

# Bridging the gap between technology and a circular economy : the case of VITO

VITO – ENERO, June 1 2022

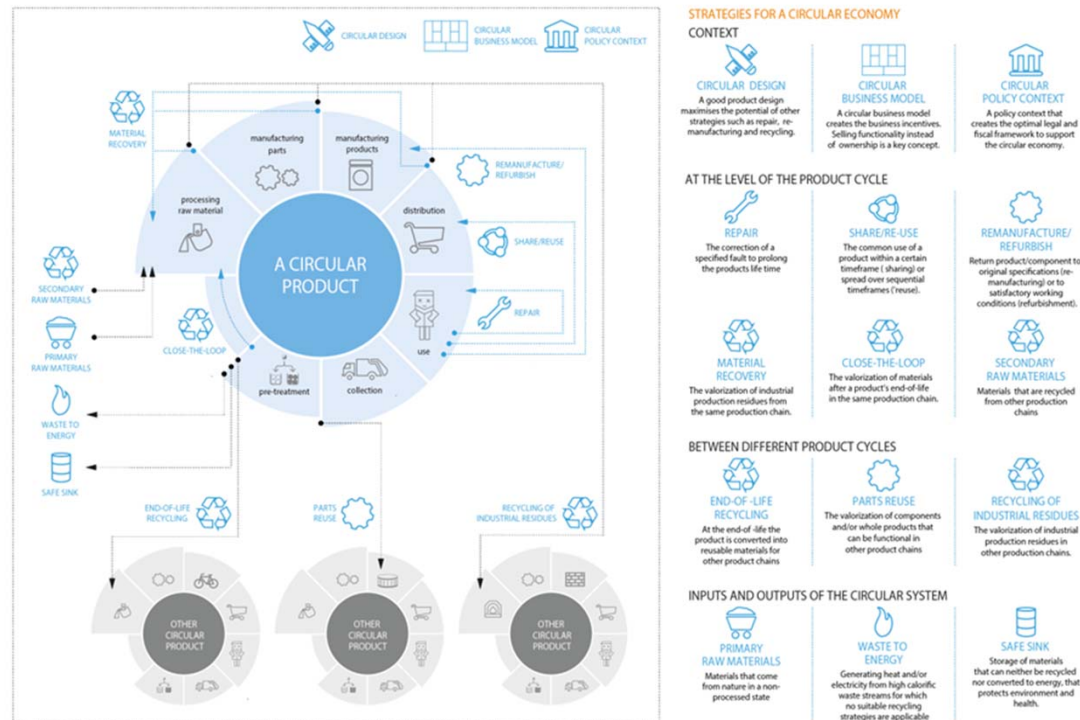
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# Transition to a circular economy needs technology and new business models and policies

