

# PURE

EXPERTISE



ALWAYS AN IDEA AHEAD

## CORE THEME

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# EDITORIAL

## DEAR READERS,

Dynamic is not only the word for the new, revised CAC logo which is launched on the coming anniversary of the 55-year old company in a new, fresh look. Dynamic also describes the processes and employees of our young at heart, company which, in line with our motto "ALWAYS AN IDEA AHEAD", is precisely that.

In this issue we would like to introduce some of the people who drive our company forward with zest and enthusiasm. Get to know our new representative in Minsk, Dr. Alexei Vejera, go with one of our managing directors, Mike Niederstadt, on a notional journey to international large-scale projects, let Philipp Hadlich explain the advantages of our student scholarship program and find out how the Bundesliga players of the Handball Club Chemnitz e.V. train for stamina and ambition.

Our project engineers need both of these qualities time and again when they're installing groundbreaking large-scale plants throughout the world. Read about where, how and for whom they do that in our Kaleidoscope. One burning issue that is constantly with us is the conversion of chlor-alkali electrolysis plants from mercury to membrane technology. In our core topic on pages 9 to 11, we report on what has to be borne in mind in this regard and how we guide these demanding projects to worldwide success.

Dynamic is also a byword for the subject of simulation. How can a computer-aided model display highly complex processes in faithful detail, even in varying situations? Our contribution on the modern technology of dynamic simulation explains backgrounds, principles and advantages.

We hope that you find reading our dynamic magazine enjoyable and interesting!



Jörg Engelmann



Joachim Engelmann



Mike Niederstadt



Board of Management from left to right:  
Joachim Engelmann, Jörg Engelmann, Mike Niederstadt





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Photo: © TRM

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# FIRST MEMBRANE ELECTROLYSIS PLANT IN GERMANY COMPLETED

Photo: © Neolyse Ibbenbüren



ANNUAL CAPACITY:

**120.000** tonnes



of caustic potash

**80.000** tonnes



of chlorine

WHERE?



Ibbenbüren, Germany

**TIP:** DETAILED INFORMATION ON THE CONVERSION TO MEMBRANE TECHNOLOGY CAN BE FOUND ON PAGES 9 TO 11.

CAC has built their first chlor-alkali electrolysis plant in Germany. "We are delighted that after more than 15 years of successfully implemented chlor-alkali projects worldwide we have now realised a plant with this technology in Germany", says Jörg Engelmann, Chairman of CAC. The new plant for AkzoNobel Speciality Chemicals and Evonik Industries AG at the Ibbenbüren site is being operated by the joint production venture Neolyse Ibbenbüren GmbH. The new membrane electrolysis plant is based on the membrane technology of the Asahi Kasei Corporation in Japan and replaces the previous mercury based plant. According to the plant operator, the new production process improves the ecological footprint of each tonne of chlorine produced in Ibbenbüren

by 25 to 30 percent. "This project was close to the hearts of both ourselves and our customer because the new plant does not only have an improved energy balance but also secures many jobs in Ibbenbüren", emphasizes Jörg Engelmann. CAC's contract embraced the general and detail engineering, purchasing, site management and support during the plant commissioning up to the performance test run.

## NEW CHLORINE LIQUEFACTION PLANT IN POLAND

Integrating a new plant into the existing inventory is always a special challenge. So, too, with the new chlorine liquefaction plant for PCC Rokita in Poland. Space restrictions, the complex integration of the existing production plants and national specifications through the Polish technical inspection authority demanded precise engineering services and good consultation. Together with our Polish subsidiary BIPROTECH Sp. z o. o. Krakow we compiled, amongst other things, the general and detail engineering for the chlorine liquefaction plant, supplied the chlorine liquefier, the ammoniac refrigeration plant and the instrumentation, monitored the assembly and supported Rokita with the commissioning and training.

With a daily capacity of circa 405 tonnes of liquid chlorine, the new plant produces approximately double that of the existing plant. In addition, the plant is more environmentally friendly thanks to the use of ammonia instead of CFC.



DAILY CAPACITY:

**405** tonnes



of liquid chlorine

WHERE?

Brzeg Dolny, Poland



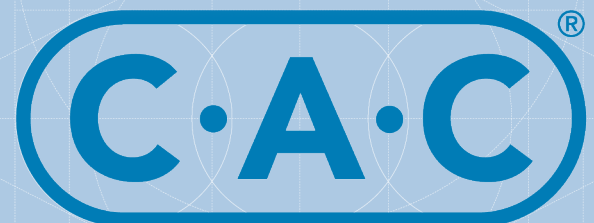
## FACELIFT FOR THE CAC LOGO

Modern and clear, for sure: CAC's new logo interlinks past and future cautiously and with great graphic and strategic sensitivity.

