



Chemie in Beweging: Het Ondernemende Landschap in Antwerpen



Proud Member of the YUFE-Alliance

Pieter Billen

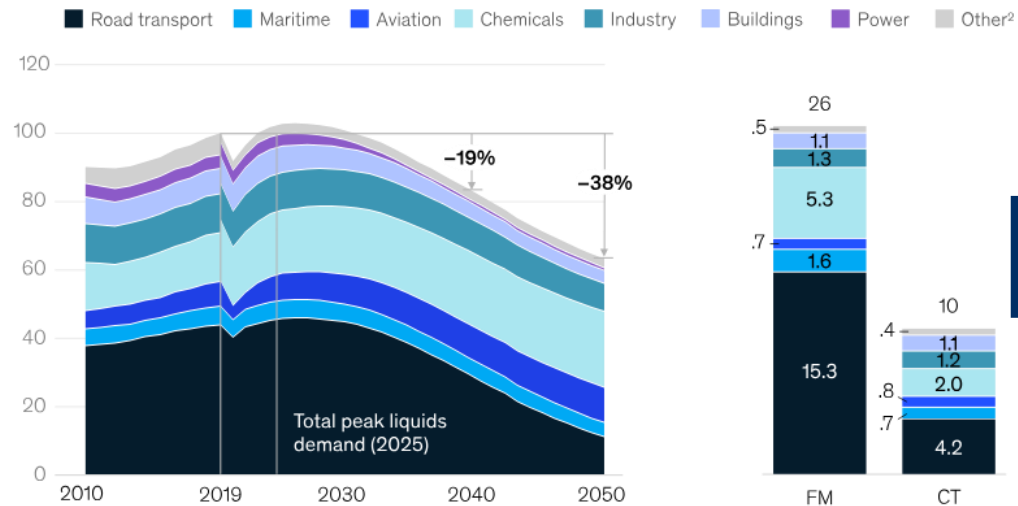
Faculteit Toegepaste Ingenieurswetenschappen

Proffen en Ondernemerschap

Duurzaamheid is Strategisch

Road transport is the main driver of the peak in liquids demand.

Global liquids demand outlook by sector for FA scenario,¹ mbd



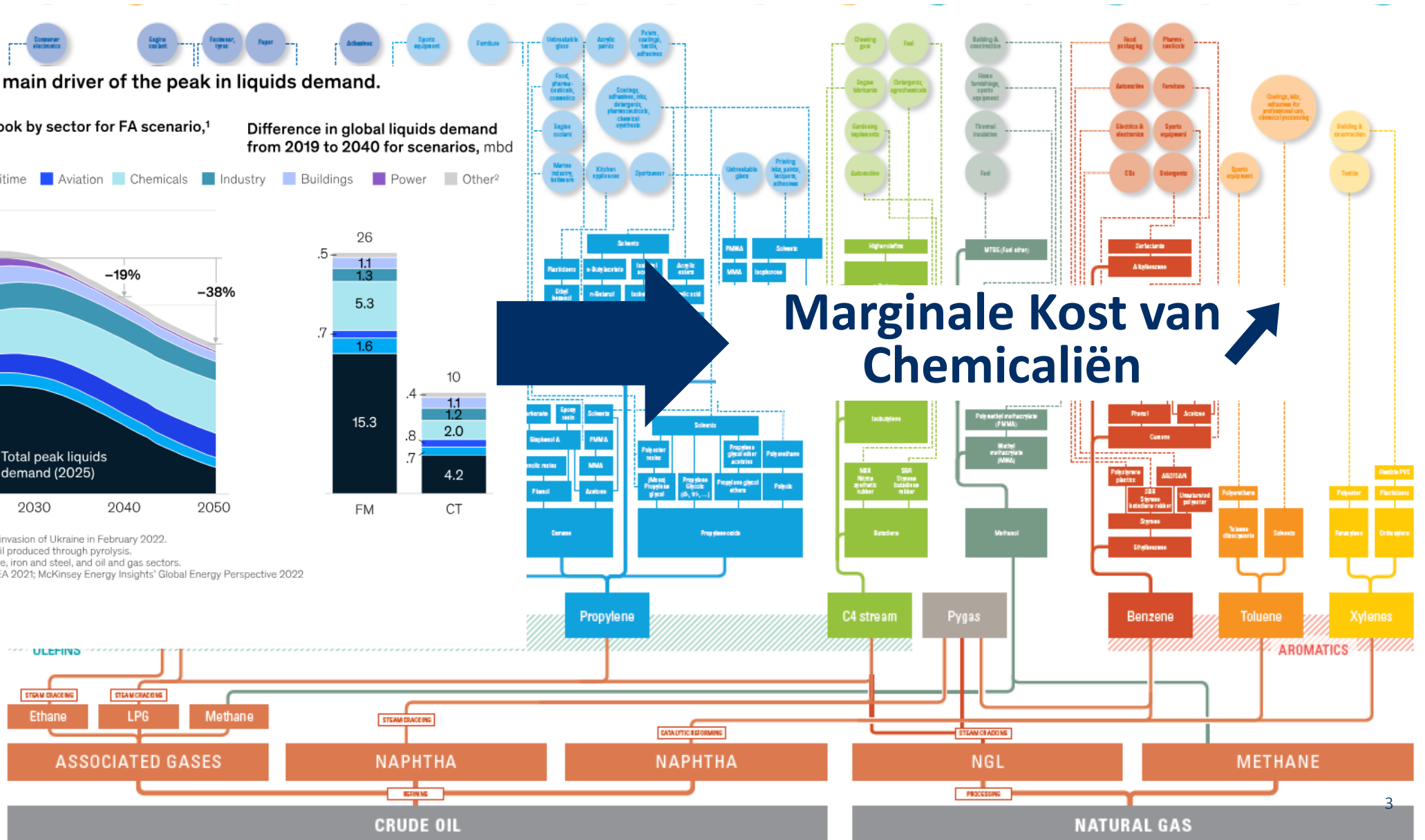
Disclaimer: Analysis conducted before the invasion of Ukraine in February 2022.

