

SPECIALIZED COURSE

# SUSTAINABLE TECHNOLOGICAL TRANSITION

In the Chemical and Life  
Sciences Industry

03-07 February 2025  
Zebrastraat, Ghent



essenscia

IN COLLABORATION WITH



SPECIALIZED COURSE

# SUSTAINABLE TECHNOLOGICAL TRANSITION

In the Chemical  
and Life Sciences Industry

## CONTEXT

Sustainability challenges on a global scale require the chemical and life sciences industries to lead transformative change. Technology plays a critical role in this transition. This 5-day specialized course on Sustainable Technological Transition for the Industry, offers an advanced, multidisciplinary exploration of tools and technologies that drive sustainability. Organized by essencia with the support of Ghent University, the course combines scientific rigor with industrial insights across topics such as carbon management, reactor and utility optimization, carbon recycling, and new carbon cycle applications.

## AIM

This program offers an opportunity to get more insight into the different levers that can play a role and to explore innovative approaches and gain the skills needed to drive sustainable transitions in these essential industries. Participants will engage with leading experts on diverse themes, including net-zero portfolio management, electrification of chemical processes, circular economy models, and sustainable construction.

The program also includes practical perspectives from industry leaders on life cycle assessment, CO<sub>2</sub>'s role in energy transition, and the use of renewable technologies like heat pumps and geothermy.

Through case studies, site visits, and sessions led by experts from academia and industry, this specialized course is designed to equip participants with the knowledge and skills to advance sustainable practices across the entire value chain, addressing evolving technologies, regulatory frameworks, and operational standards.

This specialized course is co-developed with member companies, industry peers, experts and academics and aims to increase sustainability knowledge and awareness within the chemical and life sciences industry and beyond.



## PRACTICAL INFORMATION

### LOCATION

Zebrastraat 32,  
9000 Ghent

### FOOD & BEVERAGES

Business lunch menu,  
coffee breaks and closing  
cocktail included

### TOTAL REGISTRATION FEE

members: € 2700  
non-members: € 3200

### REGISTRATION

[www.essencia.be/agenda](http://www.essencia.be/agenda)

## WHO SHOULD ATTEND

This specialized course is made for Masters in Engineering, and professionals with experience in the chemical and life sciences industry for whom a global overview and in-depth understanding of sustainability issues is key. This course will help them to deepen their expertise on the most material aspects for the industry, illustrated with clear practical examples and company testimonials. A questioning attitude will help to increase the mutual understanding around common challenges and solutions. Peer exchange is crucial for fostering advance.

## WHAT TO EXPECT

### CUTTING-EDGE TECHNOLOGIES AND SUSTAINABLE INDUSTRIAL PROCESSES

Dive into topics like the electrification of chemical processes, the use of E-boilers, innovative heat pump applications and advanced topics in reactors and utilities.

### CARBON MANAGEMENT TECHNIQUES

Learn practical methods for reducing, managing, and recycling carbon emissions, with hands-on sessions on carbon cycles and carbon-neutral technologies.

### CIRCULAR ECONOMY AND RESOURCE EFFICIENCY

Analyze case studies on plastic recycling, sustainable construction, and circular economy models to understand real-world applications of these concepts.

### LIFE CYCLE ASSESSMENT AND ECONOMIC VIABILITY

Study life cycle assessments, including the economic aspects of implementing sustainable practices and tools to evaluate their effectiveness.

### FIELD VISITS TO INDUSTRY LEADERS

Participate in site visits to companies to observe sustainable practices in action and gain insights from experienced professionals.

### HANDS-ON CASE STUDIES AND PRACTICAL APPLICATIONS

Work through real-world examples, including renewable energy solutions, CO<sub>2</sub> utilization, and geothermy, to see the implementation of sustainable practices.

### SKILLS FOR FUTURE CAREERS IN SUSTAINABILITY

Acquire a solid foundation in sustainability principles, positioning you for careers in research, academia, or industry focused on driving sustainable technological transitions.

# GOVERNANCE BOARD

The Governance Board determines the strategic goals of the Sustainability Academy, and ensures that the courses and workshops are optimally tailored to the current and future needs and requirements of the chemical and life sciences industry.

