



EHDG

Yearbook

2024

European Hygienic Engineering & Design Group

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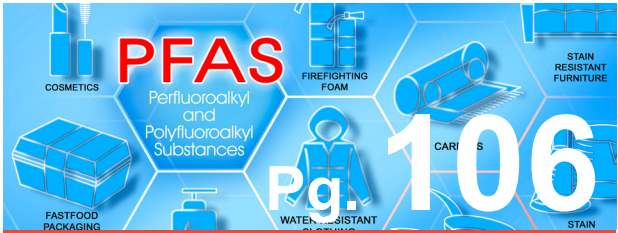
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Director's message

Dear Reader,

Securing global food safety through innovative hygienic design is at the heart of everything we do at the European Hygienic Engineering & Design Group (EHEDG). Reflecting on our activities in 2024 and looking forward to the highlights of 2025, I am very proud of the different ways in which we advance food safety. From our Guidelines and Training & Education to our Testing & Certification, our regional outreach, EHEDG continues to empower a broad spectrum of stakeholders to uphold the highest standards of hygiene and quality, protecting public health and in this way building greater trust across the entire food processing chain.

The need for clear guidance on hygienic design is critical for the food industry. EHEDG answers this with initiatives focused on food safety through innovative design solutions. As we look back on our achievements in 2024 and set our sights on the next phase of our journey in 2025, our commitment to excellence remains unwavering.

In 2024, we organised two Working Group Days. In May, the Chairs' Working Group Meeting brought together Working Group Chairs to align objectives and content and share progress updates. In October, at the Working Group Members' Meeting, nearly 150 people participated in this broader gathering, collaborating to streamline ongoing projects and identifying ways to improve our way of working, the quality and content of our Guidelines and inter-Guideline relationships. These discussions led to the formation of new task-forces dedicated to fortifying EHEDG's working methods and ensuring faster, more efficient progress.

Over the past year, we at EHEDG have demonstrated a renewed focus on strengthening our Guideline portfolio. We published 6 new Guidelines, and we are proud to see a substantial increase in both downloads and sales. This underscores industry recognition of EHEDG as a global reference point for hygienic design.

EHEDG membership continues to expand, reflecting the growing significance of hygienic design worldwide. Our new Polish Regional Section exemplifies local engagement: they organised an EHEDG Hygienic Design Day, attracting more than 100 participants from over 80 different organisations. This successful event showcased how EHEDG's message resonates with small and medium-sized companies, educational institutes and research centres. We are also looking forward to the initiatives that our new Regional Section in Ireland is undertaking. We are investing time and resources in building new chapters in Europe, in Czechia and Greece, and are in talks with engaged individuals and small teams in other parts of the world in order to set up new regional committees there. I trust I will be able to report on this in the next edition of this Yearbook.

Alongside these activities, we have seen stronger engagement on our main B2B communication channel – LinkedIn, allowing us to share updates, success stories and best practice with a broader and more diverse audience.

In order to empower a next generation of hygienic design professionals, we are investing in several initiatives, one of which is building on the EYE Mentorship Programme. In partnership with Young EFFoST, EHEDG strives to ensure young professionals learn more about so-called "soft skills" and receive the guidance they need. Another action we have taken towards the younger target audience is to invite them, along with their colleagues, for a very attractive fee to our EHEDG World Congress 2025 in Nantes. This will bring more than 80 participants under the age of 35 to hear and learn about hygienic design to our Congress. A major highlight of 2024 was our most-visited EHEDG World Congress to date, which drew an impressive number of attendees and saw more poster participants than in any other year. Building on this momentum, we look forward to continuing these global gatherings that bring together hygienic design experts, researchers and industry partners for networking and collaborative learning.

For the latter, the learning, we also introduced our first e-learning course last year. During the coming year, we will be further expanding our Training & Education offerings. Looking ahead, we aim to enhance these offerings with additional online modules and a central online examination platform.

Promoting global harmonisation in order to improve food safety via hygienic design guidance requires close partnerships with organisations such as 3-A SSI, GFSI, BRCGS, FSSC, IFS, CEN and ISO. Our collaborations with EFFoST, CIFST and IAFP also provide critical channels for knowledge exchange. Through active involvement in key industry events, EHEDG leaders reinforce our collective goal of globally unified hygiene and safety standards.

Looking ahead to 2025 and 2026, EHEDG aims to sustain and accelerate its positive trajectory. I would like to mention a few initiatives that stand out:

1. The first EHEDG PanAm Congress in Mexico City: in 2025, we will host our first Pan-American Congress, expanding EHEDG's reach and fostering new international collaborations.
2. The Third EHEDG Online Congress (5th & 6th November): our digital congress format, which has proven to be highly successful, will return for a third iteration, enabling greater accessibility and engagement.
3. The EHEDG World Congress 2026 in Vienna: preparations are already underway for the next World Congress, to be held on 7th – 8th October 2026 in Vienna. We anticipate another record-breaking event that will further elevate hygienic design standards.
4. 14 new and updated Guidelines: building on our progress so far, we plan to release 14 new or revised Guidelines, ensuring EHEDG continues to provide cutting edge resources for the food industry.
5. New Training & Education initiatives: beyond e-learning and a central online examination, we are investing in additional training and educational programmes to broaden and deepen hygienic design expertise across global markets.
6. Membership growth: and, of course, we aim for continued increases in EHEDG memberships, building on the current upward trend.

In summary, all these accomplishments and the dynamic steps we're taking – record-breaking Congress attendance, the launch of new Guidelines, membership growth, active regional sections and an ever stronger communication presence – are the direct result of the extraordinary collaboration among the dedicated EHEDG head office team in Amsterdam, our regional volunteers, Working Groups and committees. This spirit of teamwork drives our mission: to protect global food safety through unparalleled leadership in hygienic engineering and design.

As we look towards 2025 and 2026, EHEDG stands ready to support the food industry in meeting ever-evolving challenges. Thank you for being part of this journey, and we look forward to achieving new milestones together.

Warm regards,

Adwy van den Berg
Director, EHEDG



EHEDG Head Office Team

Head Office Team



Adwy van den Berg
Director
Oversees daily operations and ensures efficient departmental workflows, managing internal processes and supporting organisational growth. Additionally, he represents EHEDG at industry events, promoting the organisation's mission globally.



Cristina Annoni
Content & Communication Manager
Plans and manages communication content for the year, including internal messaging, Yearbook creation and webinars. Coordinates communication with external organisations to promote EHEDG's initiatives and strengthen industry relationships.



Joshua Rodulfo
Marketing & Project Manager
Focuses on external communication, digital systems monitoring and project coordination, overseeing initiatives such as the EYE Mentorship Programme and other key external projects that align with EHEDG's mission.



Karlijn Faber
Certification & Membership
Ensures that EHEDG's certifications remain up to date and addresses member satisfaction, managing the growth and retention of members and overseeing the certification process.



Valeriia Seliverst
Membership & Events Management
Dedicated to organising and coordinating events such as the EHEDG World Congress 2024 in Nantes, working closely with sponsors and participants to ensure successful event execution.



Gabriel de Bie
Finance Officer
Manages all financial activities, including budgeting, financial planning and membership payments and ensures EHEDG's overall fiscal health and sustainability.



Vanessa Amani
Portfolio Manager
Works directly with EHEDG's Working Groups, facilitating collaboration and supporting the development of key projects. Actively follows up on the progress of various Working Groups throughout the development and revision of guidelines, ensuring their smooth publication and the overall success of group initiatives.



Brad de Souza
Business Analyst
Focuses on CRM and process automation, implementing the Odoo ERP system to integrate the website into the finance and CRM functions, improve workflow efficiency and manage master data and databases for enhanced performance.



Martina Tacconi
Junior Communication Manager
Supports internal communications, content creation, social media, digital campaigns and performance analysis. Promotes EHEDG's initiatives to a wider audience and maintains the website.



Kevin Kelly
Junior Communication Manager
Conducts research on members and industry leaders, focusing on SEO strategies and industry trends to optimise EHEDG's online presence and enhance digital visibility.



Hai Anh Phi
Digital Marketing & Communication Intern
Creates visuals and contributes innovative ideas to enhance EHEDG's online presence, supporting social media campaigns and digital marketing initiatives.

EHEDG

Foundation Board

Looking back on 2024, what achievements and successes are you most proud of and how have they contributed to the organisation's growth and future direction?

Hein Timmerman: A new yearbook, another year passed as EHEDG President. As we reflect on 2024, we celebrate a year of progress, innovation and collaboration within EHEDG. This year has been a testament to our shared commitment to advancing hygienic design, ensuring food safety and fostering a global community dedicated to best practices in engineering and manufacturing. A year filled with great member activities supported by a strong team in the head office in Amsterdam. With this strong team, we were able to fill our 2024 agenda with successful events, such as the EHEDG World Congress - our biggest ever - and our yearly Plenary Meeting in Nantes, France, and a follow-up with a second Full Working Groups Day. EHEDG is more and more present, from the PanAm congress in Mexico to the Fooma in Japan and at a large number of local and regional trade shows and events. In an ever-evolving industry where standards, regulations and technologies are continuously developing, EHEDG remains at the forefront, driving positive change and setting benchmarks for excellence. Through expert-led guidelines, hands-on training programmes and dynamic networking opportunities, we have empowered professionals across the food and related industries to implement the highest hygienic standards. Our members, partners and supporters have been instrumental in this journey. Their dedication to improving equipment design, enhancing manufacturing processes and strengthening food safety protocols, has fuelled our collective success. From international congresses to local working groups, from groundbreaking research to practical solutions, EHEDG has been a hub of knowledge exchange and professional growth. This yearbook captures the essence of our achievements in 2024 - milestones that highlight not just where we have been, but where we are going. As we celebrate the progress we have

made, we also recognise that our work is never done. With emerging challenges and opportunities ahead, EHEDG remains committed to leading the way, fostering innovation and ensuring that hygienic design continues to evolve to meet the highest global standards.

To all who have contributed to this year's success - thank you. Your passion and expertise drive EHEDG forward. Let us carry this momentum into the future, strengthening our impact and shaping the next chapter of hygienic design together.

Reflecting on this past year, how has your experience compared to your initial expectations and what key lessons have shaped your perspective?

Patrick Wouters: The year 2024 has been another significant year for the EHEDG organisation, marked by growth in membership and an expanded global reach. This progress underscores how our professional approach and communication initiatives, along with the publication of new guidelines, are driving global interest in hygienic design to manage food safety and quality. Notably, several major food safety incidents, where hygienic design was identified as a critical factor, have further fuelled this interest.

One of my personal highlights was the publication of a new guideline on Hygienic Design Risk Management, which garnered considerable attention and interest from various stakeholders in the food industry. I would like to take this opportunity to thank everyone who contributed to this important milestone.

During my visits to various trade shows and conferences, I observed that, while the EHEDG organisation is well-known in certain areas, there are still many stakeholders who are not familiar with us. This presents an opportunity for further outreach and energises our mission to promote the importance of hygienic design and engineering solutions for managing food safety and quality in the food industry and beyond.

Other notable highlights include the World Congress in Nantes and the Full Working Groups

Day in November in Amsterdam. The World Congress was excellently organised, featuring a robust lecture programme and exhibition area, and it received positive feedback from attendees and sponsors alike. The Full Working Groups Day in November attracted approximately 130 volunteers actively contributing to our guideline development activities. The day was marked by lively discussions focused on enhancing our guideline development process, with many Working Groups meeting face-to-face to collaborate on guidelines. It was truly inspiring to witness the enthusiasm and dynamic interactions among so many subject matter experts. The outcomes of the Full Working Groups Day have now been distributed into new projects that we are actively working on and we intend to share the results of these projects throughout the whole of 2025.

Looking ahead, we are already planning events for 2025, including a Chairs Working Groups Day on 22-23 May and our Annual Plenary Meeting on 14 October which will coincide with the Full Working Groups Day in Krakow on 15 October. I encourage everyone to mark these dates in their calendars.

Finally, 2024 marks the end of my tenure as Vice President of the EHEDG organisation after 14 years of service. I would like to extend my heartfelt thanks to all those who have supported me throughout these years. I am now stepping into a new role as Working Groups Chair alongside Uwe Heiswloff and we look forward to continuing our efforts in developing relevant guidance documents for the food industry to manage food safety and quality through hygienic design and engineering solutions.

What impact have the EHEDG's financial decisions in 2024 had on its mission and the programmes it supports and what steps can we take to ensure long-term financial stability?

Matilda Freund: First, I would like to thank the members of EHEDG for placing their trust in me as Treasurer. As the organisation grows, the financial responsibility has also increased. I am therefore very thankful for the excellent support I receive from the EHEDG Head Office and for the external validation from our partner, Deloitte.

The two overarching principles which I abide by in my role of Treasurer are increased transparency for our members and responsible spending. Our ultimate goal is to ensure that the activities of our members are adequately funded so we can achieve our goals. In that process, we also try to maintain equity and fairness in how the funds are allocated.

As EHEDG is growing and we have more members from around the world, we have published further guidance on travel spending. This direction is to ensure responsible spending and equal treatment among our membership. In addition to the guidance, we have also increased our Head Office budget to provide support for various initiatives.

Over the last few years, we have implemented the following:

- better tracking of the areas where we are spending our budget;
- a mid-year check-in with budget owners to manage over- and under-expenditure;
- a central budget to fund unexpected initiatives or increase allocated budgets as needed;
- increased Head Office resources to provide support to Working Groups and develop training.

A few examples of our recent financial decisions illustrate these points. The first is bringing the management of our online and in-person congress events internally. While this does require increased Head Office staff, I believe the professionalism and success of the Nantes congress in October 2024 validated our decision. In addition, there were savings generated by not having to hire a third party to manage the event, which offset some of the increased costs. We also hired a Head Office resource to oversee and provide support to the Working Groups that are generating Guidelines. We can now track progress, ensure alignment across Working Groups as well as generate a similar look and feel across guidelines and illustrations. Another example is in the area of projects. We are spending money on the generation of e-learning training modules. This training material is free to our members as well as universities around the world. It is an important tool to support our strategy for contributing to safer food globally. In the coming year, we will also roll out a programme to fund research in the area of hygienic design. Finally, we are sponsoring a Gen EHEDG programme in order to generate interest and passion for the EHEDG of the future. It is important that we continue to recruit people with the much-needed technical expertise that makes our organisation successful.

Our long-term financial stability is dependent on being able to manage our budgets with good oversight, and many of our recent changes have been implemented with that aim. Our membership is continuing to grow and so we have a healthy budget. We will continue to spend conservatively and monitor fees. If our income decreases, we will make budget adjustments to compensate.



Patrick Wouters PhD, (Cargill) Vice-President;
Hein Timmerman, (Diversey, a Solenis company) President;
Matilda Freund PhD, Treasurer & Secretary

We have a healthy reserve and we will work to protect that, so we have some buffer against economic fluctuations. I believe that we are financially strong and we will continue to be able to support our members well. We are a member-driven organisation and our most important asset is our volunteers who freely give their technical expertise in order to improve food safety across the planet. This model is sustainable into the future, as long as we continue to recruit passionate individuals and companies. In closing, it would be remiss of me not to thank all the members for their time and generous sharing of knowledge that is so important to the success of EHEDG.

“This year has been a testament to our shared commitment to advancing hygienic design, ensuring food safety and fostering a global community dedicated to best practices in engineering and manufacturing.”

Patrick Wouters

Vice-President

2010 - 2024

Patrick, you have been on the Foundation Board since 2010. What initially drew you to EHEDG, and what motivated you to take on the role of Vice-President?

My journey with EHEDG began during my time in the Microbiology & Preservation team at Unilever. With a background in food technology and microbiology, I saw an exciting opportunity to tackle microbiological challenges through hygienic design. This area has always intrigued me, particularly the role of equipment design in ensuring food safety and quality.

At Unilever, I had the privilege of working with a team of experts, including Huub Lelieveld, the first President of EHEDG. Unilever even had its own dedicated testing facility to evaluate equipment for cleanability and sterilisability. This gave me first-hand exposure to the importance of hygienic design and introduced me to the EHEDG association. Unilever played a significant role in supporting EHEDG's mission, including active participation in its Executive Committee. Later, I was honoured to be invited by Knuth Lorenzen to serve as Vice-President.

Over the years, EHEDG's influence has expanded far beyond Europe. Collaborating, also through our more than 35 Regional Sections, with many organisations around the world and the 3-A SSI in the United States has helped us gain recognition and traction across the world. It's been an incredible journey witnessing the growth of our foundation and the increasing global focus on hygienic design.

In your opinion, what have been the key achievements of EHEDG in the last 15 years?

EHEDG has made remarkable progress over the last 15 years. The growth of our brand and the increased visibility of what we stand for, to begin with. If you look at the attendance at our congresses and events, it's clear that more people recognise EHEDG as a leader in hygienic design. That said, there's still work to be done to cement our credibility with an even wider audience. Another major milestone is how we've expanded our focus. Initially, we concentrated on equipment

design requirements, but over time we've embraced a much more holistic approach. Now, we're addressing areas like building design, utilities, cleaning and disinfection system design and associated procedures. It's something I often hear from colleagues in the field – they appreciate how EHEDG looks at the entire ecosystem of hygienic design, rather than just one piece of the puzzle.

There's been significant organisational growth as well.

Absolutely. Establishing our EHEDG office was a big step forward. It gave us a central hub for managing our activities and communicating our mission more effectively. We've grown significantly in professionalism, while staying true to our roots as a member-based organisation. That balance is important because our members are the backbone of EHEDG. They provide the expertise and passion that drive our initiatives. We also took the time to refine our statutes and ground rules, ensuring we clearly define what we stand for as an organisation. Securing ANBI status was another major achievement. This recognition highlights our commitment to the public health and benefit. We're not a commercial entity but a group dedicated to food safety for everyone. It's a responsibility we take seriously, promoting food safety management by design and raising awareness throughout the supply chain.

How has EHEDG been influencing industry practices?

One of our strategic goals has been to make risk-based hygienic design a necessity rather than just a nice-to-have. Over the years, we've started to see more companies incorporating hygienic design into their risk assessment when purchasing new equipment and designing new production facilities. This is crucial because, when food safety management certification programme owners align with hygienic design principles, it creates a ripple effect. Slowly but surely, we're moving towards a future where these considerations become standard practice.