¹Includes biofuels, natural gas liquids, and oil produced through pyrolysis.

²Includes (among others) refining, agriculture, iron and steel, and oil and gas sectors.

Source: Monthly Oil Data Service, OECD/IEA 2021; McKinsey Energy Insights' Global Energy Perspective 2022

McKinsey & Company



Bio



Chemisch ingenieur (KU Leuven)
PhD 2015 (KU Leuven)
Afvalmanagement, Biomassa, Duurzaamheid

Onderwijzer
chemie, instrumentele
analyse, digitalisering

Onderzoeker
Circulariteit van
organische materialen

Coach
The Company
BSc, MSc, PhD

Manager
iPRACS
internationalisering
onderzoeksbeleid

Communicator

Vernieuwer

Facilitator

Research: iPRACS



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Advanced Catalysts and Solvents

Prof. dr. ir. Pieter Billen

Circularity, Process Design, Sustainability Assessment



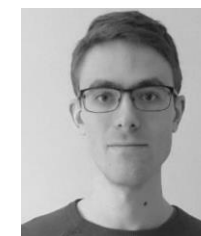
Prof. dr. Christophe Vande Velde

Organic synthesis, crystallography, physicochemistry



Prof. dr. ir. Yoshi Marien

Molecular simulations, Optimizations and Machine Learning



Postdocs:

dr. ir. Lukasz Pazdur: Project coordinator

dr. Leili Esrafili: organic synthesis, scaffolds

dr. Muhammad Adeel: polymer chemistry, recycling

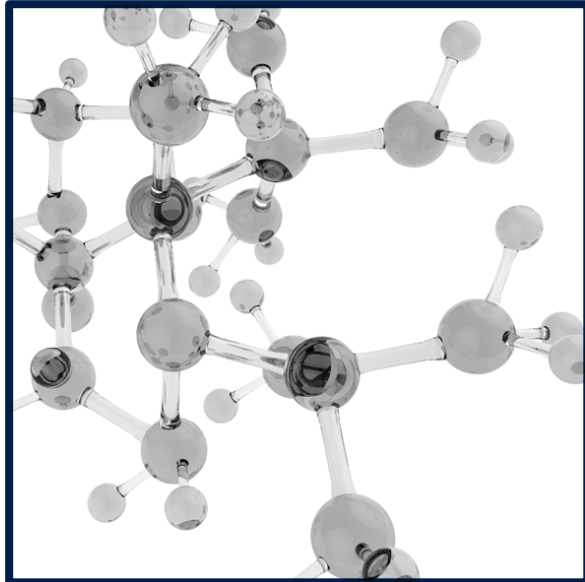
dr. ir. Attila Kovacs: machine learning, molecular dynamics

Doctoral students: Yanou Fishel, Rosa Fucci, Sven Janssens, Trang Thi Bui, Jonas Cassimon, Christophe De Graaf, Zoë De Herdt, Matthew Porters, Britt Segers, Cristina Moyaert, Marthe Nees, Rishi Morthala, Fuline Musengo Otomboy, Peng Xiao, Féline De Meester