The new visual execution gets the message across in the three familiar capital letters. The identity remains but its motion is now more dynamic, future-orientated and full of character.

Typography and colorfulness underpin the sector, clarify the visions and goals of the company and stress continuity.

The slogan "ALWAYS AN IDEA AHEAD" puts it in a nutshell and points the way to the new graphic interpretation of CAC as a brand.



ALWAYS AN IDEA AHEAD

MORE THAN 50 YEARS IN THE MARKET AND STILL SPARKLING FRESH ...



LOGISTIC MASTERPIECE FOR REFINERY PROJECT



Photo: © Michael Deutsch/TRM



**134,000** hours

total man-hours – that equates to more than 15 years of life

**7,500** cubic metres

of soil moved

**147** tonnes

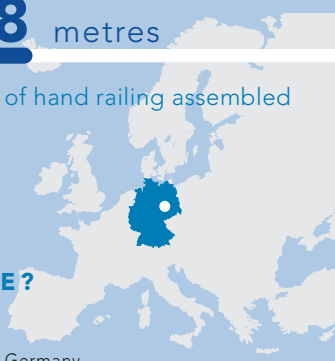
of steel and

**558** metres

of hand railing assembled

**WHERE?**

Leuna, Germany



The performance test lasted 72 hours, then the new plant section for the benzene enrichment was handed over to the Total Raffinerie Mitteldeutschland GmbH. CAC is thereby continuing a long tradition in the realisation of plants in the central German refinery complex. One milestone was the lifting and installation of the 65 metre high, 245 tonne dividing wall column – the core element of the new plant. A week later followed the installation of the 35

tonne pre-assembled unit with four air coolers. The erection of the dividing wall column was a logistic masterpiece: it was not, as originally planned, completed perpendicularly on site on the foundation but pre-assembled horizontally by means of pre-dressing and then transported to its destination with the aid of a 1200 tonne mobile crane and a 750 tonne crawler crane.



Photo: © TRM

## TURNKEY PLANT IN SPAIN AWARDED

In the northern Spanish city of Torrelavega, a turnkey chlor-alkali electrolysis plant for the Portuguese company Bondalti Capital S.A. will be erected. The new plant is based on the modern, energy-efficient and environmentally friendly membrane electrolysis process by the Japanese Asahi Kasei Corporation. After its completion in about two years, it will replace the mercury electrolysis plant that was closed down in 2017. "We are very proud to have been given the overall responsibility by Bondalti for all phases of the contract implementation", explains Mike Niederstadt, Managing Director of CAC. "This contract strengthens our long-standing experience as an EPC contractor amongst the international competition for strategic large-scale projects." As well as the Asahi Kasei technology membrane electrolyzers, the CAC services also cover the brine treatment including filtration, water softening, iodine and ammonia removal as well as sodium hydroxide evaporation and sodium hypochlorite plants.



ANNUAL  
CAPACITY:

**68,000** tonnes



of chlorine

**55 Mio** Euros

total capital  
expenditure

WHERE?

Torrelavega, Spain

Photo: © tanevix / shutterstock.com



**TIP:** DETAILED INFORMATION ON THE CONVERSION TO MEMBRANE TECHNOLOGY CAN BE FOUND ON PAGES 9 TO 11.



## NEW CRYSTALLISATION PLANT FOR SODA MANUFACTURER CIECH



Photo: © CIECH Soda Deutschland.

Sodium bicarbonate ( $\text{NaHCO}_3$ ) is used, amongst other things, as a pharmaceutical additive for hemodialysis treatments. With the construction of a new crystallisation plant, Ciech Soda Deutschland is extending its portfolio for the manufacture of  $\text{NaHCO}_3$  to pharmaceutical quality. Ciech Soda Deutschland GmbH & Co. KG

is a subsidiary of Ciech S.A. with its HQ in Warsaw. The market leader of the Polish chemical industry is among the largest manufacturers of sodium carbonate and sodium bicarbonate in Europe.

CIECH Soda Deutschland is one of the oldest companies in Saxony-Anhalt, Germany, and produces soda and sodium hydrogen carbonate (baking soda). The factory uses its own limestone deposits and salt sources for the soda production.

CAC is assuming the overall responsibility at the plant in Staßfurt for all contract phases: from the general and detail engineering to procurement, logistics and assembly, to commissioning and turnkey handover based on a GEA technology. A special challenge for the Chemnitz engineers is the integration of the plant into the existing complex.



ANNUAL CAPACITY:

**110,000** tonnes



of  $\text{NaHCO}_3$

WHERE?

Staßfurt, Germany



CAC NAMED AS OFFICIAL CONTRACTOR TO THE LICENSOR STAMICARBON B.V.

To be selected as official engineering contractor is a particular honour. We have been assigned this status by the Dutch company Stamicarbon B.V. since December 2017. We are amongst a select group of currently eight international suppliers that Stamicarbon has recognised over the past six

decades as partners for the implementation of general and detail engineering. Stamicarbon is one of the world's leading licensors for high-pressure urea synthesis and urea granulation. Our common focus centres on collaboration in high-pressure urea synthesis and granulation projects.

**1 of 8**



official engineering partners

WHERE?

Sittard, The Netherlands



## CONVERSION OF CHLOR-ALKALI ELECTROLYSIS PLANTS: CAC HAS THE KNOW-HOW



*By December 2017 almost all mercury electrolysis plants in the EU had been shut down. The old technology was too damaging to the environment due to excessive mercury contamination levels for effluent and soil and hence harmful to health and work safety. On top of that was the immensely high power consumption. The mercury electrolysis method has been replaced by membrane technology, which is far better in terms of environmental friendliness, consumes up to 30% less energy, wins out with its significantly higher product quality and also without mercury contamination, offers a significantly safer work place for operating and service personnel.*

*The experts of CAC know what's important when it comes to the conversion of electrolysis plants.*

Chlorine and caustic soda are two important basic chemicals for numerous industrial processes. Since the end of the 19th century, these have been produced from sodium chloride and water using chlor-alkali electrolysis. Initially, the asbestos-containing diaphragm process was used, which was later replaced by the amalgam or mercury technology.

In 2001, the European chlor-alkali industry voluntarily decided to abandon mercury technology for the production of chlorine from 2020 and subsequent to that, the phase out of mercury technology became obligatory under the Industrial Emissions Directive. Since December 2017 almost all mercury electrolysis plants in Europe have been shut down. The EU is playing an important pioneering role in this field.

The challenge for companies that produce chlorine and caustic soda is that existing mercury electrolysis plants must be converted to the new membrane technology. "The conversion from mercury to membrane technology saves up to 30 percent of electrical energy and thus helps to cut production costs," says Dr. Franziska Herrmann, Chlor-Alkali

Group Manager at CAC. "Nevertheless, we must not forget that the conversion represents a huge investment. The key element – the electrolyser – is a cost-intensive and sensitive equipment system."

For this reason, it is vital to modernise and enhance the brine treatment upstream of the electrolyser. The requirements on brine purity are much higher for the membrane process than with diaphragm or mercury technology. Whilst with mercury electrolysis up to 2 ppm of calcium were permitted in the brine, 10 ppb at most are allowed with the membrane electrolysis – that's 200 times less! If the threshold values are exceeded, irreversible damage to the membranes can occur. Reliable brine treatment is an essential basis for stable operation and long service life of membranes – or, as Dr. René Stahlschmidt, Sales Manager of CAC, puts it in a nutshell: "The true skill in engineering a membrane electrolysis plant lies in the brine treatment."

Within the scope of a conversion it is therefore not enough to merely

replace the mercury with a membrane electrolyser. Understandably, however, it is also very important for most operators to maximise the reuse of existing plant components. "There is nothing wrong with reusing parts of the existing brine treatment, such as precipitation tanks or filters – but only after thorough cleaning," says Dr. Herrmann and adds: "In order to fulfill the high demands on brine quality, additional brine purification by means of ion exchange is necessary."

Existing transformers and rectifiers can also be used for the membrane electrolysis – provided that the number of cells per electrolyser are expertly selected and the resulting compact electrolysers are connected in parallel. With a few specific interventions in the control technology, brine pumps can also be reused, especially as they are often made of high-quality titanium.

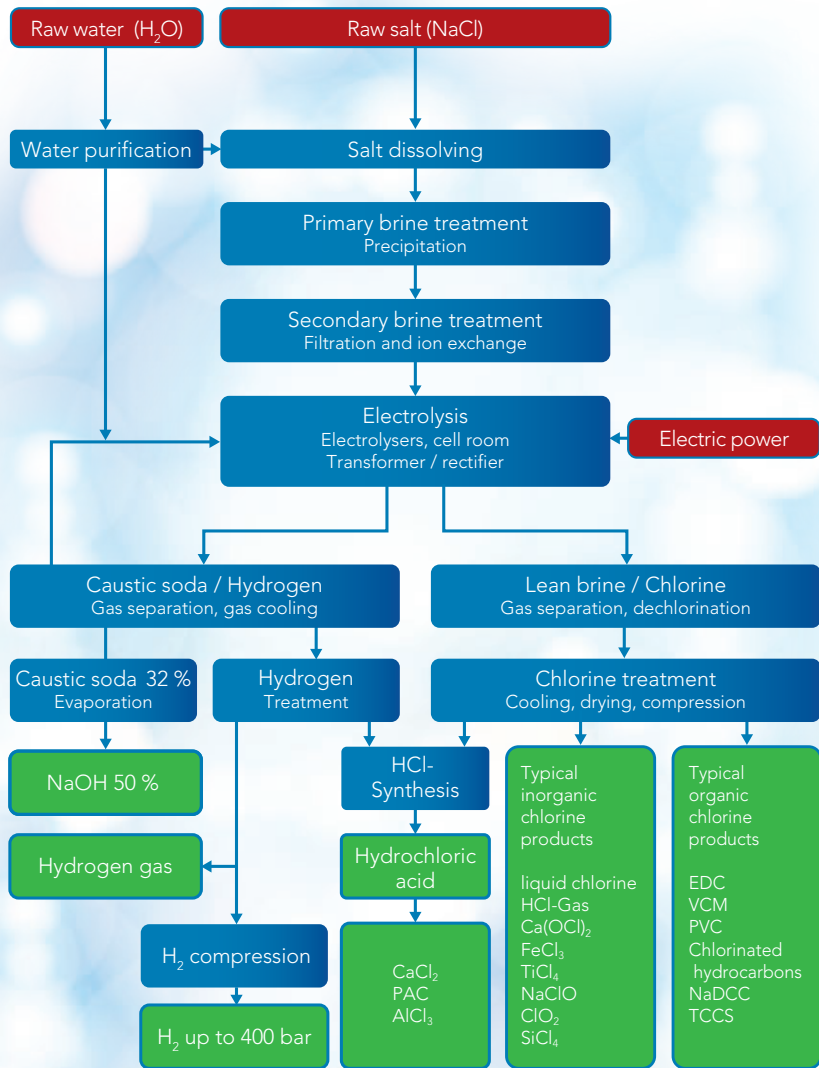
The examination of existing buildings and structures is also part of the considerations. How can mercury contamination be properly eliminated? Are the concrete structures including the reinforcing steels still intact?

“THE TRUE SKILL IN ENGINEERING A MEMBRANE ELECTROLYSIS PLANT LIES IN THE BRINE TREATMENT.”

Dr. René Stahlschmidt

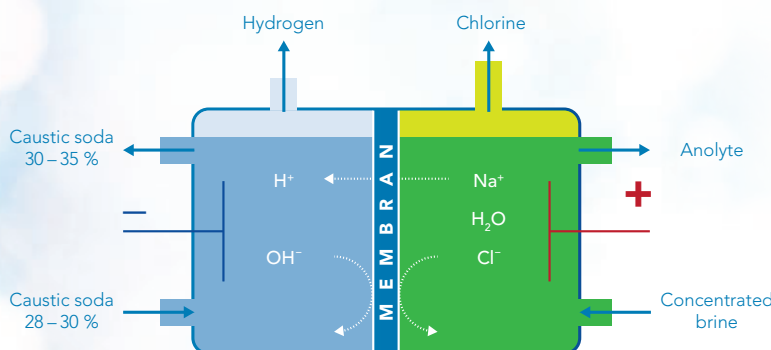
“THE CONVERSION FROM MERCURY TO MEMBRANE TECHNOLOGY IS WITHOUT QUESTION DESIRABLE.”

Dr. Franziska Herrmann



“The customer naturally wants to reuse as many plant components as possible,” says Sales Manager Dr. Stahlschmidt. “CAC knows how to accomplish this.” For decades CAC has been one of the most capable partners for the conversion of existing mercury plants. The plant constructor’s chlorine expertise goes back to the 1980’s. The first membrane plant for the manufacture of chlorine was constructed in Thailand in 1983 and in 2002 the foundation stone was laid for large scale chlorine production in Russia – incidentally the first membrane electrolysis plant in Russia. Worldwide, ten plants have been newly constructed or converted by CAC. At the end of 2017 the first membrane electrolysis plant was commissioned in Germany (see page 4).

