





#### Dear reader,

Birthdays and anniversaries are always a good opportunity to look back, to pause for a moment, as well as to celebrate and look to the future. We aim to do all that in this commemorative publication, and also to give you an insight into 40 years of CRONIMET. We want you to get (re-)acquainted with us, our history, key events and the achievements of our family business.

When Günter Pilarsky founded CRONIMET back in 1981 in Südbeckenstrasse in Karlsruhe with 18 employees, he undoubtedly would never have imagined that 40 years later his company would be a global leader in stainless steel recycling. There was no roadmap to success, and the business environment was a very different one.

CRONIMET has grown in this environment. Today more than 1,500 employees at about 70 locations on six continents are working to return valuable metallic raw materials to the cycle. They use the latest laboratory technology, modern IT and are globally connected. Recycling, CRONIMET's core business, is a truly sustainable business. It is this essence that drives us to develop new methods to feed raw materials that have already been extracted back into the cycle and to seize new opportunities going forward.

Our employees are the heart and soul of CRONIMET. It is their creativity, their commitment and their expertise that makes us so successful.

Our company's 40th anniversary also provides us with an opportunity to thank all those who have helped shape CRONIMET in the past and who will continue to do so in the future: our employees, customers, suppliers, decision-makers in the municipalities and investors. There is still plenty we can achieve together!

We look forward to celebrating this historic milestone of 40 years of CRONIMET with you.

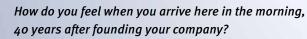
We hope you enjoy reading this brochure.
Your CRONIMET Management Team

Jürgen Pilarsky, Annette Gartner, Oliver Kleinhempel, Bernhard Kunsmann

Alather dift Bull human

# FROM KARLSRUHE INTO THE WORLD





I've always been proud of my company over these 40 years and I still enjoy being able to contribute to its success, even at my age. I retired from operational management some time ago. It's good to see that the company's doing well, has even gained market shares and is now no. 1 in the world of stainless steel recycling.

### You deciced early on to set up your own business. What gave you the idea?

I can only speak for myself, but I already knew at a young age that I didn't want to be an employee all my life, that at some point I would want to take my chances and start my own business.

#### By the 1960s you were already running a company that traded in ferroalloys...

In the beginning I ran a foundry business together with a partner. He was from Gelsenkirchen and had the idea of buying stainless steel waste. That was when I started visiting tool steel factories to buy stainless steel scrap. After a few months, I realised we were earning more with one load of stainless steel than from what we sold to the foundries in a month.

#### How did CRONIMET come about?

I had opened a warehouse together with Heinen, a company based in Nordbeckenstrasse in Karlsruhe, and was in the same business there as we are today, though on a much smaller scale. After 10 years, in 1979, I left and founded CRONIMET, which went into business on 1 January 1981.

#### What happened next?

We started the business with sites in Karlsruhe and Düsseldorf, and in the same year expanded to our Dutch warehouse in Delft. It was the only way we could guarantee the quantities we needed to be able to conclude contracts as factory trader. CRONIMET was intended to be a factory trader and not an intermediary. The next step was delivering to Sweden. We had to take the risk in order to be able to deliver the large quantities needed.

#### What were the most important decisions you had to make during 40 years of CRONIMET?

The first big decision was to actually start my own business. It was difficult to gain an edge over my competitors and I had to end my contract with my employer in advance and he thought I couldn't do it on my own. But I managed to take the most skilled people with me – and customers, the steel mills also continued to buy from CRONIMET.

Interview with company founder and

Interview with company founder and managing partner Günter Pilarsky

Günter Pilarsky, 2021

Günter Pilarsky, 1981

#### ► How did CRONIMET's story continue?

Once we had grown as a business in Europe, it was time to make a move and break into the United States. That was a big decision and needed big investments. Later we went on to Armenia. When the mine was privatised, we had to step in, otherwise we would've lost our supply of molybdenum concentrate. I never planned to go into the mining business.

#### Looking to the future, what are your hopes for CRONIMET?

I'd be happy for things to continue as they are. I'm very optimistic. A lot depends on our staff, and we have a great team of all-rounders.

# You do a lot of charitable work in and around Karlsruhe in the fields of music, sports and culture. Do you think it's important to give something back to the people here in the region?

In the past, I would have never been able to do what I do today. Now I have the time. I just enjoy being able to contribute something to the community in Karlsruhe, be it the Academy of Music or the KSC football club. It makes life more fulfilling to be involved in things other than business.

What have 40 years of CRONIMET been like for your family? My children had a really good mother who took excellent care of them and our home. Back when I was

#### 40 years of CRONIMET in figures



1981











20 million DM









working I was usually on the go every week. I spent three days on the road and two days in the office. Then we expanded into Italy and Sweden. I went there every two months. People always had to meet in person and therefore had to travel much more than they do today.

# You've always given more than 100 per cent to CRONIMET. Was it difficult for you to scale back your commitment?

That's exactly what I wanted. I took the decision after having had so little free time in recent decades. I'm happy that things turned out this way. It would be terrible if all I did now was sit in front of the TV. But

I'm not bored: I spend one day in the office, another at KSC, and another at the Honorary Consulate of Armenia. There's always something to do.

#### How important is to you that the company is still run by your family?

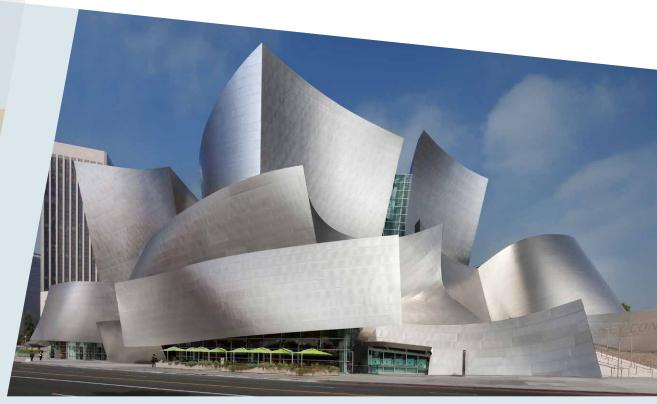
I think for any businessman who's built something like this it's good to see one of his children carrying on the business. There were many potential buyers, and we also had a few difficult years, but we've always tried to keep it a 100 per cent family business – and we managed to do just that.

Rheinhafen 1984



# SHOWSTOPPING STAINLESS STEEL

ARCHITECTURAL MASTERPIECES



Walt Disney Concert Hall, Los Angeles

Breaking something down into its component parts in order to reassemble it later on. What is part of the process in the circular economy also describes deconstructivism in architecture. Instead of a house in the form of a geometrically perfect square, for example, you'll come upon a cube that has shifted in on itself and, despite its seemingly absurd shape, entirely fulfils its function as a living or working space. Frank O. Gehry, one of the leading architects of our time, came to fame with precisely this style – and also thanks to his preferred material.

Frank O. Gehry's name is synonymous with thousands of square metres of stainless steel, tonnes of titanium alloy or hundreds of metres of aluminium. Born in Toronto in 1929, the Canadian – American architect has created numerous buildings all over the world throughout his creative period whose shiny facades and surprising shapes make them real eye-catchers.

#### Stainless steel wherever possible

Interleaved or entwined, often with equally fascinating window and door designs – various buildings in Düsseldorf's Media Harbour, in Seattle or New York,

in Paris or in Bilbao reflect the impressed faces of the many millions of visitors they attract. While these masterpieces are visually fascinating, they are also remarkable in terms of their construction.

Guggenheim Museum, Bilbao

Whether it's the load-bearing elements, the connecting, fastening or pure design elements, he uses stainless steel wherever he can. In that Gehry is consistent. The compelling arguments for using this material are its ease of processing, its strength and wear resistance, its variability in processing and its wide range of applications. Depending on the occasion, he also combines stainless steel with

elements made of limestone brick, glass and sometimes colourfully painted steel to emphasise different elements and features.

#### Falling for stainless steel's charms

Frank O. Gehry has not only created a monument to himself with this "art in architecture" in many of the world's major and significant cities over the past 60 years. He has also left his mark on the cities themselves. Even the term "Bilbao effect" can be traced back to him. His Guggenheim Museum in Bilbao, which opened in 1997 after four years of

construction, set off a chain reaction in terms of urban upgrading. The former commercial area in the industrial port in the Basque capital was transformed into a cultural hotspot and tourist magnet within a very short space of time. It is why, whenever a new, attractive building brings a rush of visitors to a city and serves as a catalyst for change, there is always mention of Gehry and the "Bilbao effect".

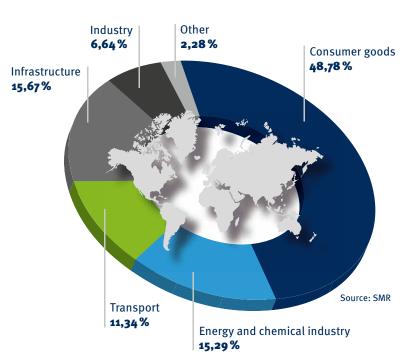
Only few people know that he started out in recycling. As a child, he used the scraps from his grandfather's hardware and household goods store to design his first houses.

# Four Decades of Stainless Steel

Recycling Changes the World

A clear trend has emerged over the past 40 years, particularly in the field of stainless steel. Increasing demand on the one hand and scarcer resources on the other – modern societies on the one hand and a faltering climate on the other. Instead of continuing to extract more and more raw materials, the principle of the circular economy is now being applied ever more frequently. Recycling has become firmly established.

According to the Federal Association of German Steel Recycling and Waste Management Companies, global demand for stainless steel multiplied from just under 10 to around 30 million tonnes between the 1990s and 2016. Demand increased especially in Asia, primarily in China, although per capita consumption of stainless steel has also steadily increased in developed countries such as Italy, Sweden, Germany, Spain and the United States. There have, of course, been exceptions, for example during the global economic crisis, when the entire industry collapsed. However, growth has averaged between four and five per cent per year since 1981.



Areas of operation in 2021

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#### Stainless steel is everywhere

All this comes as no surprise when you look at its areas of application: Stainless steel is everywhere in households, for example in refrigerators and washing machine drums, and in facades, lifts and banisters in building and housing construction. This valuable raw material can also be found in cars and trucks, in railway rolling sock and tracks, in space travel and, unpretentiously, in bicycles. Heating systems and air conditioning, heat pumps, gas pipes, nuclear power plants and even solar energy are not feasible without stainless steel. All of us are surrounded by a seemingly endless amount of stainless steel every day.

#### Growth and consolidation

This development has also had an impact on the metal industry, in that the entire industry consolidated both in terms of raw materials and at the business level. Individual companies banded together to form groups and holdings; acquisitions and disposals were the order of the day. As a result, the number of (European) stainless steel producers was reduced from 21 to just four major players and six smaller companies.

"I work in sampling at CRONIMET

Ferroleg. GmbH. Very simply put,

What set Europe in motion probably only elicited a smile in China, as it became the global leader in the production of stainless steel, chrome and nickel.

▶ Almost in passing, China introduced the 4-in-1 production process, leading to massive cost-savings by bundling the production of electricity, nickel, chrome and stainless steel in a single plant. Other new and particularly energy-saving production processes once again gave the country a lead over the United States and Europe. So far, they have not been able to catch up with China – and this will probably remain one of the challenges of the future.

#### Revolving in the circular economy

The more stainless steel is in circulation, the more scarce primary resources become and the more important recycling. In the past, scrap dealers were looked upon with a certain degree of scepticism, but today they are an important, recognised part of the circular economy and thus play an active role in our joint effort to guarantee security of supply and environmental and climate protection. Anything that ends up as scrap at CRONIMET, for example, is later turned back into a product like the above-mentioned refrigerator.

Stainless steel scrap comes from three sources, and CRONIMET collects what are called "first-use" and "end-use scrap" (up to 25 per cent and 70 per cent respectively). First-use scrap is generated on the premises of stainless steel manufacturers' customers and is usually properly separated. End-use scrap, be

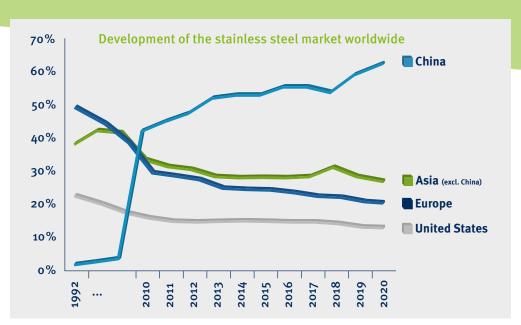


it pots, pans or parts of a chemical plant, becomes available at the end of a product's life. On average, this is the case after about 27 years.

### Recycling is changing – and so is the recycling process

Recycling thus has the potential to change the world by making us less dependent on primary raw materials. It also saves energy and costs, protects the environment and reduces waste that poses a major challenge to humanity. For this to succeed in the long term, however, the recycling industry needs to consistently change with the world. And the indus-

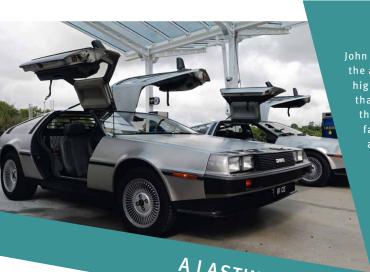
complement to materials know-how. The sampling process has also changed. In the past, CRONIMET customers sorted their materials by hand and only tested very small quantities. Today they are tested by melting at least 20 per cent of the product. Everyone benefits from this development. The results are obvious, discussions have become superfluous and CRONIMET proves that it controls both the material feed and the mixing process.



#### Whatever happens, happens

The past 40 years allow us to draw a conclusion for the future: Stagnation is not to be expected. The world, each individual consumer and, of course, CRONIMET are facing major challenges. How will scarcer and more expensive energy affect us? What if China ends up developing the largest urban scrap mine by the end of the decade? Will green stainless steel be the solution for European and US manufacturers? How is competition between European stainless steel producers developing – and how will global climate policy affect future trends?

At CRONIMET we know from experience that whatever happens, happens. We are optimistic that new opportunities will also grow out of whatever changes occur. And we are prepared and ready at all times to adapt to new situations, to actively shape the future and thus meet the challenges we face.



John DeLorean, a respected manager in the automotive industry, wanted a safe, high-quality car with a long service life that holds its value. And so he created the DeLorean DMC-12, which became far too heavy for market success on account of the massive use of stainless steel – and it clearly failed to achieve the goal of sustainability. But the DeLorean will never be forgotten. The car with the unforgettable gull-wing doors was Marty McFly's constant companion in the film Back to the Future.

A LASTING MEMORY

the pace of the digital revolution. It will be the biggest investment opportunity and the biggest job machine in history."

#### Contribution to the future

It is obvious that all this will not be possible without conscientious companies doing their bit. CRONIMET is aware of this — and has been for many years. After all, sustainability is our core business: We recycle metallic raw materials and return them to the reusable materials cycle. A sustainable business model alone is not enough, though. At least not for CRONIMET. Sustainability is part of our strategic goals, the foundation on which everything else is built.

#### **CSR** and sustainability at **CRONIMET**

CRONIMET is in the process of drawing up a group-wide CSR strategy and aims to become carbon-neutral by 2030. This group-wide CSR strategy also offers the opportunity to increase efficiency, retain employees and attract all the right new talent, as well as to generate innovation and minimise risk. In addition, sustainability reporting based on an internationally recognised standard is on the agenda for 2022. It is intended as a means of demonstrating our commitment to acting responsibly for the future of the company, people and the planet. CSR is an opportunity – and an obligation. This commitment is apparent in the CRONIMET Group's values and in all dimensions of its strategic goals. "Our financial targets also take sustainability aspects into account wherever possible," says CFO Bernhard Kunsmann. "Our goal is to implement compliance, environmental, social and safety standards across the group, surpassing existing regional standards."

Employees are another particular focus. "They're the heart and soul of CRONIMET," says Managing Director Annette Gartner. This is no empty phrase, because the holding company management team knows that CRONIMET thrives on the expertise and commitment of its employees.

"We are aware of our social and ecological responsibility to society," says CEO Jürgen Pilarsky. "For CRONIMET, this responsibility and sustainability is a core issue. It is about the contribution we can make with our core business," adds Oliver Kleinhempel, Managing Director of CRONIMET Holding GmbH.



"CRONIMET has grown into a large company and yet has retained its strength: the warmth and closeness to its employees. The company adheres to its core values and has an efficient and responsive management team that adapts to opportunities and changes as they arise. There is a great synergy between all the teams across the various sites around the globe."

Mahiar Patel, Singapur

# FOR A BETTER TOMORROW

There is general consensus across the world now that we live in a world in which resources are finite and our behaviour has an impact on us today as well as on future generations. And everyone is largely agreed that we need international standards and concepts to ensure that we do not leave this earth worse off than how we found it. Yet what can each individual do, and what can companies do? The answer is that we need a greater awareness of more sustainable ways of living and working. That also means that companies need to address CSR, or Corporate Social Responsibility, or even better to actively promote it.

CSR refers to companies taking responsibility vis-à-vis society for their actions. It includes social, ecological and economic aspects in equal measure. Or as the German Federal Ministry of Labour and Social Affairs puts it: "It is about fair business practices, employee-oriented personnel policies, economical use of natural resources, protection of climate and environment, serious local commitment and responsibility throughout the supply chain."

Because this responsibility cannot be borne by one person or company alone, the international community has agreed on joint action in various alliances and treaties. Many consider the origin of the global CSR movement to be a speech which the then Secretary-General of the United Nations, Kofi Annan, made at the World Economic Forum in Davos in 1999, in which he said: "I propose that you, the business leaders gathered in Davos, and we, the United Nations, initiate a global compact of shared values and principles, which will give a human face to the global market." This resulted in the UN Global Compact in 2000, which aims at economic activities on the

one hand and the protection of human rights, social standards, the environment and the fight against corruption on the other.

### International agreements for more sustainability

Other initiatives were subsequently launched, including the European Commission's European Green Deal and the UN's Sustainable Development Goals (SDGs). The Paris Climate Agreement is also part of international efforts. The Agreement is the first time that obliges all states to develop a national climate protection contribution. They must also decide on concrete measures to implement that contribution. The key common goal is to limit global warming to well below 2 degrees Celsius compared to pre-industrial levels, ideally to 1.5 degrees. Prominent climate change activists and sustainability experts such as former US Vice President Al Gore are optimistic despite the immense challenges this target poses: "We will experience a sustainability revolution comparable to the industrial revolution in the 19th century, but at

# MILESTONES

AGAINST THE BACKDROP OF HISTORY



#### A PC in every living room

At the beginning of the 1980s a success story takes its course that no one had expected: IBM launches its first personal computer. It has hardly any memory and even less processing power. It throws down the gauntlet to one person in particular: Steve Jobs. His Macintosh thrust the world into a new technological era. Due to the ever more rapid growth of the multimedia industry over the following decades, the demand for valuable, metallic components – which are processed at CRONIMET – also increases.



#### Fall of the Wall

On 9 November 1989, something happened that everyone had already given up on: The fall of the Berlin Wall paved the way for German reunification. The fall of the Wall reunited families and brought a great deal of personal happiness and economic growth to reunited Germany. There were so many additional tarpaulin lorries arriving at CRONIMET with stainless steel scrap from the former USSR that the Karlsruhe site even had to expand its yard.

#### **Political firsts**

The 2000s were politically eventful years. In 2005 Angela Merkel became the first woman to be elected German Chancellor; in 2009 Barack Obama became the first African-American President of the United States. He remained in office from 2009 to 2017, while Angela Merkel stayed in office until she did not stand for re-election in 2021.





#### The EU comes into being

After years of negotiations, the Maastricht Treaty, signed in 1992, laid the foundation for today's European Union – including the establishment of a European Central Bank and the introduction of the euro in 2002 as its single currency. CRONIMET benefited from this because both currency fluctuations and transaction rates decreased as a result.

#### Freedom for South Africa

In 1990, after 27 years in prison, Nelson Mandela was finally a free man again, putting an end to apartheid in 1993. South Africa experienced a time of joy and economic upswing. The conditions were ideal for CRONIMET to expand its own activities and to supply the only stainless steel producer in the entire country, which it continues to do to this day.

1981

Start of operations

1996

Founding of Plant of Pure Iron, Armenia:
Production of ferro-molybdenum and
molybdenum metal

Entry into the Brazilian market: Founding of CRONIMET Brasil Ltda., Brazil

Entry into the African market:
Foundation of CRONIMET RSA (PTY) Ltd.

1997

Entry into the American market:

Foundation of the US subsidiary

**CRONIMET CORPORATION (US)** 

» Founding of CRONIMET Holding GmbH, Germany

Entry into the Asian market:Opening of the representative office in Shanghai, China

**1995** 

2005



#### A very smart phone

The revolution that fits into your jacket pocket: The first iPhone came onto the market in 2007 – and despite its high cost, it created a real hype thanks to its design and new and innovative apps. From everyday life to work – smartphones would go on to revolutionise many aspects of our life. New models appear every year, including ones from other suppliers. An awareness of the value of metals and recycling is now growing.



#### Asia catches up

As globalisation moves on apace, so does China's rise as an industrialised nation. During this period, demand for raw materials is higher than it has been for a long time. This is accompanied by rising prices and a stock market boom. In 2008, however, the upswing is rudely interrupted by the financial crisis and the subsequent global economic crisis.



#### For the climate thanks to the Paris Agreement

In 2015, 195 countries agree to jointly stop global warming and achieve the 2-degree target. To date, 184 states have signed the Agreement. Many companies, including CRONIMET, have developed a sustainability strategy to help achieve the goals of the Paris Agreement.



#### **Building global partnerships**

World trade faces a number of challenges: The 2016 Brexit decision marks the beginning of tough negotiations between the EU and the UK. In contrast, CETA, already partly in force in 2017, aims to facilitate trade between Europe and Canada through such means as lower tariffs. In 2018, the EU also signs a free trade agreement with Japan. With its clear commitment to the Paris Agreement, it is also seen as sending a signal to China.

# 2006

Construction of the new CRONIMET administrative building and several factory halls at headquarters in Karlsruhe, Germany

Expansion in the United States with additional locations

2011

2013

Expanding the area of business: processing of industrial sludge by CRONIMET Envirotec GmbH

Founding of CRONIMET

2018

2019

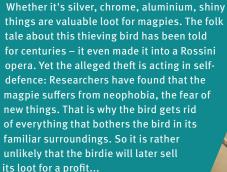
- » Founding of CRONIMET Australia Pty. Ltd.
- » Sale of shares in ZCMC
- » Restructuring of CR Mining AG into a GmbH (a German limited liability company)
  - » Bundling of raw materials business in CRONIMET Raw Materials
  - » Entry into the business of recycling electric vehicle batteries with our partner Pure Battery Technologies

2020

# Decades Four Continents

3090

The 1990s saw CRONIMET focus more clearly on expansion. In addition to its growing business in its "home market" of Europe, the company took the plunge and entered the market on three new continents. After South Africa (1995), ventures into the United States (1997) and Brazil (1999) followed in quick succession. In this section, the managing directors of the respective business units look back at the beginnings, trace developments and provide a glimpse into the future.





THIEVING MAGPIES?



Bernard Maguire, Managing Director CRONIMET South Africa

CRONIMET's entry into the South African market in 1995 could be seen as a prime example of the company's DNA. While some would call it a coincidence, others would say that it is exactly what CRONIMET has done and is still doing today, that is seizing opportunities.

In 1993, when Tony Basson, Managing Director of D&T Metal Associates, a stainless steel scrap and secondary raw materials company from South Africa, made a business trip to Europe to buy suitable secondary material, CRONIMET was not on his suppliers' list.

He finally found what he was looking for in England, at Westdoor Ltd. in Cannock, north of Birmingham. And that's where the story could have ended. But things turned out differently. Before making his first deal with the South African company, Roy Westwood, Managing Director of Westdoor Ltd, wanted to get to know the new partner, ideally on site.

"During his visit, he quickly realised the potential of the South African market for further business," Bernard Maguire, Managing Director of CRONIMET in South Africa, recalls. Despite the large quantities to be expected from South Africa, Westwood spotted a small problem. "He felt that it might be difficult for them to finance these volumes of stainless steel scrap he said. "His suggestion at the time was to include CRONIMET." says Maguire.

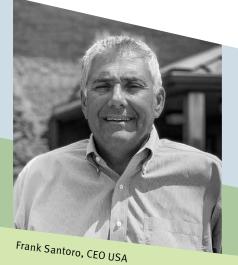
The newly established company started operations in South Africa with three shareholders: D&T Special Alloys, Westdoor Ltd. and CRONIMET.

"In the beginning, Paul Westwood travelled tirelessly around the country, introducing himself to local scrap dealers, and suddenly material started piling up in our once small storage yard. You could practically watch the company grow almost on a daily basis," says Maguire. Starting with Paul Westwood and a handful of employees, the company grew steadily; the growth in business was also reflected in increasingly cramped conditions as basic processing and handling equipment was purchased and additional warehouse staff was hired.

The current Managing Director Bernard Maguire joined the group in 1995 when CRONIMET acquired a majority stake in his company, which specialised in processing stainless steel.

Development on the South African market has steadily improved right up to today. Figures also bear this out. The initial handling volume of about 300 to 400 tonnes per month has grown to about 1,700 tonnes today. CRONIMET RSA now employs 66 people in Johannesburg and Durban.

During his time at CRONIMET, Bernard Maguire has experienced many different situations. It is this experience that gives him a positive outlook on the future of CRONIMET South Africa as well as of the entire group: "I've seen quite a few changes within CRONIMET. They reflect the dynamics of the company. But one thing has always remained the same: appreciation and respect for the people who work at CRONIMET," Maguire says, adding that "considering how certain technologies are evolving and the world is realigning to ensure a green and sustainable environment, I believe CRONIMET's future course will continue on an upward trajectory."







Günter Pilarsky described the leap across the pond to the United States in this issue as no less than the biggest milestone in the company's history. It was not entirely risk-free, as it involved a

considerable amount of investment.

On the other side of the Atlantic, Frank Santoro had been quite sure of the matter: "I was pretty sure that we would succeed." the current CEO of CRONIMET USA and employee from the very beginning recalls. After all, he had already gained enough experience in the industry and knew what to do. "I knew that if we work hard, we have a very good chance of succeeding in the US market, too. We had specific ideas about what needed to be done, and we went about it with a long-term plan," says Santoro.

CRONIMET Corporation US was founded with the aim of connecting the entire company via the waterways. "Our intention was to make CRONIMET the largest stainless steel recycler in the United States offering a freight advantage by using the river system for transport," says Frank Santoro. Shortly after the company was founded, this very strategic idea was put into practice by opening locations in Chicago, Illinois, Houston, Texas (1998) and Decatur, Alabama (1999). Three years later, CRONIMET Corp. US expanded into the superalloys business following the acquisition of United/Unico Alloys.

"CRONIMET's history in the United States is certainly not just one steep, straight march to the top. We definitely struggled at times, too. But we have seen every challenge as an opportunity to develop further" - which is a particular skills of Günter Pilarsky and ultimately of CRONIMET as a whole, adds Santoro.

One particular situation comes to his mind: When CRONIMET US expanded into the superalloy business – a business very much linked to the aerospace industry – the world was still suffering in the aftermath of 9/11. After all, the attack on the World Trade Center had taken place only a few months earlier. "I remember perfectly that I called Günter Pilarsky and asked him if we should quit the business. The aviation industry was hit particularly hard by 9/11. Günter's answer was that this was not the end and that we had to keep our promise to buy the company. He believed in our decision and in the opportunities of the company."

Overall, CRONIMET's story is a success story. According to Santoro, over the past five years CRONIMET has seen "the biggest growth we've ever had" in the United States. "Jürgen Pilarsky played a very big part

Frank Santoro says that the two key factors for success were a great team that has given its full commitment to CRONIMET from the very beginning and that has been able to continue its existing, good and cooperative relationships with customers and suppliers. And he describes the third factor as follows: "In the early years in particular Günter Pilarsky believed in a group of young people who eventually built up and developed the company. Both he and Jürgen are great leaders and we are very proud to work for this company."



CRONIMET's entry into the South American market, which marked the fourth continent on which the company had a site, can only be summed up in retrospect. CRONIMET's performance in Brazil is definitely positive. Although things were not always easy. Following years of prosperity and growth, CRONIMET Brasil was also hit by the global financial crisis at the end of the 2010s.

While other business owners would have at least stopped to think a little about the future of the location at such a time, the Pilarsky family kept following the only business plan they knew, that is continuing to invest. In 2010, the first milestone was CRONIMET's acquisition of 100 per cent of the shares in the Brazilian subsidiary. All its processes and procedures were restructured. Leandro Campos joined the company in 2014 while that restructuring was still ongoing.

As the current Managing Director, he brings more than 20 years of experience in the field of ferroalloys. He started out as an industrial worker in aluminothermic production in his family's factory, and later completed



"I'm proud to be a part of CRONIMET and excited to celebrate its anniversary. This day represents a year of hard work been achieved. I hope to be part his success for many mor ars to come and that there will

a degree in business administration and industrial management. At the same time, being a metallurgical technician, he found his way into the production of ferroalloys. "Joining CRONIMET in 2014 was a great opportunity! I was sure that the Brazilian market had great potential not only in stainless steel scrap but also in ferroalloys. Over time I have gained a better understanding of the stainless steel scrap market. At the same time, I was also given the chance to develop the ferroalloy business within CRONIMET Brasil."

CRONIMET has benefited from a great deal of progress that has been made in Brazil, particularly over the last 10 years. The team has grown and turnover volume has multiplied. In 2016, CRONIMET was able for the first time to surpass the threshold of 1,000 tonnes of scrap lifted per month; that figure now stands at 4,000 tonnes at the two sites in São Paulo and Araquari in the state of Santa Catarina.



► CRONIMET Brasil was able to find another niche and specialism in addition to stainless steel scrap: The company is now also the largest local producer of ferromolybdenum and ferrotungsten. In 2020, CRONIMET Brasil received RMI certification, enabling it to open up new sales markets and sell the material in Europe as well.

"Looking back at the last few years, I'm very proud of where we are now. With a great team that has worked hard, we want to keep growing our business and provide the best quality material and services to our customers. My goal for the future is to achieve sustainable growth in the field of ferroalloys and stainless scrap," says Leandro Campos, indicating the company's future direction.





By the mid-1990s, CRONIMET was already an established company in the industry and had set out to conquer three new continents at the same time, but Marijo Zeljko was still at the very beginning of his own personal CRONIMET journey. The current CEO Europe has spent more than half his life and more than half the life of CRONIMET in the company and has been involved in its very successful development. For him, this development is inextricably linked with the name of Pilarsky: "We can be really proud of what Günter Pilarsky created and what we have continued to develop so far under the direction of Jürgen Pilarsky. Along the way, we've done a lot of things right – and as it is still a family-run business, we've done it our CRONIMET way," says Zeljko.

Marijo Zeljko has witnessed how CRONIMET has expanded around the world. He was on the road himself for CRONIMET: in Asia, in Brazil and in Italy for three years before he returned to the Karlsruhe site in 2013. CRONIMET's rapid growth in Europe at that time ultimately made the founding of the Board Europe

inevitable. The aim in consolidating the operational units on the continent was to ensure even closer communication and coordination between the individual locations and thus more efficient and flexible solutions for partners.

CRONIMET has experienced many good times, but has also gone through difficult phases, not only during the pandemic. "There were always events that we could not foresee and that had an impact on the market. Be it the financial crisis before the pandemic, as well as the fall of the Berlin Wall long before that. Changes as far-reaching as these are often opportunities as well. At CRONIMET, we have always sought and grabbed these opportunities and dealt with these situations in our own particular way," says Marijo Zeljko

The most difficult as well as the most important goal for a company is to make its success sustainable, says Zeljko. "It is one thing to be successful in our industry and be able to supply this or that tonnage. Yet what sets us apart is that the majority of those on

the market and in the industry perceive us as reliable and that our partners trust us. Trust is not just an empty phrase, but something that makes relationships work," he says.

Zeljko believes that trust, long-term relationships and cooperation are essential to the business. He believes that his vision of "One CRONIMET" will bring the individual units – not only in Europe but worldwide – even closer together.

"We want to continue to show our partners the same commitment as always. This means that it is important for us as an organisation to grow even closer together globally, including at the operation

gether globally, including at the operational level. Communicating and sharing information with each other is important at all levels, be it the management, technical or even trade level," says Zeljko.

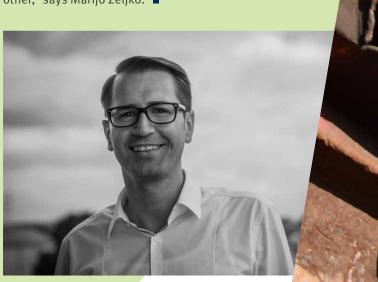
Talking about cohesion is one thing, but actually putting it into practice is another. And when is there a better time to demonstrate that cohesion than in a time of crisis? The coronavirus pandemic, for example, proved that "One CRONIMET" is anything but an hollow words.

During the lockdowns, production at the steelworks came to a temporary standstill and some CRONIMET sites, like those in Italy and Spain, also had to close for a while. There were supply bottlenecks in various countries. In order to cover all demands, materials were flexibly and quickly reallocated within the CRONIMET Group. "Despite all the restrictions during the pandemic, we were able to fully meet all our customers' and suppliers' demands – because we acted as one unit throughout Europe and supported each other," says Marijo Zeljko.



"Working at CRONIMET is like climbing a high mountain. It is like doing earnest work while learning something new every day to be able to keep moving forward with the CRONIMET family. I'm proud to show my company's colours and happy to be a part of this family."

Meral Sen, CRONIMET Turke



Marijo Zeljko, CEO Europe



# Interview with Prof. Dr.-Ing. Daniel Goldmann, Clausthal University of Technology

Prof. Dr.-Ing. Daniel Goldmann is one of the leading figures in raw materials and recycling science. As Head of the Chair for Raw Material Processing and Recycling at the Institute for Processing, Landfill Technology and Geomechanics at Clausthal University of Technology in Germany, his work includes recycling and processing technologies for resource-relevant complex waste. This waste also includes metals, as well as the increasing electronic waste, batteries and end-of-life vehicles. Our interview with him gave us a glimpse into the future of recycling.

Prof. Goldmann, you're currently doing a lot of research on processing technologies at your institute. Can you tell us a little bit about your work and why it's important?

Our institute focuses on the field of metals and minerals recycling. The challenges and problems are

currently getting bigger rather than smaller. Battery recycling as well as mining and smelting residues are our main focuses at the moment – but they're not the only ones. If we want to achieve a global "circular society" by the middle of the century, we need to have created complete closed-loop systems.

In addition to developing processes for reprocessing, we are therefore particularly keen to get holistic networks off the ground and to link companies and research. One example is the REWIMET recycling cluster, of which CRONIMET is also a member. The aim in getting business, science and local authorities to share information is to promote innovation in the metal recycling industry.

Comparing 2021 with 2011, what has changed in metal production over the course of the last 10 years? And looking ahead: What do you think metal production will look like in another 10 years?

Let me start off by saying that there is one problem that we still face to some extent today. Manufacturers along the production chain pay close attention at their respective products, but their handling of specific waste is often still inadequate. There is still considerable potential for improvement in terms of targeted collection, identification and subsequent transport to

the appropriate recyclers. We have made progress here by networking companies in a wide range of sectors and linking their process chains. In more complex processes, however, only the digital transformation will enable this to be handled in the future. The digital transformation of the circular economy is still in its infancy, but we'll get nowhere if we can't look at closed supply chains and closed process chains – one person's waste is another person's raw material! Besides material flows, we also need information flows in order to optimise process technology accordingly. This will only be possible if the large quantities of data are sensibly "trained", made available and made usable.

Let me give you the perfect example: the lithium-ion traction battery. You need to have information on its "state of health" in order to be able to decide whether to go into reuse, second life, remanufacturing or recycling. The fundamental question therefore is what is being recycled, when and in what composition? The more

▶ information you have, the more confidently you can invest. So information governance and the use of data will definitely be one of the most important tasks in the next 10 years.

# Do the new manufacturing processes also have an impact on recycling? What do metal recyclers need to prepare themselves for?

It depends a little on the material flows. If we're talking about very critical raw materials, as in the case of the lithium-ion battery, we'll certainly see closed cycles in the future. There are 18 production steps from the raw materials to the battery, and waste is produced at every single step. If that waste is not intelligently controlled and further processed in order to be returned as raw material, it will cause problems. That means all the links in the production chain and the recyclers will have to be more closely connected. Put simply: We're still losing far too many raw materials purely because the information about where they are and what can best be done with them is simply insufficiently available to many operators. Processors need to know which materials the customer needs, as well as their characteristics, when to expect which flow rates, and how the markets will develop.

Climate change has led to a turnaround in almost all areas of life. In this context, do you see trends in metal production that are aimed at sustainability and environmental protection or at least encourage it?

The switch to hydrogen technology, which is currently being made in steel production, is a massive game changer, especially in metal production. Decarbonisation is changing scrap use, slag structure and many other cycles. It won't be 100 per cent "green" right from the start. In the short and medium term we'll still be talking about using natural gas, then in the longer term about hydrogen as well as methane produced from green hydrogen and carbon dioxide, in combination with many other technologies.

#### E-mobility is also a big topic in this context and is expected to be a major lever for climate action. But how far have we actually come in terms of recycling batteries?

The challenge is that new mobility systems first have to be conceptualised. Besides purely battery-electric electromobility, hydrogen or synthesis gas will certainly play a role going forward. The important thing here is that while the technologies are being developed, the recycling technologies also need to be constantly being worked on so that they're ready for use when waste from the respective technologies is returned in larger quantities. Especially in the case of e-mobility, you have to start recycling immediately, otherwise the raw materials may be in short supply.

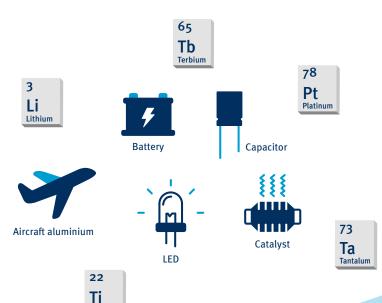
#### What challenges and/or opportunities do you see in this trend for the circular economy?

Hardly anything is more challenging to recycle than a battery – not to mention the fact that battery technology is evolving virtually on a daily basis. For every recycler, there are 10 constructors. However, that doesn't only apply to batteries, but to all high-tech products. The key is to know in good time when something will be built and how, and when it will be taken off the market again. That is the basis on which recycling processes can be further developed, adapted and better implemented.

#### These developments also have legal consequences: Old batteries are considered hazardous waste, and the approval procedures are thus extremely strict. Does the state need to intervene and regulate these matters?

We have to make a distinction here: With traction batteries there is a great hazard potential anyway, they're already quite heavily regulated and insurance companies are also already breathing down everyone's neck. That's why all the operators will ensure – in their very own interest – that the process runs as smoothly as possible.





Matters are more complex when it comes to other substances, for example in the case of portable batteries. Producers aren't necessarily reliant on having to recover the products or raw materials from those batteries. This will have to be regulated, for example through deposit systems. And you have to ask how to get consumers to steer their material flows intelligently into the right channels. There's a lot of environmental psychology involved. The next level is controlling waste in industrial processes. Here, again, quickly available and usable data are needed.

# How important do you think it is to have EU or even global consensus on companies' responsibility for their own supply chain?

It would be desirable to have a global, uniform system. However, that's quite a difficult task, because red tape in the EU often gets out of hand and tends to be more of a hindrance than a help. It's a very ambitious idea, but it would be my preferred solution.

Titanium and lithium have recently been added to the European Commission's list of critical raw materials. Which metals do you feel will be classed as critical in the future based on current developments? And what does that mean for recycling?

There's a whole list of critical raw materials. When you go through it, you're basically looking at more than half of the periodic table. I think we'll see vanadium being classed as critical, tantalum will become even more critical than it is today, lithium as well; terbium or scandium will probably become more

important, as will, most likely, the rare earth element gadolinium. The list will grow significantly. It also depends a little on product developments and where which substances are used. Of all the precious metals, however, the platinum group metals are always a sensitive issue. Titanium is interesting because there are already options for planning somewhat more efficient processes.

How important is the role of the recycling industry, especially for metals, for the supply of raw materials in the future?

Metal recycling is a central component in securing the supply of raw materials and

reducing carbon emissions. The goal must be to cover between 30 and 50 per cent of demand using recyclate by the middle of the century. In the case of copper, we're currently at 47 per cent recyclate; a further increase is possible, but is limited when it comes to very long-lasting applications, such as when copper cables lie in the ground for many years. Products made using tantalum, on the other hand, only have a lifespan of four to five years, for example. That in particular affects capacitors in electronics. So there is real potential to make a difference.

#### What other tasks beyond the technical do recyclers face?

In the future, recyclers will have to push ahead with the digital transformation and the creation of associations and networks involving all the players along the entire chain even more actively. Only then can they plan on a more solid basis and further optimise their recycling processes.



"I started at CRONIMET in August 2002. A friend of mine who was working here at the time told me that the company was looking for an IT employee – in fact, they were looking for their first in-house IT employee. I met with my current boss and it just seemed like a good fit. The company was new, it was growing and everything was exciting. All my colleagues worked as a team towards one goal and it was and still is great to work with all of them. And I've been here ever since."

im Mallick, United States



## WITH THE CRONIMET DNA

Forty years of CRONIMET. Forty years of success. The history of the company can be summed up quite precisely in just a few key words: Over 1,500 colleagues worldwide, on all the inhabited continents, active in over 30 countries.

#### But what were the factors that brought CRONIMET to where it is today?

While searching for answers by asking old allies and partners along the way as well as current contemporaries, one thing again and again becomes clear, namely that the key factors that shaped the company are the hunger for success and the striving to become better and

better, the required competence and, ultimately, the ability to seize and use opportunities as they arise. These are the ingredients of the much-vaunted CRONIMET DNA.

# Yet what does this DNA mean for the future of the company? How can CRONIMET use it to continue on its successful path going forward?

In addition to the company's still most important mainstay – stainless steel recycling – Oliver Kleinhempel lists three key points that will shape CRONIMET's future: diversification, optimisation and the use of modern technologies. The Managing Director of CRONIMET
Holding GmbH, who is responsible for
Corporate Development, puts it like
this: "The main challenge will be how
we can use our core competencies to
open up new fields of business that will
enable us to put our business on a broader footing,
with a secure future, based on our core business."
However, Kleinhempel does not want competence
to be understood (only) as mere know-how. What
matters, is bringing the right people together and
creating synergies – whether it's inside or outside
the organisation.

The latest developments show that this may be exactly the right path for CRONIMET to take. Take Queensland in Australia: A huge mine with several million tonnes of tungsten-bearing tailings that was closed down in the 1970s because the technical conditions

did not allow for efficient and economical processing. With the technologies available today and the expertise available within the group, CRONIMET is able to extract the valuable metal and to return tungsten, which the EU has designated a critical raw material, to the economic cycle. The CRONIMET experts are also working on further processing methods at the site in Brazil, where concentrates are currently already being remelted into ferroalloys. This allows CRONIMET to deliver sustainable ferrotungsten to its customers.

A key criterion when choosing potential new fields of business is that they need to be a good fit for CRONIMET and its core business. Resource efficiency plays a central role in this. CRONIMET's goal is to meet the continuous demand for raw materials without polluting the environment like in the past, which may even lead to a better future for our world.



#### ► Looking back at 40 years of CRONIMET, what is most important to you?

We're the global leader in stainless steel recycling. That's fantastic! We grew out of the tradition of a trading company. In my opinion, we're first and foremost a recycling company. I'd like us to focus even more on the circular economy and recycling. After all, our bread-and-butter business, scrap recycling, is a circular economy. And it forms the heart of CRONIMET. However, there is more to us than just our core business. Let me illustrate what I mean: Our core business is the sun and there are several small planets orbiting around it. These planets are all different in nature and in size, but they all move around the sun because they're concerned with the same elements.

#### What kind of potential is there?

Our processing, for example, which we do in Australia. We reprocess material from old, disused mines there in order to return it to the cycle. Our newest business field also holds a lot of potential: We recycle nickel and cobalt so that it can be used to produce battery cells for electric vehicles. There are many small units with which we are expanding our business field and from which we can learn as a company. There is such a wide range of topics, and you can always cross-fertilise and learn from each other if you break down the silos.

#### But isn't that also risky?

We've always said that any investment we make must be a good fit for CRONIMET. We have our bread-and-butter business that keeps us fed and ultimately provides us with the means to try out new things. The group as a whole needs to be able to shoulder the investments we make in new business areas, and we must be careful to only take on things that fit us in terms of size so as not to put the bigger picture at risk. The more planets I have, the more chances I have to develop them further so that they generate their own earning capacity that enables them to grow by means of their own resources.

#### What has made CRONIMET so strong, and what distinguishes CRONIMET from others?

My father's strength was his flexibility in responding to opportunities. He always grasped opportunities. He just has that open-mindedness to accept new challenges. And that's still part of the CRONIMET DNA. But we've also grown. In 2016 we defined our first strategic goals. We've now revised them for the period up to 2025, and are in the process of operationalising them and making them tangible for all our employees.



#### Can you name some of these goals?

We've cast our goals in four pillars and a foundation. The pillars are finance, market, processes and employees; the foundation is sustainability. The foundation, which now for the first time appears in our goal structure, is that we want to be a carbon-neutral company by 2030.

#### What are the company's biggest future challenges?

I'm quite pragmatic and I want a high degree of flexibility. What's important to me is that we as a company are highly flexible and robust so as to be able to respond appropriately to the challenges that come our way. The coronavirus pandemic has shown us that we can't predict what those challenges will be.

# CRONIMET is known for turning challenges into opportunities. What do you consider to be specific fields of action in the near future?

We've turned our focus for the next few years to the issue of climate change. From heavy rainfall in western Germany and the United States to fires in southern Europe, the disasters caused by extreme weather events have been a lesson to us all this year. This may be the first time we in Europe in particular have had to realise that we don't live on the island of the blissful. As I see it, there is no issue more pressing than climate change and the challenges it poses for CRONIMET. We want to earn enough money with our core business, which is intrinsically sustainable, so that we can invest even more in being climate-friendly and in business areas that protect resources. To achieve our goal of being carbon-neutral by 2030, we need to create a certain amount of earning power that will enable us to make the necessary investments.

#### How do you want to address these issues?

Even though I'm the CEO, I'm only a part of the bigger picture. I share these visions with many others. We all have to get behind them, whether it is our colleagues in the management of the holding company or in Europe, the United States, Brazil, South Africa, Asia or Australia – and that's exactly what we're doing. To achieve these goals, we need to make resources available. That doesn't just mean technology, it also means expertise, that is investing in our (future) employees. We the managerial staff are responsible for taking people with us on our journey, showing them what we are planning and why. This is partly because we are aware of our

social responsibility, and partly because we are convinced that it's the right way to continue to be a robust company going forward.

#### You've certainly got a lot on your plate. Will we soon see a completely new CRONIMET Group?

Not in terms of how the company is structured. But, as I've already indicated, yes in terms of the issues we focus on. I'd like to implement changes and all the ideas we've just talked about and perhaps bring so-called softer issues further to the fore. We've included that in our strategic goals, too.

## The company has just turned 40, which is still quite young for a business. Where do you see CRONIMET when the company turns 50?

We've already revealed some of our goals. My wish and this is what I, the management of the holding company, the managing directors worldwide and everyone at CRONIMET are working towards – is that we'll be able to say on CRONIMET's 50th anniversary that we are a carbon-neutral company. I also see CRONIMET continuing to be the global leader in stainless steel recycling, with a much stronger non-stainless segment. One of the goals is also to actually live the "One CRONIMET" vision. I have the impression that this topic is well established at the management level. In the back of our minds, we always know that "One CRONIMET" makes us all better. And we'll live the "One CRONIMET" vision when we also unconsciously align all our decisions to it. Working on a real corporate identity that is understood and lived by everyone – that is the key goal.



### **CRONIMET and Charitable Work**

"We are aware of our social and ecological responsibility to society."

This is one of the CRONIMET Group's five corporate values. At CRONIMET we don't just pay lip services to these values, but we make them an integral part of our corporate culture and thus of our identity.

Our commitment goes beyond our region.



#### Jocelyn & Günter Pilarsky Foundation

"Alleviate need – create a future" is the mission of the Jocelyn & Günter Pilarsky Foundation. To fulfil this mission, the Foundation, which was established in 2006, supports projects on issues ranging from education and raising children to development aid, youth welfare and assistance for the elderly.

In a project in Tambakan in the Philippines, for example, people living on landfill sites are given food and medicine. Securing the local water supply is an important goal.



#### Togo-Hilfe e.V.

Togo-Hilfe e.V. was founded in Rheinbach in 2002. The non-profit organisation focuses on school education and vocational training for children and young people in Togo, West Africa. Funding is also available to support hygiene and health measures. The projects focus on helping people to help themselves. Donations collected in Germany are used entirely to fund projects in Togo, and each cent reaches the people who need it. The members finance all the organisation's administrative costs and work on a voluntary basis.



#### Caritas

CRONIMET has been supporting the Caritas food bank in the Beiertheim district of Karlsruhe since 2018. We have supported the organisation in many different ways, from donations of money or goods to active on-site support, for example distributing food to people in need.

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