

Anodes - From the Raw Materials to the Pot Performance

Get familiar with the essentials of anode production and performance in the pots:

- Understand the options of **raw material suppliers** and requirements of **aluminium producers**
- Get to the bottom of the **anode manufacturing process**
- Learn to improve **anode quality** and reduce **production cost**

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These topics will be discussed:

- Anode Raw Materials
- Green Anode Production
- Baking
- Rodding
- Slots in Anodes
- Anode Cracking
- Carbon Dusting in Pots
- Quality Improvement
- Specifications
- Process Optimization
- Cost Evaluations
- New Technologies

Monday, 23 September 2024

17.00 Registration desk opens at the Deltapark Resort

18.00 Welcome cocktail reception

19.30 Dinner in Deltapark Resort

Tuesday, 24 September 2024

08.30 Reception of the participants
Distribution of proceedings and general information

09.00 Introduction
■ Anodes used for the aluminium production

09.15 Test methods for quality and process control
■ Anode raw materials

10.00 Coffee and tea break

10.30 Test methods, continued
■ Anodes

11.00 Anode raw materials
■ Petroleum coke

12.00 Lunch

13.30 Anode raw materials, continued
■ Coal tar pitch
■ Anode butts

15.00 Coffee and tea break

15.30 Green anode production
■ Dry aggregate preparation

16.30 Discussion

18.30 Social program with networking opportunities

Wednesday, 25 September 2024

08.30 Green anode production, continued
■ Paste preparation
■ Forming and cooling

10.00 Coffee and tea break

10.30 Anode baking
■ Bake furnace characteristics and operation

12.00 Lunch

13.30 Anode baking, continued
■ Factors influencing anode quality

14.15 Anode rodding
■ Procedure and influencing factors

15.00 Coffee and tea break

15.30 Basics of reduction process
■ Cell design
■ Reactions in the cell
■ Influence of anodes on heat balance

16.30 Discussion

18.30 Social program with networking opportunities

About Your Presenters:

Dr. Markus Meier



joined R&D Carbon in 1991 after graduation as a mechanical engineer at the ETH in Zurich and completed his PhD about anode cracking in 1995. As today's Vice President Technical Services he brings knowledge to the plants to increase the performance of the carbon products with technical audits, process optimizations and training courses. He strongly believes that educated and skilled operators are the biggest asset of every plant.

Peter Sulger



graduated in electric and electronic engineering at the technical school of Rapperswil in 1985. He joined R&D Carbon in 1996. He is well recognized in the industry for his expertise in anode furnace design and operation. Today he is the Vice President of Process and Data Analysis. He is responsible for all technical services related to the bake furnace and the firing system including audits and optimization trials.

Julien Wyss



joined R&D Carbon in 2010 after graduating with cum laude in mechanical and materials engineering at the technical school in Sion in 2009. As today's Vice President Research and Development he follows widespread activities related to carbon products for the metal industry. He supervises all testing activities in the pilot plant and laboratory and is actively involved in plant audits and optimizations.

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R&D
Carbon

Thursday, 26 September 2024

08.30 Anode performance in pots

- Anode consumption
- Anode cracking due to thermal shock
- Carbon dusting in pots
- Spike formation
- Burn-off
- Bath impregnation

10.00 Coffee and tea break

10.30 Slotted anodes

- Production and performance

11.15 Specifications

- Definitions and interpretation

12.00 Lunch

13.30 Optimization trials to reduce smelter cost

- Paste plant: recipe and processing parameters
- Bake furnace: operation and baking parameters

14.30 Coffee and tea break

15.00 Outlook: worldwide technological trends

- Change of anode raw material characteristics
- Requirements of a new anode plant

16.00 Discussion

16.40 Closing word

17.00 Conclusion of technical sessions

18.30 Social program with networking opportunities

Friday, 27 September 2024

08.00 Departure to Sierre

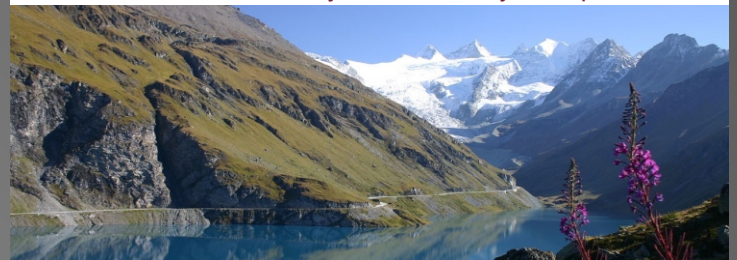
10.00 Visit of R&D Carbon technology center

- Laboratory: Carbon research and testing
- Pilot plant: From coke calciner to graphitization furnace
- Anode baking test flue and equipment development

12.00 Lunch

13.30 Departure to Grimentz

- Visit the Lake Moiry surrounded by the Alps



- Promenade in the traditional village of Grimentz
- Closing dinner

22.00 Departure back to Deltapark Resort in Thun-Gwatt

Goals of the Course:

In the field of the primary aluminium production the anode performance is most relevant for the smelter. From all cost factors, the **anode quality** has the biggest variable impact on the aluminium production cost. Top smelters have well understood to produce **aluminium at lowest possible cost** by focussing permanently on an optimum anode quality.

R&D Carbon has developed this course where you learn the **essentials about anode production and performance**:

- What is the link between the **anode raw materials** and the resulting anode quality?
- Understand how the anode quality can be improved by optimizing the **processing parameters** of the paste plant and bake furnace.
- Bring the knowledge into your company about how to **reduce anode consumption and carbon dusting** and how this affects the costs.
- What **instruments** do you have to quantify the costs and savings?
- How can you implement the findings of this course into your **daily work**?
- What are the latest **technological trends**?

With this course

- you gain a **principal understanding** about the anode production and performance in the pots,
- you become a **competent discussion partner** for the raw material supplier, the anode manufacturer, the aluminium producer and the trader,
- you get the tools to work with in the **practice**.

About R&D Carbon:

Since its formation in 1986 the key mission of R&D Carbon has always been to persistently strive for innovative solutions with profound research and development projects. Our main activities are technical assistance and supply for the global metal, oil and coal industry. Today, we are recognized by our customers as the leading authority in the transfer of innovative carbon technology.

With this course we offer a forum to professionals for exchanging information and experience beyond the limits of their corporation.

Concise information to advance your professional skills:

Whether you are an anode raw material supplier, an anode manufacturer, an aluminium producer or a trader: This course is intended for professionals with technical or commercial background who want to broaden their knowledge about the black side of aluminium production.

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10th International Training Course Organized by R&D Carbon 23 - 27 September 2024

How to Register:

The registration to the course is open through the link on our website:

<https://www.rd-carbon.com>

We recommend early registration, as the number of participants is limited.

Registration Fees & Conditions:

Take advantage of the discounted earlybird rates:

Registration Fee	1 Participant	Additional Participant *
Before 31 May 2024	CHF 4'350	CHF 3'850
Before 30 June 2024	CHF 4'650	CHF 4'150
From 1 July 2024	CHF 4'950	CHF 4'450

* from the same plant site

The registration shall be made prior to 23 August 2024.

The registration fee includes all course material, all meals, beverage drinks and organized social events. The hotel accommodation is not included in the fee.

Registrations can only be confirmed upon receipt of payment or proof of payment. Discounted fees only apply when payment is received within the offer period.

Cancellation is possible with 100 % re-imbursement of the registration fee until 7 September 2024. Cancellations received after 7 September 2024 are subject to a service charge of 50 % of the registration fee. You are welcome to send a substitute from the same company without extra charge.

We reserve the right of program changes.

Venue:



The course is conducted in the **** DELTAPARK Resort in Thun-Gwatt, where a limited number of hotel rooms is reserved for the participants:

**** DELTAPARK Resort

Deltaweg 29

3645 Thun-Gwatt, Switzerland

www.deltapark.ch

Thun can easily be reached by train from the airport of Zurich within 1:40 h and from Geneva within 2:20 h. The Deltapark Resort is located in Thun-Gwatt; from the train station of Thun it is a 12 minute ride by bus line 1.

Hotel Reservation:

A limited allocation of hotel rooms is reserved in the ****DELTA PARK Resort from 23.09. to 28.09.2024. The rooms shall directly be booked at the hotel by email:

info@deltapark.ch

By mentioning "R&D Carbon Course 2024" the following discounted room rates are offered:

Discounted rate per room & night incl breakfast	Single room (1 person)	Double room (2 persons)
Superior, Main Building	CHF 225	CHF 335
Comfort, Main Building	CHF 205	CHF 315
Basic, Annex Building	CHF 190	CHF 300

Any Questions?



Call (+41) 27 - 459 29 29

or email at training@rd-carbon.com

Méлина will be happy to help you

Previous Participants Said:

"Course of high added value from highly qualified trainers."

"I am very happy with the course. I have learned a lot."

"Information from experts will help to improve my work."

"I will recommend it to other people in the industry."

"Great social program to exchange with other participants."

"For me best practice in organizing conferences."

During laboratory visit: "This is better than Disneyland."