



Transitioning to Circular Economy through Industry 4.0

Prof. Dr. Karl Vrancken

Research Manager Sustainable Materials VITO (Belgium)

Thematic Chairman G-STIC Circular Economy





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**CONNECTING TECHNOLOGICAL INNOVATION TO DECISION MAKING FOR
SUSTAINABILITY**

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#CircularTech



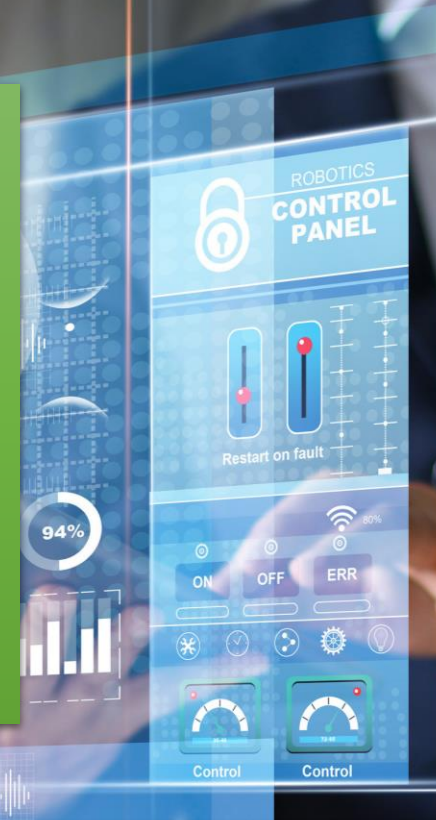


Circular Economy generates 4 technological needs:

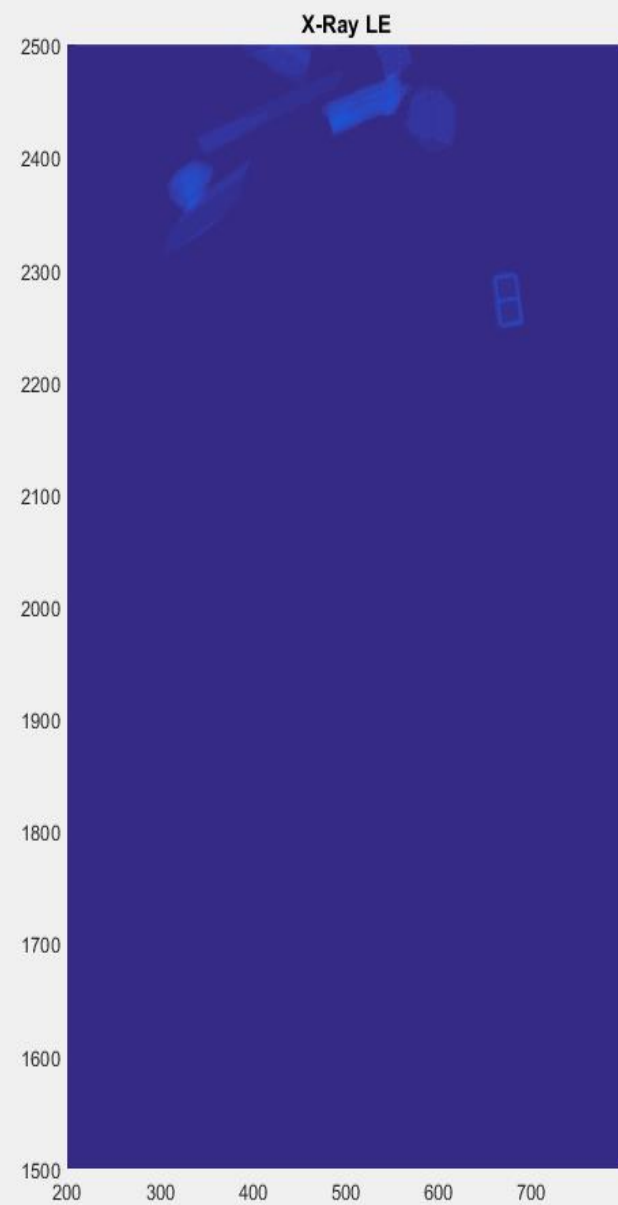
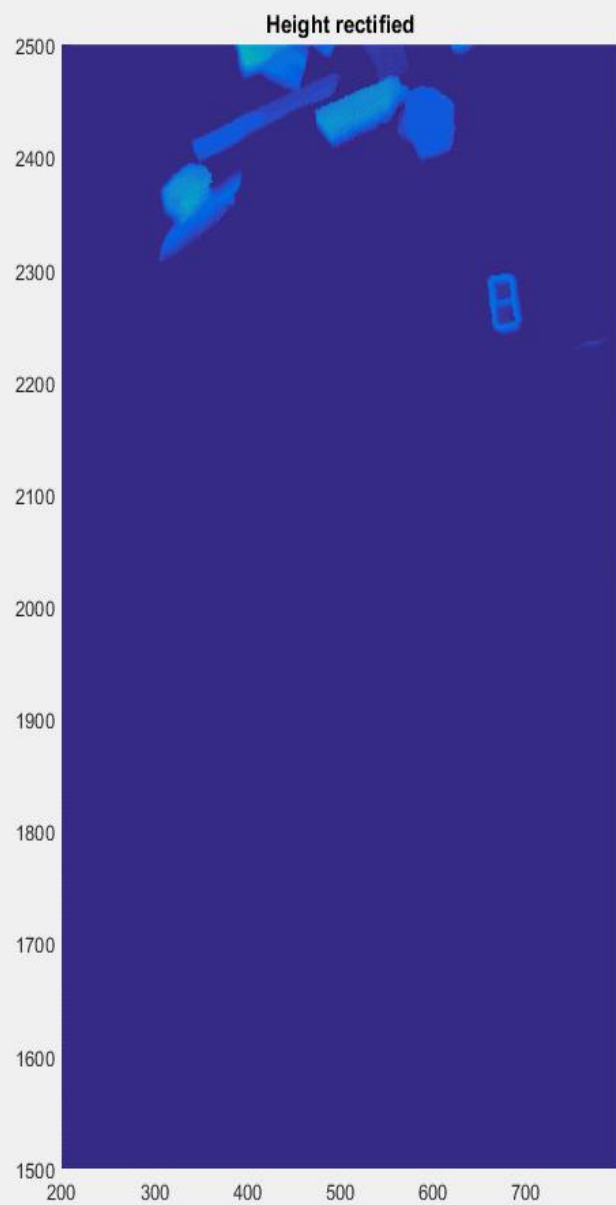
1. advanced collection, sorting and recycling
apps, sensors, robots,..
2. efficient materials processing
machine learning, artificial intelligence,..
3. production to support design for circularity
3D printing, disassembly, repairability,..
4. interactive platforms
apps, websites, databases, IoT,..

The necessary digital technologies exist. The challenge is to make them available and integrate them into the systemic approach that leads to sustainability.

Products can have a digital replica to study their behaviour through the circular material chain. **Digital twins** are used to model and optimise production systems. Their application has been demonstrated for construction materials and is being explored for other material types.

