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"I SEE, I SEE, WHAT YOU DON'T SEE..."

WASTE CHARACTERISATION 2.0

KRIS BROOS and ROELAND GEURTS
EIT Raw Materials - Expert Forum 2021



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PROBLEM: WASTE CHARACTERISATION

HANDSORTING

- Slow
- Subjective
- Batch
- Unpleasant
- Representative samples = huge mass balance, particle size distribution

NEED for new method: Fast, Objective, Continuous, Accurate, Data on particle-level.

Artificial Intelligence

MASS	322 G
VOL	210 CM ³
DIAM _F	98 MM
SHAPE	
TEXTURE	
OBJECT	CATALYST
MATERIAL	

RL C SI CU AG

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DUAL ENERGY X-RAY TRANSMISSION

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3D LASER TRIANGULATION & RGB COLOUR CAMERA

Enable Pulse triggering Position Number of scans (Scan height)

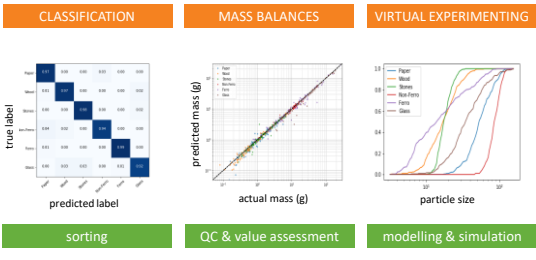
④ SICK
③ SICK
② SICK
① 2-3



DEVICE INSTALLED @ VITO



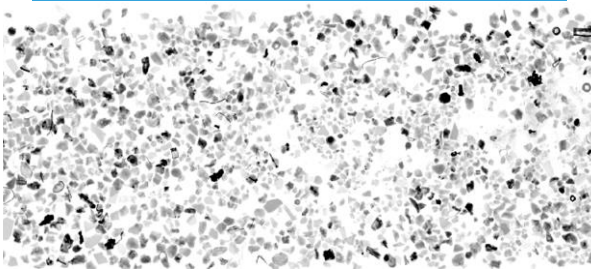
TO DO EXACTLY WHAT ?



COLOUR (BOTTOM ASHES)



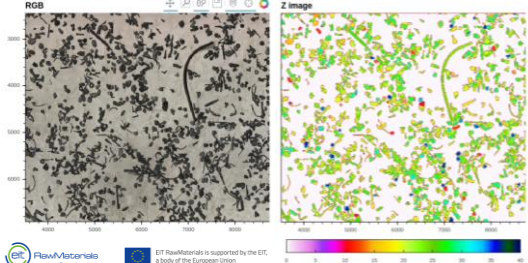
X-RAY TRANSMISSION



ATOMIC NUMBER



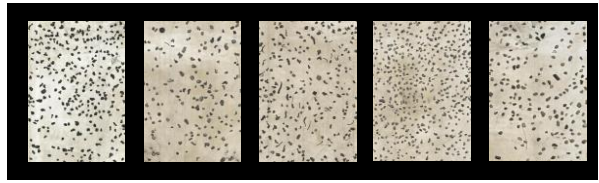
HEAVY NON-FERROUS METALS (CHARAMBA PROJECT)



FlowMaterials
 DT FlowMaterials is supported by the DT, a body of the European Union

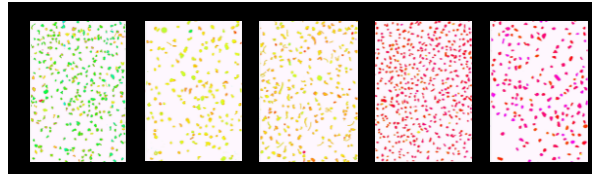
23

COLOUR




24

AVERAGE ATOM NUMBER (Z)



PREDICT THE CHEMICAL COMPOSITION OF A COMPLETE STREAM

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REFERENCES:
<https://vito.be/en/product/advanced-characterisation-waste>
<https://charamba.vito.be/en>

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