## GOVERNANCE BOARD AND STEERING COMMITTEE

**Jan Remeysen**, CEO, BASF Antwerpen, and President of the board of essenscia

**Anouk Van Looveren**, Country Manager, Dow Belgium

**Bert Verstappen**, Manager Environmental Sustainability, Johnson & Johnson Innovative Medicine

**Lieven Stalmans**, Group Manager Energy & Climate, Borealis

**Peter Roose**, Director Sustainability Advanced Interlayers and Technology Director EMEA at Eastman, Chairman of Catalisti

**Yannick de Munter**, Engineering Manager Antwerp Meerhout Polymers Plant, ExxonMobil

**Prof. Dr. Mariya Edeleva**, Professor, Center for Polymer and Material Technologies (CPMT), Department of Materials, Textiles and Chemical Engineering (MaTCh), University of Ghent

**Prof. Dr. ir. Kevin M. Van Geem**, Full Professor in Thermochemical Reaction Engineering, Ghent University, and Director of the steam cracking pilot plant and Director of the board of LCT, and Director of Centre of Sustainable Chemistry (CSC)

**Yves Verschueren**, Managing Director, essenscia

**Ann Wurman**, Managing Director, essenscia vlaanderen

**Frédéric Druck**, Managing Director, essenscia wallonie/brussels

**Dr. Ann Dierckx**, Director of Innovation and Circular Economy, essenscia

**Geert Boogaerts**, Director Safety & Sustainability, essenscia

## ABOUT ESSENCIA

essenscia is the Belgian federation of the chemical industry and life sciences sector. The organisation defends the specific interests of more than 720 companies active in chemistry, plastics, pharma and biotech.

essenscia's role is to offer a tailor-made service, providing expertise and advice on sectoral issues. essenscia also represents the sector in the media and defends the interests of chemistry and life sciences at all levels.

# DAY-TO-DAY PROGRAM OVERVIEW

## DAY 01

Monday 03 FEB | 08:00 – 17:00

### **An integral approach**

#### **Opening speech**

##### **An engineering perspective**

Jan Remeysen, CEO, BASF Antwerpen, and President of the board of essenscia

#### **Sustainable transition to net-zero**

##### **Drivers, levers and challenges**

Sandra Wauters, Manager Net-Zero Transition, BASF

#### **An essential sector point of view**

##### **CCUS for the lime industry to reduce millions of tons of CO<sub>2</sub> emissions**

Andreas Bode, Vice President CO<sub>2</sub> and Process Innovation, Lhoist

#### **Life cycle assessment**

##### **A useful tool? Are economics involved?**

Dr. Miet van Dael, Researcher, VITO  
Bart de Bruycker, LCA and Sustainability Expert, Eastman

## DAY 02

Tuesday 04 FEB | 08:00 – 17:00

### **How to avoid or deal with carbon**

#### **From theory to field operations** **A collaborative and integrated approach**

Prof. Inge Bellemans, Associate Professor, Ghent University  
Thomas de Witte, Project Engineer CO<sub>2</sub> and Circularity - Business Development & Strategic Partnerships, ArcelorMittal

#### **CO<sub>2</sub> : Enemy or ally in the energy transition?**

##### **But it's not all about you**

Dr. Jan Mertens, Chief Science Officer, ENGIE, and Visiting Professor, Ghent University

## DAY 03

Wednesday 05 FEB | 08:00 – 17:00

### **Reactors and utilities, the heart of the process industry**

#### **From academia to the industry** **The future of electrification of chemical processes**

Prof. Patrice Perreault, Associate Professor, ElectrifyHy: Laboratory for the Electrification of Chemical Processes & Hydrogen, University of Antwerp

#### **An E-boiler and the associated infrastructure**

##### **How to engineer?**

Jolien Bruninx, Teamlead Infrastructure and Energy Technology Management, BASF

#### **Heat pumps**

##### **A tight marriage?**

Tom Jacobs, Projectleader ALC Data Management–OneCAE–Technical Services, Evonik

#### **A not-over-the-counter solution: Geothermy**

##### **The ultimate energy engineering**

Stijn Kuypers, Staff Process Engineer, The Janssen Pharmaceutical Companies of Johnson & Johnson

## DAY 04

Thursday 06 FEB | 08:00 – 17:00

### Carbon recycling

#### Plastics recycling: an academic point of view

##### Are there trade-offs?

Prof. Dr. Mariya Edeleva, Professor, Center for Polymer and Material Technologies (CPMT), Department of Materials, Textiles and Chemical Engineering (MaTCh), University of Ghent

#### The transition to sustainable carbon cycles

##### Legislate to innovate?

Saskia Walraedt, Director PolyMatters, essenscia

#### A circular economy?

##### Is there a perspective?

Dirk Nelen, Senior Researcher on Sustainable Resources Management, and Pieter Willot, Materials Management & Circular Economy, VITO

#### What can we feed our reactor?

##### You need to be selective

Dominique Lebbe, Site Director, Ineos Styrolution

#### Plastics recycling

##### An easy game?

Thomas Pintelon, Polinivo

## DAY 05

Friday 07 FEB | 08:00 – 17:00

### New carbon cycles in practice

#### Plastic recycling: Ecoo A real case example

##### Welcome speech from the Founder

Koen Verhaert, Co-Founder, Ecoo

##### A research case

Dr. Veerle Balcaen, Chief Scientific Officer, and Dr. Tom Wieme, R&D Engineer, Ecoo

##### Visit of the recycling plant

##### Visit of the production plant