

VIS

Vacuum Insulation System

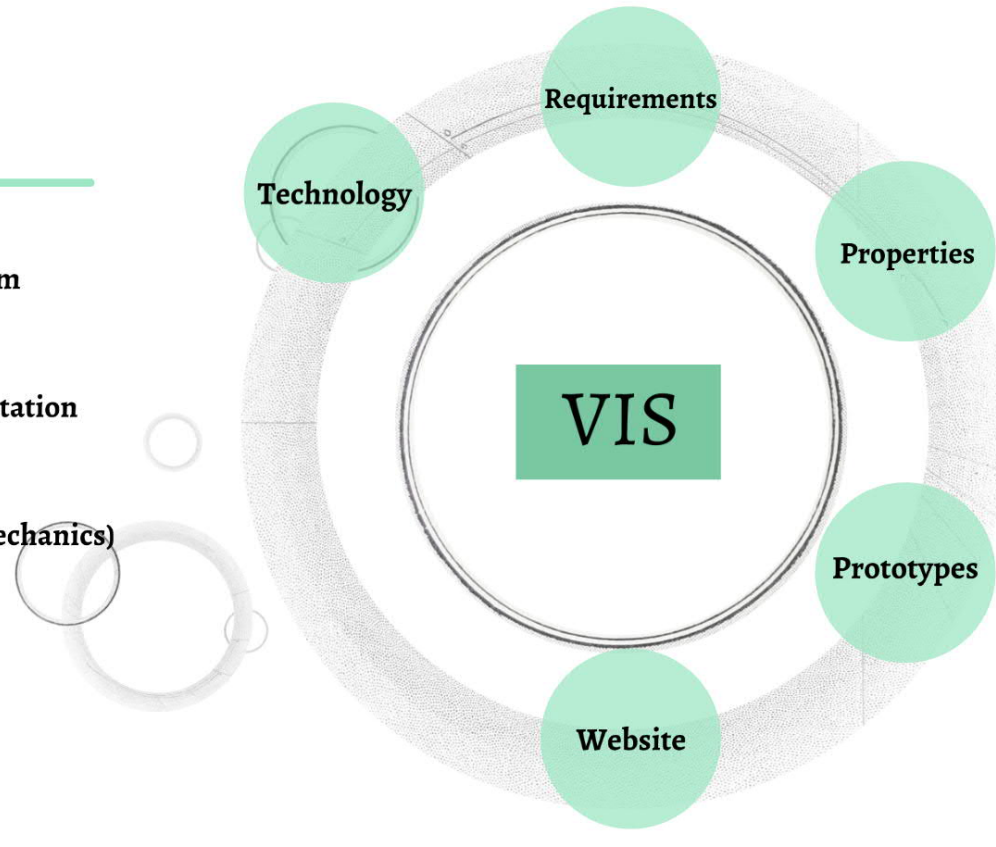
-CHEMARTS 2019 presentation

2.7.2019

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M.Sc (Aalto 2014, Solid Mechanics)

**Plant
Factory**





Plant Factory

- Closed system for indoor farming (no sunlight)
- Growing with LED-lights
- Vertical farming
- Controlled environment
(temperature, humidity, CO₂ levels,
light quality, wind speed...)

