



SPECIALIZED COURSE
STRUCTURAL INTEGRITY
& MATERIAL DEGRADATION
IN THE PROCESS INDUSTRY

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20, 21, 23, 24 November 2023

LEUVEN | FACULTY CLUB



DEAR MEMBER,

essenscia would like to present the details of the **Specialized Course on Structural Integrity and Material Degradation in the Process Industry**, organized by Process Safety Academy, essenscia and the Chemical Engineering Department of KU Leuven. For additional information concerning these topics please feel free to contact Mr. Geert Boogaerts (+32 476 906 663 | gboogaerts@essenscia.be)

Programme

Process safety is a specific discipline within the organization of a company. The level and quality of process safety management determines the success of the organization. Process Safety Academy aims, with this 4-day specialized course, to provide process safety professionals with the essentials concerning structural integrity and material degradation. The lectures are taught by specialists in their discipline. For each day a syllabus is provided by the organization and a certificate will be granted at completion of the course.

«The level and quality of process safety management determines the success of an organization. This course offers the essentials on structural integrity and material degradation.»

Governance board and steering committee

- ✓ **MSc. Ivan Pelgrims**,
President Process Safety Academy, Director, Evonik
- ✓ **MSc. Koen Colpaert**,
HSE Group Process Safety Manager, Borealis
- ✓ **MSc. Benny Ghoos**, Senior Operations Support Manager,
Johnson & Johnson
- ✓ **MSc. Nico Hertoghe**,
ExxonMobil Research & Engineering
- ✓ **Phd. MSc. Pol Hoorelbeke**, Vice president Safety, Total
- ✓ **MSc. Marnix Mahieu**, Managing Director, Kronos
- ✓ **MSc. Dick Oomen**, AMPP Site Manager ExxonMobil
- ✓ **MSc. Frank Quaeys**,
Head of Technical Services, Covestro
- ✓ **MSc. Stephen McGrady**, EHS BL Director – GSK UK
- ✓ **MSc. Geert Vercruysse**, Process Safety Expert, BASF
- ✓ **MSc. Jan Weckx**,
Antwerp Process Safety Lead, Bayer Agriculture
- ✓ **MSc. Filip De Proft**, EHS director Campus Belgium, Johnson
& JohnsonAgriculture
- ✓ **MSc. Kris Deboutte**, Global SHE Manager, Ineos

Attendees

Professional engineers with industry experience for whom understanding and applying process safety thinking is an integral part of their jobs and who would benefit from an engineering view on process safety for deepening the expertise in their roles and for their career development (e.g. operations, engineering, maintenance, inspection, safety professionals...).

Lecturers

- ✓ **Stefano Cavalleri**, Yara International
- ✓ **Prof. Dr. ir. Stijn Schaltin**, METALogic
- ✓ **Piet Van Dooren**, Borealis
- ✓ **Prof. dr. ir. Dimitri Soccol**, KUL
- ✓ **Prof. Ir. Geert Vercruysse**, BASF
- ✓ **Annick Schellekens**, Veolia
- ✓ **Michel Didden**, Veolia
- ✓ **Eric Cruysweeghs**, TUV AUSTRIA
- ✓ **Niels Mouling**, Chevron
- ✓ **Joris Roeck**, METALogic
- ✓ **Jan Geerts**, METALogic

Aims

Structural Integrity and Material Degradation play a key role in the first layer of protection of our installations. To manage this topic two important aspects need focus: first of all, knowledge regarding the phenomena, and secondly the countermeasures and the management of all these. The lectures are part of an academic course on structural integrity and material degradation enriched with practical industry based applications on the topic. During the first two days, the different phenomena are discussed together with some case histories out of the industry. The third day emphasizes on the protection and inhibition countermeasures, the latter illustrated by the different process waters used in industry. The specific integrity management systems, like risk based inspection and a field case namely corrosion under insulation, are the topic of day four. The course ends by a visit to METALogic, the corrosion experts, focussing on monitoring.

DAY TO DAY OVERVIEW OF THE PROGRAMME :
08:30 – 17:00

DAY 01



MONDAY 20 NOVEMBER 2023

Strategy & Science of corrosion



Strategic governance of mechanical integrity

Stefano Cavalleri, Yara International

Layer one of process safety



The science of corrosion

Stijn Schaltin, METALogic

Electrochemical principles



Manifestation of corrosion in practice

Stijn Schaltin, METALogic

Corrosion types and their mechanisms



Workshop on failure analysis

Stijn Schaltin, METALogic

Learn in practice the theory

DAY 02



TUESDAY 21 NOVEMBER 2023

Prevention & mitigation



Corrosion under insulation

Piet Van Dooren, Borealis

A sniper



Prevention and Mitigation

Dimitri Soccol, KUL

Design & material selection: from carbon steel to stainless steel and beyond



Prevention and Mitigation

Dimitri Soccol, KUL

Inhibitors, galvanic protection & coatings



Degradation of polymers

Dimitri Soccol, KUL

Can we detect?

HOST CITY

Leuven

LOCATION

Faculty Club
Groot Begijnhof 14
www.facultyclub.be

LUNCH

Business menu
3-course diner

TOTAL REGISTRATION FEE

€2200



DAY TO DAY OVERVIEW OF THE PROGRAMME :
08:30 – 17:00

DAY 03



THURSDAY 23 NOVEMBER 2023

Chemical & Mechanical failures



Different water - different treatment

Geert Vercruysse, BASF, **Annick Schellekens** and **Michel Didden**, Veolia
A solution for every problem



Chemical corrosion & degradation

Stijn Schaltin, METALogic
High temperature failure mechanisms



Mechanical failures & fracture types

Stijn Schaltin, METALogic
An introduction to fracture surfaces



Workshop failure analysis

Stijn Schaltin, METALogic
Learn in practice the theory

DAY 04



FRIDAY 24 NOVEMBER 2023

Risk based inspection & non-destructive testing



Damage Mechanism Review (DMR) and Risk-Based Inspection (RBI)

Joris Roeck and **Jan Geerts**
More than a model



Non-destructive testing

Eric Cruysweeghs, TUV AUSTRIA
Standard & advanced



After the theory

Niels Mouling, Chevron
Practical implementation a company testimonial

Limitation: This Specialized Course is limited to 20 participants because a high level of interaction is foreseen.



SUBSCRIPTION FILE

The essenscia Process Safety Academy and the essenscia Chair Safety Engineering organize a 4-day Advanced Course on Process Safety.

PARTICIPANT

FIRST NAME

LAST NAME

EMAIL

COMPANY

FUNCTION

Member of Process Safety Academy Member of essenscia

THE INVOICE OF €2200 (TOTAL REGISTRATION FEE, EXCL. VAT) CAN BE SENT TO

COMPANY

STREET AND NUMBER

POSTAL CODE AND CITY

V.A.T.

PURCHASE ORDER

SIGNATURE OF THE PARTICIPANT

To be sent by mail
to **Ms. Michèle Celis** (mcelis@essenscia.be)
For additional information please feel free to contact
Mr. Geert Boogaerts (+32 476 906 663 | gboogaerts@essenscia.be) or
Ms. Michèle Celis (mcelis@essenscia.be).