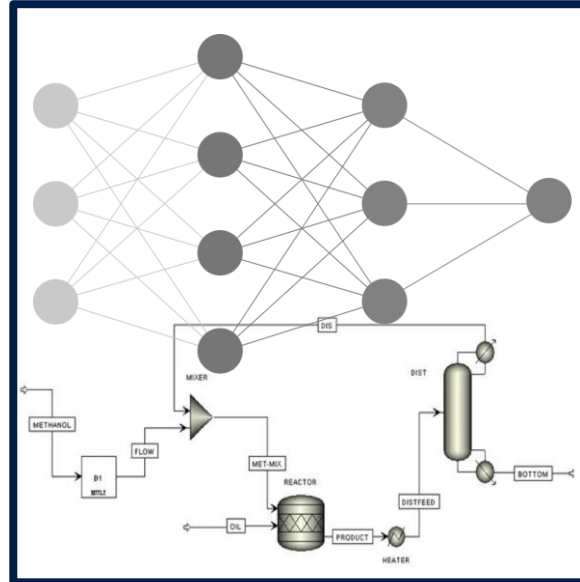
Lab technician: Muna Lema

Admin: Marie-Laure Schobbens

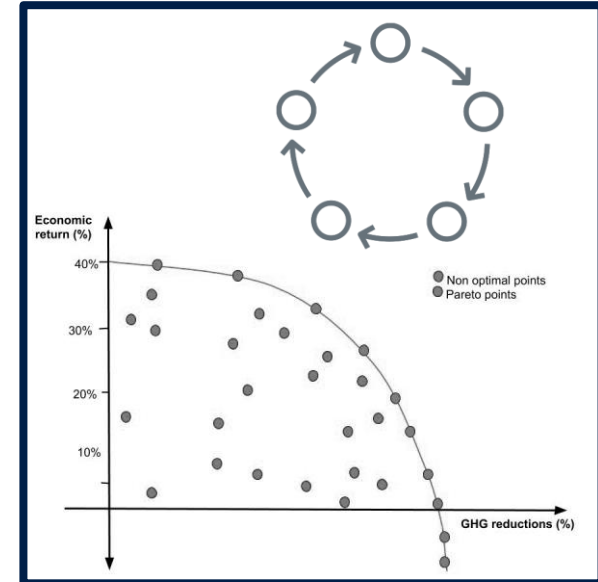
MOLECULES



SMARTLY

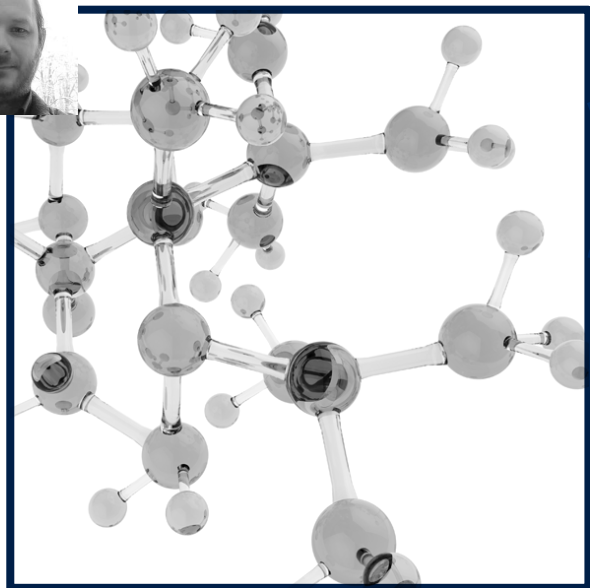


MANAGED



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MOLECULES



monomers