Overall, the past 15 years have been a period of evolution. From expanding our scope to strengthening our internal structure and influencing global food safety standards, EHEDG is making a real difference. But as with anything, the journey isn't over—we still have a lot to accomplish.

What role do you believe our organisation will play in shaping the global food safety landscape over the next decade? What are the most critical next steps for EHEDG?

EHEDG will play a pivotal role in embedding hygienic design as a foundational element of global food safety management. As food production systems become more complex and interconnected, the need for equipment, facilities and processes designed with hygiene in mind will only increase. Our foundation has the expertise and credibility to lead this shift, ensuring that hygienic design is no longer seen as an optional feature but as an essential requirement for safeguarding public health.

To fulfil this role, we must focus on several critical next steps. Developing and refining our product portfolio is paramount – we need to continue creating relevant, practical guidelines, papers and documents that meet the evolving needs of the industry. At the same time, we must streamline the way we produce these resources, making them more accessible and actionable to ensure wide adoption.

Equally important is investing in our community. EHEDG thrives on the dedication of its members, so keeping them motivated and engaged will be key. This means creating a collaborative environment where members feel valued and inspired to contribute, while also reaching out to new participants to inject fresh perspectives into our work.

Ultimately, our goal is to solidify EHEDG's position as the global resource in hygienic design. By expanding awareness, enhancing accessibility and fostering active participation, we can shape a safer, more sustainable food safety landscape for generations to come.

What message would you like to share with the EHEDG network?

My message to the EHEDG network is simple: Thank you for all your support over the last 15 years and I'm not gone! It's important to give others the opportunity to take on leadership positions and contribute to building the next chapter of EHEDG's legacy. But I remain deeply committed to our mission and I am always here to support and collaborate as we continue to grow and evolve together.

Patrick Wouters PhD, FSQR - Global Hygienic Design Lead, (Cargill), EHEDG Vice-President (2010-2024)

Advisory Board Members 2021 - 2024

Tim Schrodt

Can you tell us about your journey on the EHEDG Advisory Board? What motivated you to join?

My participation in the EHEDG started in 2003 with the Working Group 'Sensors' which I led for two years as the Chair. The journey continued by joining the Working Group 'Seals' in 2008 and since 2012 the EHEDG Regional Section Germany. Through these activities, I became involved more deeply in the understanding of hygienic design in the food and beverage industry. Before 2013, only a fistful of my colleagues and I participated in the EHEDG as individual members. To share the benefits of this organisation with many more colleagues inside Endress+Hauser, I decided to apply for a company membership. This internal and external networking showed me the challenges of implementing hygienic design in products and markets. As an industry manager, one of my tasks is to develop and cultivate the awareness for the needs of the food industry inside our company. This motivated me to join the EHEDG Advisory Board to bring in the experience which I had gained during this journey.

What do you believe is the primary value of having an Advisory Board?

The members of the Advisory Board represent a good cross-section of the food industry. As an experienced team, they act as a seismograph for trends and developments which have an impact on the mission and the value of the EHEDG. We also work as pathfinders and guideposts for the Executive Board to support them with the development of the organisation for the future.

What do you see as the most significant contributions you have made during your time on the EHEDG Advisory Board?

Over the years, I watched the market for hygienic certified components and figured out that the certification process was becoming more complex and expensive. With this development, we run the risk of losing smaller companies for system components for the EHEDG. At the same time, we challenge the companies which still apply for EHEDG certification to spend a lot of resources on this. These resources are missing from other fields of activity, e.g. innovations.

What advice would you give to incoming Advisory Board members or others looking to contribute to EHEDG's mission?

Being a member of the EHEDG organisation is not only a honour but also a duty to support the implementation of the idea and concept of hygienic design in the food industry. The right application of hygienic design is essential for the survival of each company active within this industry. On one hand, you will learn that hygienic design is a philosophy which includes different approaches. On the other hand, you clearly have to define and decide what is hygienic and what is not hygienic. To find the balance between these two challenges and involve all people working on the mission of EHEDG is the key for success.



Tim Schrodt, Regional Industry Manager, (Endress+Hauser Deutschland), EHEDG Advisory Board member (2021 - 2024)

Anne-Claire Carrere

Could you tell us about your role and your time on the EHEDG Advisory Board?

I'm Anne-Claire Carrere and I'm currently working as a production manager at the factory in Konolfingen. I was a member of the EHEDG Advisory Board for three years. When I started, I was the Hygienic Engineering Global Lead at Nestlé. However, after a year, I transitioned to my current role, which required me to focus more on operational work.

EHEDG is an important organisation for the industry, as it supports the development of guidelines for better hygienic engineering. Nestlé has always fully supported this mission, and when I stepped down from the Advisory Board, my colleague Johnson Alao was elected to take over the position.

What initially motivated you to join the Advisory Board?

It was important for Nestlé to be part of this Board. As one of the largest food companies, we purchase a significant number of machines every year, and we want these machines to meet the highest hygienic design standards. EHEDG's work in improving these standards is critical. A good hygienic design foundation is essential for producing safe products. I see this often in my role: if the design isn't right, it creates issues in production later.

What do you see as the primary value of having an Advisory Board?

The Advisory Board provides strategic guidance for EHEDG. It's essential to have a balance between food producers, machine suppliers and consultants. This diversity of perspectives ensures that the organisation's strategy is well-rounded and effective.

How would you describe your contributions to the Board?

At the beginning, I was very active, contributing significantly to the risk assessment guideline, which has now been published. However, my involvement decreased over time due to several factors. COVID-19 limited in-person meetings, and transitioning to an operational role left me with less time for EHEDG tasks. Unfortunately, my contribution in the last year was minimal, which I regret.

If you had more time, what would you have done differently?

I believe meeting people in person would have made a big difference. Building relationships and collaborating face-to-face creates opportunities for more effective contributions. I would have loved to engage more and play a bigger role in advancing EHEDG's hygienic engineering initiatives.

What advice would you give to your colleague Johnson or others looking to contribute to EHEDG?

Simplifying guidelines is crucial. Digitalising content and creating e-learning platforms are also important steps. Training the younger generation of engineers is essential. For instance, one of my engineers attended an EHEDG training course this year and she came back very excited about what she had learnt. Continuing to offer these types of training programmes is invaluable.

Another area to focus on is addressing gaps in the industry. For example, robotisation is a growing trend, but we need to ensure hygienic design standards for robots are fully addressed.

How has EHEDG already begun addressing these areas?

I understand that EHEDG has started a Working Group on robotics, which is great to hear. There's also an e-learning catalogue now, which includes an introduction to hygienic design. Participants can even earn a certificate, which is a fantastic way to promote knowledge within companies like Nestlé. Affordability and implementation speed are also important considerations. Hygienic design can sometimes seem expensive or slow to adopt, but it's an investment that pays off in the long term.

What message would you like to share with EHEDG and its network?

I'm grateful for the opportunity to have been part of EHEDG. It's an important organisation making a meaningful impact on the industry. I'll continue to support EHEDG's mission and encourage others to contribute to its success.



Anne-Claire Carrere, Head of Manufacturing, (Nestlé), EHEDG Advisory Board member (2021 - 2024)

Reactivated Working Group

Cleaning in Place



Can you tell us about your background and what motivated you to join the EHEDG Working Group 'Cleaning in Place'?

Hein: My name is Hein Timmerman. After graduating in Food Technology, I began my career at Alfa Laval as a project engineer, tasked with designing CIP stations despite having little to no prior experience. Initially, I relied on old files and learned as I went. By the time I joined Diversey (now Diversey, a Solenis company), I was already recognised as an expert in dairy and brewing technology. At Diversey, our work extends beyond supplying CIP stations – we also focus on optimisation and diagnostics.

My journey with EHEDG began about twenty years ago, as I started deepening my understanding of hygienic design principles through the literature that the association was producing, and being more and more involved in various initiatives. In 2003/2004, initial discussions around CIP began, and a decade later, the French team published a very first document. This draft became a strong foundation for what is now the EHEDG Guideline 50.

Joe: My name is Joe Matthews and I've been part of the industry for eleven years, starting my journey at Sycamore Process Engineering. Along the way, I've continuously learnt from experienced predecessors and knowledgeable peers in the fields of CIP and hygienic design. Early in my career, I completed an EHEDG training course

at Camden BRI, which laid the foundation for my expertise. I joined the EHEDG Working Group to actively contribute to shaping industry guidelines and, in doing so, make a meaningful impact on the field. Designing CIP systems comes with its challenges – balancing commercial demands and tight timelines, to name just a few. Being part of this team has allowed me to look beyond these limitations, explore ideal scenarios and identify best practices. It's been a rewarding and enjoyable journey, and I'm proud of what we've achieved together so far.

CIP systems are crucial in maintaining hygiene in food processing. What prompted the need to revise EHEDG Guideline 50? What are the key challenges that this document aims to address in terms of design, installation and operation?

Hein: Two key factors prompted the revision of EHEDG Guideline 50. First, according to our Internal Rules and Standard Procedures, all documents must be reviewed within five years of publication to ensure they remain aligned with market demands and regulatory requirements. If no updates are deemed necessary, the guideline is simply reaffirmed for another five years. However, with several Working Group members having changed roles or retired, we initiated a Call for Experts.

This brings us to the second driver: the input from the newly-formed team. Their fresh per-

spectives and contributions highlighted the need for a thorough review of the guideline. Additionally, we wanted to address a critical and timely issue – sustainability. CIP stations are often viewed as heavy consumers of water, and the second edition of Guideline 50 will include a dedicated chapter on optimisation through hygienic design.

Let's talk more about sustainability and resource efficiency. How can we achieve effective cleaning, while minimising water and chemical usage?

Hein: CIP systems account for 25-40% of a factory's total water consumption, depending on the sector. They also operate at high temperatures, typically 70-80°C, with some systems running continuously – 24 hours a day or even 24/7 – leading to significant energy costs. Strong chemicals, such as acid-based cleaning agents, are often used due to their cleaning efficiency and contribution to food safety. CIP systems are highly effective, capable of cleaning large tanks in as little as 15 minutes with validated results. But they also have an environmental impact.

The industry increasingly demands sustainability and resource optimisation. Key questions arise: Can we use fewer or greener chemicals? Can cleaning be performed at lower temperatures? Can we reduce water and steam consumption? While there's no one-size-fits-all solution, these issues must be addressed in the updated guideline. For instance, in the dairy industry, dissolving milk fat at lower temperatures is not feasible, as it risks bio-film and soil build-up from fat deposits. What can be done, then? Our Working Group, composed of experts from chemical suppliers, engineering companies and end-users, brings diverse perspectives to tackle these challenges and guide the industry.

Joe: A good example of sustainable innovation I'm thinking of is The Blender, Innocent's electric, renewable energy-powered factory in Rotterdam. It uses a holistic design approach, integrating sustainable techniques to minimise energy consumption. For example, the factory repurposes energy extracted for cooling to heat production processes, achieving greater resource efficiency. This demonstrates how sustainability can be embedded into facility design to reduce environmental impact and how boundaries can be moved.

Hein: Absolutely! The Working Group is eager to challenge and rethink what's possible.

What role do you see emerging technologies, such as IoT and smart sensors, playing in the future of CIP systems?

Hein: In CIP, we provide guidance on sensors – referred to as instruments – outlining minimum or recommended configurations. However, the industry is advancing rapidly. Suppliers are transitioning from analogue to digital systems, developing faster, more precise sensors and introducing smarter technologies capable of capturing extensive data. Currently, cleaning parameters are typically validated and fixed, making adjustments challenging. But imagine a self-adjusting CIP system that dynamically accounts for production recipes, run variations and other factors, while maintaining quality validation. If we can achieve six-sigma reliability and eliminate risks, it would revolutionise the industry – much like self-driving cars in transportation.

Joe: Definitely. At the heart of artificial intelligence is data analysis. Reliable data eliminates guesswork and enhances decision-making. This evolution isn't just about individual CIP systems but also interconnected sites with multiple stations. As AI leverages broader datasets, it will accelerate optimisation and execution.

Hein: That said, this transition won't happen overnight. It requires significant time and investment, especially since many current CIP systems have limited data capture and analysis capabilities. Overcoming these barriers will be key to realising this future.

Hein Timmerman, Global Sector Specialist Food & Beverage, (Diversey, a Solenis company), Chair of the EHEDG Working Group 'Cleaning in Place' and EHEDG President

Joe Matthews, Design Engineering Manager, (Sycamore Process Engineering, member of the EHEDG Working Group 'Cleaning in Place')

Utilities

New Working Group

Can you tell us about your background and what motivated you to join the EHEDG Working Group 'Utilities'?

Roland: I'm Roland Cocker and I run my own company, Cocker Consulting Limited, which originally started in the Netherlands. I've worked extensively in the industrial sector, using utilities like gas and steam, which sparked my interest in the EHEDG Working Group 'Utilities'. There were initially very few people involved in the group, so I decided to contribute alongside Lisa and Hugo Silva, the other founding members of the Working Group.

What is the primary focus of this team and why do you believe it's crucial for EHEDG to address utilities in this way?

Roland: Our team focuses on defining utilities and structuring them within EHEDG guidelines for easy reference. Utilities support hygienic operations, and any service, even electricity, can impact hygiene.

We noted industry interest in recycling, such as condensate water, and future topics like waste handling. Utilities engineers need clearer specifications for hygienic standards, so we coordinate with other groups or create these ourselves.

We proposed a parent guideline covering key topics, followed by child guidelines on specific supplies like steam, water and air. Emphasising traceability and clear labelling prevents unauthorised connections, maintaining hygiene.

How important is the collaboration with other EHEDG Working Groups (e.g. Air Handling, Water Treatment, Building and Factory Design) for ensuring a comprehensive hygienic design?

Roland: Collaboration with other EHEDG Working Groups, such as Air Handling, Water Treatment, and Building and Factory Design, is crucial for comprehensive hygienic design. For example, we identified significant overlap with the Water Treatment group, especially in the absence of a dedicated utilities guideline. Lisa and I held early discussions with Anett Winkler's Working Group, which are ongoing, to address supply aspects like well construction and operation.

Clear boundaries between Working Groups are essential. For instance, Annette's group stops at water processes that don't involve the product, while John Holah's group covers building drains. Aligning these interfaces ensures logical, user-friendly guidelines. Even handling solid waste improperly can attract pests and impact factory hygiene. Our goal is to maintain hygiene as the priority, even when considering energy use or recovery.

Can you tell us about your background and what motivated you to join the EHEDG Working Group 'Utilities'?

Lisa: I'm Lisa Bullens, and I've been with FrieslandCampina for eight years. I started at a local plant and now work as a subject matter expert for utilities and HVAC within the corporate CAPEX team. One of my colleagues received an email about the formation of a Working Group on utilities, and a year later, I joined the team with Roland. When we were asked who would chair, I was new to EHEDG, so I didn't feel ready to take on that role, but I offered my support to Roland.

What are some of the most common issues that are connected to poor utility management in hygienic systems?

Roland: Poor utility management in hygienic systems often stems from prioritising production over utilities. Overcapacity can cause issues when demands fluctuate, leading to contamination, such as water mixing with steam or chemicals affecting the product. Production failures can also cause product contamination in utilities, promoting growth of biofilms in pipes. Integrating utility and production systems is increasingly important, especially for energy efficiency and sustainability, with heat pumps playing a role. Improper utility handling can result in uncleanable systems, as utilities are typically one-directional. As recycling and energy recovery gain focus, maintaining hygiene and traceability to prevent cross-contamination is crucial.

Roland Cocker, Owner, (Cocker Consulting), Chair of the EHEDG Working Group 'Utilities' and **Lisa Bullens**, Subject Matter Expert Utilities & HVAC (Friesland Campina), member of the EHEDG Working Group 'Utilities'

“Integrating utility and production systems is increasingly important, especially for energy efficiency and sustainability,...”



Air Handling

Reactivated Working Group



Nitin Mehta, Technology Lead – Global, (Cargill), Chair of the EHEDG Working Group 'Air Handling'

What motivated you to join the EHEDG Working Group 'Air Handling'?

The EHEDG Working Group 'Air Handling' provides an opportunity to align industry best practices with operational needs. HVAC plays a critical role in food safety and hygiene. Joining this group allows professionals to collaborate on global guidelines, share experiences and address practical challenges.

For those with a background in food safety, quality management or engineering, participating in such a Working Group is a natural progression. It enables experts to contribute to improving guidelines like GL 47 while learning from a diverse group of peers, including OEMs, food manufacturers and consultants. The goal is to turn real-world challenges into comprehensive, actionable solutions that benefit the food industry.

What are the critical air quality challenges that food manufacturers face today?

Key challenges include a lack of well-defined User Requirements Specifications (URS), especially in older facilities or regions where standards may not align with international best practices. Without clear specifications, facilities struggle with temperature, humidity and filtration issues.

Condensation, particularly in hot and humid environments, poses a significant risk. It can lead to microbial contamination, food quality issues and safety concerns. Poorly designed airflow and insufficient pressurisation exacerbate these risks.

Filtration systems also vary widely across facilities. While some plants invest in advanced systems, others delay upgrades due to budget constraints or lower prioritisation. Additionally, validation and documentation processes, such as design and performance qualifications, are often insufficient. Introducing basic documentation practices would help facilities identify and address deviations effectively.

What updates are planned for the revised Guideline GL 47?

The revised guideline will focus on several key areas, including:

- **Moisture and humidity control:** Identifying technologies and practices to manage relative humidity effectively.
- **Energy efficiency:** Incorporating economisers and heat recovery systems to optimise HVAC performance and leverage renewable energy.
- **Regional customisation:** Adapting guidelines to account for geographic and climatic variations to ensure global applicability.

The goal is to provide a robust baseline standard while allowing flexibility to meet local operational needs. Balancing functional requirements with supplier-driven technical solutions will also be emphasised, ensuring manufacturers can achieve their objectives without stifling innovation.

How does sustainability factor into maintaining high air quality without compromising food safety?

Sustainability is a growing priority across the food industry. Energy-efficient HVAC designs, renewable energy sources and strategies to reduce water usage are essential for minimising environmental impact while maintaining food safety standards.

For example, replacing traditional cooling towers with adiabatic systems has significantly reduced water consumption in some facilities. Advanced filtration systems improve air quality and reduce maintenance requirements, supporting sustainability efforts while enhancing operational efficiency.

Balancing sustainability with food safety requires a holistic approach. By integrating green energy solutions and leveraging waste energy or heat pump systems, facilities can improve perfor-

mance without compromising safety.

