

Eco-Design of Refractories : *E for Ecological, Economic, Eco-energetic* FIRE - ECerS SUMMER SCHOOL *for students and industrialists*



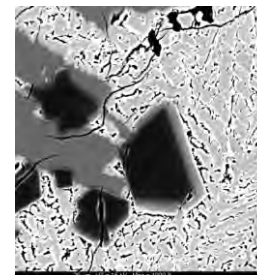
Welcome to Aachen (Germany)

It is a great pleasure to invite you to take part at the 2022 **FIRE-ECerS Summer School: Eco-Design of Refractories** which will be held at the RWTH Aachen University, Germany from June 28th to June 29th. A visit of Tata Steel plant in Ijmuiden, The Netherlands is planned on June 30th.

This Summer School aims to promote cooperation on educational programs in refractories among the major institutions and companies of the sector. This school will favour networking between young scientists and experienced professors and experts. It will create links between different scientific communities (ceramics, refractory manufacturers, metallurgy, mechanics, thermodynamics, instrumentation, sustainable development) and between industrial and academic research.

Face to face and virtual training course which

- **Integrates 3 aspects** : *fundamental approach, industrial needs, new approaches on innovations*
- **Propose a good balance between** : *the courses, an industrial tour, exchanges and conviviality*



Venue: SuperC Building
RWTH Aachen University
Templergraben 57, 52062 Aachen



Visit of Tata Steel Plant

Your contact for any queries:

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Dr. T. Tonnesen tonnesen@ghi.rwth-aachen.de
Ms. V. Huart school2022@bcrc.be

Logo of FIRE Sponsors

Eco-design of refractories : the program

Tuesday, June 28th

Refresher of basic knowledge

- Raw materials
- Shaped refractories
- Monolithic refractories : LCC, ULCC, NCC

The Fundamentals :

Corrosion and thermo-mechanics

- Thermodynamic and kinetics
- Reactive transportation
- Fracture and creep

Exhibition Cerami°k,

Poster session and video session

Banquet

Wednesday, June 29th

Industrial and economic needs

- Refractory values in use
- How to innovate ?

Future challenges for refractories

- Sensors, instrumentation and refractory needs
- Challenges for data mining and machine learning in the refractory industry and end-users
- Circular economy

Refractories for Steel Making

- Critical wear factors and optimum choice
- Improvement of steel cleanliness

Departure to Ijmuiden

Thursday, June 30th

Refractories for Steel Making

- The new face of the steel industry
- Management and production of iron by H2 – consequences for refractories

Visit of Tata Steel Plant

Discussion, Brain Storming

End of the FIRE-ECERS School (16h30)

Lecturers

Dr. Andus Buhr – ALMATIS, Germany

Dr. Erwan Guéguen – RHI MAGNESITA, Austria

Dr. Bruno Touzo – CALDERYS, France

Dr. Hong Peng – ELKEM

Prof. In-Ho Jung – Seoul National University, South Korea

Dr. Thorsten Tonnesen – RWTH Aachen University, Germany

Prof. Harald Harmuth, Dr. Dietmar Gruber, Dr. Shengli Jin,

– Montanuniversität Leoben, Austria

Chris Parr – Imerys, France

Dr. Christoph Wöhrmeyer – Imerys, Germany

Prof. Jacques Poirier and Prof. Emmanuel de Bilbao – Cemhti / University of Orléans, France

Matheus Santos et Prof. V. C. Pandolfelli – Universidade Federal de São Carlos, Brazil

Dr. Carmen Baudín – Instituto de Cerámica y Vidrio, CSIC, Spain

Dr. Margarita Alvarez – Alfran, Spain

Prof. Christos Aneziris – University of Freiberg, Germany

Dr. Paul van Beurden – Tata Steel, The Netherlands

The training courses and conferences will be **memorized using video documents.**

Online registration fee available on the EcerS website:

<http://ecers.org/en/2021-FIRE-Ecers-refractory-school.html>

Or registration form to be sent to school2022@bcrc.be

Title/ Family name :

First name :

Student or **Professional**

University/lab/Company :

VAT number if any :

Street:

Zip code /Town :

Country:

Phone:

Email:

Member of : European Ceramic Society (ECerS)
 American Ceramic Society (ACerS)
 Not member

FACE TO FACE PARTICIPATION

Student registration fees

- 300 euros for Master or PhD, members of ECerS, ACerS or FIRE
- 400 euros for non members of ECerS, ACerS or FIRE

The student registration fee includes:

- 3 nights-double room from 27th to 29th June,
- Attendance to the FIRE- ECerS courses, certificate of attendance, courses documents, coffee breaks, lunches, banquet, transport by bus Aachen-Ijmuiden and Ijmuiden-Aachen

Professional registration fees

- 550 euros for members of ECerS, ACerS or FIRE
- 650 euros for non members of ECerS, ACerS or FIRE

The professional registration fee includes:

- Attendance to the FIRE-ECerS courses, certificate of attendance, coffee breaks, lunches, banquet, transport by bus Aachen-Ijmuiden and Ijmuiden-Aachen

No room booking is included in the professional registration fee -

The Organizing Committee recommends hotels situated near the FIRE-ECerS Summer School (see attached list) :

VIRTUAL PARTICIPATION (including courses documents)

Student registration fees

- 150 euros for Master or PhD, members of ECerS, ACerS or FIRE
- 200 euros for non members of ECerS, ACerS or FIRE

Professional registration fees

- 500 euros for members of ECerS, ACerS or FIRE
- 600 euros for non members of ECerS, Acers or FIRE

Payment

Payment of the registration fee must be done on the following bank account:

IBAN: **BE16 7512 0815 5774**

BIC: **AXABBE22**

with the following reference:

FIRE – ECERS SRefractorySchoolIEcerS2022 – First and Last Name

List of hotels

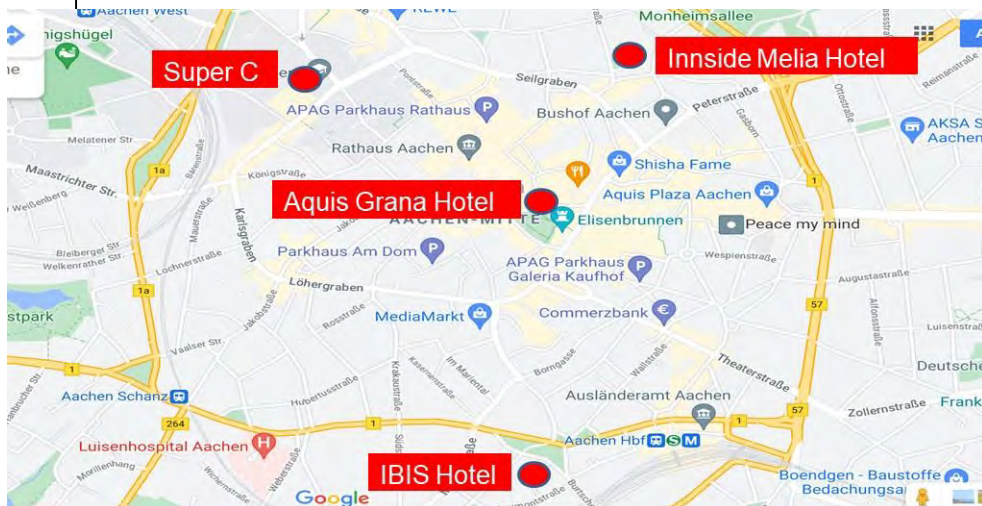
Aachen

Special rate available using "Summer FIRE School 2022"
(Offers until 16.05.2022)

- **Aquis Grana City Hotel (EUR 90,-)**
www.hotel-aquis-grana.de , Tel. +49 (0)241 443-0
- **IBIS Hotel Marschierdor Aachen (EUR 100,-)**
www.all.accor.com , Tel. +49 (0)241 47880
- **Hotel Inside Melia Aachen (EUR 140,-)**
www.melia.com , Tel. +49 (0)241 510 370