Benefits

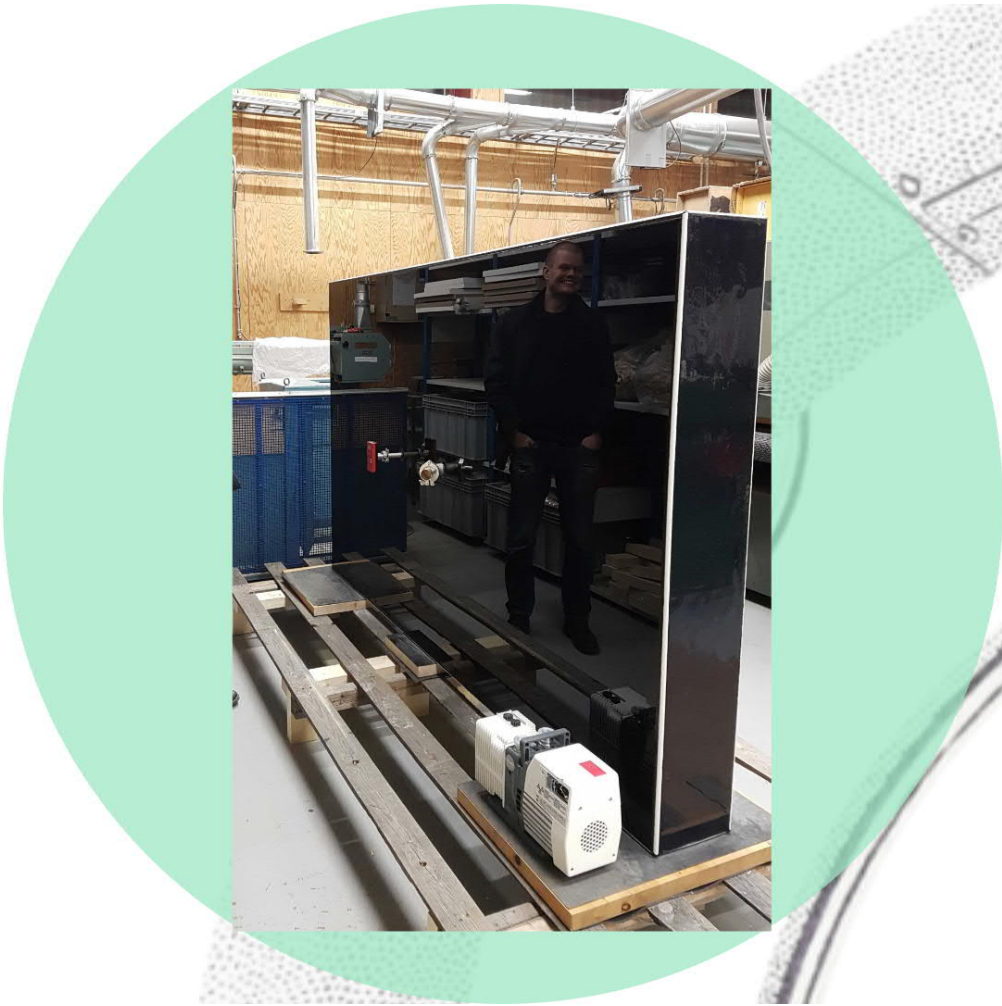


Benefits

- 10+ times more yield per square meter compared to greenhouses
- Over 90% less consumption of water
- Steady production
- One of the strongest weapons against global warming



Technology



Requirements

**Strong
frame**

**Air
tightness**

**Impact
resistance**

Low price

Wooden element frame

- Optimized geometry
- Perfect material
 - Strong material
 - Low thermal conductivity
 - Low cost
 - Excellent machinability



Prototypes

3 prototypes manufactured

1st

2nd

3rd



Prototypes

3 prototypes manufactured

1st

2nd

3rd



- Solid Mechanics' lab
2017-2018
- Own funding





- Bioproducts' wood workshop 2018-2019
- Aalto's pre-seed funding

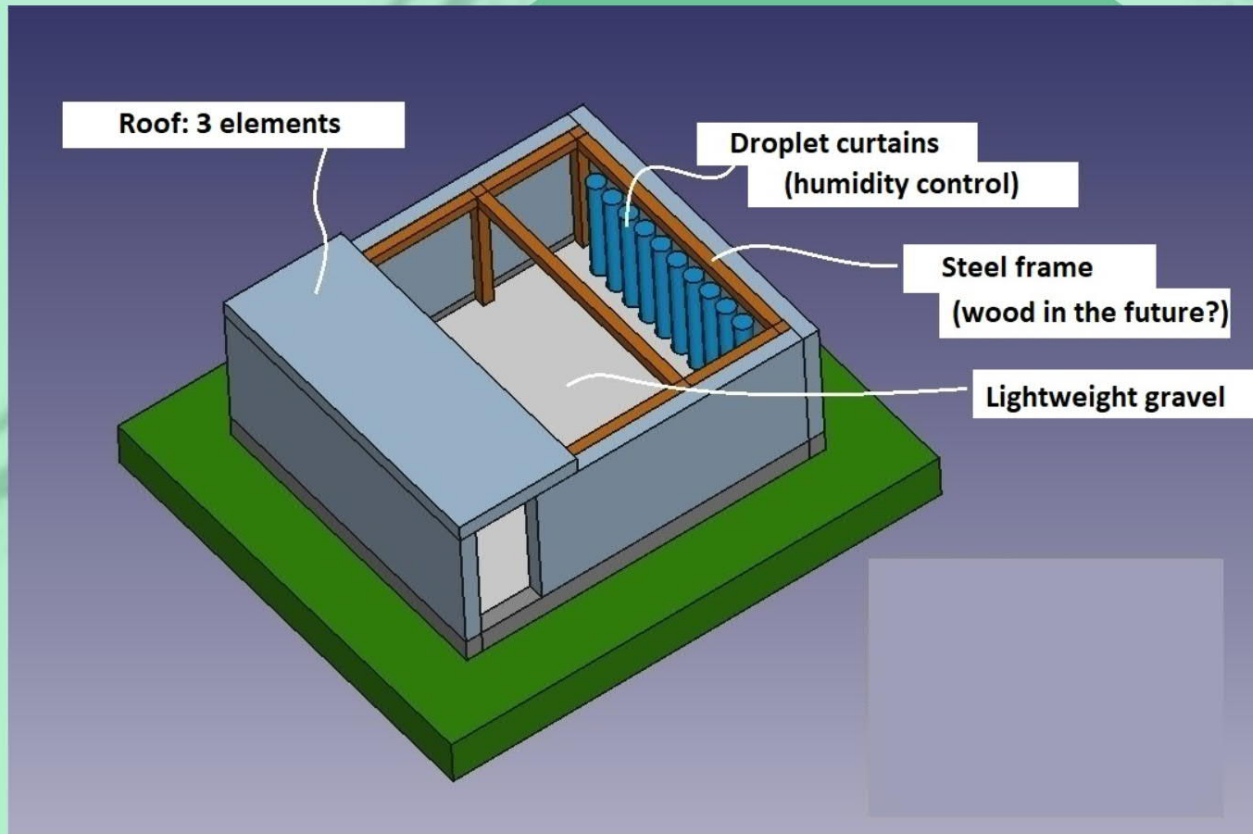


- 2019 -
- Business
Finland
TUTL
funding



Plant
Factory

VIS - Plant Factory, 1st Demo





www.aalto.fi/vis