What is the most rewarding aspect of being part of this Working Group?

The opportunity to collaborate with a diverse group of professionals from different backgrounds is highly rewarding. By addressing real-world challenges together, the group develops best practices and global standards that positively impact the food industry. For those involved, the working group is a platform for knowledge exchange, allowing members to learn from each other and contribute to meaningful advancements in air handling and food safety.

Nitin Mehta & Corinne Begueria



Corinne Begueria, Group Quality & Food Safety Director, (Bel Group), member of the EHEDG Working Group 'Air Handling'

NEWLY

Published
Guideline

GL13: Hygienic Design Criteria for Equipment Used in Wet-cleaned Open Food Processing Environments

Open equipment is widely used in the food industry and is involved in the manufacture of various types of products, from dairy to sweet oil, nutrient fat, coffee, sugar, cereals, vegetables, fruits, bakery products, meat and fish. It is frequently used in the manufacture of perishable food products, with significant risks of microbiological contamination. Fresh-cut, ready meals and other ready-to-eat refrigerated products are gaining in popularity among consumers and are mostly manufactured in open production lines.

The hygienic design of open equipment is a major prerequisite for preventing contamination by pathogenic bacteria, such as the familiar salmonella strains or *Listeria monocytogenes*. Benefits are linked not just to product safety, but also to a potential increase in the shelf life of food products and the anticipated service life of the equipment, a reduction in maintenance measures, enhanced sustainability, and lower operating costs.

EHEDG Guideline 13 focuses on open equipment used in wet-cleaned food production areas. Wet cleaning includes semi-automated or automated spray cleaning (including foam and gel) and manual cleaning (brushes, cloths and scrapers).

'We took EHEDG Guideline 8, 'Hygienic Design Principles' as our starting point, and tried to expand all the criteria in the

specific area of open processing. We discussed how we can prevent physical, chemical and microbiological hazards, and developed minimum requirements that could be applied to different types of processes and products.'

Giampaolo Betta, Founder and President (Società Italiana per l'Innovazione nell'Industria Alimentare - SIIIA), Chair of the EHEDG Working Group 'Open Cleaning', Chair of the EHEDG Regional Section Italy, EHEDG Authorised Evaluation Officer and EHEDG Authorised Trainer



NEWLY

Published
Guideline

GL57: A Method for the Assessment of Open Process Equipment Cleanability

Andy, how did you approach the challenge of developing this entirely new type of cleanability test and the accompanying Guideline 57?

Basically, we aimed to make the method usable at any testing location intending to offer the OPC (Open Plant Cleaning) test. We had to carefully consider environmental factors such as humidity and temperature control to ensure that all soiling parameters remained consistent, regardless of the laboratory. This meant examining all variables that could impact results between different locations and incorporating sufficient controls into the methodology to ensure the test is both repeatable and reproducible across laboratories.

The EHEDG ATLs (Authorised Testing Laboratories) must have played a pivotal role in providing the industry with the means to certify their open process equipment. Wasn't that also the reason behind developing the guideline?

Absolutely, that was the primary motivation for creating this document. Years ago, EHEDG identified a niche in the market with our performance-based certification scheme, which is supported by robust testing methods. We recognised the need for tests tailored to other equipment categories – such as open, dry and

tanks. And Guideline 57 really came about because of the need for manufacturers to verify open plant cleanability.

Will EHEDG Guideline 57 and the corresponding certification programme ultimately enable food processing companies to purchase EHEDG-certified equipment for open food processes?

Yes, indeed.

How will this new document help equipment manufacturers design and develop food processing equipment in line with the EHEDG certification?

The document provides equipment manufacturers with clear guidance on the parameters according to which their equipment will be evaluated and potentially certified. It details the testing process, including the soiling method, drying method and, most importantly, the cleaning method. This is crucial because manufacturers are required to design equipment that is suitable for wet washdown. For instance, components must be robust enough to prevent issues such as short circuits or sensor malfunctions caused by insufficient waterproofing.

Can you briefly share the approach used by the testing laboratories?

Fundamentally, to evaluate cleanability, it's essential to examine how soil is removed from the surface. The test follows a logical process. First, the test item must be pre-cleaned to ensure there is no residue that could cause a false positive result. This involves preparing and conditioning the components so that they are clean and dry. Next, the soil is mixed and applied in a controlled manner. After the soil is conditioned for a specified time (as detailed in the method), the cleanability test is performed using a three-axis robot that moves around the test item's envelope to provide a consistent cleaning process. Finally, the assessment is carried out by shining black lights to identify any hotspots where residual soil remains. We have applied a similar analysis protocol to that of EHEDG Guideline 2. If we consistently find soil collecting and showing residuals in the same area during each test, we identify that as an uncleanable or less cleanable area on the equipment.

Andy Timperley, Owner, (Timperley Consulting), Chair of the EHEDG Working Group 'Test Methods' and EHEDG Authorised Evaluation Officer

NEWLY Published Guideline

GL29: Hygienic Design of Packaging Systems for Solid Foodstuffs

The second edition of EHEDG Guideline 29, 'Hygienic Design of Packaging Systems for Solid Foodstuffs', emphasises the critical role of hygienic design in packaging machinery, which serves as the final processing step before food products reach consumers. Given its pivotal role, hygienic design is essential to prevent contamination risks that can occur both during and after packaging, ensuring the safety and quality of solid foodstuffs.

Why hygienic design for packaging machines is crucial

Since packaging machinery is often exposed to the production environment, the potential for microbiological, chemical and physical hazards remains high. Even a minor contamination can have significant consequences, particularly given recent trends toward packaging ready-to-eat (RTE) meals, fresh meats and other perishable items. The growing demand for packaged fresh food, such as sliced meats and delicacies, has amplified the need for stringent hygiene controls in packaging to meet consumer safety expectations.

Incorporating the V-Model for holistic hygienic design

In addition to hygienic considerations, the new edition of EHEDG Guideline 29 makes references to the V-Model, an engineering framework that enhances communication between machine manufacturers and end users throughout the hygienic design pro-

cess. Initially introduced in EHEDG Guideline 34, the V-Model promotes a holistic approach to equipment design and hygiene evaluation, enabling a robust collaboration between stakeholders. The V-Model approach includes forming a team that brings together diverse expertise in machine design, food processing, cleaning, maintenance and packaging. This multidisciplinary team can identify and address hygiene risks from the earliest stages, contributing to more effective risk management and a higher level of safety in food processing environments.

Essential steps in the hygienic design process

The document also underscores a step-by-step approach to evaluating hygienic design. The process begins with a comprehensive task definition, covering essential factors such as:

- Characteristics of the food product and packaging process (e.g. required capacity, versatility);
- Information on the production environment, cleaning strategies and technical constraints;
- Input from machine suppliers to leverage their technical knowledge early in the design phase.

This initial task definition phase is critical, as it lays the foundation for the subsequent hygiene risk assessment process, aligning with standards such as EN 1672-2:2020. Once the task is defined, the design is evaluated in an iterative manner to ensure that all hygiene requirements are being met.

Enhancing safety for existing machinery: Reference to Guideline 58, 'Hygienic Design Risk Management'

EHEDG Guideline 29 also refers to document 58, offering insights into assessing the hygienic design of existing packaging equipment. For facilities with machinery already in operation, this resource provides practical guidance on identifying and mitigating hygiene risks, extending the benefits of the hygienic design approach beyond new installations.

Peter Golz, Chair of the EHEDG Working Group 'Packaging Machines'

Tobias Braunegger, Hygienic Design Compliance Manager, (MULTIVAC Group), member of the EHEDG Working Group 'Packaging Machines'



NEWLY

Published
Guideline

GL35: Hygienic Welding of Stainless Steel Tubing in the Food Processing Industry

What are the most important aspects of welding for the end user (food processors)? What does 'having a reliable hygienic weld' mean according to EHEDG Guideline 35?

Key aspects of welding crucial for end users like food processors include reliability and consistency in producing welds. This ensures safe and consistent food production. Moreover, it is essential that welded piping and tubing systems are easily cleanable. A reliable hygienic weld ensures no internal defects and meets stringent quality standards, thereby guaranteeing smooth production operations.

What does 'repeatability' mean in the context of this guideline?

In the context of our guidelines, 'repeatability' refers to the ability to consistently achieve high-quality welds across different geometries of piping systems. Regardless of the various types of connections involved, it is essential that all of them meet the stringent requirements of the food producers in the final production.

Has the scope of the hygienic design requirements changed since the last version of the document? What is an example of the innovations incorporated into the new guideline?

The range and quality of hygienic design requirements have remained consistent, as they have been established and accepted by numerous customers, factories and the 3-A standards. It is essential to adhere to these. However, alongside these established guidelines, we have integrated numerous new technologies to improve the production of high-quality tubing systems. For instance, advancements in turntable solutions represent a significant innovation in the new document. Recent developments in this area have led to the creation of new machines capable of delivering high-quality welds. Traditionally, achieving consistently high quality has been challenging, but these technological advancements are effectively addressing this issue.

Some say that 'less is more' when it comes to avoiding hygienic design risks in food processes. Does this apply to welding?

There is a belief that 'the best weld is no weld', but with current technology, it is possible to achieve high-quality results due to precise preparation methods. This principle was a key focus in revising the new guideline. We emphasised the importance of proper preparation and included examples to illustrate it. This approach helps those who need to meet high quality standards. In our experience, companies sometimes place orders



without detailed specifications, which complicates the assessment of weld quality. Clear specifications are crucial, and those who use or refer to our guidelines find that it simplifies the process for both customers and suppliers.

Peter Merhof, Manager of Welding Technology and Standards (GEA Group), Chair of the EHEDG Working Group 'Welding'

NEWLY

Published
Guideline

GL53: Hygienic Engineering of Bulk Pack-off Systems in Process Lines for Dry Particulate Materials

Developers of pack-off systems and food processors can refer to this new document to ensure optimal food safety and food quality control throughout their entire food processes, including in the packaging stage. The new guideline has been developed by a multidisciplinary team of food and ingredient producers and pack-off food equipment suppliers.

But to what extent are pack-off systems still considered to be part of a food processing production line?

I think they are still a large part of food processing. When we talk about pack-off systems for dry particulate materials, the scope covers the equipment, and so inevitably hygienic design. Pack-off systems for dry particulate materials are important links in supply chains for various types of food products. When correctly designed in compliance with this EHEDG guideline, pack-off systems will be cleaned more effectively, and will protect the dry particulate materials from chemical and biological contamination. This new document covers the most widely applied equipment used in pack-off systems, from the hopper, to the metering and weighing systems and up to the filling heads. It should be pointed out that the current guideline focuses

exclusively on equipment used for business-to-business packaging, mostly large industrial containers, and not on equipment used for consumer packaging like small sachets or pouches.

The closer to the final packaging, the riskier it becomes if contamination is introduced. Pack-off systems usually represent the last step in a dry particulate production process on site, so there will not be any further processing. That's why it is fundamental to prevent contaminants from entering the packaging containers. Correct hygienic design of these pack-off systems will help food ingredient producers to avoid last minute cross-contamination from other food products – e.g. moisture, dirt, dust, or bacteria – entering the dry particulate materials packaging. Consequently, properly designed and cleaned pack-off systems will also reduce the risk of product spoilage.

Edyta Margas, Global Head of Food Safety (Bühler), member of the EHEDG Working Group 'Dry Materials Handling'



NEWLY

Published Guideline

GL58: Managing Food Safety and Quality through Risk-based Hygienic Equipment and Building Design

In food manufacturing, particularly for ready-to-eat (RTE) products, ensuring food safety and product quality is critical. Hygienic design plays a crucial role in preventing contamination and upholding the highest standards of product safety and quality. Recently, a major food safety incident in the US regarding the production of RTE sausages and contamination by *Listeria monocytogenes* resulted in 59 people being hospitalised and ten deaths. This incident has highlighted the critical importance of food safety management by having the right prerequisites in place. This article will discuss the importance of hygienic equipment design, risk management and the role of EHEDG guidelines in achieving these goals.

Hygienic Equipment and Building Design

The functional hygienic design aspects for equipment and buildings can be summarised as the prevention of microbial growth and the prevention of ingress and accumulation of any unwanted materials or pests. This can be achieved by applying the hygienic design principles and associated practices to ensure segregation, cleanability, drainability, accessibility and the use of correct construction materials. Following these principles will ensure that the equipment and buildings are easily cleaned and allow for inspection and maintenance practices that prevent contamination. Other benefits of hy-

gienic equipment and building design include reduced cleaning time and optimised use of water and chemicals – important aspects for achieving sustainability targets regarding water usage, waste generation and energy consumption.

Importance of Hygienic Design Risk Management

Risk management in the context of hygienic design involves identifying potential sources of contamination and implementing measures to mitigate the identified risks. This process is essential for ensuring that food products are safe for consumption, have the correct quality and meet regulatory standards.

EHEDG has developed a new document that supports decision-making in hygienic equipment and building design. Guideline 58, 'Hygienic Design Risk Management', provides a framework for assessing and managing risks associated with hygienic design. It emphasises the importance of considering all aspects of the production process, including its different life cycles, equipment, utilities, facility layout and the management of people and material including its flows throughout the buildings. The hygienic design risk management (HDRM) model combines hygiene risk assessment and hygiene risk reduction via design, construction, integration and installation, as well as residual hygiene risk mitigation via operational procedures,

e.g. cleaning and maintenance. It is based on generic, iterative risk management models (e.g. ISO31010) and has been developed to support the implementation of standards in the food and equipment manufacturing industry (e.g. EN1672-2, ISO 14159). The methodology is a step-by-step approach, supported by several checklists and examples:

- Establishment of scope, context and criteria
- Hygiene risk identification
- Hygiene risk analysis and evaluation
- Hygiene risk reduction
- Verification, validation, control and monitoring

By following this model, food manufacturers can ensure that their facilities are designed to minimise the risk of contamination and optimise food safety and quality. This proactive approach to risk management helps prevent issues before they arise, ensuring that products meet the highest standards of safety and quality.

Hygienic Equipment Design

The importance of designing the right equipment cannot be overestimated. For instance, selecting the correct materials for product contact surfaces in equipment will prevent chemical cross-contamination and physical contaminants, as well as manage the risk of corrosion. Equipment with smooth, non-porous surfaces is less likely to harbour bacteria, making it easier to clean and sanitise. Design-

ing equipment for cleanability and drainability requires, for example, no crevices, no dead ends and no sharp corners. Additionally, equipment that is easy to disassemble and reassemble allows for thorough cleaning and inspection, further reducing the risk of contamination. The EHEDG organisation has written several guidelines to explain how closed and open, as well as several components of equipment, should be designed to achieve the functional objectives of hygienic design. In addition, several methods have been described on how equipment can be tested and certified for several aspects like cleanliness, bacteria tightness and sterilisability.

Hygienic Building Design

The EHEDG Guideline 44 focuses on factory design and provides comprehensive recommendations for hygienic building design (civil, structural and architectural), plant layout and the management of people, materials and utilities flows, including traffic patterns within the facility. Key aspects of this guideline include zoning, segregation and barrier control. Zoning involves dividing the facility into different areas based on the level of hygiene required. For example, high-risk zones where ready-to-eat products are processed should be separated from low-risk zones where raw materials are handled. Segregation involves physically separating different areas by walls and ceilings to prevent cross-contamination, while barrier control involves using, for example, transition zones or differential pressure, to control the movement of people and materials, including air. Other examples are separate entrances and exits or dedicated pathways for staff and materials, which can help to prevent cross-contamination. Another important aspect is the design of drains. Drains in high-hygiene zones, where ready-to-eat products are handled, should be kept physically segregated from drains in the lower hygiene zones in which raw or uncooked materials are handled. The drains themselves should also be hygienically designed, cleaned and disinfected at regular intervals to manage cross-contamination with, for example, *Listeria*.

HVAC System Parameters for Managing Cross-Contamination

Heating, ventilation and air conditioning (HVAC) systems play a critical role in maintaining air quality and preventing cross-contamination in food manufacturing facilities. A risk-based HVAC design, especially in ready-to-eat facilities, is essential for controlling temperature, humidity and air flow, creating an environment that minimises the risk of contamination. Key parameters to consider in HVAC system design include air filtration, airflow direction and pressure differentials. Air filtration removes contaminants from the air using filters, while airflow direction and pressure differentials help control air movement to prevent the spread of contaminants. For example, maintaining positive air pressure in high-risk areas prevents contaminants from entering, while negative air pressure in low-risk areas contains contaminants. Additionally, using high-efficiency particulate air (HEPA) filters can help remove airborne contaminants, further reducing the risk of contamination.

Air humidity management is another critical factor, particularly in chilled ready-to-eat manufacturing facilities. Condensate and aerosols, which form especially after wet cleaning, are critical cross-contamination vectors. A well-designed HVAC system that is able to manage these conditions by air dehumidification and increased air changes per hour is essential for ensuring a safe production environment. By creating dry zones free of aerosols after wet cleaning, manufacturers can further reduce cross-contamination, ensuring that their products meet the highest standards of safety and quality.

Cleaning and Disinfection Procedures

In ready-to-eat food manufacturing facilities, implementing and adhering to a detailed cleaning schedule ensures that all areas and equipment are cleaned and disinfected regularly. The correct use of cleaning and disinfecting agents, and following the manufacturer's instructions for dilution and contact time, are essential for effective sanitation. Having the right cleaning tools that are well-de-

signed and maintained further enhances the cleaning effect. Regular training for staff on hygiene practices and cleaning procedures helps maintain high standards of cleanliness. Ultimately, these procedures need to be validated and monitored for effectiveness, for which the EHEDG organisation has also developed various guidelines.

In conclusion, hygienic equipment and building design is essential for ensuring food safety and quality in ready-to-eat product manufacturing. By selecting the right equipment, implementing effective risk management practices and following guidelines such as those provided by EHEDG, manufacturers can create facilities that minimise the risk of contamination and optimise food safety and quality. By taking a proactive approach to hygienic design and associated procedures for cleaning and disinfection, manufacturers can ensure that their products meet the highest standards of safety and quality, protecting consumers and enhancing their reputation in the market.

Patrick C. Wouters PhD, Global Hygienic Design Lead, (Cargill), Chair of the EHEDG Working Group 'Hygienic Design Risk Management' and EHEDG Vice-President (2010-2024)



Maria Paula Marques, Chemical Engineer, Consultant

Thank you, Rafa Soro

Rafa, you've held multiple leadership roles within EHEDG: Chair of Regional Section Spain, Liaison with Spanish-speaking countries, Authorised Trainer, Authorised Evaluation Officer and, most recently, Chair of the Sub-Committee Working Groups. What initially inspired you to get involved with our organisation, and what has kept you engaged over the years?

