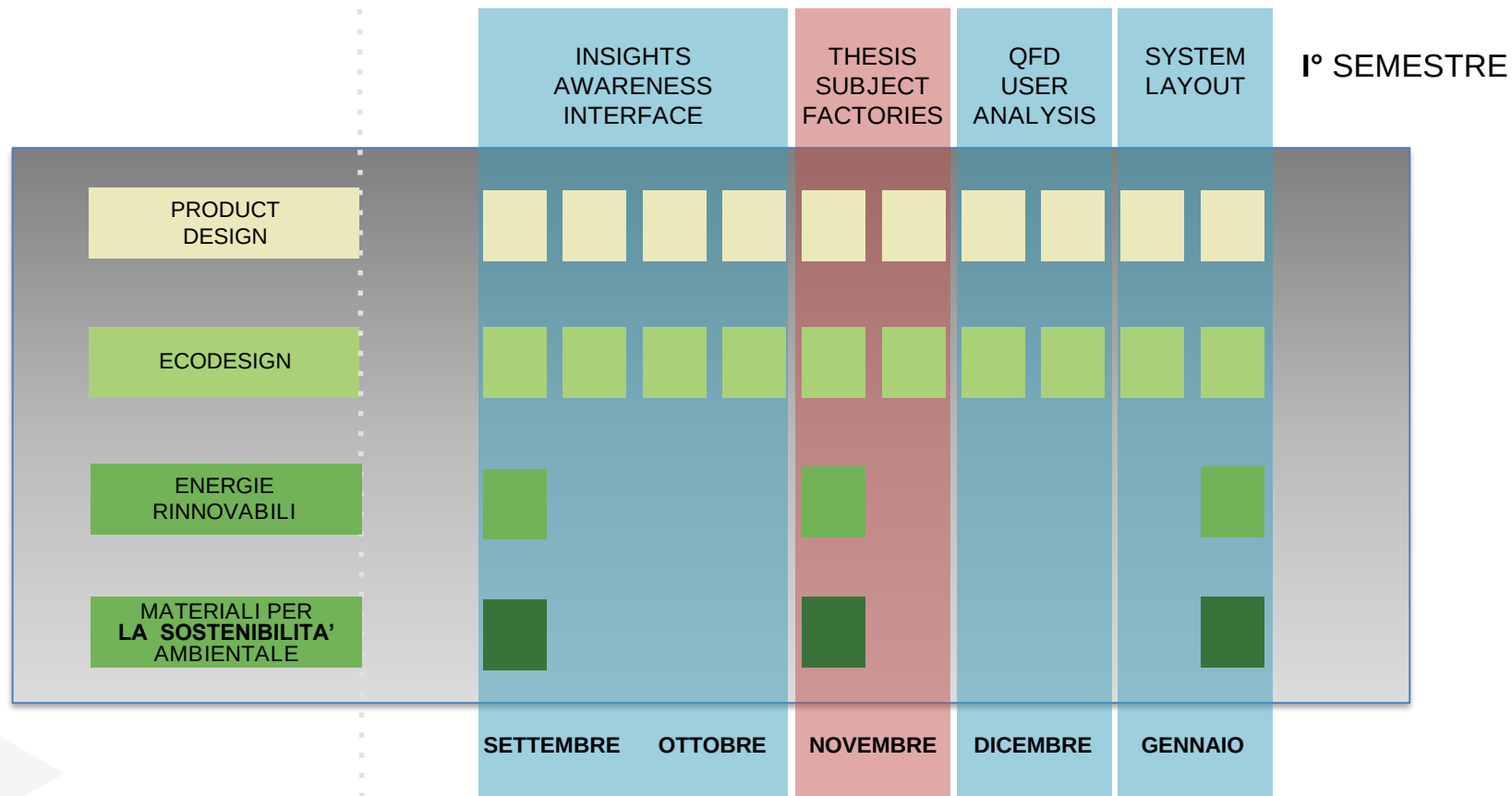
MODULO 001

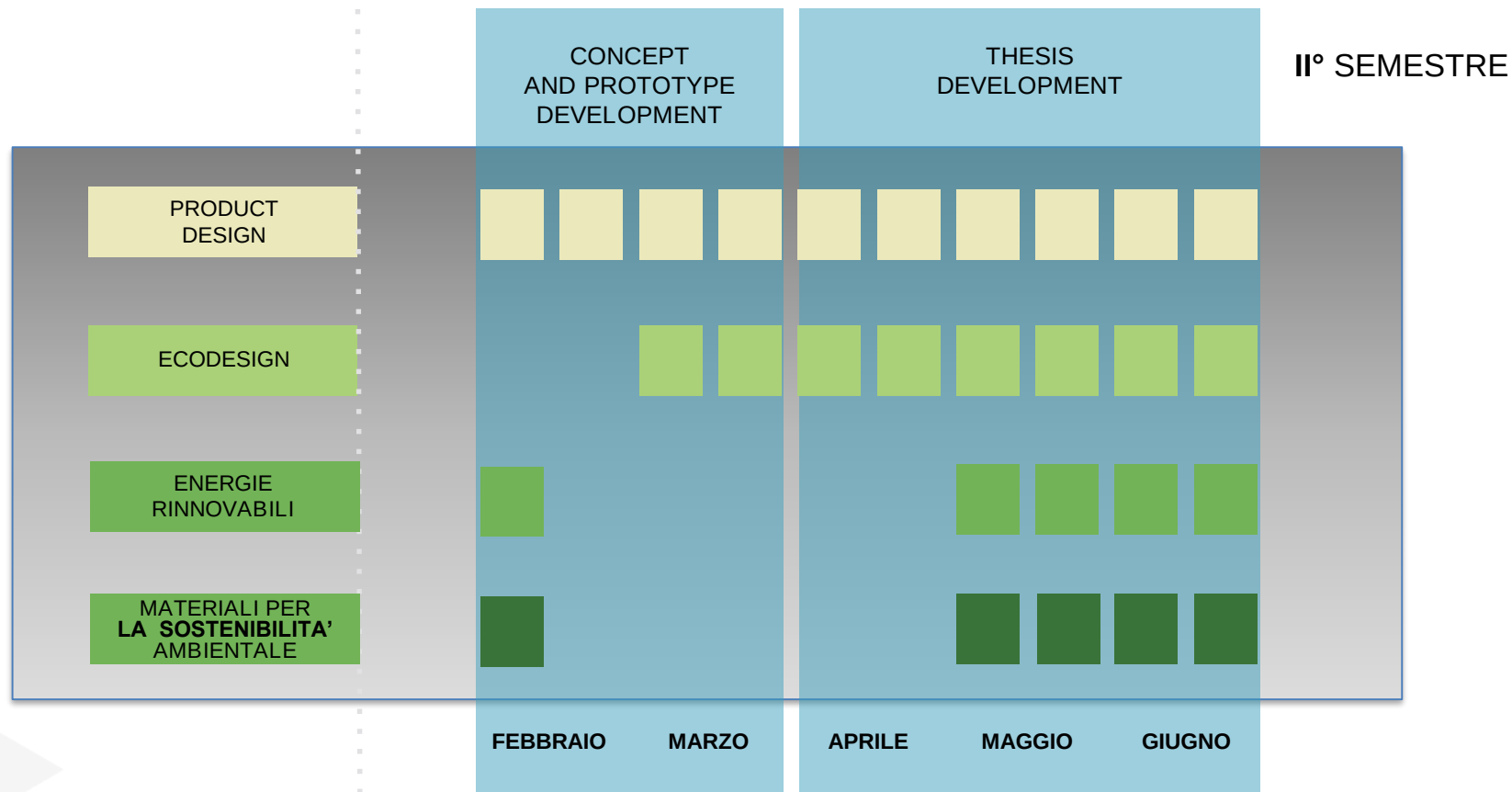


DESIGN DEVELOPMENT

- CONCEPT SKETCHING
- FAST 3D MODELING
- RAPID PROTOTYPING







Grazie per l'attenzione

 : <https://www.facebook.com/Lsfa1/>



Lsf_a
choose the future