THE CIRCULAR ECONOMY AND ITS MAIN STRATEGIES



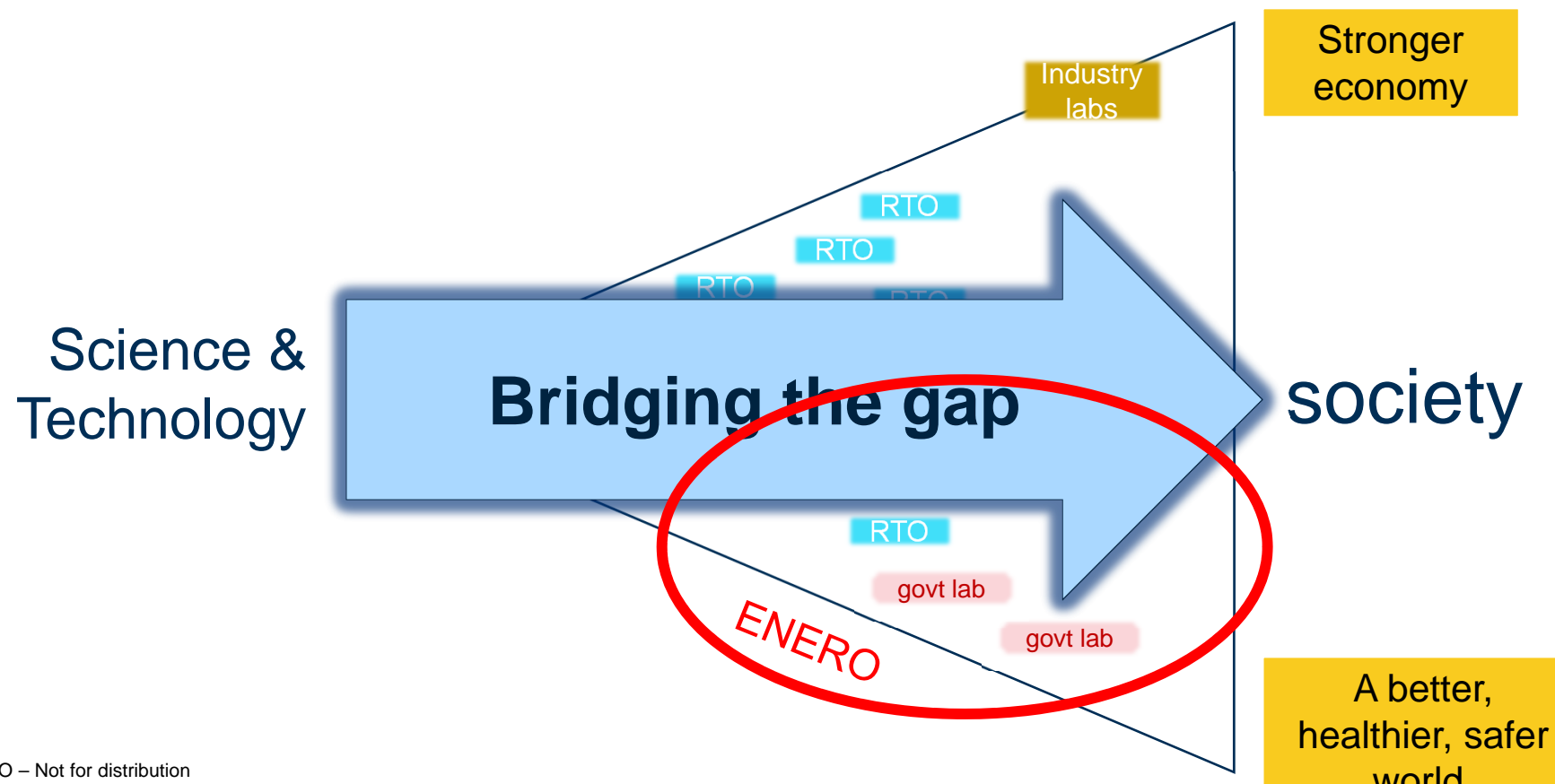
## Circular economy needs:

New  
technology

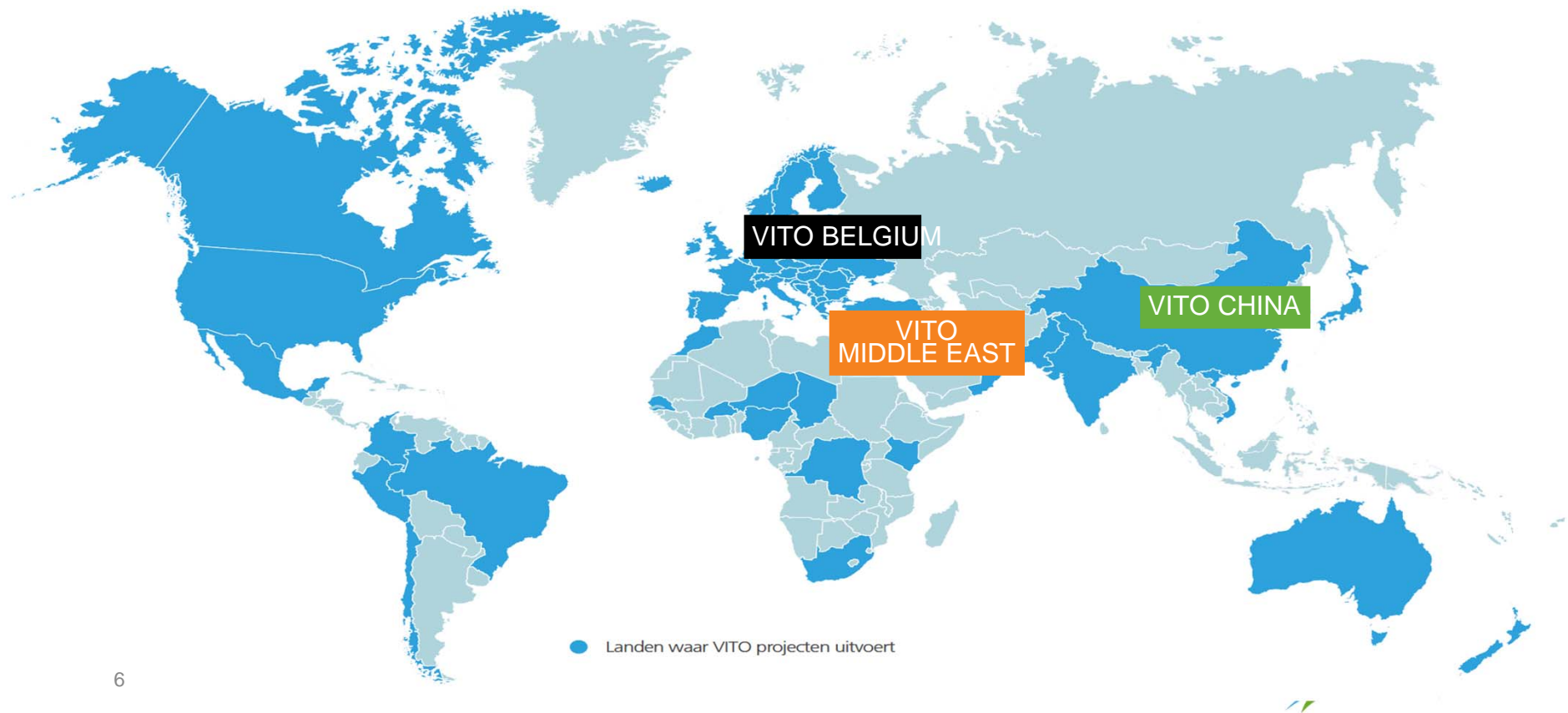
New  
business  
models

New  
policies

## Bridging the gap between technologies and business /policies



- 1 of 4 Flemish RTO's (others: imec, VIB & Flanders Make)
- 980 co-workers (760 on pay rol, 170 non-Belgian)
- Budget 1/3 basic – 1/3 competitive research – 1/3 contract research
- In 2021:
  - > 400 private customers (30 % international),
  - 32 MEUR public contract research (40 % international)
  - 300 science papers,
  - 40 patents,
  - 3 spin-offs



## VITO's mission

sustainable: including  
“resource-efficient”

*VITO accelerates the transition to a sustainable world.  
VITO de-risks innovation for businesses and strengthens the  
economic and societal fabric of Flanders.”*

## VITO's research areas

Energy



Materials



Chemistry



Health



Land use



## VITO's work on circular economy:

Technological innovation  
High value materials for a  
clean and circular industry

Circular  
business  
model  
innovation

Science-based CE policy advice  
Regional, European and international



# Guide government policy



BRIEFING

## Textiles in Europe's circular economy

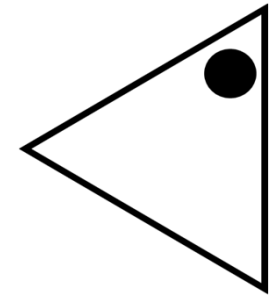
Textiles are fundamental to our society, providing us with clothing, shoes, carpets, curtains, furniture, etc. for homes, offices and public buildings. The textiles industry employs millions of people worldwide, making it among the largest in the world and an important part of Europe's manufacturing industry. However, textile production and consumption cause significant environmental, climate and social impacts by using resources, water, land and chemicals and emitting greenhouse gases and pollutants. This briefing provides an EU perspective of the environmental and climate pressures from textile production and consumption, and discusses how circular business models and regulation can help move us towards a circular textiles economy.

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Photo: © Istockphoto, credits Karl-Friedrich Hohl, reference: 642628996

PDF





# Business models for circular fashion



SCIRT.

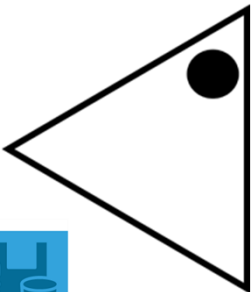
Project Partners News Events Resources

  
**Towards a real, lasting  
circular fashion economy.**  
SCIRT aims to accelerate the transition to a circular fashion system through  
technological innovation in textile-to-textile recycling.