It has been twenty years of very intense collaboration with EHEDG, but the truth is that the initial decision to join the organisation was circumstantial. When I started working at Ainia in 2003, the decision had already been taken there to make a strong commitment to hygienic design and EHEDG had been identified as the reference organisation to rely on. So the only thing I did was to follow in the footsteps of Irene Llorca, who by then was already part of the Working Group 'Training and Education', led at that time by Roland Cocker. From the very first moment, I realised that being part of EHEDG was an unbeatable opportunity not only to grow professionally but also to join a global network in which to share knowledge, but also, very importantly, personal experiences. Over time, I have taken on new challenges within the foundation, always with great enthusiasm and eager to contribute my small grain of sand. I would like to take this opportunity to thank EHEDG for the trust shown and Ainia for giving me total freedom to dedicate time to EHEDG (I must particularly thank Andrés Pascual for the latter). It has been very easy to find the motivation to contribute to EHEDG because the effort-reward balance has always been positive. Now, due to work circumstances, I have had to leave the organisation, but the motivation is still there, so I am convinced that it has not been a 'goodbye' but a 'see you later'.

What have been your biggest challenges and your most significant contributions?

In my first years at EHEDG, my main challenge was to acquire the knowledge in hygienic design that would allow me to feel comfortable and useful in an organisation like EHEDG. Once I had some expertise in the subject (which is never enough), the main difficulty, and I think it is something quite common in the network, is to find the time to carry out all the activities that over time I took on in the



organisation. EHEDG is a particular organisation in the sense that its activity is based on the work that many people do on a voluntary basis. This has the advantage that the person who dedicates part of his or her time to an organisation on a voluntary basis is usually very committed to it, and that is something that any company would want from its people. But days have 24 hours and this also sometimes becomes a problem when the projects we embark on at EHEDG do not advance at the pace we would like. Thus, one of my last challenges, as Chair of the Sub-Committee Working Groups, was to establish mechanisms that would help the teams to be more efficient so that, with the same effort, we could achieve better results. As for my most significant contributions, the truth is that I can't think of anything very striking. Those who know me know that I'm a long-distance runner. That has been my relationship with EHEDG: the sum of many small contributions in many areas of the organisation over many years.

What will you miss most about being an active member of the EHEDG network?

People. EHEDG is a global organisation with a common language – hygienic design – but with multiple cultures represented. So you can spend a day discussing highly technical issues with colleagues from all over the world, all broadcasting on the same frequency, so to speak. But after those days of work, there are always the moments of socialising, where everyone is who they are, what they are like and where they are from. All very varied. For me, it has been a privilege to have been able to share those more relaxed and personal moments with colleagues from all over the world, from Taiwan to LATAM, from all corners of Europe to New Zealand, to give some examples.

What advice would you offer to those who are looking to make an impact within the sphere of hygienic design?

I believe that anyone who wants to contribute and learn about hygienic design will find EHEDG the ideal place to do so. I would recommend to all those who belong to EHEDG member companies to get involved in the organisation, to join as much as they

can. Give it a try. You will most probably like it and will want to get involved in more and more aspects of this organisation, because it is a very enriching activity and, very importantly, you will join a network of people interested and knowledgeable in hygienic design and, not least, you will make friends!!!

Rafa Soro, former Chair of EHEDG Regional Section Spain, EHEDG Liaison with Spanish-speaking countries, Chair of the Sub-Committee Working Groups, Authorised Trainer and Authorised Evaluation Officer



Acknowledgement of Tracy Schonrock's Remarkable Contribution to EHEDG



EHEDG proudly recognised the exceptional dedication and longstanding contributions of Tracy Schonrock, who has been awarded the prestigious EHEDG Fellowship Award for his work in advancing hygienic engineering and design.

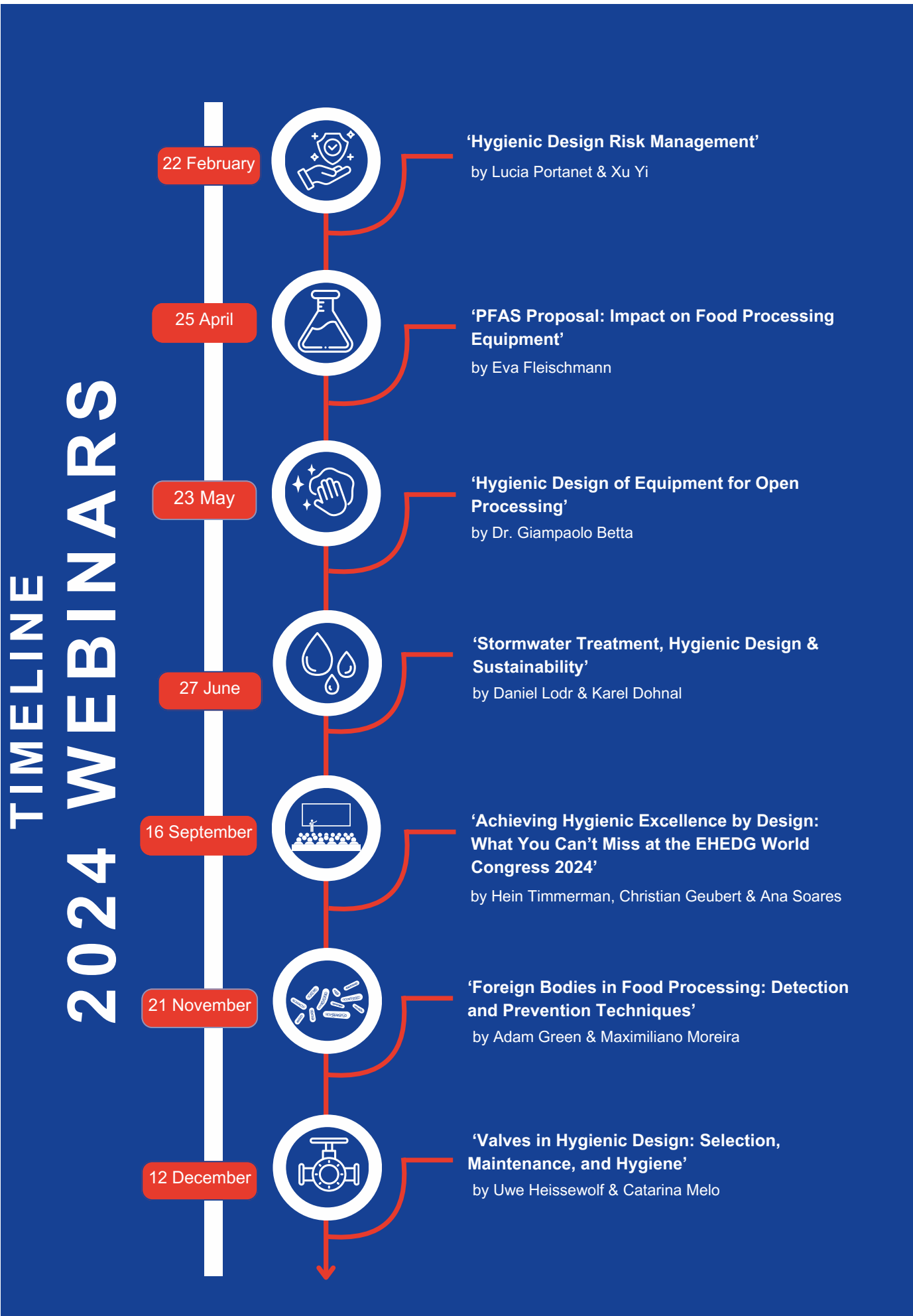
Tracy's career in sanitary standards began with a robust foundation at the U.S. Department of Agriculture, where he dedicated over three decades to improving food safety through rigorous equipment inspection and dairy plant grading programmes. However, his significant contributions to EHEDG started in 2002, when he became Chair of the 3-A Sanitary Standards Steering Committee and took on the critical role of serving as a liaison between the two organisations.

Tracy's involvement with EHEDG deepened in 2009, when he was invited by then-President

Knuth Lorenzen to join the EHEDG Executive Committee. His leadership has since been pivotal in shaping EHEDG's operational framework. As Co-Chair of the EHEDG Sub-Committee Working Groups, Tracy focused on the drafting of Standard Coordination Procedures (SCPs), ensuring consistency and clarity in EHEDG's working methods.

Tracy's meticulous work and collaborative approach have left a lasting impact on EHEDG's guidelines and processes. With this Fellowship Award, EHEDG expresses deep gratitude for Tracy's tireless efforts, leadership and unwavering commitment to improving hygienic engineering and design practices worldwide.

Thank you, Tracy, for your remarkable service and dedication!



Peet, could you briefly introduce yourself and your background?

My name is Peet Grobler. I've been in the food and beverage industry for over 38 years, providing hygiene solutions, technical support and application advice to various international and national food & beverage operations. This includes chemical usage, training, validations, troubleshooting and more.

Over the years, I've used various skills to help customers manage risks in their operations and optimise processes to protect their brands - whether in processed food, beverage or dairy industries.

What motivated you to become an EHEDG Authorised Trainer?

In South Africa, training requires a lot of credibility. To ensure this, our Regional Section had our programmes certified by the University of Pretoria. We also needed competent trainers to conduct the training, which led to my certification as an EHEDG Authorised Trainer.

My extensive background in the food and beverage industry made it relatively straightforward for me to achieve this certification. It adds credibility to what we offer the industry, and certification is critical. When we started the programme, we debated whether to bring in someone from academia to conduct the training. However, the EHEDG certification process made it clear that industry expertise was essential, which helped guide our approach.

Becoming a trainer also gives me the opportunity to support young food scientists, quality assurance staff and engineers through knowledge transfer to ensure that the work we've done over many years within the food & beverage industry continues to make a positive impact.

In your opinion, what are the most critical aspects of ensuring food safety in commercial food production?

When you consider the HACCP concept, the primary goal is to provide safe food to consumers. Food safety is non-negotiable, especially for vulnerable populations, such as those with suppressed immune systems, the elderly or individuals with other health conditions. The industry - and suppliers to the industry - play an essential role in ensuring that the food being produced is safe for consumption.

What changes do you foresee in the field of food safety?

Globally, there's a growing focus on recalls, and with advancements in communication, incidents are now widely publicised. This means food safety will become even more important in the future.

One thing to highlight is the public's growing awareness of food safety. In the past, people might not have recognised food poisoning or its impact, but now there's much more information available. This creates additional pressure on companies to maintain high food safety standards.

Recalls can be extremely costly, so it's better to approach food safety proactively.

For me, food safety is closely linked to brand protection. During our training, we always stress that it takes years to build a brand, but just one bad incident can destroy it almost instantly.

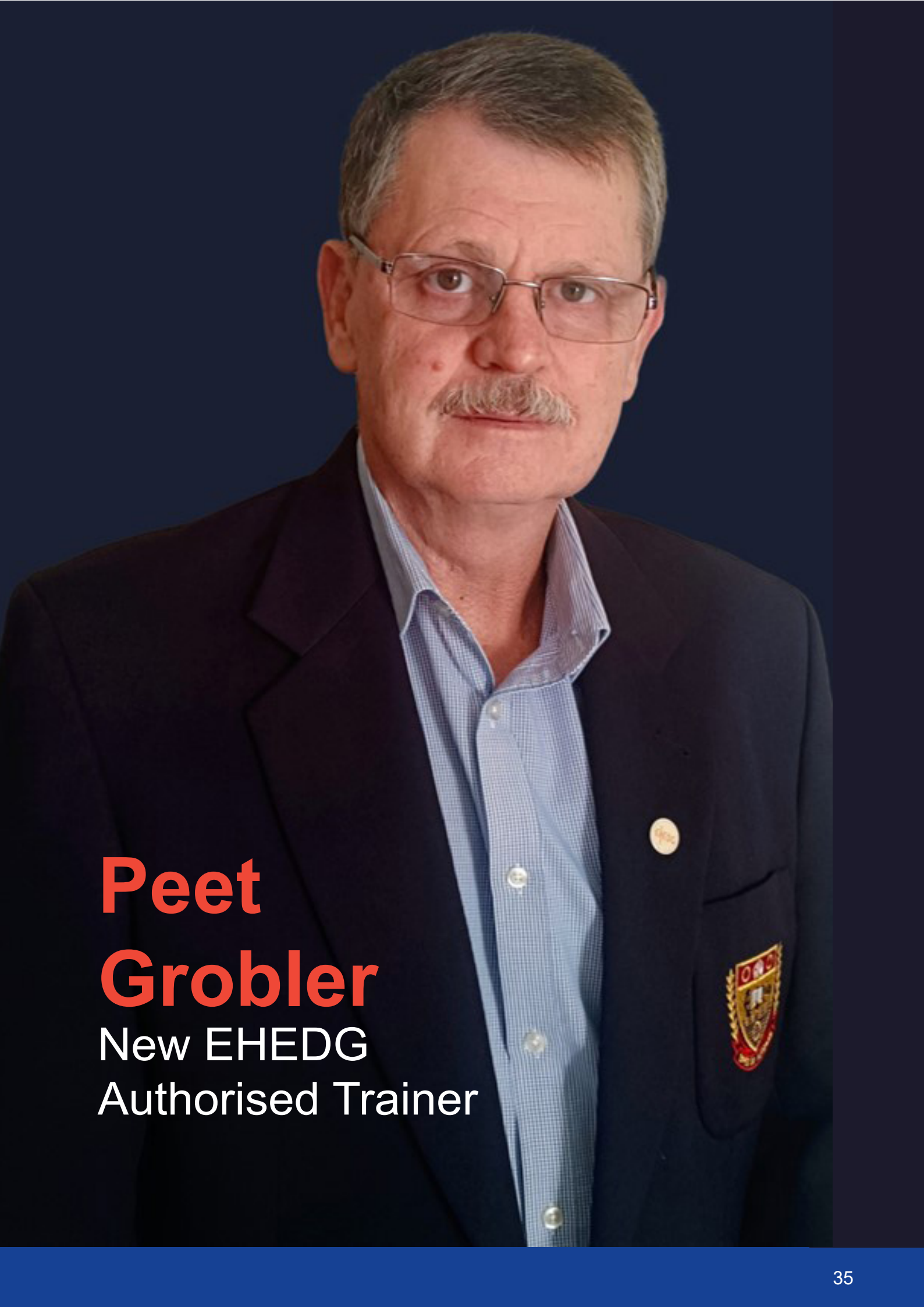
Our role is to support all companies - international, national and local - through awareness, education and troubleshooting and by providing solutions to support them in their endeavours to produce food that is safe for consumption. Hygienic design is a key focus, as it helps mitigate risks and supports continuous improvement in food safety practices.

What are the current developments at EHEDG South Africa?

From a regional perspective, EHEDG South Africa is becoming well-established. We're receiving increasing interest from the industry, both from suppliers and food producers and processors, wanting to learn more about our activities and join us in our efforts to share the news on the importance of hygienic design.

Hygienic design has been somewhat neglected in the past, but it's an area where we can truly add value to the industry's overall food safety efforts.

Peet Grobler, Group Head Hygiene & Food Safety (OFT Group), Sales Director Sentratek, EHEDG Authorised Trainer and Chair of the EHEDG Regional Section South Africa

A portrait of Peet Grobler, a middle-aged man with short grey hair, wearing glasses and a dark blue blazer over a light blue button-down shirt. He is looking directly at the camera with a slight smile. The background is a dark, textured blue.

**Peet
Grobler**
New EHEDG
Authorised Trainer

Olivier Couraud

New EHEDG Authorised Trainer



Can you briefly introduce yourself and your background?

My name is Olivier Couraud; I come from France. I've been working in the food industry for over 24 years, during which I've cultivated a deep passion for food safety and hygienic design. I began my career in quality departments, where I spent five years gaining a solid foundation in food quality and safety. From there, I transitioned into roles as a Food Safety Auditor and Consultant, and for 18 years I worked as a Hygienic Design Expert at a cleaning company.

Currently, I am with Commercial Food Sanitation, a consulting company dedicated to supporting the food industry. Over the course of my career, I've had the privilege of working with more than 150 food production plants across various sectors, as well as packaging suppliers, helping them optimise their processes to meet rigorous food safety standards.

I hold a Master's Degree in agri-food engineering, which has been instrumental in shaping my technical expertise. Additionally, I hold a patent for a cleaning method designed specifically for allergen removal, which reflects my commitment to innovation in food safety and sanitation practices.

What motivated you to become an EHEDG Authorised Trainer?

I have been actively involved with EHEDG since 2009, contributing to various Working Groups and serving as an administrator for Regional Section France. One of my key roles is chairing a Working Group focused on meat equipment, where we're currently developing a guideline dedicated to hygienic design in red meat processing, from slaughtering to further processing.

Over the years, I've seen first-hand the importance of spreading knowledge about hygienic design principles to improve food safety across the industry. Becoming an EHEDG Authorised Trainer felt like a natural next step for me. It allows me to deepen my engagement with the association, share my expertise and play an active role in helping the organisation grow. Ultimately, my goal is to empower others in the food industry with the knowledge and tools they need to implement hygienic design effectively.

In your opinion, what are the most critical aspects of ensuring food safety in commercial food production?

Ensuring food safety in commercial food production is multifaceted, but one critical aspect is the management of the people working in food factories. Food safety isn't

just about equipment and processes; it requires a strong food safety culture where everyone understands their role and adheres to best practices. Over the years, food producers have significantly improved their knowledge and practices, especially around hygienic design, but it's equally important that this knowledge translates into consistent behaviour on the factory floor.

Another key factor is the role of hygienic design itself. Legacy equipment with poor design can often be a source of contamination, posing serious challenges to maintaining safety standards. However, I'm encouraged to see a growing trend of collaboration between equipment suppliers and food manufacturers. They're working more closely than ever to develop hygienic design solutions that address these risks, demonstrating a proactive approach to enhancing food safety. This combination of a strong food safety culture and continual improvements in hygienic design is, in my opinion, essential for the future of safe food production.

What changes do you foresee in the field of food safety?