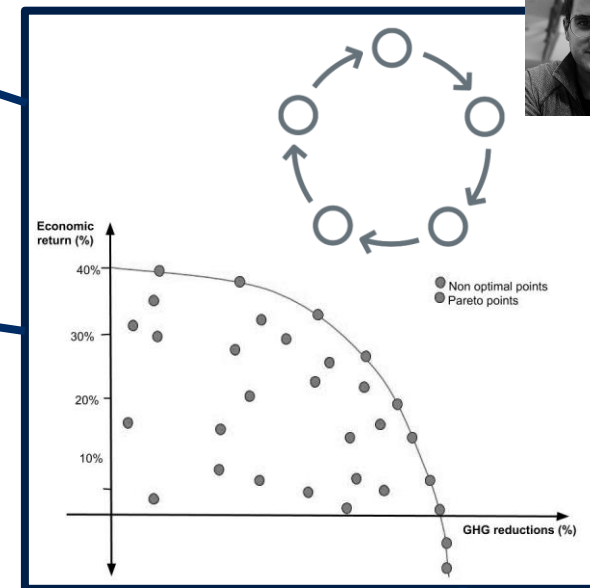
solvents

scaffolds

fatty acids

data science

MANAGED

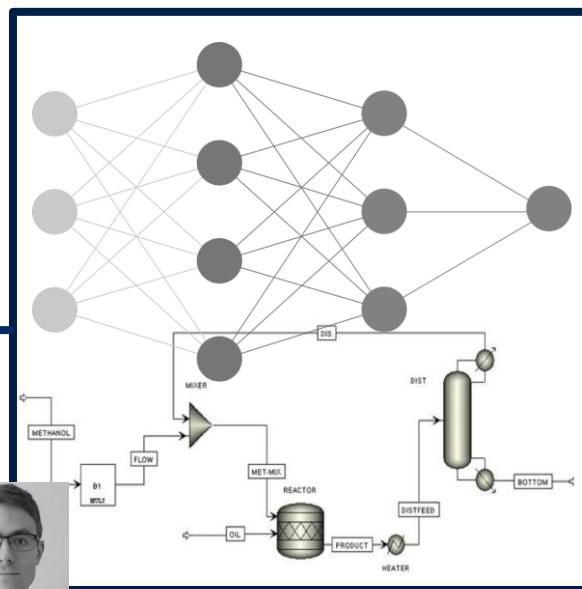


LCA and TEA

decision support

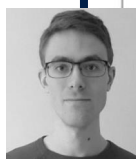
circularity

SMARTLY



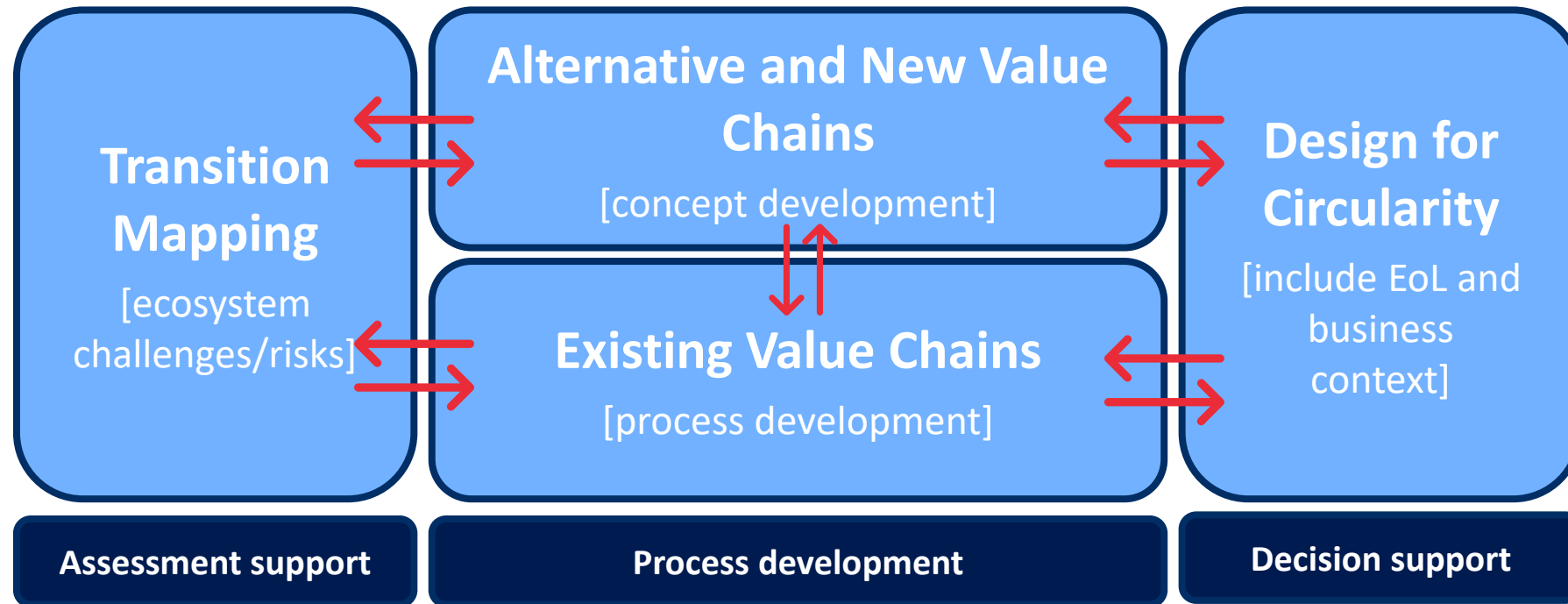
(quasi) thermodynamics

process modeling and optimization



iPRACS valorisatiestrategie

INTEGRATED CIRCULAR PROCESS DEVELOPMENT

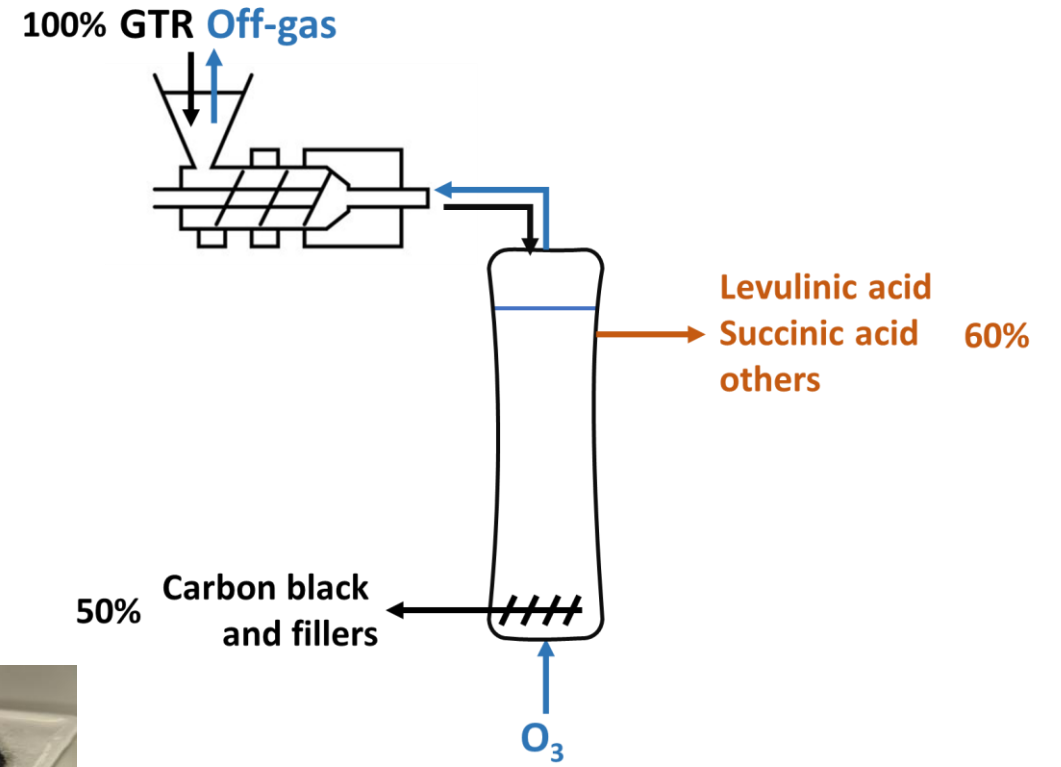


TECHNOLOGY EXAMPLE 1

▪ Ozonolysis of rubber waste WO 2024/153780

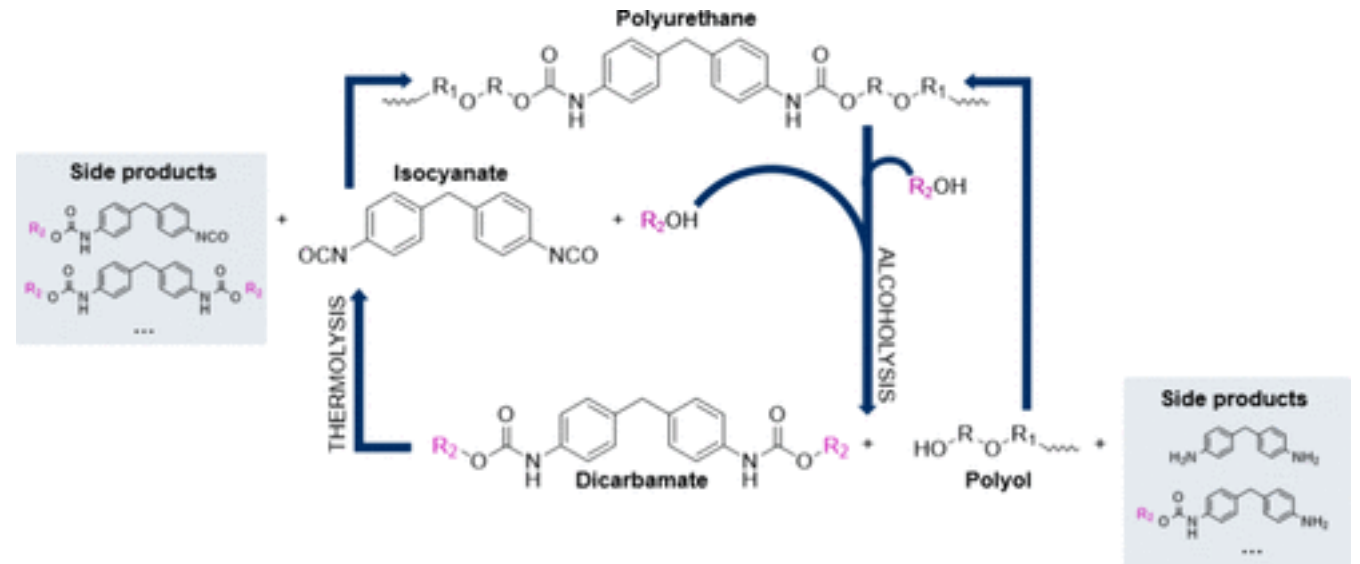
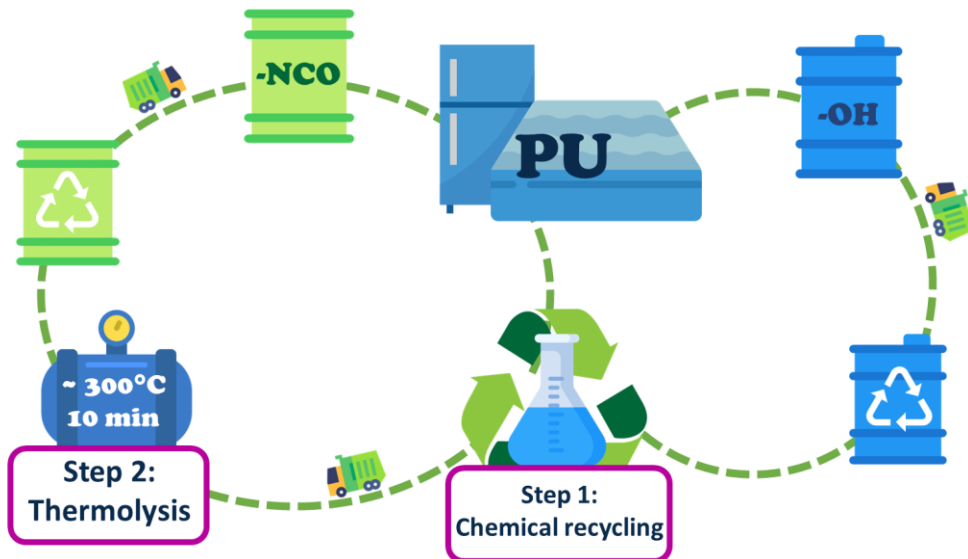
Source: Luke's auto service

