

Innovative recycling technologies as part of circular economy on the research site :metabolon

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Research Center
:metabolon

Research alliance :metabolon



:metabolon on the landfill site Leppe is:
**„Education- and Research Center
of the TH Köln - University of Applied Sciences“**

Starting April 2018:

**New Master course “Business Engineering”
with the specialization “Energy & Resource Management”**

Expanding of research capabilities by EFRE-funding until 2020

New technologies and plants – High Temperature Technologies



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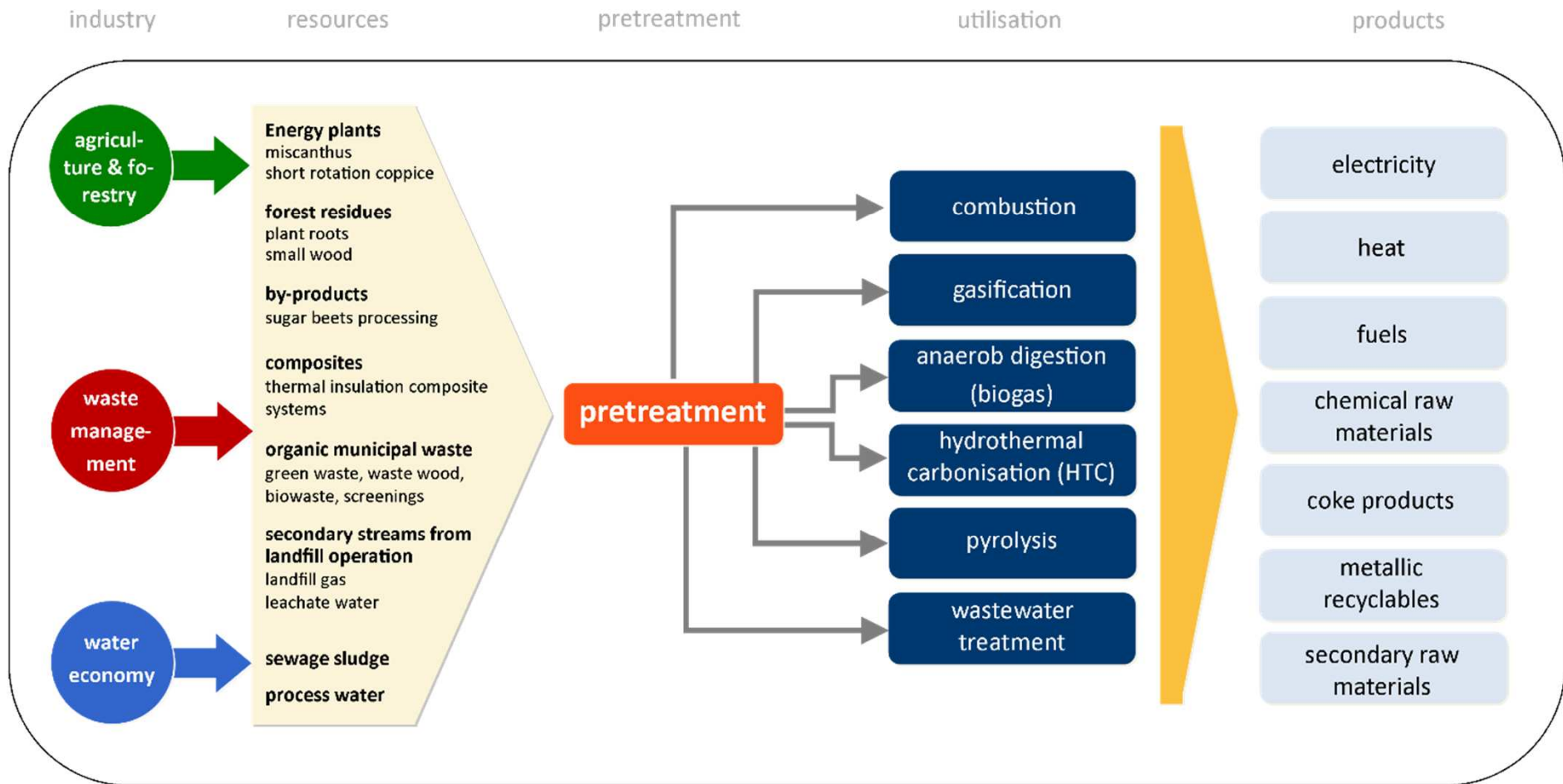
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:metabolon – research concept



balancing, LCA, profitability

Our research activities



Biogas from waste:

Dry anaerobic fermentation / Input characterisation by image processing and Deep Learning / Model based predictive control / On-Line FOS/TAC measurement

Fuel from waste:

Conditioning of resources by HTC / Pyrolysis and gasification

Biomass Incineration:

Energetic use of leaves and organic waste / Pellets from waste including test of exhaust gas quality / Optical Control by Image Processing /

Process Water:



Biological treatment of process water and landfill leachate / Application of Ultrasound and Algae for water purification

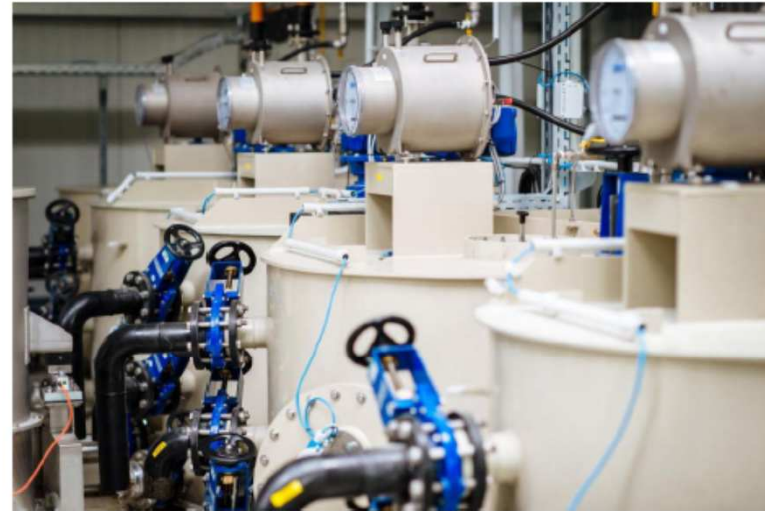
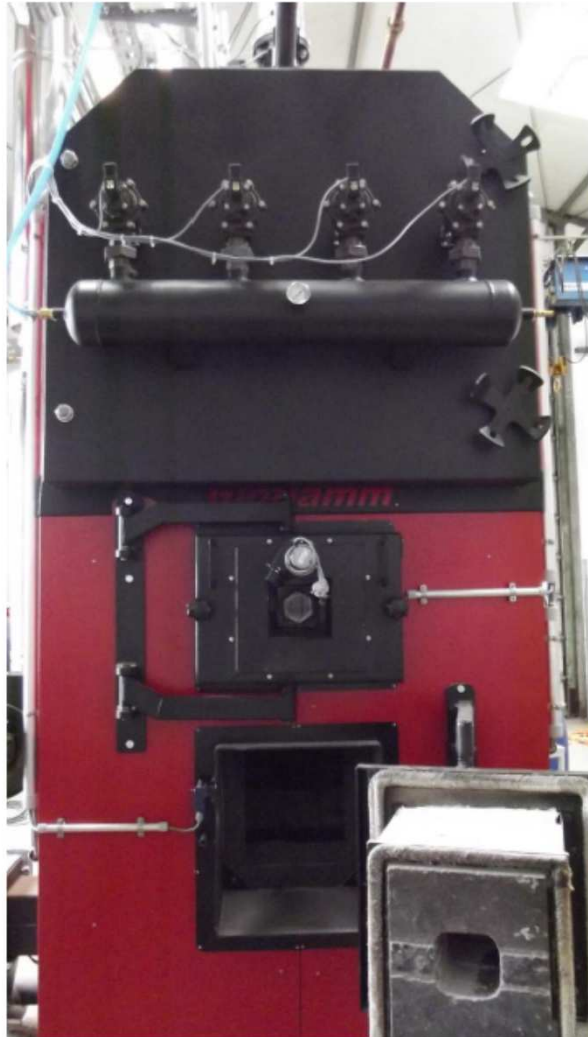
Research from laboratory to industrial scale !

Participation and / or Coordination:



- **ILE/IMS:**
Industrial Wastewater (2002-2006)
- **Wapscience:**
Wastewater Treatment (2004-2007)
- **SILCO:**
Innovative Control in drinking water (2010-2012)
- **Renew:**
Dissemination of Biogas-knowledge (2013-2015)
- **ATBEST:**
Joint PhD-projects (Marie-Curie program - 2013-2016)
- **ENERWATER:**
Energy efficiency of Wastewater Treatment (2015-2018)

Incineration and Anaerobic fermentation (Biogas)



Thank you!



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