The field of food safety is evolving rapidly, with technology playing a key role in shaping its future. I foresee an increase in both the number and accuracy of controls. Advanced detection technologies will enable us to identify contamination issues much faster and at much lower levels than ever before. While this is a significant step forward, it also presents a challenge: mitigating risks as quickly as these technologies evolve. Rapid detection is only as effective as the ability to respond and address potential issues in real time.

Another challenge lies in cleaning and disinfection, particularly as sustainability becomes a greater priority. We're likely to see stricter regulations on chemical use, with fewer chemical disinfectants allowed. While this shift is positive from an environmental perspective, it may create difficulties in maintaining microbial cleanliness standards. Balancing the need for sustainability with the stringent hygiene requirements of food production will be a critical focus in the coming years.

Overall, the future of food safety will demand agility – not just in adopting new technologies but also in adapting practices to meet evolving sustainability goals while ensuring robust protection against contamination.

Olivier Couraud, Food Safety Specialist, (CFS - Commercial Food Sanitation L.L.C.), EHEDG Authorised Trainer and Chair of the EHEDG 'Meat Processing' Working Group

Marisa Padula

New EHEDG Authorised Trainer

Can you briefly introduce yourself and your background?

I am a Food Engineer with a Master's Degree and PhD in Food Science. I am a Senior Scientific Researcher at the Food Technology Institute - Ital, which belongs to the Department of Agriculture and Supply of the Government of the State of São Paulo. I work with food contact materials (equipment and packaging) and food safety. I am a specialist in national and international legislation for food contact materials. Since 2005, I have been part of the Workgroup of the Technical Food Committee (CTA) of ANVISA (Brazilian Health Regulatory Agency) and since 1992, I have been an official member of the Mercosur Subcommittee on Food Packaging Sub-Workgroup III - Technical Standards - MERCOSUR. I am also Professor of the Master Programme in Food Science and Technology of Ital.

What motivated you to become an EHEDG Authorised Trainer?

In October 2015, Ital signed the partnership with EHEDG. At the same time, I accepted the position as chair of Regional Brazil and the task of disseminating the concepts of hygienic design and EHEDG in Brazil. After several years of organising successful advanced courses at Ital (we are in the ninth edition - March 25), I felt that I could qualify to be an instructor of the course. I received final approval in October 2023. It is a course with a lot of information and it requires constant study.

In your opinion, what are the most critical aspects of ensuring food safety in commercial food production?

In fact, the more I study about food safety, the more critical points come to mind, considering all the innovations that are being developed by the food industry, such as plant-based food, cultivated meat and non-thermal processing.

There is no doubt that equipment projects, efficient cleaning, processing area construction, equipment construction and the quality of materials make the difference in safe food processing. However, we must not forget that the quality of raw materials, packaging, handling and transportation of the finished product and how the food will be consumed (ready to eat, for example) are also fundamental to food safety.

What changes do you foresee in the field of food safety?

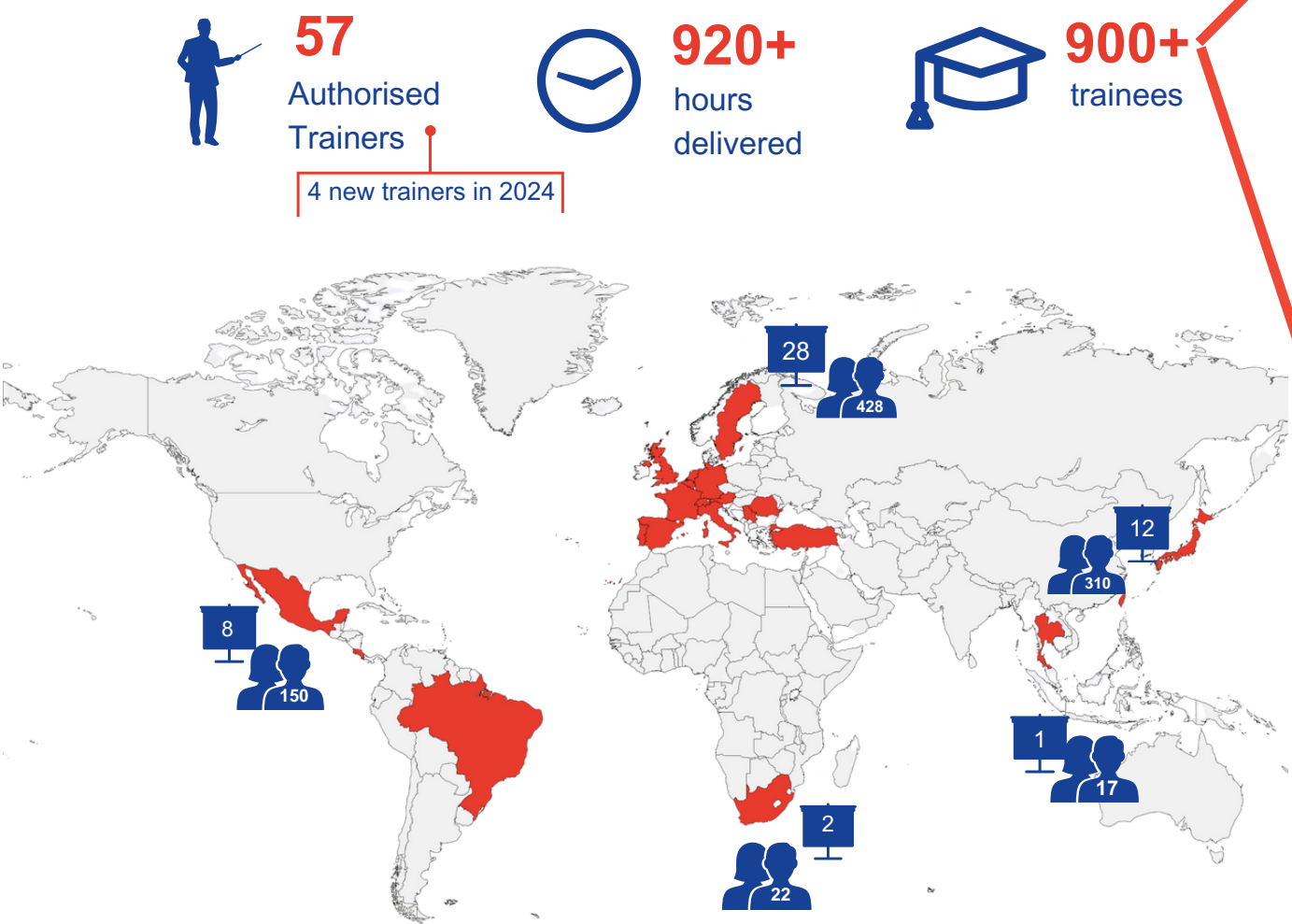
I think that, nowadays, the changes are mainly related to sustainability and the challenge of making food processing safe and without wasting food, water and energy, for example. Another challenge is the use of artificial intelligence to improve the food industry.

Marisa Padula, Researcher (ITAL - Institute of Technology), Chair of EHEDG Regional Section Brazil, EHEDG Authorised Trainer



Training & Education 2024

OUR TRAININGS AND ATTENDANTS



OUR E-LEARNING



*E-learning catalogue is a pilot that started July 2023 and is currently available for members and on request; contact us at office@ehedg.org.

Trainee testimonial

Could you briefly introduce yourself and your background?

I'm Kelly Mulholland; I'm the Technical Manager of Safety & Quality at Foundation FSSC. I'm responsible for the FSSC 22000 Scheme, a scheme for the auditing and certification of Food Safety Management Systems, in place to ensure the provision of safe food, feed and packaging in the consumer goods industry. In relation to myself, it is my personal drive to make a difference in food safety globally and to contribute to Foundation FSSC's impact and support in the food sector and the supply chain we work with.

My background is mostly in food safety, specifically. Before joining Foundation FSSC, I was a Technical and Compliance Manager for food (Global) of BSI, a certification body. Prior to this, I was a Lead Auditor for the FSSC 22000 Scheme, amongst other GFSI schemes and standards. I also worked in the food industry as a Technical or Quality Assurance Manager for a variety of companies.

What were your three key take-aways from the training?

1. Hygienic design and engineering play a vital role in ensuring the production of safe food. They are also a legal requirement in many countries. If hygienic design is not implemented correctly, it has an adverse effect on people consuming the food. It can also impact the brand integrity of the manufacturers.
2. Without proper training and understanding, organisations are not able to apply the requirements of hygienic design effectively. It is a very complex subject that requires a high level of detailed knowledge.
3. Understanding hygienic design criteria and principles sets out the basic foundations in implementing the hygienic design of equipment. This needs to be understood by the food, feed and packaging organisations operating in the market.

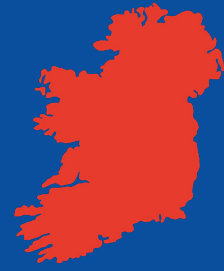
How are you applying/how do you intend to apply what you have learnt in your daily job?

When we published Version 6 of the FSSC 22000 Scheme, we included an additional requirement on equipment management, to ensure that hygienic design is taken into account right from the purchasing stage of machinery. And to ensure that the risks associated with a new item of equipment or with changes to an existing one have been considered within the organisation's Food Safety Management System. The EHEDG Advanced Course on Hygienic Engineering and Design equipped us with the knowledge that we, as the Scheme owner, need to manage this additional requirement effectively. And to undertake sufficient calibration and harmonisation of our auditors with regard to this topic.



Kelly Mulholland, Technical Manager of Safety & Quality, (Foundation FSSC)

Regional Section Ireland



Niamh, congratulations on the establishment of the EHEDG Regional Section Ireland! Could you please briefly introduce yourself and your background?

My name is Niamh Burke; I'm the Dairy Processing Technical Lead at the Dairy Processing Technology Centre (DPTC), based at the University of Limerick. DPTC is a world-class collaborative research and technology centre. We are key enablers of innovation, addressing common sector challenges and driving value creation, competitiveness and sustainability in the dairy processing sector.

Regarding my background, I studied Food Sciences and Health and earned a PhD in Dairy Engineering. My entire career has revolved around this sector, focusing on processing capabilities and finished products, as well as evaluating the hygienic design of dairy processes. I've also examined environmental influences on product quality and process optimisation. Additionally, I have worked extensively on sustainable dairy processing aimed at reducing carbon emissions and energy consumption.

What does this milestone mean to you personally, and how do you believe it will impact the food safety landscape in Ireland?

I guess it is a significant milestone, both personally and professionally. Personally, it is a combination of efforts towards advancing food safety and engineering standards here in Ireland. A commitment to aligning with global best practices, fulfilling something that directly impacts the wellbeing of consumers, as well as the success of businesses. From the perspective of developing and establishing the Regional Section, it's essential for Irish organisations to have access to localised training and a dependable team that can foster commitment within the community.

You are the Technical Lead at the Dairy Processing Technology Centre of Limerick. What recent advancements or trends in hygienic design have you observed in the dairy processing sector?

There have been a lot of advancements in hygienic design in the dairy sector. It seems to be moving towards greater automation, enhanced material sciences, modularity and sustainability. An example could be the optimisation of automation of cleaning processes, using digital sensors and IoT technologies to allow for predictive maintenance of food plants. There has also been significant recent innovation in dairy processing equipment aimed at eliminating dead zones where bacteria can thrive. This includes designing smooth transitions in and around the corners of pipes and valves, to ensure complete cleaning coverage. Additionally, advancements from a sustainability perspective have focused on optimising water and energy usage. These innovations in hygienic design not only enhance operational efficiency but also significantly reduce water and energy consumption, particularly during cleaning processes.

"... it is a combination of efforts towards advancing food safety and engineering standards here in Ireland. A commitment to aligning with global best practices, fulfilling something that directly impacts the wellbeing of consumers, as well as the success of businesses."



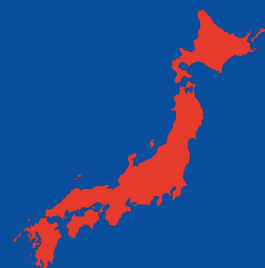
Can you share any success stories or examples of effective hygienic design implementation in Irish dairy processing facilities?

We are actively engaged in ongoing projects within the DPTC that examine how seasonal variations in products influence not only cleaning capabilities but also processing strategies, with a strong emphasis on equipment design and efficiency. A significant amount of research is dedicated to process automation, particularly regarding the design of various processing areas, such as pump efficiency and flow dynamics. One notable case study I participated in focused on optimising cleaning cycles. Through our research, an industry partner was able to implement corrective action procedures that effectively prevented product backflow at the CIP station, resulting in substantial savings on both costs and chemical replenishment. Our industry partners have made significant investments in hygienic design, and we play a crucial role in mitigating the risks associated with these investments through our research. As a result, our impact will only continue to grow with the development of the Regional Section.



Dr. Niamh Burke, Dairy Processing Technical Lead, (Dairy Processing Technology Centre – DPTC), Chair of the EHEDG Regional Section Ireland

Regional Section Japan



Could you please briefly introduce yourself and your background?

Masahiro: My name is Masahiro Watanabe. I majored in International Relations at university and spent my second year studying abroad at Central Washington University in the United States. After returning to Japan, I joined Watanabe Foodmach Co., a manufacturer of meat processing equipment, including slicers, mincers and vacuum packaging machines. Our company handles everything from development and design to manufacturing, sales and maintenance. In addition to operations in Japan, we have a subsidiary in China and distribution agreements in 22 countries, driving global business expansion. Since joining, I have worked in sales, and in 2018 I became the representative director of the Shanghai company, a role I continue to hold today.

In June of this year, I took over the chairmanship of EHEDG Japan from Takashi Hayashi. Although I have experience studying abroad, time has taken its toll and my English skills have completely rusted away. However, I would like to do my best to fulfil my responsibilities as with the Regional Section, while enjoying exchanges with everyone and being true to myself. I look forward to a long and friendly relationship with you. P.S. I love golf. If you like golf, let's play a round together sometime.

Hiro: My name is Hiroyuki Omura. Everyone calls me Hiro. I earned a Ph.D. in Safety and Hygiene Engineering and I currently serve as the technical division manager at FOOMA. My work includes contributing to the development of both Japanese Industrial Standards (JIS) for food processing machinery and relevant ISO standards. I am actively involved as an expert in ISO/TC-199 WG2, a domestic committee member for TC-199 WG5 and an expert in ISO/TC326, among other roles.

What are the current trends in food safety and hygienic design that you observe in Japan?

In the past, the appropriateness of hygienic design was typically evaluated based on the structure devised by the company or responsible individual. However, it appears that more companies are now gradually assessing hygienic design in line with ISO 14159, relevant JIS standards and similar guidelines.

What recent technological innovations in food machinery have you seen at FOOMA 2024 that impact hygienic design and food safety?

It seems that many new products featuring advanced automation were showcased, enabling operation with fewer workers. Among the highlights were machines equipped with multi-axis robots for bone removal and automated systems for arranging food on trays. These cutting-edge automation technologies not only minimise the need for workers – who are a primary source of potential food contamination – but also allow food production to take place in lower-temperature environments, further enhancing food safety and quality control.

How does EHEDG collaborate with other organisations or industry stakeholders in Japan to promote food safety and hygienic design?

EHEDG Japan works in close collaboration with FOOMA and the Japan Food Research Laboratories (JFRL) to actively promote the principles of Hygienic Design. In recent years, the organisation has expanded its efforts by conducting regular joint seminars with the Japan Society of Mechanical Engineers (JSME), fostering knowledge exchange and industry engagement. Additionally, EHEDG Japan has been engaging in discussions with the Ministry of Agriculture, Forestry and Fisheries to share insights and align the hygienic design standards for food machinery, aiming to improve safety and compliance within the sector.



Masahiro Watanabe, President (Watanabe Foodmach), Chair of the EHEDG Regional Section Japan
Hiroyuki Omura, Technical Division (The Japan Food Machinery Manufacturer's Association - FOOMA), Treasurer of the EHEDG Regional Section Japan

Regional Section Mexico



Could you introduce yourself and tell us about your role at EHEDG?

My name is Marco Antonio León Félix, and I am the Chairman of the Board of SOMEICCA, the institution representing EHEDG in Mexico. My role focuses on promoting and disseminating hygienic design principles within the food industry through workshops, courses and conferences. We place particular emphasis on the JI and JII documents of the Global Food Safety Initiative (GFSI), which are essential for food safety. Additionally, we collaborate with equipment manufacturers and contractors involved in the design, construction and maintenance of food processing facilities.

This year, EHEDG Mexico organised the EHEDG FoodFest Mexico: Why do you consider events like this important for the regional section in Mexico?

The EHEDG FoodFest Mexico is designed to connect hygienic design service providers with professionals in the food industry. The event brings together experts in various fields, including cleaning chemicals, drainage systems, air handling and production line integration. It attracts representatives from Mexico's leading food and beverage sectors, including dairy, meat, fruit and vegetable processing, canned and frozen foods. Special attention has also been given to the chocolate industry due to recent challenges related to salmonella contamination. The event features specialised conferences on key hygienic design topics such as welding, risk assessment and air handling. Additionally, companies showcase their solutions in an exhibition space. The event concluded with a roundtable discussion, where industry leaders and representatives from key organisations, such as the Tipo Inspección Federal, a Mexican certification body for the meat sector, shared their experiences, challenges and needs regarding hygienic design.

This is the most important event for the Regional Section of Mexico, as it facilitates communication and feedback between service providers and users in the food industry. Through this space, the main challenges and opportunities within the sector are identified, allowing for continuous improvement in hygienic design. Currently, we are promoting an extra benefit of hygienic design: sustainability. This issue is especially relevant in Mexico, where approximately 70% of the territory is semi-desert or desert, resulting in a significant water crisis. Optimising water usage in the food and beverage industry has a crucial impact in this context.

What objective would you like to achieve with the Regional Section of Mexico in the coming years?

Our main objective is to strengthen the relationship between users, service providers and national organisations related to food legislation. We aim to integrate them into a dynamic that raises the standards of hygienic design in food processing plants in Mexico. A key focus is to bring this knowledge to small and medium-sized industries, which represent approximately 80% of the food sector in the country. Reaching this segment would allow us to make a significant impact on the safety and efficiency of their processes. We also aim to promote the inclusion of hygienic design in the curricula of universities and technical institutes. Currently, this topic is often addressed only superficially in programmes such as food engineering, biochemical engineering, agro-industrial engineering and food chemistry. Our goal is for it to be given the importance it deserves, even as a full-semester course.

What other events are planned for the Regional Section of Mexico?