Verona



TECHNOLOGY EXAMPLE 2

- Two-step chemical recycling of PU waste to isocyanates
WO2023285545A1



DESIGN FOR CIRCULARITY

Computational chemistry
and
reaction engineering



RECYCLING PROCESSES

Ozonolysis
Alcoholysis
Hydrolysis
Aminolysis



Extractions
Solvent recovery



TEA



Advanced
analytics

catalyst heterogenization



tagging for traceability

decision making
using energy-entropy



crystallization



PROCESS DESIGN



Risk Capital Availability

Business and Innovation Strategies

Innovators and Entrepreneurs

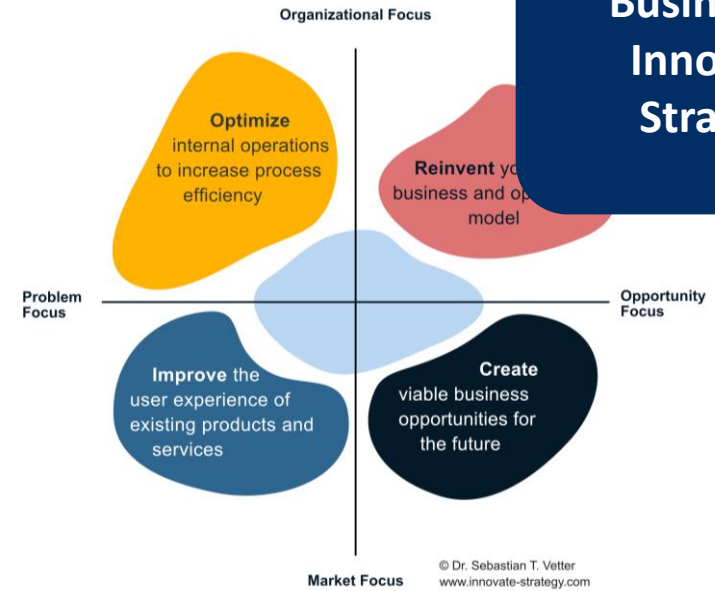
Flexible Incubators

4 Bruggen te Bouwen

Risk Capital Availability



Business and Innovation Strategies



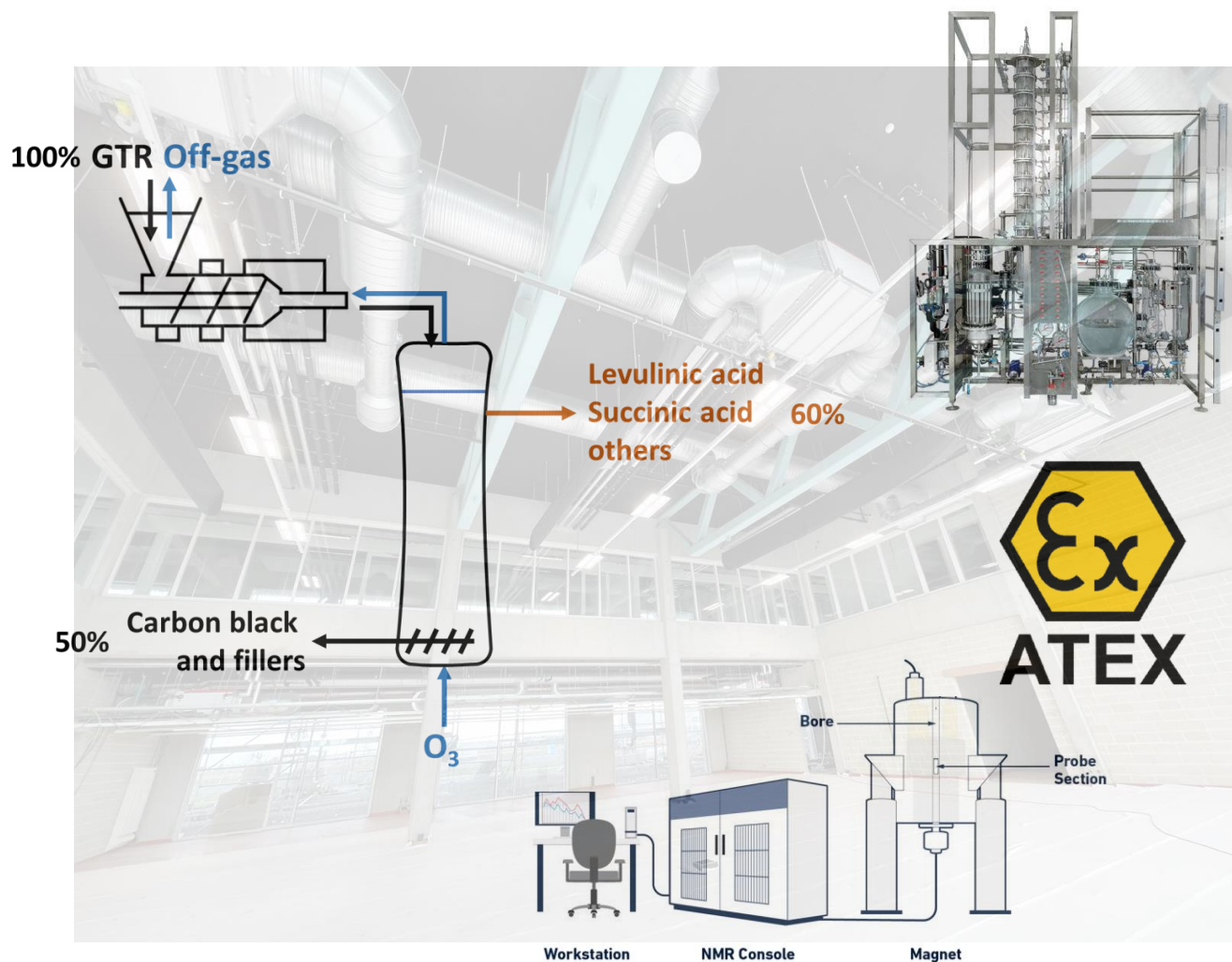
Innovators and Entrepreneurs



Flexible Incubators



Incubating in Antwerp



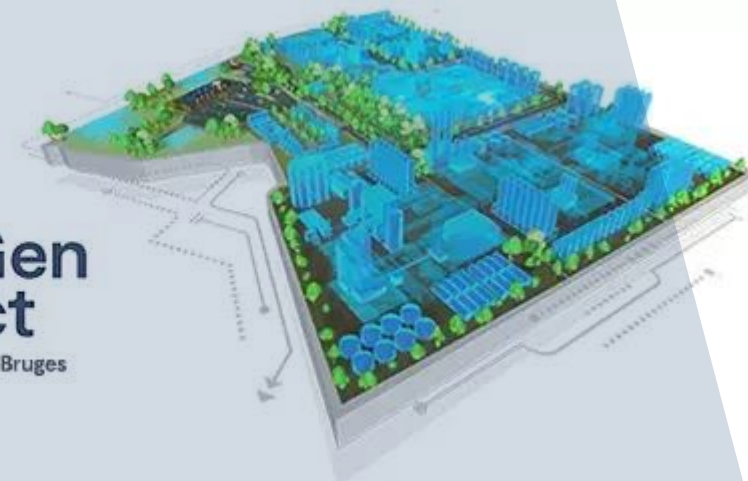
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BlueApp
Powered by UAntwerp

BlueChem

INCUBATOR FOR SUSTAINABLE CHEMISTRY



**NextGen
District**

By Port of Antwerp-Bruges

Business and Innovation Strategies



Go for the long haul
Strategic assets of the region

Risico in Onzekere Tijden

Tot 530 jobs op de he... bij
Agfa in Mortsel: "Dit gaat...
als een bom"



Libe/nieuws/buitenland

VIDEO 7-NIEUWS

**BEKIJK – Jan Remeysen (CEO
BASF): ‘Voor het eerst in tien
jaar geen netto- aangroei van
jobs’**

Kanaal Z

31-10-2024, 19:09 • Bijgewerkt op: 31-10-2024, 22:07

De jobcreatie in de voor ons land zo belangrijke sector van chemie en farma is stilgevallen. En dat is voor het eerst in tien jaar het geval. Die alarmbel luidt Jan Remeysen, de CEO van BASF Antwerpen en sinds een

Chemiebedrijf BASF Antwerpen lanceert besparingsplan



Foto: Patrick De Roo

**Onrust in chemiebedrijf Envalior in
Antwerpse regio**

Het chemiebedrijf Envalior in Lillo, dat zeshonderd mensen tewerkstelt en vroeger bekend was onder de naam Lanxess,