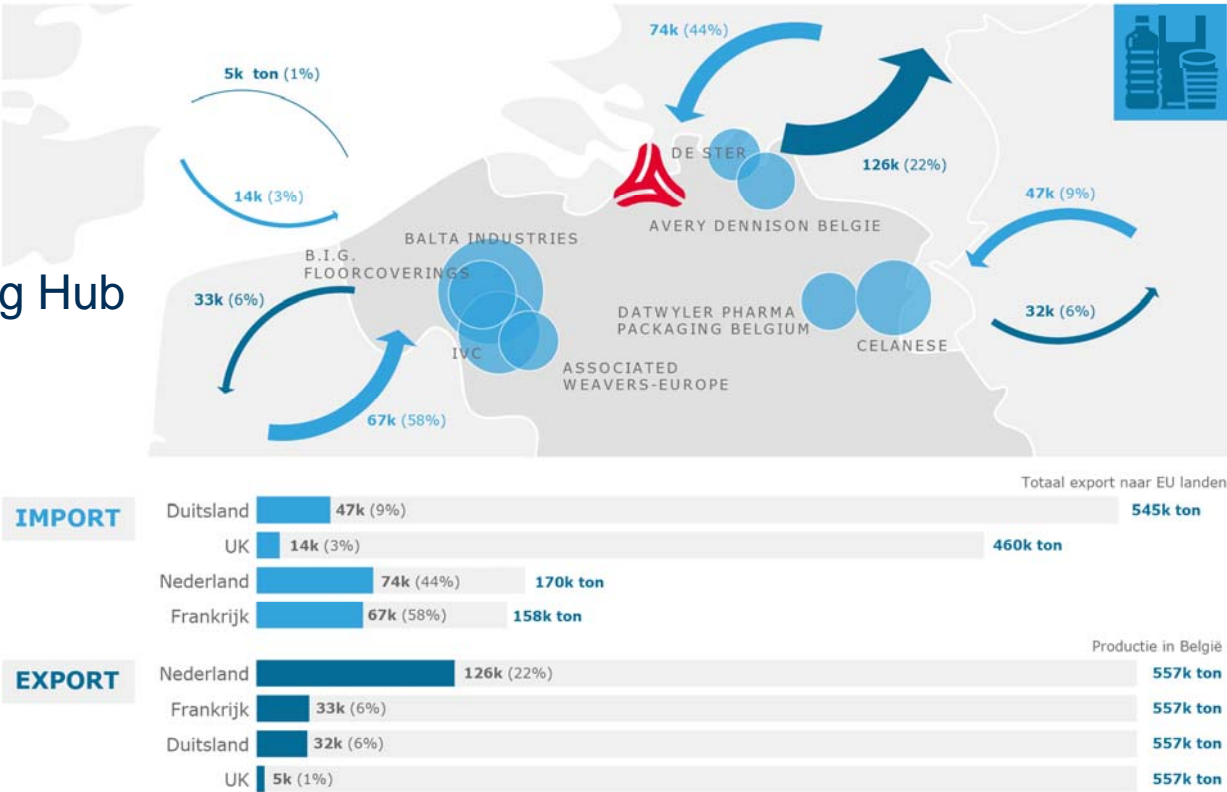


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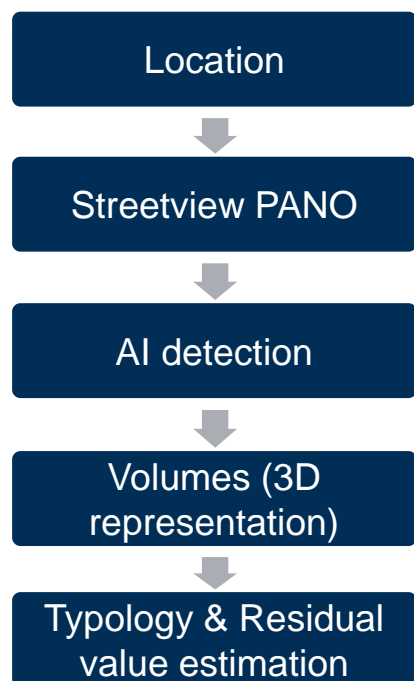
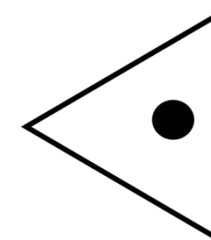
# Strategic advice to companies



Flanders Recycling Hub



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**Data source:** (recurrently) Webscraping platforms for peer to peer trading of used building elements/materials