In 2025, EHEDG Mexico has an active agenda to continue promoting hygienic design. In March, we will be participating in Expo Carnes y Lácteos in Monterrey and in Expopack, the packaging and processing fair, where we will be organising workshops and conferences. We will also be returning to FoodTech, the most important fair for the food industry in October, with a possible alliance with FSSC 22000.

Internationally, we have received invitations from fairs in Colombia and Costa Rica, showing that EHEDG is gaining increasing relevance in Latin America. We as the Regional Section Mexico are open to lend a hand and give initial support in these regions. In education, we will be offering at least six talks at universities and participate in the EHEDG PanAm Congress 2025 in April. Additionally, we will be hosting a series of webinars to continue promoting hygienic design. Finally, we are receiving requests for Advanced Hygienic Design courses from other Latin American countries such as Costa Rica and Colombia. These initiatives aim to strengthen knowledge and the application of hygienic design within the industry.

Is there any message you would like to convey to current and potential members in the region?

I would like to emphasise the tangible benefits of applying a culture of hygienic design within the industry. Beyond preventing product recalls and protecting brand reputation, the real impact lies in the continuous improvement of everyday processes. Companies that adopt hygienic design manage their processes with greater awareness and efficiency, which translates into better productivity, resource savings and a reduced environmental impact. All of these factors ultimately contribute to food safety and the sustainability of the industry.

The message for the regional section is clear: we must continue working with determination towards this goal, as the benefits are real and significant for the entire value chain.

Marco Antonio Leon Felix, Chairman (SOMEICCA), General Director (Lefix), EHEDG Authorised Trainer and Chair of the EHEDG Regional Section Mexico



Regional Section New Zealand

Could you please briefly introduce yourselves and your background?

Shane: My name is Shane Mason, and I have been in the food industry for 45 years. My career began at the Meat Research Institute, where I met David and worked on R&D projects, primarily focusing on mechanical deboning of animal carcasses. I then transitioned to a stainless steel fabrication company in Hamilton, specialising in building vessels and tanks for the dairy, brewery and broader food sectors. During my 10 years there, I took on various R&D and technical sales roles.

Later, I joined Keystone that then became Tyco (now called Pentair), an industrial and hygienic valve company. I have currently served as R&D and Engineering Manager for some 32 years. My key responsibility is overseeing the development of the company's valve portfolio. I manage the engineering side of the business in New Zealand while collaborating closely with our team in Germany. In 2019, I participated in the first EHEDG training led by Andy Timperley, and today, I am an EHEDG Authorised Trainer in this region.

David: I am David Lowry. I began my career as a microbiologist, focusing on pathogens in the meat industry, with early work on *Listeria*. Over my 45 years in the field, I transitioned into the commercial side, spending over two decades with Ecolab in various global roles. I served as a Technical Manager here in New Zealand, spent three years in their United States headquarters with global R&D responsibilities and established a Food Safety Division for the company in China. Through my work, I recognised the crucial role of hygienic design in addressing microbiological challenges in the industry. My research in this area led me to EHEDG, which I joined as a member. During this time, I connected with Andrés Pascual [Chair of the Sub-Committee Regional Development], who encouraged us to establish a Regional Section, which we did in late 2018. Coinciding with that period, I retired and launched my own consultancy, specialising in microbiological troubleshooting and hygienic

design across multiple sectors of the food industry. Together with Shane, we bring a strong combination of expertise to promote these important concepts in this part of the world.

How would you describe the current state of hygienic design practices in New Zealand's food industry?

David: New Zealand's economy is heavily reliant on the food industry, with the dairy and meat sectors at the forefront. The country's strong reputation for food quality, along with its agricultural and farming methods, naturally requires a solid understanding of food safety and best practices. While New Zealand is reasonably well-equipped in terms of hygienic design knowledge, I often point out that the industry continues to repeat the same costly but avoidable failings in this area. This led me to believe that establishing a Regional Section could help bridge these gaps through training. As I often say, "You don't know what you don't know." EHEDG offers an invaluable source of education, and there's significant potential for its growth here.

What are some of the unique challenges New Zealand faces when it comes to implementing effective hygienic design in food production facilities?

Shane: Some of the topics we cover during the courses are real eye-openers for the attendants. For instance, harbourage sites – areas and equipment where bacteria can grow and thrive. While general hygiene practices are solid, this is often due to higher temperatures or extended cleaning times, rather than using equipment designed with hygienic principles from the start.

David: One of the unique challenges is that over 80% of food manufacturers in New Zealand are small to medium enterprises, with fewer than 15 staff members. Despite their small scale, these businesses generate significant revenue and must balance efficiency with profitability. On the other hand, there are large organisations like

Fonterra, New Zealand's leading dairy company with multiple large processing sites, processing over 1.48 billion kg of milk solids last season. Some of these factories operate up to 14 different processing lines on a single site. The meat industry is the second largest export sector, with multiple plants processing mainly lamb and beef for global export.

The growth potential surely lies with food producers, who can demand design specifications and use GFSI scopes to ensure equipment manufacturers supply hygienically designed components. We're also exploring EHEDG opportunities for co-operation with Australia, given the strong economic trade agreement between the two countries. This partnership could unlock significant potential.

Can you tell us more about the inspiration behind the Hygienic Design Interactive Educational Display (IED)? What led to its creation?

Shane: The inspiration for the Hygienic Design Interactive Educational Display (IED) came from our experience at trade shows, where we realised we needed something more dynamic and interactive than just standing by with brochures. We wanted a display that would attract people and engage them, allowing them to interact with the concepts of hygienic design firsthand. The IED is more than just a static display – it's something you can touch, feel and see in action. For example, we reached out to Combifit, a fitting manufacturer that offers EHEDG-certified variations, and they provided free samples to incorporate into the display. It was crucial to showcase common fittings and highlight differences in design. One of the key points we demonstrate is how some gaskets used in couplings are not hygienically designed. Even standard gaskets readily available in the market may not meet all the criteria for a good, cleanable fitting. By placing two variations side by side, we can clearly show these differences.

The IED also covers general fabrication techniques, including smooth surfaces that don't trap product, and examples of dead legs, explaining why it's important to minimise their length. We feature six different weld types, allowing people to see inside the pipes and observe the varying levels of oxygen in the welds. This helps illustrate that, while pieces of equipment might look the same from the outside, the internal structure is what truly matters. We also included surface finishes, giving people a chance to compare smoother surfaces with rougher ones, and explaining that a 0.8 µm Ra is ideal. Overall, the IED combines all key design features in a fun and interactive way. It's not only used at trade shows but also in EHEDG Advanced Training Courses here in New Zealand.



What advice would you give to New Zealand food producers who are looking to enhance their food safety protocols through better hygienic design?

Shane, David: Prioritise knowledge sharing through training sessions and guidelines. Much of the design work is carried out overseas by large manufacturers, which can lead to limited local expertise. It's crucial to bridge these gaps and emphasise risk assessment topics, particularly those outlined in EHEDG Guideline 58 "Hygienic Design Risk Management". There's also a significant opportunity to engage with universities early in students' trajectories. By interacting with undergraduates and recent graduates through webinars, we can make them aware of the available tools, guidelines and resources from regulatory bodies and where to access them. Giving guest lectures to postgraduate students before they enter the industry can further raise awareness about the importance of hygienic design in food safety.

David Lowry, Owner (Lowry Food Consulting), Chair of the EHEDG Regional Section New Zealand and EHEDG Authorised Trainer

Shane Mason, Engineering/R&D Manager, (Pentair New Zealand), member of the EHEDG Regional Section New Zealand and EHEDG Authorised Trainer

Regional Section Portugal



Could you please briefly introduce yourself and your background?

I'm Margarida Vieira, a Professor Coordinator with a confirmed Polytechnical Career. I hold a PhD and MSc in Food Engineering and Biotechnology, as well as a degree in Chemical Engineering. From 2020 until July of this year, I served as President of the ISEKI-Food Association, and I'm currently the deputy editor-in-chief of the ISEKI Journal of Food Studies.

With over thirty years of experience teaching Food Engineering at the University of Algarve's High Institute of Engineering (UAIG), my areas of expertise include Food Packaging, Food Thermal Processing and the Hygienic Design of Equipment and Plant Facilities. From 2019 to 2021, I was the President of the Scientific Board of ISE/UAIG.

My research focuses on emerging processes to replace or mitigate traditional thermal food preservation methods, as well as the development of new food products and packaging materials derived from biological polymers. I've also worked on creating and characterising active food packaging with antioxidant and antimicrobial compounds on micro and nano-scale. I've published numerous articles and book chapters detailing my research findings.

Since 2020, I have also been the representative for the EHEDG Regional Section Portugal.

You are the Director of the MSc Programme in Food Technology at the University of Algarve, in Faro. What are the main areas of focus in your teaching related to hygienic design and food safety? How do you incorporate the principles of EHEDG into your curriculum?

Currently, I am teaching Hygienic Design as part of the Industrial Project course at Bachelor level. I also plan to reintroduce Hygienic Design as an optional course in the upcoming academic year.

How does your academic work interact with the food industry in Portugal? Are there specific projects or collaborations with companies that have been particularly impactful?

We specialise in product development for companies, including leading initiatives such as the creation of carob bars and spreads, which resulted in the establishment of a new production facility. Additionally, we've optimised fruit syrup pasteurisation conditions for another client and provided crucial assistance in addressing food safety issues.

What are some common challenges faced by the food industry in Portugal regarding hygienic design?

Maintaining cleanliness in both equipment and plant buildings is essential, just as it is for any food company worldwide. However, micro-companies often face additional challenges, particularly when producers lack formal education in food processing. For instance, we encountered an issue with a type of game sausage, which had a pH >4.3 and was contaminated with Clostridium botulinum because the producer opted for vacuum packaging and distribution at room temperature. Additionally, Listeria has been problematic, as it has been detected in refrigeration and freezing equipment, leading to contamination of the final food products.

"Micro-companies often face additional challenges, particularly when producers lack formal education in food processing."



What is your strategy for developing your region?

My focus is primarily on teaching and training. Currently, there seems to be a lack of interest among the younger generation in pursuing Food Engineering or Food Science. So EHEDG will play a crucial role in training individuals entering the food industry who come from diverse backgrounds such as Chemical Engineering, Microbiology, Veterinary Medicine, Nutrition, Agronomic Engineering (which is also in short supply in Portugal), Mechanical Engineering and even entrepreneurship.

I am working towards introducing EHEDG to key players in the food industry and plan to launch courses next year, with more accessible pricing to encourage participation.



Maria Margarida Cortez Vieira, Professor Coordinator, Food Engineering Department (University of Algarve), Chair of the EHEDG Regional Section Portugal

Regional Section Thailand



Could you please briefly introduce yourselves and your background?

Navaphattra: I am Navaphattra Nunak, an Associate Professor in the Department of Food Engineering at King Mongkut's Institute of Technology Ladkrabang (KMUTL). I received my PhD from the University of Natural Resources and Life Sciences in Vienna, Austria. Since 2009, I have been the Chair of EHEDG Thailand, working on hygienic design and food safety. I am an EHEDG Authorised Trainer, too, giving lectures on legal requirements, building and process layout and hazards in hygienic processing.

Taweepol: I am Taweepol Suesut, Co-Chair of EHEDG Thailand and an Associate Professor in the Department of Instrumentation and Control Engineering at King Mongkut's Institute of Technology Ladkrabang (KMUTL), Thailand. I hold a PhD in Automation Engineering from Montan Universität Leoben, Austria. I am well-regarded for work in instrumentation and hygienic design in closed processing. Like Navaphattra, I am also an EHEDG Authorised Trainer.

How do hygienic design needs in Thailand compare to other regions, and what unique considerations are there?

Navaphattra: As Thailand aims to become the "world's kitchen", the country produces a large volume of agricultural products and processed foods for export to various regions worldwide. The food industry is one of Thailand's key sectors and is part of both the S-curve and New S-curve development policies. Many Thai people are employed across the food production chain, including roles such as raw material suppliers, food and ingredient producers, equipment and machinery manufacturers, engineering and service providers and retailers.

Moreover, the strengthening of international food safety standards and shifts in the global economy have prompted the Thai food industry to ensure the safety of its products and improve resource efficiency, particularly in cleaning processes. This includes considerations for machinery, production systems and surrounding environments, all in line with hygienic design concepts. Global industry changes have also influenced the direction of Thai industries. Many equipment and machinery manufacturers, as well as engineering and service providers, have transitioned from other sectors to the food industry, where they must now acquire knowledge of food safety and hygienic design to meet the requirements of food and ingredient producers. As a result, there is a growing demand for expertise in hygienic design within Thailand's food production chain.

What are the common challenges faced by companies in Thailand regarding hygienic design and food safety?

Taweepol: Cost and competitiveness are key factors that companies in Thailand must consider when deciding to implement the concept of hygienic design for food safety. Currently, Thailand's food industry, which exports products worldwide, is highly aware of food safety standards. Many food manufacturing systems and machinery are still in good condition and functional, rather than being obsolete. The main challenge in applying hygienic design knowledge in Thailand is the gradual adaptation of existing systems to better align with these principles, while maintaining the operation of the machinery as before.

You are very active EHEDG Authorised Trainers. How do you address these challenges in your courses?

Navaphattra: In the early stages of EHEDG training courses in Thailand, EHEDG Thailand collaborated with EHEDG Authorised Trainers, namely Mr. Worapanya Suthanupahpwut (an expert in liquid food processing system design) and Dr. Jedsada Chaishome (an expert in food contact materials), to promote hygienic design knowledge to food and ingredient producers. This was done through the EHEDG Fundamentals Course on Hygienic Design and training sessions at various food and beverage-related exhibitions, such as PROPAK ASIA in Bangkok.

Today, the demand for hygienic design knowledge has expanded beyond food and ingredient manufacturers to include equipment and machinery manufacturers, engineering and service providers and other agencies involved in Thailand's food production chain. Over the past 10 years, with the implementation of this strategy, the number of participants has steadily increased.

Navaphattra Nunak and Taweepol Suesut, Associate Professors, (King Mongkut's Institute of Technology Ladkrabang - KMUTL), Chair and Co-Chair of the EHEDG Regional Section Thailand



Regional Section United Kingdom



Eric, could you please briefly introduce yourself and your role at EHEDG?

My name is Eric Partington. I've been with EHEDG for just over 25 years now and I'm a metallurgist. I am also a European consultant to the Nickel Institute. If it sounds strange to think about the connection between nickel and hygienic engineering, the answer lies in the fact that half the world's nickel is used to make stainless steel, and half the world's stainless steel is used to make food production equipment. So, there is a very strong link. Currently, I am the Chairman of the EHEDG Regional Section UK and Chair of a Working Group revising one of the technical guidelines on materials of construction for food processing equipment.

In your opinion, what has the Regional Section UK achieved this year?

We've had quite a productive year, especially considering the challenges. Earlier this year, we held a very successful seminar in Cardiff, located in Wales in the southwest of the UK. This was a new initiative conducted in conjunction with a university there, and it was very well attended. Additionally, we conducted a three-day advanced hygienic engineering course at SMC in Milton Keynes later in the year. Two of our committee members also presented at the World Congress in Nantes last October. Overall, these activities reflect the progress and engagement of our committee, which consists of about seven members.

What will be the focus of the Regional Section UK in the coming years?

Our primary focus is spreading awareness about hygienic engineering to a wider audience. To achieve this, we are collaborating with organisations such as the British Stainless Steel Association and exploring new approaches, including a

risk-based perspective. This involves identifying risks and demonstrating how hygienic engineering principles can effectively mitigate them. We also want to take our message to food production areas outside of central England. Traditionally, events tend to be held in central locations like Birmingham or London. However, this makes it challenging for smaller companies in regions like Scotland to participate due to travel and accommodation costs. Therefore, we are exploring partnerships with universities and companies in Scotland, which is a significant food production hub. This includes areas like whisky production. By bringing the information to these regions, we hope to make hygienic design principles more accessible and impactful.

How would you describe the UK market in relation to hygienic design?

The kindest way to put it is that there are opportunities for improvement. Many individuals in the food business, whether producing equipment or processing food, still have limited understanding of stainless steel. Some believe there are only two types of stainless steel and that hygiene is all about surfaces being shiny on the outside. The reality is that there are about 20 stainless steels used in food production, and hygiene focuses on the internal surfaces. Educating the market about these facts is a key priority.

Do you have a message you would like to share with current and prospective members in your region?

We all understand that plant hygiene is critical for safe food production. However, achieving this doesn't have to be resource-intensive. There is an easier way – using hygienic design principles.

about spending 30% of its production time cleaning machinery, as though that was commendable. But the key question is: are you getting it clean? With proper hygienic design, the same level of cleanliness can be achieved in just 10% of the time. Poor hygiene can lead to costly recalls, brand damage and product losses. Recently, a brewery had to destroy millions of pounds' worth of beer due to hygiene failures. Embracing hygienic engineering principles not only saves money but also safeguards reputation and ensures regulatory compliance.

Eric Partington, Consultant Metallurgist (Effex), European Consultant (Nickel Institute), Chair of the EHEDG Regional Section United Kingdom, Chair of the EHEDG Working Group 'Materials of Construction'



EYE Mentorship Programme Midway event 2024



EHEDG partnered with Young EFFoST in 2023 to create the EYE Mentorship Programme. Where young professionals are paired with experts in the field of food science and technology. In the programme, the mentee and mentor meet regularly and work together on several topics according to their needs and preferences. Focusing on personal development and professional growth. From the 22nd to the 24th of May 2024, mentors and mentees came together for a three-day Midway Event, marking the halfway point in the first round of the EYE Mentorship Programme. For many participants, this was the first opportunity to meet their counterparts in person, making it an unforgettable milestone.

Day 1: EHEDG Head Office, Amsterdam

The event kicked off at the EHEDG Head Office in Amsterdam, where attendees learned more about the mission of EHEDG and the collaborative initiatives of Young EFFoST. The afternoon concluded with relaxed networking, good conversation, and a shared pizza dinner—proving once again that food truly brings people together.

Day 2: Unilever Headquarters, Rotterdam

On the second day, the group visited the Unilever Headquarters in Rotterdam, where they were warmly welcomed by Hui Zhang. After an introduction to Unilever's scope and work, mentor-mentee pairs engaged in in-depth 1:1 sessions. These conversations were meaningful and personal, strengthening the trust and openness within each pair.