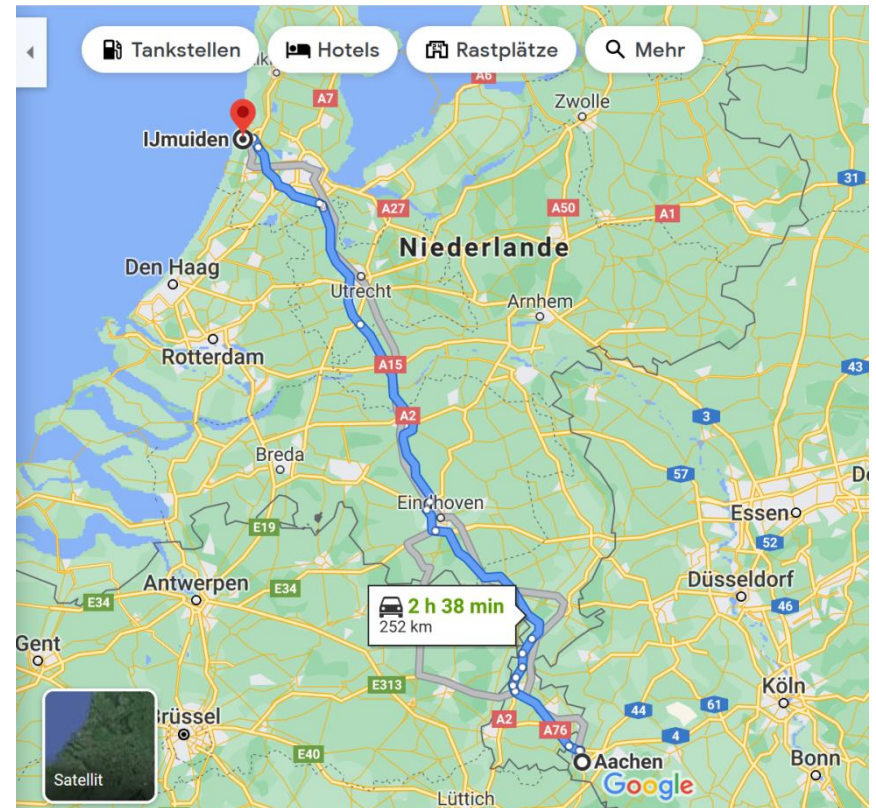
Tata Steel, IJmuiden

- **Strandhotel Het Hoge Duin, www.hethogeduin.nl**
Tel+31 (0) 251 374 202 €
- **Hotel Restaurant Zeeduin, www.fletcher.nl**
- **Tel +31 (0) 251 376 161 €**
- **Van der Valk Hotel Akersloot / A9 ALKMAAR,**
www.hotelakersloot.nl, Tel+31(0) 251361888 €€



Transport Aachen – Jmuiden – Aachen

Coach/Bus Transfer : 2,5 hours, 250 km



- ✓ **Hotel**
Walking distance
Categories: EUR 90-140

List of hotels

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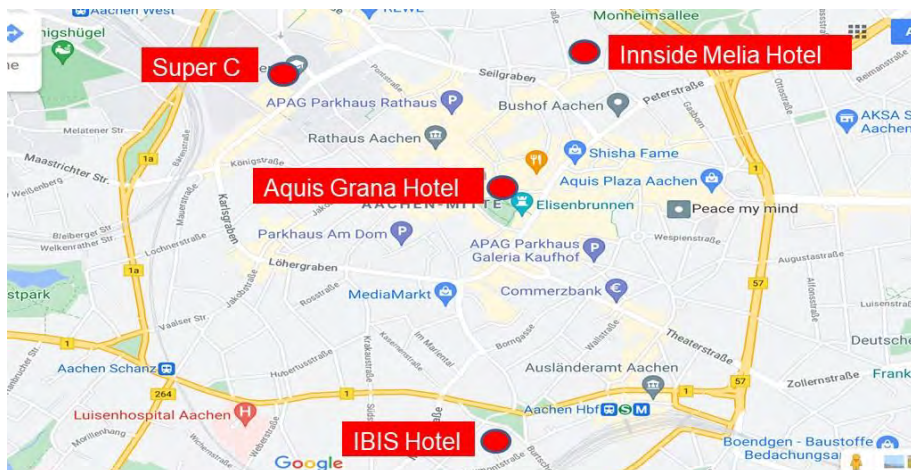
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