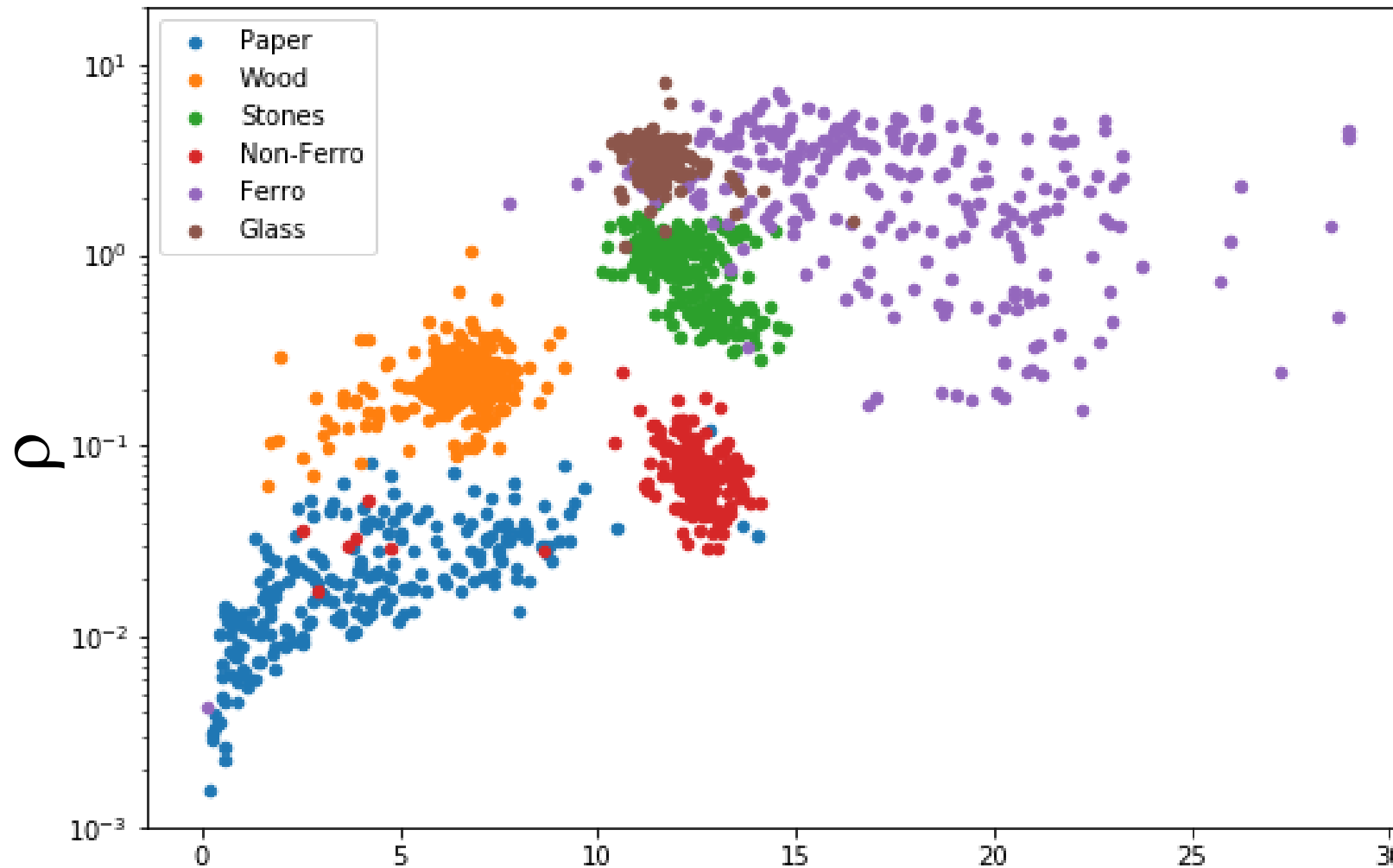


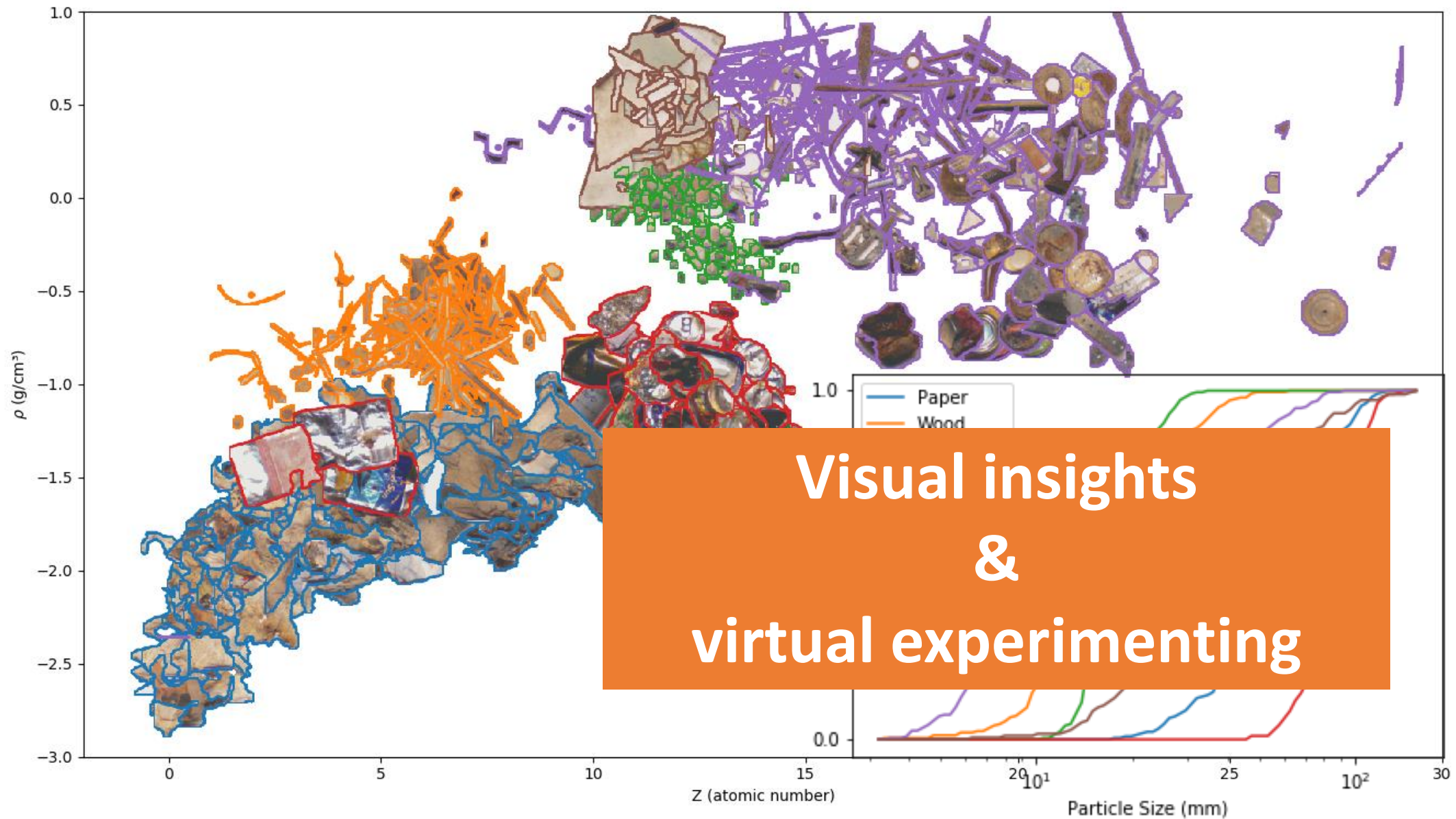
Blockchain technology allows to develop a track record for products and their parts. If we couple the blockchain information with the physical materials, this provides the information flow to support building a circular economy.





Deeper insights: density vs Atomic Number





**Visual insights
&
virtual experimenting**

We need to strengthen the contacts between **digital and circular economy** experts. We must showcase the opportunities of blockchain, internet of things, artificial intelligence, big data, product identification, collaborative platforms,... and develop common approaches.

Circular economy is a systemic solution.

Besides technologies, it needs innovative enterprises, involvement of research institutes, a stimulating policy environment and access to finance.

European Circular Economy Stakeholder Platform

The young generation will be driving the global transformation
in the next 20 years

WORLD
RESOURCE
FORUM

CLOSING
LOOPS



TRANSITIONS
AT WORK

G·STIC 2018
BRUSSELS 28 - 30 NOVEMBER

2018
WORLD CIRCULAR
ECONOMY FORUM **JAPAN**

 **ISWA**
International Solid Waste Association

 **3R** Regional 3R Forum
in Asia and the Pacific

Regional differences exist between continents. We need to
build an exchange of experience to learn from each other.




An international dialogue is necessary to ensure that a circular economy does not create a group of closed local economies, but rather becomes a global system of various economies collaborating.



We can't have a circular economy without the 4th industrial revolution

We can't have a socially useful and sustainable 4th industrial revolution without advancing the circular economy

Prof. Dr. Karl Vrancken
Karl.Vrancken@vito.be
 @KarlVrancken
+32479979041