The afternoon was dedicated to a dynamic session with keynote speaker Jocelyn Rebbens, a business psychologist, trainer, and coach. Jocelyn guided the group through the LIFO® (Life Orientations) method—helping participants better understand their behavioural styles and communication preferences. Through self-assessments and discussions, participants gained insight into how they respond in both favourable and challenging situations. The workshop fostered personal growth, encouraged mutual understanding, and laid the groundwork for more effective collaboration within the mentorship pairs.



Day 3: Intralox/Commercial Food Sanitation, Hoofddorp

The final day brought the group to Intralox / Commercial Food Sanitation L.L.C. in Hoofddorp, where hosts Roger Scheffler and Claudia Baenen led an engaging programme that included a tour of their new plant and discussions about company culture, purpose, and professional development.

One highlight of the day was a reflective session encouraging participants to consider three powerful questions: What are you good at? What are you passionate about? What is the business need? These formed the foundation of a career exercise to help mentees align their strengths and interests with impactful career paths. Interactive group activities reinforced the importance of seeing the bigger picture in food safety and operational choices. With an emphasis on inclusive decision-making and valuing every perspective, the day left mentees and mentors alike inspired to carry forward their learnings.



EYE Mentorship Programme Kick-Off Round Two: 2024 - 2025

On 12th November, EHEDG proudly joined the 38th EFFoST International Conference in Brugge/Bruges to kick off the second round of the EYE (EHEDG Young EFFoST) Mentorship Programme, in collaboration with the European Federation of Food Science and Technology.

The special session opened with a short presentation from Felix Schottroff (Chair of Young EFFoST) and Adwy van den Berg RM (Director of EHEDG), followed by an energising workshop led by business psychologist and coach Jocelyn Rebbens. Using the LIFO® method, eight new mentor-mentee pairs were thoughtfully matched based on personal and professional alignment, laying a strong foundation for a meaningful mentorship journey.

The programme launch also featured an interactive session on career and personal development for young scientists and professionals. Jocelyn offered insights into self-branding and authentic communication, while mentors and mentees from the first round reflected on their experience and shared the impact the programme had on their personal and professional growth.

As the second round begins, mentor-mentee pairs will now focus on building their own unique rhythm and dynamic, tailored to their individual goals. Whether the emphasis lies on personal growth, academic guidance or career direction, the journey ahead promises to be as enriching as it is empowering.

The spreads that follow highlight two mentorship journeys: one from a pair who have successfully completed their one-year programme, reflecting on the impact and lessons learnt, and another from a newly-matched pair at the very beginning of their experience, sharing their hopes and expectations. Together, these stories offer a glimpse into the diverse and evolving paths within the EYE Mentorship Programme.

For more information on the EYE Mentorship Programme and updates on future rounds, please visit: www.ehedg.org/eye-mentorship-programme





Can you introduce yourself and share your background, particularly your academic work at the University of Copenhagen?

I am a professor of Process Technology at the University of Copenhagen. I am a food engineer by education and completed my PhD in the United States, where I spent a large part of my studies. After that, I moved to Sweden as a postdoc and spent 18 years there before joining Copenhagen University. During my time in Sweden, I led a group focused on food process development. I grew this group from just a few members to almost 20 before leaving. When I moved to Denmark, I was also tasked with developing a group in process technology. My passion lies in developing people and expanding areas of competence.

What motivated you to join the EYE Mentorship Programme?

I enjoy developing people; it's an essential part of being a research group leader. I find it rewarding to see students grow, especially during their PhD studies, and to watch them progress further in their careers. It's a motivating aspect of my work that I truly enjoy. I found this mentorship programme particularly interesting because I've been involved with EFFoST for many years. As part of my activities there, we started young scientist groups and have often discussed the possibility of creating a programme at the European level. So, supporting this and mentoring young people felt like a natural step for me.

What approach did you take to guide and support your mentee throughout the programme? Were there any particular challenges or successes that stood out?

My approach to mentorship is to have regular meetings, as I believe this is important. I like to keep discussions open, allowing my students or mentees to choose the topics. For me, it doesn't matter what we discuss as long as they feel it's relevant. We freely explore these topics, and I try to offer different perspectives, share my experiences and connect them

with others if needed. Being present and available for their questions is crucial.

The only challenge I face is managing my time, as I have many responsibilities and, recently, my teaching load has increased. Preparing new courses from scratch is quite time-consuming and requires a lot of energy, so balancing time for all these activities can be tricky.

A success for me has been to get to know Magdalena better. In this programme, you build a friendship and develop an interest in the person beyond just the mentorship. I'm happy to have got to know Magdalena more and I want to keep following her progress in the future. To me, this is a success – having the opportunity to connect with someone on a deeper level.

How has this experience influenced your perspective as an educator? What advice would you give to another person considering becoming a mentor?

It always has an influence because it's also a learning experience for me. Through mentorship, you learn about how people think, the situations they are in and the decisions they have to make. It's a process where you also grow as a mentor, gaining new experiences that help you improve.

As for advice to someone considering becoming a mentor, I think it's a unique kind of work – relaxing, in a way – and I would absolutely recommend it to others. It helps you grow as a person and expand your experiences.

Lilia Ahné, Professor, Faculty of Science, (University of Copenhagen), EYE Mentorship Programme Mentor



Can you introduce yourself and tell us about your studies at Warsaw University of Life Sciences? What motivated you to join the EYE Mentorship Programme?

I am currently a PhD student at Warsaw University of Life Sciences, where I also completed my bachelor's and master's theses. My research focuses on the potential of protein and pectin complexes for the functional properties of 3D printing inks.

Recognising the importance of international experience in academia, I aimed to engage in international activities during my PhD, which motivated me to join the mentorship programme. I wanted to connect with my mentor and other participants, as the programme's events offered valuable opportunities for collaboration and networking. I believed that one-on-one interactions would facilitate faster personal and professional growth. Having the chance to ask questions and receive diverse perspectives was invaluable, especially during my transition from student to PhD candidate. Lilia's support helped me navigate this challenging phase, making the mentorship programme a vital part of my journey.

How did your mentor help you in shaping your academic and professional journey? Can you share a specific example of how her guidance made a difference for you?

After our initial talks, I realised I needed to decide whether to stay in academia and pursue a PhD or move into industry. I was overwhelmed, trying to manage too many responsibilities at once. Lilia advised me to focus on one task at a time, which helped me concentrate fully on my PhD. This decision has been incredibly satisfying and marked a significant success

in my journey. Without the programme and our discussions, I doubt I would have made this choice, and I am very grateful for her guidance.

Lilia also introduced me to new perspectives that influenced my approach to research and teaching. This early-stage guidance has shaped my outlook and will continue to impact my development. Her support led me to let go of unnecessary commitments, allowing me to focus on what truly matters to me, making my academic journey more productive and fulfilling.

You managed to secure an internship through your mentor. Can you tell us more about this opportunity and how it has impacted your career aspirations?

Lilia invited me to undertake an internship at the university, which became a pivotal experience just a few weeks in. Transitioning to a new university and working in a different research group under her guidance was essential for my development. The international nature of Lilia's team allowed me to engage with colleagues from various universities and countries, broadening my perspective significantly.

During the internship, I not only benefited from direct conversations with Lilia, but also observed her leadership style and how she interacts with her team. This experience was inspiring, as it highlighted the importance of being a mentor and leader in academia, not just a manager. Observing Lilia's approach reinforced my commitment to pursuing a career in academia, as it demonstrated the vital role of support and guidance throughout the challenging PhD journey. Overall, this internship has solidified my aspirations in academia, showing me the value of mentorship and collaboration in a research environment.

What are your next steps following the EYE Mentorship Programme and the internship?

I recently completed my internship, so I haven't had the chance to reflect deeply on it yet. However, our collaboration inspired me to apply for additional research positions abroad. While I'm unsure of their success, I am eager to continue gaining international experience, particularly at prestigious institutions like the University of Copenhagen.

Additionally, I've enjoyed being part of the mentorship programme, which has led to my membership of the Young EFFoST Council. This role allows me to contribute to future programme rounds, sharing my insights and experiences from the first round. I'm excited to see how the programme develops and to support others in their journeys.

Magdalena Trusińska, MSc., PhD Candidate, Institute of Food Sciences, (Warsaw University of Life Sciences), EYE Mentorship Programme Mentee



Round Two 2024-2025

Could you briefly introduce yourself?

Lucia Portanet (Mentor): I'm from Spain and I've already been working for 15 years at Tetra Pak, where I've managed to develop my professional career focusing on different areas, but always chasing quality and food safety developments.

Jorge Luis Rivera Azurdia (Mentee): I recently completed my PhD in January. My expertise lies in process engineering, equipment design, and computational fluid dynamics, including computational simulations. I have a strong "can-do" mentality and embrace challenges with enthusiasm.

So what motivated you to join the EHEDG Mentorship programme?

Lucia: I first learned about the mentorship programme through a colleague at EHEDG and, after exploring it further, particularly during the EHEDG Congress, I was instantly drawn to it. The programme resonated with me because it mirrored my own experience. I started my career as a biologist and, after completing my studies, I made the decision to transition from research into the industry. I felt that this could be an opportunity to share my experiences and provide guidance to young professionals who might be in a similar situation.

Jorge: At that stage in my career, the timing couldn't have been better. I had just completed my PhD, full of energy and high expectations, ready to take the next step. My professors had often told me that what I needed wasn't just a boss, but a mentor - someone who could help me focus my ambitions and guide me towards a clear goal. While I had big dreams, I knew that having the right guidance from someone who had already walked this path would be invaluable. Transitioning from academia to industry was a big leap and this opportunity felt like the perfect bridge - a golden ticket to the future I envisioned.

How was the kick-off of the programme and how does it compare to your expectations?

Lucia: To be honest, I didn't have any specific expectations at the beginning - I approached it with an open mind. But I ended up really enjoying the experience. It was well-organised and I especially appreciated the personality exercise we did. It gave me valuable insights into how we could structure and develop our mentorship sessions. Overall, it was a great experience and I took a lot from it.

Jorge: I completely agree with Lucia. At first, I expected the programme to be more casual - just a quick introduction and that's it. But the deeper focus on understanding our personalities and how we respond to different situations, especially under stress, really stood out to me. It wasn't just about technical skills; it was also about human behaviour, which made the experience even more insightful. I was also pleasantly surprised by the pairing process. Instead of being matched with someone dominant or direct, as I had expected, I was paired with Lucia, who is more relationship-orientated. Over time, I've found this to be a great complement to my personality. She has helped me see things from a different perspective and I think it was a fantastic way to start our mentorship.

Lucia, what were the objectives you have set for yourself and for your mentee?

Lucia: My main objective is to help Jorge position himself for the next steps in his career. Beyond that, I wanted to introduce him to what I see as the intangibles of working in multinational companies - qualities such as leadership behaviours, self-drive, collaboration and productivity. These are often expected but not always obvious until you gain first-hand experience in a corporate environment. Ultimately, my goal is to have a positive influence on his journey and provide guidance as he navigates this crucial phase of his career.

What type of professionals would you recommend becoming a mentor?

Lucia: Anyone! This is a great opportunity to share experiences that can provide value to young professionals starting their careers. It's also a chance for the mentors themselves to learn and gain new insights from different perspectives.



Jorge, in what specific areas are you seeking guidance and support?

Jorge: As Lucia mentioned, we've been focusing a lot on developing my leadership profile. A key part of that has been identifying the transferable skills I gained during my PhD and how they apply to the industry. Lucia has also been incredibly helpful in translating my academic experience into terms that resonate in the job market. For instance, I initially saw myself simply as a food engineer, but through our discussions, we realised that roles like Project Engineer or Manager better reflect the work I've done. Beyond that, we've been working on recognising my strengths and areas for improvement. One key aspect has been refining my patience - Lucia has encouraged me to take things step by step and adjust my pace, which is a shift from my usual approach. Her support has been invaluable and I'm truly grateful for it.

What are your future ambitions?

Jorge: I have big ambitions for the future, as I'm naturally driven and goal-orientated. With Lucia's guidance and the networking opportunities she's helped me access, I'm working to carve out a strong path in the industry. My goal is to step into a leadership role where I can make a positive impact - not just through my technical expertise, but

also by developing my leadership profile. One day, I'd love to give back and perhaps even become a mentor myself.

Who would you encourage to apply for the programme as a mentee?

Jorge: As a mentee, I believe this programme is most beneficial for individuals at pivotal career moments. If you're finishing your master's degree or PhD, it's an ideal time to apply. This is when critical decisions need to be made - whether to continue in academia or transition into industry. For those in the later stages of a PhD, especially if you're facing challenges, a mentor can offer valuable guidance. If you're in your second year and have already established your research path, a mentor can help you navigate obstacles while also shaping your work in a way that aligns with industry needs. In short, I'd highly encourage master's students nearing graduation, PhD candidates in their middle years and those approaching the end of their PhD to take advantage of this opportunity.

Lucia Portanet, Food Safety Specialist
PSE Quality & Safety, (Tetra Pak Hispania SA) &
Jorge Luis Rivera Azurdia, Engineering Consultant & Researcher, (University of Natural Resources and Life Sciences), Vienna.

Recognising Outstanding Scientific Work in Hygienic Processing and Design

Scientific research is essential for driving progress in hygienic processing and ensuring safer food production worldwide. The Hygienic Study Award supports these advancements by encouraging innovative research and fostering stronger connections between academia and industry.

Since 2009, this recognition has celebrated pioneering contributions in the field, providing valuable insights to promote hygienic design globally. It also offers young researchers the opportunity to align their work with real-world industry challenges. The distinction is jointly conferred by EHEDG, Fraunhofer IVV and Gesellschaft zur Förderung des Maschinenbaues mbH, a VDMA e.V. subsidiary.

Meet the 2024 winners, acknowledged during the EHEDG World Congress in Nantes by **Dr.-Ing. Marc Mauermann** Deputy Director Division Processing Technology, (Fraunhofer IVV, Dresden), Chair of EHEDG Sub-Committee Training & Education.



Are you ready to contribute to the Hygienic Study Award 2026?

We invite submissions of diploma projects – Bachelor's, Master's and doctoral theses – as well as scientific studies, in areas such as hygienic design of machinery, equipment and facilities, fouling, cleaning and disinfection processes, food contact materials, surface design, fluid mechanics and food safety, sustainable and resilient food processes.

Submissions are evaluated by an international jury of academics, researchers and industry leaders, ensuring the recognition of work that balances scientific innovation with practical application.

We look forward to receiving your abstract and to supporting the next generation of innovators in hygienic processing and design. For more information, please contact the EHEDG Office at office@ehedg.org or hsa@ivv-dd.fraunhofer.de.

First place

'Shaping the future of dairy manufacturing and distribution using energy consumption models'

Hello everyone. I'm Maria Ioanna Malliaroudaki, a Chemical Engineer, and I recently completed my PhD at the University of Nottingham. It is a true honour to receive the Hygienic Study Award 2024, and I'm excited to share with you some insights from my research, which focuses on energy consumption models in the milk supply chain.

Models play a critical role in helping us understand and improve complex processes. In my research, I developed two energy consumption models specifically for the milk supply chain, aiming to reduce energy use and carbon emissions while maintaining high hygienic standards.

Model 1: Energy Consumption in Milk Manufacturing and Distribution

The first model focuses on the entire milk supply chain, from manufacturing to distribution. It maps out every process and operation step by step, allowing us to simulate different scenarios by changing fuels, vehicles and distribution systems. The key question we aimed to answer was: How can we move towards net zero in this industry? Based on the model's simulations, we found that 92.2% emission reductions can be achieved by 2050 if we implement the right changes step by step. These insights are particularly valuable for the industry, offering a clear roadmap toward sustainable practices.

Model 2: Energy Use in Milk Pasteurisation Processes

The second model is more detailed and focuses specifically on the milk pasteurisation process. This is a critical part of dairy production where hygienic standards must be met, but the industry has been using the same protocols for many years. We explored how adjusting operational conditions can reduce both energy consumption and carbon footprint. For example, by reducing cleaning times and optimising processes, we can achieve significant energy savings. We used heat maps to visualise different scenarios, balancing the carbon footprint with hygienic risks. This tool helps us identify the most sustainable options without jeopardising food safety.

What makes this research even more impactful is the potential to combine both models. By integrating the optimised pasteurisation processes from Model 2 into the broader supply chain model in Model 1, we can create a comprehensive energy map for the entire milk production and distribution line. This approach allows us to see the bigger picture and explore how small, detailed changes can ripple through the supply chain to create meaningful energy savings and carbon reductions. Energy models like these are essential tools for moving the dairy industry towards more sustainable and efficient practices. When we combine models at different scales, we get more accurate, actionable insights that can drive real change.

I would like to sincerely thank my supervisor, Professor Rachel Gomes, who leads the Food Water Waste Research Group at the University of Nottingham, for her invaluable guidance throughout my research. I am also deeply grateful to EHEDG and the Hygienic Study Award Committee for recognising this work. Finally, I want to encourage others to participate in similar initiatives. These awards not only highlight important innovations but also motivate us to push boundaries and improve the sector for future generations. Thank you!



Maria Ioanna Malliaroudaki (University of Nottingham)

Second place

‘The development and characterisation of a microorganism-free biofilm imitation’

Theresa, could you briefly introduce yourself and your background?

My name is Theresa Kauer and I'm a student at BOKU University in Vienna, Austria. I've completed my bachelor's degree in Food Technology and Biotechnology and I am pursuing a master's in Safety in the Food Chain. One of my lecturers, Marc Mauermann, introduced me to hygienic design during a course. I found it fascinating and decided to explore it further for my master's thesis.

What was the focus of your master's thesis?

My thesis was part of a project called Bio-imitate, a collaboration between Fraunhofer Institute and BOKU University. The aim was to create an imitation with cleaning characteristics similar to a native biofilm, such as *Mycobacterium lactium*. I used two approaches: one with a gel and another with a complex mixture of agar, alginate, xanthan and calcium. I tested the rheological properties of both approaches and conducted cleaning trials at the Fraunhofer Institute.

Why is this research significant?

Biofilms are a critical challenge in food processing, as they can complicate cleaning and disinfection. I wanted to contribute to raising awareness of the importance of addressing biofilms. I hope my project serves as a foundation for further research in this area.

What are your plans for the future?

I'm currently exploring opportunities across industries, keeping my options open for roles in the food industry, academia or possibly pursuing a PhD. I'm eager to see where my path leads me. Participating in the EHEDG World Congress has been an incredible experience. It's inspiring to meet people from both academia and industry, and I'm grateful for the opportunity to present my work. Thank you for organising such a wonderful event!