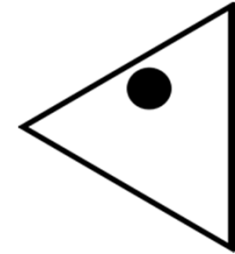
## Waste characterisation



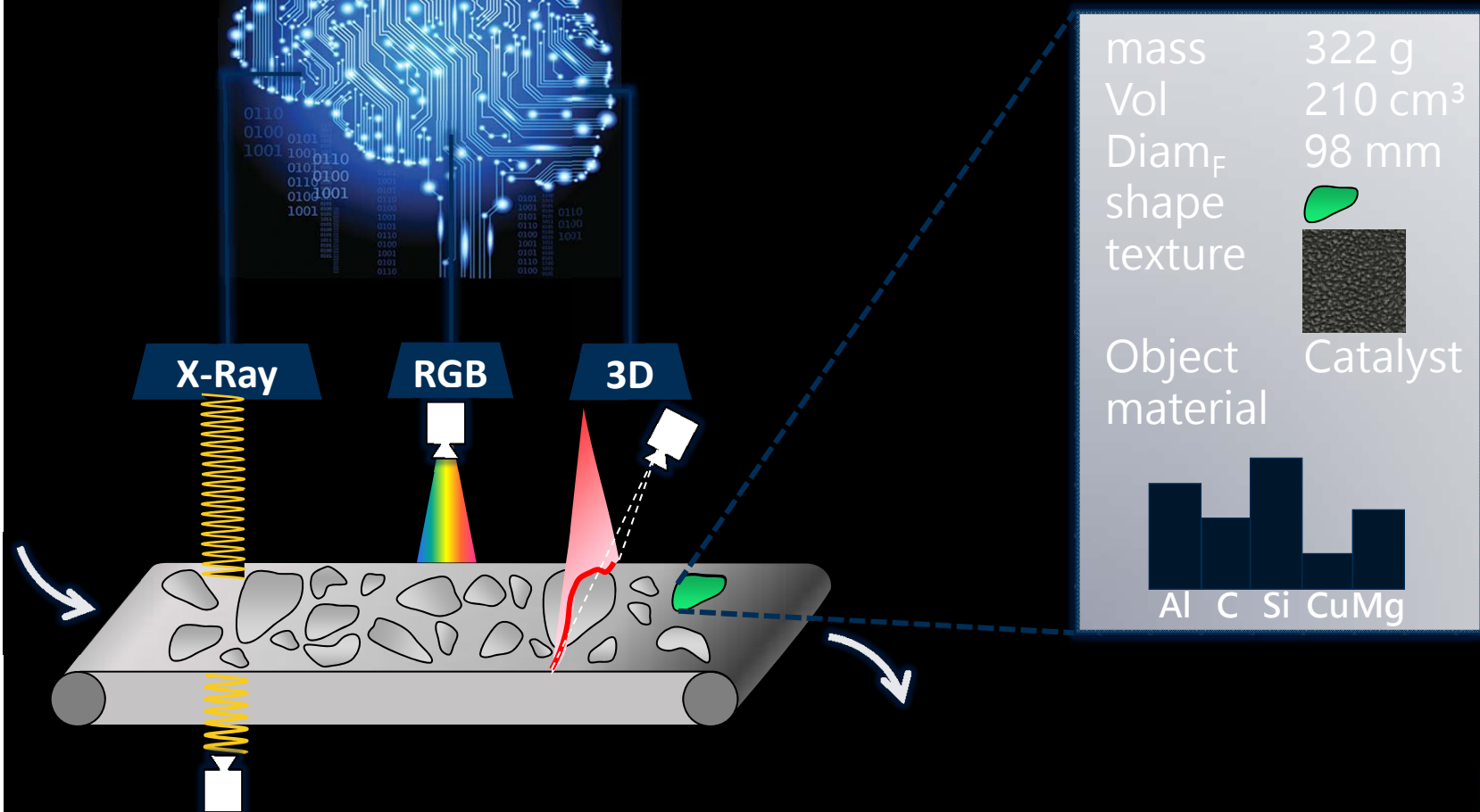
## HANDSORTING

- Slow
- Subjective
- Batch
- Unpleasant
- Representative samples = huge
- Limited to bulk data:  
mass balance, particle size  
distribution

**NEED for new method:** fast, objective, continuous , accurate, data on particle-level



## Artificial Intelligence

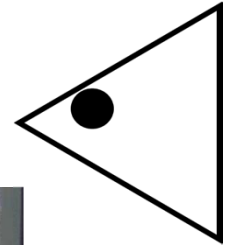






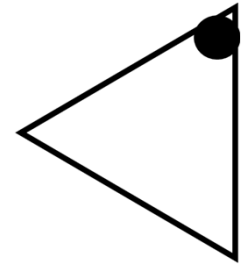
# LIGNOVALUE pilot plant

Biobased chemistry: biomass as feedstock (e.g. lignin)





## Low-carbon construction materials by mineral carbonation



Turning mineral waste into construction materials by CO<sub>2</sub> treatment

- Pioneer in the field
- Proven track-record: Carbstone ®
- +10 years of expertise
- IP – growing patent portfolio



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## Transition to circular economy needs:

