CelSian – NCNG International Glass Technology Course

Eindhoven, the Netherlands
October 1 – 5, 2018

In cooperation with:

Introduction & Summary

CelSian Glass & Solar B.V. organizes regularly a five-day highly technical, comprehensive Glass Technology training course focused on industrial glass production. This course was developed in cooperation with the NCNG (National Committee Netherlands Glass industry).

The next region dedicated CelSian – NCNG International Glass Technology Course is scheduled from **Monday, 1st October to Friday 5th October 2018** (5 days) in Eindhoven, The Netherlands. The course is open for the employees of the glass producing industry and related suppliers.

This in-depth course covers many aspects of glass and glass production: from raw materials to formed product, including glass structure & properties and mainly concentrates on glass melting technology. Originally started in 1990, the course has been attended by more than 1500 employees from the worldwide glass industry. All presentations are formatted in PowerPoint and are given in the English language.

The registration fee for the five-day training course is €3200,- per participant. GlassTrend member companies benefit from a reduced fee of only €2500,- per participant.
All participants receive:

- A 5-day classical course dedicated to glass technology for glass industries
- An introductory on-line e-learning course in the 2 week-period preceding the classical course
- A comprehensive textbook on industrial glass production, glass properties and glass technology (about 800 pages)
- The Power Point presentations (pdf formatted presentations)
- Lunches, beverages and 2 informal evening dinners

Hotel accommodation and travel costs are not included.

All attendants receive access to our interactive e-learning course, giving the opportunity to watch 11 short films online (trailer available on https://youtu.be/pID0PYsBIbQ). The movies are accompanied by multiple choice questionnaires accessible to the participants for a period of 2 weeks preceding the classical course. This way the participants can become acquainted with the terminology and the basics of the course. The time required to take this introductory course is about 2 hours.

Once registered we apply the following cancellation rules:

- Before September 7th, 2018: free of charge
- Sep 8th – Sept. 21st, 2018: 50% of the registration fee will be charged
- Sept. 22nd – Sept. 30th, 2018: 75% of the registration fee will be charged
- No show: full registration fee will be charged.

The tentative program can be found on pages 4 & 5, with more details on the content per subject on pages 6 & 7.

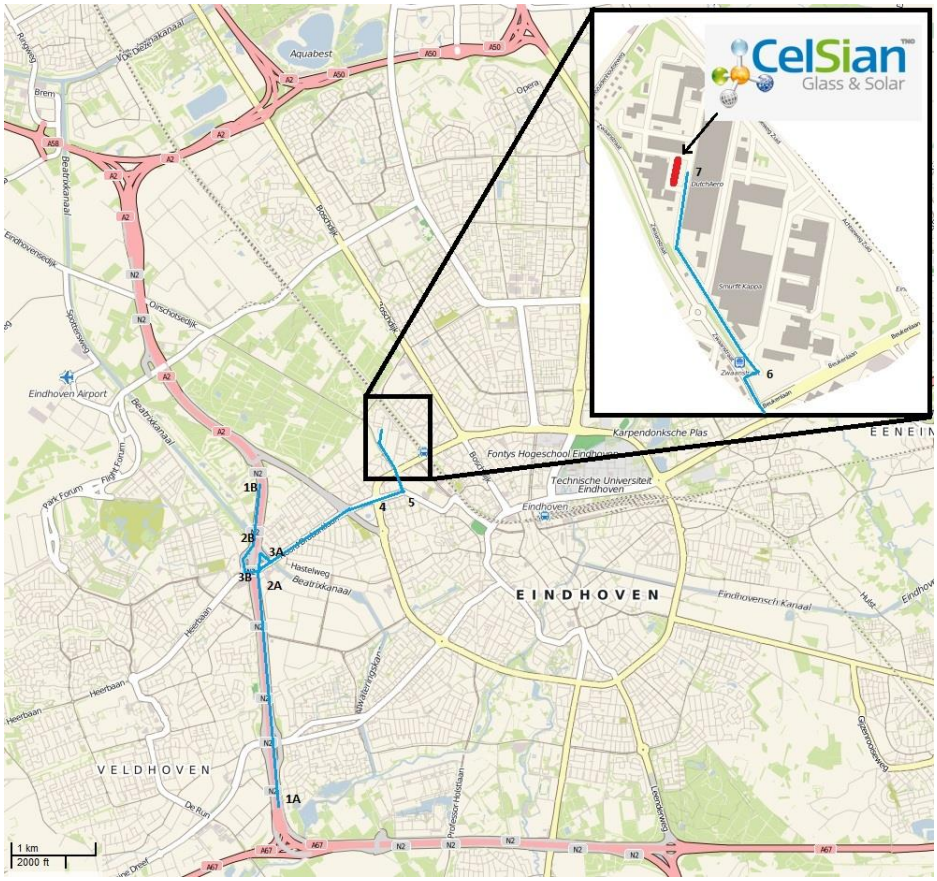
Target group

The course is meant for experienced engineers in the glass industry to receive a more detailed understanding of the glass production, entrants in the glass producing industry and related suppliers and young glass technologists and scientists. Level: high technical and academic.

Registration is open *(online registration only)*

Click here to register

The number of places available is limited to 25.



Location:

CelSian Glass & Solar B.V.
Zwaanstraat 1
5651 CA Eindhoven
+31 40 2490100
http://tinyurl.com/jctluas

Preliminary Program Glass Technology Course

01/10 – 05/10 2018

Place: **Eindhoven, the Netherlands**
Location: **CelSian Glass & Solar building, Zwaanstraat 1**

Preliminary Program

Monday, 1 October 2018

08.30 – 09.15 hrs.	Welcome & Introduction
09.15 – 12.30 hrs.	Module on Glass Structure & Properties, part 1
12.30 – 13.30 hrs.	Lunch
13.30 – 17.30 hrs.	Module Glass Structure & Properties, part 2
18.30 – 21.30 hrs.	Informal dinner in Eindhoven area *(At the invitation of CelSian Glass & Solar)*

Tuesday, 2 October 2018

09.00 – 12.30 hrs.	Module on Raw Materials & Batch Preparation
12.30 – 13.30 hrs.	Lunch
13.30 – 17.30 hrs.	Module on Melting and Fining Processes, part 1

Wednesday, 3 October 2018

09.00 – 12.30 hr	Module on Melting and Fining Processes, part 2
12.30 – 13.30 hr	Lunch
13.30 – 17.30 hr	Module on Glass Furnaces, Refractories and Combustion, part 1

Thursday, 4 October 2018

09.00 – 12.30 hrs.	Module on Glass Furnaces, Refractories and Combustion, part 2
12.30 – 13.30 hrs.	Lunch
13.30 – 17.30 hrs.	Modules on Energy and Environment
18.30 – 21.30 hrs.	Informal dinner in Eindhoven area *(At the invitation of CelSian Glass & Solar)*

Friday, 5 October 2018

09.00 – 12.30 hrs.	Modules on Recycling and Glass Defects
12.30 – 13.30 hrs.	Lunch
13.30 – 16.00 hrs.	Modules on Recycling and Glass Defects

Course will finish at ±16.00 hrs.

The arrangement of the different modules and the program of the visits may be subject to changes. The final program will be communicated to all the confirmed participants approximately one week prior to the beginning of the course.

More info about the content of the course can be found in the following pages.

Registration is open

Content of the course:

The course includes the following subjects:

1. Glass structure and Glass (melt) properties (1 day)
    a. Glass Chemistry and Physics
    b. Optical properties
    c. Mechanical properties
    d. Physical properties
    e. Flow properties
    f. Heat conduction
    g. Chemical resistance of glass
    h. Colouring of glass

2. Raw materials for glass (1/2 day)
    a. Raw material evaluation
    b. Selection criteria
    c. Batch preparation and transport
    d. Batch compositions

3. Melting processes in glass furnaces (3/4 day)
    a. Melting and fusion of raw materials
    b. Sand grain dissolution
    c. Removal of gases (bubbles) – fining, foaming and refining
    d. Redox chemistry and colour issues
    e. Homogenisation

4. Glass furnace design, operation and control (1 day)
    a. Furnace designs
    b. Refractories and behaviour refractory in glass furnaces
    c. Combustion systems
    d. Furnace operation & control

5. Energy efficiency of glass furnaces & emissions (1/2 day)
    a. Energy balances & Energy saving methods
    b. Emissions and their sources
    c. Chemistry of flue gases
    d. Air pollution Control

6. Recycling of glass (1/2 day)
    e. Purification of waste glass
    f. Recycling technologies
    g. Redox sensors & organic materials in recycled glass

7. Glass defects and glass quality (1/2 day)
    h. Gas bubbles and their origin
    i. Knots and their origin
    j. Stones
    k. Cords
    l. Investigation methods for glass faults (defects)