The know-how of the Chemnitz based engineers not only encompasses the conversion and replacement of the electrolyser but also includes the entire process chain from preparation of the salt solution to further processing the electrolysis products. The customer naturally wants to have as little production downtime as possible. “If space is available for the new electrolysers and plant components, construction and installation can be done independently of the existing plant. The switchover itself can then be implemented within a few days,” explains Dr. Franziska Herrmann and concludes by drawing attention to the increased demands on the operating personnel: “Most of all, the higher demands on brine quality must be made clear in training.”







Dr. René Stahlschmidt summarises: "The challenge lies less in the construction of new membrane plants on greenfield sites than in the conversion of existing plant inventory. Due to our comprehensive experience in this field, we at CAC possess far reaching know-how from the upstream chain through the actual conversion to the commissioning. We will gladly share this knowledge with our customers and find the best possible solution for each specific case."

**12 million** tonnes



of chlorine are produced annually in Europe.



FROM **36%**  
TO **17%**

The percentage of chlorine from mercury electrolysis has halved over the last ten years from 36 % to 17 %. The membrane technology saves up to 30 % of electric power – and thereby production costs – compared to mercury electrolysis.



## “PROJECTS WHICH WORK WELL ON THE HUMAN LEVEL WILL ALSO WORK WELL.”

MIKE NIEDERSTADT, 46, HAS BEEN A MEMBER OF THE CAC BOARD OF MANAGEMENT SINCE THE MIDDLE OF 2017. IN THE INTERVIEW HE TALKS ABOUT THE SIGNIFICANCE OF UNIFORM STANDARDS, THE FASCINATION OF LARGE-SCALE PLANTS, HUMANITY IN PROJECTS AND THE VALUE OF CLEAR COMMUNICATIONS.

**Name:** Mike Niederstadt  
**Age:** 46  
**Family:** Married, 2 sons  
**Function at CAC:** Managing Director  
**Hobbies:** Ice skating (no pirouettes, but fast), windsurfing in summer, preferably on the Pöhl reservoir, spending as much time as possible with my wife and my sons



**Mr. Niederstadt, what fascinates you about plant construction?**

The size and complexity has always thrilled me. As a plant engineer you can create something yourself and are on the go worldwide getting to know and appreciate other people and cultures. Each project is different, you never develop the same thing twice.

**How did you come to CAC?**

As my studies in machine and plant engineering came to an end in 1995, it wasn't easy to get a job in East Germany. I started as a designer with a company specialising in water treatment plant construction in Leipzig. But eventually my potential for personal development there was limited. At the end of the 1990's, Lurgi started a big recruiting drive in Chemnitz. In the forerunner company to today's CAC a generation change was lining up. Hence many young people came into the company all at once who profited from the experience of the established engineers. It was the beginning of a great time with a lot of joint undertakings, both at work and in our free time. The atmosphere on the building sites was good and I was able to gather a lot of practical knowledge.

**What were your first projects?**

Lurgi was then a top plant engineering company in Germany. One of the main emphases was on pharmaceuticals and life sciences, an extremely interesting field for me. My first project as a project engineer at Lurgi was a refinery in Burghausen. After this excursion into the world of refineries I was firstly involved in the project planning and assembly preparation

for the highly automated multi-purpose active ingredient pharmaceutical plant for Boehringer in Ingelheim. I was allowed to take on a lot of responsibility quickly and became lead engineer for plant design on the contract for an active ingredient pharmaceutical plant in Basle, which was virtually running in parallel. We were able to bring the project to a successful conclusion within the budget and time frame. I was then to take over as manager of the plant planning department. I had only just turned 28 then, all the employees in this department were older. I took a chance.

**In 2003 Lurgi gave up the life science division, CAC was separated through a management buyout. How did things continue for you?**

I had consciously decided to stay here. Family and the quality of life were important motivations. At the time I specifically approached Joachim Engelmann, our new owner, with the request that I would very much like to build large-scale plants again. In the pharmaceutical sector, the plants which were achievable for us then were relatively small. And that's how I took over the management of the entire plant design department in the new CAC.

**How did the start of CAC go?**

Well, we were like a startup business. We had to win the trust of the customers from scratch and convince them of ourselves and our know-how. We drove from customer to customer. Luckily, some customers had great trust in us and the experience of our new owner. So we managed to pull in the first big contracts, to which there were almost always follow-up projects.



***Which projects from this period have remained foremost in your memory?***

In 2006, as engineering manager, I headed up a large project for a gas treatment complex in Syria worth 300 million US dollars. We built the entire new plant on a green field site, so to speak – or more correctly on a brown desert site. As well as the actual processing units, we also built all the associated facilities such as living accommodation, water boreholes to a depth of 500 metres, gas turbines for power generation, an on-site gas filling station, a fire department and much more. I got to know Syria as a future orientated and multi-denominational country. The Arabic culture with their open-hearted people and the aroma-rich cuisine has impressed me to this day.

***How has contact with other cultures shaped you?***

With my line of work I got to know numerous cultures, managed projects in Syria, Russia and France and worked with the most diverse international customers, licensors, suppliers, project engineers and installers. Especially with the Russians, we have more in common than many people think. Economically, it would be a huge opportunity if Germany would at last resume dialogue with Russia.

***You were a project manager for many years. What makes a good project engineer in your opinion?***

A project engineer must be someone who finds it exciting to work on complex things and does not shy away from challenges that are constantly changing. Not infrequently, you work on a large project for several years and indeed no two days are the same. You have to be a good team player. You can't build a large-scale plant on your own.

***How does that work in practice, precisely?***

You have to talk to each other. The process technicians must know what it means for the plant planner when something is changed and the civil engineer must be able to deal with it when a foundation has to be redesigned because a pump has to be bigger. Everyone has to follow everyone else's train of thought and argue constructively for the cause. Each has to be clear what they are responsible for. So it comes good in the end.

***How does one achieve this high level of cooperation?***

Right from the start with Lurgi, then later CAC, the very good quality of the documentation enthused me. Very good standards are applied, much is clearly documented and structured. All disciplines are networked, the plant builder knows

exactly what the steel constructor expects of them and vice versa. Clear communication distinguishes a good partnership.

***How does such a partnership work at CAC?***

How people interact with each other is crucial. Customer and contractor should see each other as equally ranked partners who meet eye-to-eye and only by working together are able to guide the project to success. We also treat our subcontractors in accordance with this principle. Because projects, in which the human interaction works well and in a partner-like manner in the spirit of the project, will also work well.

***You have been a member of the Board of Management since 2017. What were the further steps on your way there?***

After a difficult project in France, I had the chance to take over the management of the technical engineering department. In so doing, I profited a lot from my experience as a project manager. You work closely with all the disciplines and see potential for improvement, in particular at the interfaces. In 2016 I was given company power of attorney and eventually Joachim and Jörg Engelmann approached me with the suggestion that I strengthen them in the Board of Management. I grabbed the chance to shape and create.

***What does your daily work as COO currently look like?***

I try to do a balancing act between mentoring ongoing projects and advancing that which forms the basis of our work. For me that includes important standards and procedures. These are often quite simple things: Who is responsible for what? Who has to hand something over to whom? Sure, there are numerous checking routines, but these only work if they are complied with. This also includes their continuous improvement. Young and old can achieve a lot together in this.

***What do you value in particular at CAC?***

The open atmosphere, the familial interaction. Anyone can approach, ask, talk to anyone. We absolutely must preserve this. I also think it's important that personal problems are taken seriously. Our employees are often away on construction sites for months. It is imperative to find a solution that fits a person's life and CAC.

***What is your vision for CAC?***

Quite simply: I see a stable company with a loyal customer base. Our customers respect us as a partner who delivers quality to a deadline. Specifically, I see CAC as a large-scale plant constructor with EPC/EPCM responsibility for projects in the order of 15 to 60 million euros.

**“MY VISION: A STABLE COMPANY WITH LOYAL CUSTOMERS WHO RESPECT US AS A PARTNER WHO DELIVERS QUALITY TO A DEADLINE.”**

# MASTERING SPECIAL SITUATIONS WITH CONFIDENCE

## USING DYNAMIC SIMULATION, THE OPERATION OF HIGHLY COMPLEX PLANTS CAN BE MODELED REALISTICALLY.

*How does a column react under sudden temperature or pressure drop, for example in the event of an accident? What conditions prevail when starting up or shutting down a large-scale plant? How must the control system react to these variable states? To find an answer to these questions, a particularly complex model is needed: dynamic simulation.*

"Normally, steady state simulation is used in the design of plants", explains process engineer and project manager Philipp Hadlich, who is intensively involved with the calculation of dynamic simulation. "With certain plants, however, steady state models are insufficient. A dividing wall column, for example, reacts more sluggishly than conventional columns. It is imperative to find out how such highly complex systems react to rapid changes, for instance during commissioning or in an emergency." To be able to answer this realistically, the entire plant is simulated one-to-one in the computer as a model. How long are the pipelines and where are the individual pipeline connections? How thick are the walls of the equipment? "The physical model must illustrate the reality as precisely as possible", says Philipp Hadlich. "To do so, highly complex modeling is needed."

What's special about dynamic simulation is the time-dependent representation. How does the state alter after 10 minutes, 20 minutes, an hour? How quickly must altered conditions be reacted to? Especially for high security plants such as refineries these questions are critical. Based on a dynamic simulation, precise safety concepts can be generated. Even for training the operating personnel in the control room, dynamic simulation constitutes a vivid basis. The entire plant is illustrated in virtual reality on the screen. In this way, the operators can act out different standard and emergency situations. What happens when a media supply line is turned off? What if an emergency shut-off closes? The dynamic simulation calculates what effect these changes have on the overall plant. How quickly can the plant be shut down in an emergency? How long will it take until

all media is emptied from the lines? "Dynamic simulation helps the operators to understand the function of the plant in its complexity and to recognize how to take evasive measures in critical situations", says Philipp Hadlich. "Based on a dynamic simulation, the plant controller can be adapted in such a way that even special situations can be managed safely and predictably."

**"DYNAMIC SIMULATION IS THE HIGH-END OF PROCESS ENGINEERING. CAC IS ONE OF THE FEW COMPANIES IN GERMANY THAT HAS PROVEN TO MASTER SUCH A COMPLEX MODEL."**



## PRE-DRESSING DIRECTLY ON SITE

The column that CAC installed for the Total refinery in Leuna, Germany, was 245 tonnes in weight and 60 metres high.

What's special about this project? The complete installation took place in the pre-dressing stage. This means that the "naked" column was delivered to the construction site in three 20 metre pieces. It was welded together there on site, lying on its side. Then all the attachments – fixed ladders and operating platforms, insulation, pipelines including insulation and cable trays – were installed in their entirety on the column while still lying on its side. The column was then raised in situ in one piece and positioned. "The pre-dressing saves all the scaffolding work and thus time and money", explains CAC Sales Manager Dr. René Stahlschmidt. "The whole thing only works, of course, if a highly competent equipment installation and pipeline engineering company takes on the prefabrication and installation work.

A very interesting concept for erecting large columns that we have successfully implemented for several customers!"

Photo: © Michael Deutsch/TRM





## MINSK – 1,000 YEAR OLD BEAUTY

The over 1,000 year old city of Minsk is the capital of Belarus. The main artery of the modern city is the 15 kilometre long Independence Avenue with many museums, theatres and cultural institutions. “Old Minsk” with its precious historical buildings lies at the heart of the city. Dr. Vegera’s tip: “Gorky Park is the green lung of the city and a true paradise for children – with numerous carousels and splendid water features. This is where the people of Minsk like to spend their leisure time.”



Photo: © Vadim Sazanovich / Wikipedia.org





# BELARUS – MARKET OF THE FUTURE

## PROFILE

DR. VEGERA



**Dr. Alexei Vegera**

Dr. Alexei Vegera comes from Novopolotsk and studied process engineering and chemical engineering, amongst others at the University of Applied Science in Mannheim, Germany.

He spent a long time in Germany and wrote his degree dissertation at BASF in Ludwigshafen. "As a chemical engineer, this city fascinates me", he says. "So many big plants in the tightest space!" He enjoys traveling with his wife and 13 year old daughter in Europe, to Italy or along the Baltic coast. At weekends he goes swimming or to the sauna.

Since 2017 CAC has had its own representative office in Belarus. It is headed by Dr. Alexei Vegera, 44, in Minsk. The experienced process engineer knows the sector and the Belarus market inside out. "The chemical and petrochemical industries are highly developed in our country and make up almost one third of the exports and 20 percent of the entire industrial production", says the chemical engineering expert. "Correspondingly,

the requirement for chemical plants is high. Many new plants are being built and existing plants are being continuously modernised. A very interesting market!" It is now Dr. Vegera's remit to showcase CAC and find new customers in this region. "CAC is known here and enjoys an outstanding reputation", explains the representative. In the 1970's, CAC – at that time still Anlagenbau Karl-Marx-Stadt – built a high-pressure polyethylene plant in Novopolotsk. References in Belarus include, amongst others, a membrane electrolysis plant in Soligorsk. We are currently implementing the conversion of an existing sulfuric acid plant at the Grodno chemical complex.

# IN PROFILE

PHILIPP HADLICH



**Philipp Hadlich**  
Project Manager

“You know what you’re studying for.” Philipp Hadlich on the advantages of the CAC scholarship program.

After his high school graduation Philipp Hadlich, 29, decided to study natural science. During his research, he came across CAC and did an internship there. He was immediately taken with plant engineering. The feeling was mutual: CAC supported his studies at the Dresden Technical University with a scholarship. During the semester breaks he repeatedly completed internships and got to know the company, colleagues and procedures. After his graduation as a chemical engineer specialising in process engineering he started with CAC as a process engineer. “The scholarship was definitely a great thing”, he says. “That way, I acquired a good feeling for the practical aspect during my studies

and was ready for action straight after it.” What does he like about CAC? “The family-like structure, the almost friendship-like dealings with colleagues, the good cooperation.”

SINCE 2008, CAC HAS SUPPORTED 13 SCHOLARSHIP STUDENTS. 9 OF THEM HAVE BEEN TAKEN ON. CAC IS CURRENTLY SPONSORING 7 STUDENTS WITHIN THE SCOPE OF THE STUDY PROGRAMME.

# INTERJECTION

SUCCESSFUL TRADE FAIR PARTICIPATION AT THE ACHEMA 2018

From 11 - 5 June, we participated for the fourth time with our own exhibition stand at the ACHEMA in Frankfurt am Main. The world’s biggest process industry exhibition is hosted in Germany every three years and is the leading trade fair for CAC and our subsidiary HUGO PETERSEN GmbH in terms of international business relationships. With over 300 contacts to current and potential customers, service providers and suppliers, we are highly satisfied with the fair. Particularly pleasing was the huge interest from prospective student graduates who informed themselves on CAC through the target group-specific company and technology talks on our exhibition stand. Our 63 m<sup>3</sup> stand in its familiar location in Hall 9.1/B26 was characterised by our trade fair slogan

“Kick off with an idea ahead”. We’ve utilised this on the one hand to present the “kick-off” of our new logo with the associated updated brochures and the image film. On the other, the slogan alludes to the start of the football World Cup during the trade fair week which we underpinned with CAC footballs as well as a chat show with charismatic former football coach Hans Meyer.

We would like to thank all the visitors to our exhibition stand and look forward to good on-going collaboration.



(Picture: Claudia Rothenberger)



Chat show with charismatic former football coach Hans Meyer (right)





YOU'RE NOW PLAYING IN CHEMNITZ FOR THE 3RD YEAR. WHAT MAKES CHEMNITZ SO INTERESTING FOR YOU?

As I made my decision in 2015 to play in Chemnitz, I got everything right. I feel really comfortable here. This solidarity and mutual support is fantastic and makes us a small family.

YOU'VE BEEN ON THE ROAD FOR MANY YEARS IN NUMEROUS BUNDESLIGA MATCHES. HOW DO YOU EQUIP YOUNG PLAYERS WHO ARE MEETING THIS CHALLENGE FOR THE FIRST TIME?

First and foremost I equip them with stamina and then add an unbridled team spirit. To play in the Bundesliga is a great opportunity and will always bring new challenges with it. You can resolve these best through concentrated training and the will to continuously improve yourself. It's a high art to learn not to bury your head in the sand when things aren't going right personally for a while. You have to constantly motivate yourself and carry on full of ambition. Because that's also part of the team spirit – to always give everything for the team.

WHAT DO YOU WISH FOR YOURSELF AND YOUR TEAM?

For us as a team I wish that every player can finish the season without injury and that we always believe in ourselves and our ability. That we always stick together and even in defeat leave the match with dignity because we fought like lions right to the end.

# SPONSORING PARTNER MELANIE BECKERT

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## HVC

CAC and sports – an unbeatable team. The chemical plant engineering sponsors, among others, the Handball Club Chemnitz e.V., whose 1st women's team plays in the 3rd Bundesliga. We asked playmaker Melanie Beckert why she likes Chemnitz so much and how one can train for stamina.

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ALWAYS AN IDEA AHEAD

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