Pleidooi voor Open Innovatie



Ondernemende Talenten

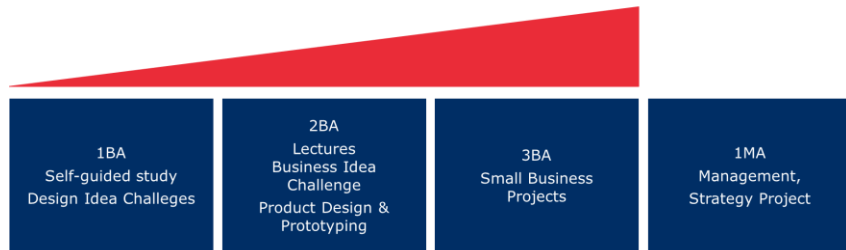


TAKEOFFANTWERP_
FUELLING
ENTREPRENEURSHIP

vlaajo



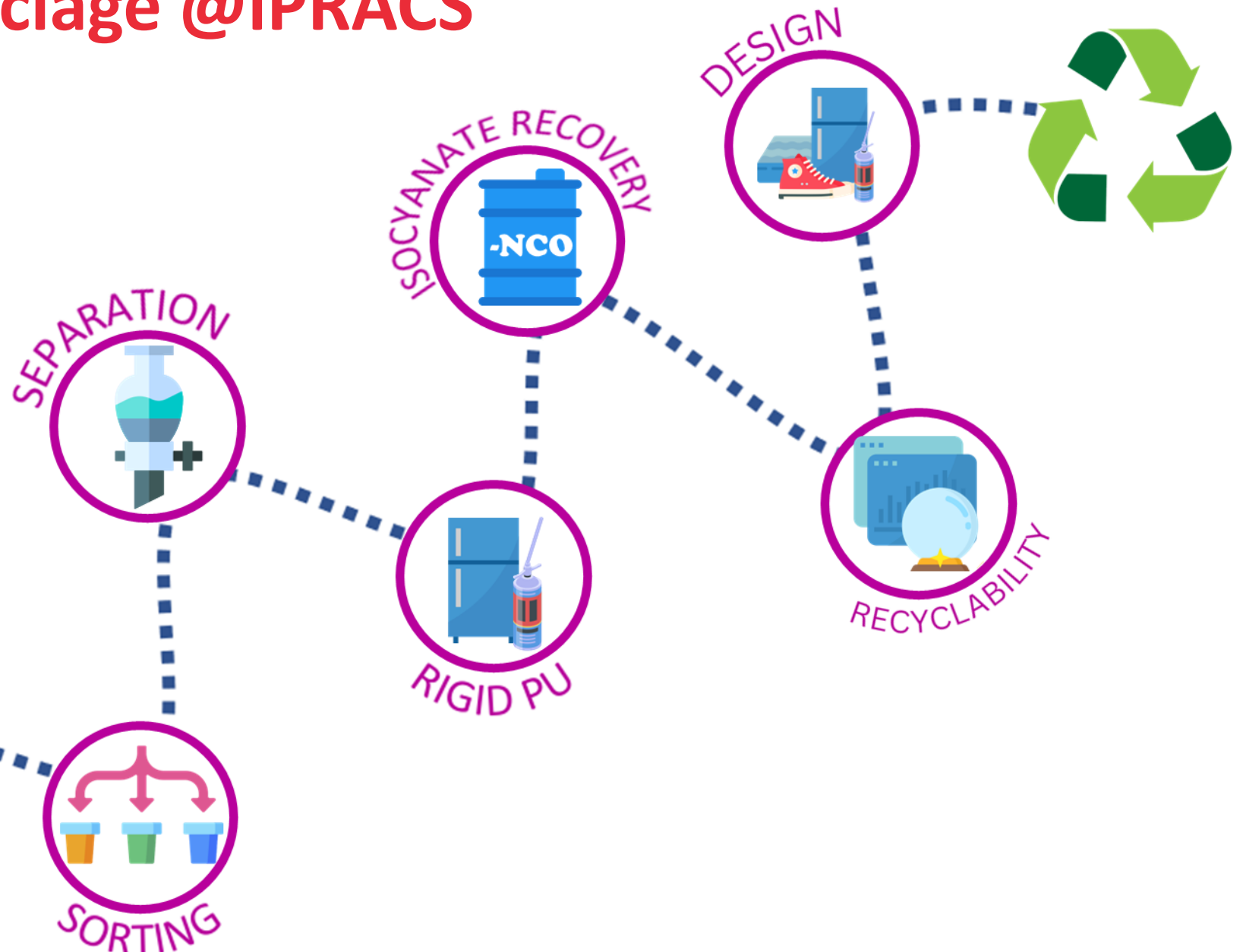
THE COMPANY⁺
HET BEDRIJF VOOR
EN DOOR STUDENTEN



THE COMPANY⁺
HET BEDRIJF VOOR
EN DOOR STUDENTEN

Voorbeeld: Triple Helix SurePUre

Polyurethaanrecyclage @iPRACS



Split-phase recycling of rigid PU foams





Dank

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