Theresa Kauer (University of Natural Resources and Life Sciences, Vienna)

Third place

*‘Resistance modification of potential surrogate organisms for *Aspergillus brasiliensis* DSM 1988 for validation of UV-based disinfection systems’*

Anja, could you briefly introduce yourself and your background?

My name is Anja Baumgärtner and I have a background in food technology. I studied food technology during my bachelor's degree course and pursued product and food quality in my master's. I've always had a special interest in microbiological topics – they were my favourite during my time at university. For my bachelor dissertation, I worked on the validation of UV-based disinfection systems. This was a topic I hadn't encountered before, so I learned a lot during the process.

What was the aim of your bachelor thesis, and what challenges did you face?

The validation of UV-based disinfection systems requires a test organism with a defined resistance to the decontamination strategy. The microorganism commonly used, *Aspergillus brasiliensis*, was classified as a pathogen in 2016, meaning it could no longer be used outside certain laboratories in Germany. The goal of my work was to find a surrogate organism with similar resistance properties but without the pathogenic characteristics. Since finding such an organism was difficult, we decided to modify an organism that didn't initially meet the criteria.

How did you modify the resistance of the surrogate organism?

I conducted many trial-and-error tests. Eventually, I discovered that adding specific chemicals, such as DMSO and heterocyclic oxide, to the nutrition media during the growth phase of the mould could decrease its resistance. This was achieved by reducing melanin synthesis, which in turn reduced UV resistance. After testing various concentrations, I found that 0.8 milligrams per gram of nutrition media produced the desired resistance. With this surrogate organism, on-site validation became possible again, and I was thrilled that my work had such a tangible impact on the industry.

What are your current projects and future plans?

For my master's thesis, I continued focusing on microbiology. I conducted decontamination tests, comparing reusable cups and glass to evaluate cleaning quality. Currently, I am working in microbiological quality control in the pharmaceutical industry. I was truly honoured to receive recognition for my work. It was a lot of hard work, and being acknowledged for it feels amazing.



Anja Baumgärtner (Hochschule Weihenstephan-Triesdorf)

EHEDG Full Working Groups Day 2024

The EHEDG Full Working Group Day took place on the 7 and 8 November 2024, in Amsterdam, the Netherlands. In total 120 participants joined the event with participants from 20 countries and 28 Working Groups. The event co-hosted by new Co-Chairs of the Sub-Committee Working Groups, Partrick Wouters and Uwe Heisswolf. The day before the plenary sessions, Working Groups met up to work on their own guidelines. During the following two days all the participants took part of plenary and breakout sessions where Working Group Chairs shared their progress and what their groups had been working on. These days were very productive and brought many great ideas for process improvement and opportunities to elevate the inter-relations amongst the Working Groups and their Guidelines. Putting a step forward towards a more impactful collaboration. Here are some of the impressions of Working Group members.



Can you tell us about your background and what motivated you to join the EHEDG Working Group?

I'm Holger Hoelzemann from Mondelēz International, where I serve as the Corporate Sanitation Leader for Europe. In my role, I support our plants with all sanitation-related topics, including hygienic design, general hygiene and pest control. I'm based in Germany. I had the opportunity to be part of the initial team when the first version of this document was created, so joining this group again to review and update the existing document felt like a natural step.

Can you briefly describe your role within the Working Group and how it connects to your work?

Currently, our focus in the Working Group is reviewing the existing document to determine if it's still relevant, if updates are needed or if sections should be removed or reorganised. This document is quite extensive, so we're considering splitting it into more manageable parts. This work connects closely with my responsibilities in building design and sanitation at Mondelēz, where topics like flooring and zoning are key. The document serves as a helpful reference for our engineers, outlining food safety and quality requirements for managing hazards effectively.

How do the different expertise areas come together in your Working Group?

Each member brings their unique experiences from their current and past roles, contributing different perspectives to the group. This diversity of backgrounds – whether in food production, quality assurance or equipment design – creates a strong team that benefits from varied expertise.

How has being part of the Working Group influenced your approach to industry challenges?

The biggest benefit has been the networking aspect, which is incredibly valuable for day-to-day work. Being part of this group means having direct contacts for specialised information. If the document doesn't cover something, I can reach out to these specialists for specific questions, making it easier to access the insights I need.

In your view, what types of professionals or roles would benefit most from joining a Working Group?

I think anyone open to broadening their knowledge and willing to share their experiences – positive or negative – would benefit. It's especially helpful for engineers, technical department staff, business development managers, maintenance staff and quality professionals in the food industry, as well as suppliers. Practical experience is valuable, but the willingness to learn from others and share experiences, even when things go wrong, is what truly makes this group valuable.



Holger Hölzemann, Corporate Sanitation Leader, (Mondelēz International), member of the EHEDG Working Group 'Building and Factory Design'

Can you tell us about your background and what motivated you to join the EHEDG Working Group?

My background is in food engineering, and I've been working in the beverage industry for about 12 to 13 years, primarily focused on sanitation and hygiene solutions. My work involves addressing microbiological contamination issues in the beverage industry. I was motivated to join this group because it connects me with a completely different reality from my experience. Beverage production is usually a closed process, whereas chocolate production has many open stages, leading to different risks and concerns. That contrast motivated me to join.

Can you briefly describe your role within the Working Group and how it connects to your work?

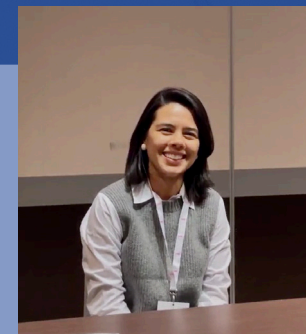
I currently work at Diversey, focusing on implementing cleaning solutions along with water consumption reduction. This Working Group helps me stay updated on the latest developments and trends, enabling us in Brazil to keep pace with new technologies and approaches. That's the primary connection for me.

How do the different expertise areas come together in your Working Group?

I've been with the Working Group for a year, but this is my first time attending in person. I'm still learning how the group operates and what my contribution will be. Our group includes many experienced professionals with master's degrees and diverse ideas across various sectors, all contributing to the goal of building the guideline. For now, I'm observing and understanding the ongoing work.

In your view, what types of professionals or roles would benefit the most from joining a Working Group?

In my opinion, engineers focused on equipment maintenance and design would benefit the most from joining this Working Group, especially when it comes to the chocolate industry. One of the major challenges here is hygienic design, as design flaws can lead to points of microbiological contamination, particularly with salmonella. These professionals would be critical to the group's success.



Kelly M. Calixto, KBS Expert (Diversey, a Solenis company), member of the EHEDG Working Group 'Chocolate Processing'

Can you tell us about your background and what motivated you to join the EHEDG Working Group?

Hello, everyone. I'm Sophie Daulmerie, working in Vennon within Global Engineering. I manage topics related to CIP, Agile Design and Aseptic processes. I joined the EHEDG Working Group because I find it essential to network, compare perspectives with peers from other companies and challenge our usual ways of thinking. Additionally, for food producers, it's important to influence the development of equipment, ensuring that suppliers meet the required standards for food safety and performance in our factories.

How do the different expertise areas come together in your Working Group?

We have a good mix, including three suppliers and two food producers. Our discussions are open and collaborative, aiming to reflect diverse technologies in the guidelines while pushing for meaningful improvements.

In your view, what types of professionals or roles would benefit the most from joining a Working Group?

Honestly, anyone would benefit. EHEDG's documents and communications have evolved, but there's still room for improvement, especially from a food producer's perspective. Networking is key, as it gives you the chance to see how others approach challenges which you might not encounter within your own company. This aspect of EHEDG is very valuable, and I encourage participation. I'll also advocate for more colleagues from my company to join these Working Groups.



Sophie Daulmerie, Hygienic & Aseptic Design Manager, (Danone), member of the EHEDG Working Group 'Design Principles'

Full Working Groups participation



Can you tell us about your background and what motivated you to join the EHEDG Working Group?

I have a background in food engineering, which I studied many years ago. I've spent the last 35 years in the food industry, initially with APV and, for nearly 30 years, with PM Group. Currently, I am the Food Sector Director at PM Group, overseeing our food and beverage work. I've always had a strong interest and extensive experience in the industry, and PM Group has been involved with EHEDG for years. After attending the EHEDG World Congress in Munich in 2022, I was invited to join the Building Design Working Group, which I accepted because building and facility design is a core area of our work.

Can you briefly describe your role within the Working Group and how it connects to your work?

I'm involved in both the general steering principles and Subgroup 1, where we focus on the general principles of building design. This aligns closely with my work, as I often oversee preliminary facility design and advise clients on hygienic design aspects, such as site selection, site layout, people and materials flow. These are key elements of the building design guidelines and are integral to my role in facility planning.

How do the different expertise areas come together in your Working Group?

The building design guideline is quite broad, so it's divided into several subgroups. These subgroups meet for full sessions, approximately every six months, allowing us to stay updated on each other's work. In my subgroup, we have experts from various backgrounds, including building materials, industry representatives and architectural engineering, bringing together a broad range of perspectives.

How has being part of the Working Group influenced your approach to industry challenges?

It's broadened my perspective by exposing me to other areas of the food business that we may not typically work in. I've had the chance to meet professionals from around the world who face unique challenges, and this exchange has provided valuable insights that I can apply to our work.

What are some unexpected yet rewarding outcomes from joining the Working Group?

One of the biggest revelations for me has been the depth of the EHEDG guidelines. It's a valuable resource that I believe should be more widely used. I plan to encourage more people within my company and my network to take advantage of this knowledge.

In your view, what types of professionals or roles would benefit most from joining this or any Working Group?

It varies between Working Groups. For our group, building professionals are central, while equipment suppliers may be more active in other groups. I think it's important to involve people who may not yet be experts but are developing in their fields, particularly those in their thirties and forties. This would allow them to gain experience from current experts and eventually take on leadership roles, ensuring a strong knowledge transfer within the industry.

Tom Waters, Food Sector Director, (PM Group), member of the EHEDG Working Group 'Building and Factory Design'

Can you tell us about your background and what motivated you to join the EHEDG Working Group?

With my team, I'm responsible for international business development at ATT, a Polish company that produces hygienic drainage systems, platforms and stainless steel constructions for the food processing sector. We view the working group as a valuable platform for knowledge exchange. We contribute ideas and experience, but also gain insights from other industry professionals, which is very interesting for us.

Can you briefly describe your role within the Working Group and how it connects to your work?

In the Working Group, we actively participate in discussions regarding evaluation, analysis and establishing the best possible standards for hygienic food processing facilities. Our focus is primarily on drainage systems, and we also work on defining best practices for critical factory elements like platforms and other dedicated structures. This is our contribution to the group.

How do the different expertise areas come together in your Working Group?

This is one of the most fascinating aspects of participating in Working Groups. I have the opportunity to listen to experts from other companies, including building materials and machinery producers, as they discuss their challenges and ideas around hygiene in production. It broadens my perspective and helps our company consider the bigger picture. For example, during our meetings, we often engage in lively discussions with floor producers. The interaction between the floor and drainage systems is essential for hygiene in factories. By sitting together and sharing experiences – both good and bad – we can develop comprehensive solutions that help our customers create hygienic facilities.

What are some unexpected yet rewarding outcomes of joining a Working Group?

While we didn't have unexpected outcomes, as ATT conducted a thorough analysis before joining EHEDG, the rewarding aspect has been the interaction with major global food producers. For a producer like ATT, the feedback from industry experts on our hygienic design concepts is incredibly valuable. Whether they confirm that our solutions are useful or explain why they wouldn't implement them, this feedback is of high value.

In your view, what types of professionals or roles would benefit most from joining this or any Working Group?

In my opinion, professionals who bridge the gap between research, analysis and real-life food production would benefit the most from participating in these groups. Practitioners in particular gain from collaborating, sharing ideas and learning from industrial discussions and insights.

Marcin Rebalski, Export Sales Director, (ATT), member of the EHEDG Working Group 'Building and Factory Design'



Can you tell us about your background and what motivated you to join the EHEDG Working Group?

I work for OSI as the Sanitation and Hygienic Design Programme Leader for OSI Europe. My responsibility is to ensure sanitation and hygienic design standards are maintained across our factories. I joined the Air Handling Unit Group because it addresses topics I encounter daily in my work, making it highly relevant to my role.

Can you briefly describe your role within the Working Group and how it connects to your work?

I'm a member of the group, primarily bringing an end user perspective to our discussions. While we have designers, engineers and others in the industry, I handle this equipment daily, focusing on achieving sanitation and food safety standards. My role allows me to share first-hand experience with the group.

How do the different expertise areas come together in your Working Group?

Our team has a rounded mix of backgrounds, including engineers who look into technical details, end users like myself, salespeople, designers and installers. This variety creates a well-rounded team that benefits from different perspectives.

How has being part of the Working Group influenced your approach to industry challenges?

As a sanitation manager, a key challenge I face is ensuring that equipment meets sanitation standards without compromising food safety. In the group, we discuss and identify common issues, and I bring challenges I've observed in practice to guide our discussions and contribute to problem-solving.

In your view, what types of professionals or roles would benefit most from joining this or any Working Group?

I think engineers, designers, salespeople and end users all benefit from participation, but more engineers should consider joining. Air handling is a critical aspect of food safety, as nearly every food production plant uses this equipment. The more people we have involved, the better we can address these essential safety needs.

Oladipo Adedokun, Europe Sanitation Programme Leader, (OSI Europe), member of the EHEDG Working Group 'Air Handling'



Can you tell us about your background and what motivated you to join the EHEDG Working Group?

I'm David Stewart from Halton Food Service, part of the Working Group 'Air Handling'. My background is in commercial kitchen ventilation, and we've recently expanded into food processing. My experience in ventilation led me to join this team.

I've always been drawn to the technical aspects of my work. Although my role has generally involved sales, there's always been a strong technical element. Joining a Working Group felt like a natural next step.

Can you briefly describe your role within the Working Group and how it connects to your work?

Our Working Group is still relatively new. We've had an online meeting and have another one planned next week, with our first face-to-face meeting set for January. We would have had a face-to-face meeting about a year ago, but our chairman stepped down. Since then, we've been discussing ideas that could guide us in reviewing the document effectively.

How do the different expertise areas come together in your Working Group?

We have a good mix of OEMs and end users from various sectors, including meat processing, cheese production and cleanroom applications, some of which are close to the pharmaceutical field. This diversity brings valuable expertise. However, we may lack experience in working with EHEDG, in terms of guideline production, which could be an area for improvement.

How has being part of this Working Group influenced your approach to industry challenges?

Being in the Working Group has exposed me to different aspects of the industry and potential new approaches. It's broadened my perspective on problem-solving, which is a big part of what we do, and has influenced how I approach challenges on a daily basis.

In your view, what type of professionals or roles would benefit most from joining a Working Group?

I think anyone with a genuine interest in their industry could contribute meaningfully to a Working Group. There's a wide range of people who could benefit, that's for sure.

David Stewart, Area Sales Manager, (Halton Food Service), member of the EHEDG Working Group 'Air Handling'



Can you tell us about your background and what motivated you to join the EHEDG Working Group?

I'm a food engineer with a background in food technology. I worked in the food industry for 22 years before moving to a company that produces automation components. In my current role, I ensure these components meet food industry standards, such as FDA compliance, proper materials and hygienic design.

Can you briefly describe your role within the Working Group and how it connects to your work?

My main role in the Working Group has been to learn, as there are so many experts with extensive experience, especially in the chocolate industry. I contribute by sharing practical insights from factory and production line experiences. For my company, it's valuable to understand industry trends so we can develop components that enable machinery builders to create hygienic machines, which in turn supports food producers in meeting hygienic standards.

How do the different expertise areas come together in your Working Group?

I'm part of the equipment subgroup, where we focus on machinery. Other groups handle topics like cleaning and factory design. In our subgroup, we delve into the details of specific machines used in the chocolate industry, such as tempering machines and conches, which are unique to this sector. It's essential to examine every detail because microorganisms can hide in any tiny corner, so we need to address every aspect of the machine design.

How has being part of the Working Group influenced your approach to industry challenges?

Being part of the Working Group has been an incredible learning experience. It has allowed me to have in-depth discussions with our customers, even those outside the group, about the future of the chocolate industry. Ultimately, this work contributes to improved food safety for consumers.

In your view, what types of professionals or roles would benefit most from joining this or any Working Group?

It's crucial to have food producers involved because they bring first-hand experience and understand the challenges. EHEDG's mission from the start has been to improve food safety by making machines easier and quicker to clean. Hygienic design reduces cleaning time and cost, making it vital for food producers and the industry as a whole.

Torsten Klein, Strategic Market Manager Food, (SMC), member of the EHEDG Working Group 'Chocolate Processing'



Can you tell us about your background and what motivated you to join the EHEDG Working Group?

My name is Nandini and I'm originally from India but came here today from France. My career started in the food and dairy industry after my B.Tech. in Dairy Technology in India. Following graduation, I worked for Lactalis India for a year and a half, where I was first introduced to EHEDG through my Quality Director, Mr. Subramani. Since then, I've been following the group's updates on LinkedIn for about three and a half years, though I couldn't obtain membership due to currency limitations.

After moving to France for my master's in Food Engineering, I felt it was the right time to formally engage with EHEDG and took out a student membership. I then discovered that several Working Groups were addressing different topics, and I applied to a few that aligned with my interests. I was fortunate to join the Working Group focused on CIP (Cleaning in Place), which is how my journey with EHEDG began.

Can you briefly describe your role within the Working Group and how it connects to your work?

In my Working Group, I focus on CIP, specifically Guideline 50, which deals with hygiene design requirements for CIP installations. My role involves contributing to discussions, writing and revising the document. I am the youngest professional in the group, which I am proud of, and I contribute fresh perspectives from my studies and hands-on training.

How do the different expertise areas come together in your Working Group?

When I joined the group in June, I was thrilled – it was a dream of mine for three years to work with EHEDG. I even postponed my holiday in India to attend our first meeting. I was excited to see the list of members, which included experts from chemical suppliers, food processing, food production and quality assurance. This diversity allowed me to learn from people in various fields, such as production, quality control and equipment design, enriching my understanding through multiple perspectives.

How has being part of the working group influenced your approach to industry challenges?

Our group consists of about 12 or 13 people, including the chairman of EHEDG, who also leads our group. EHEDG has encouraged me as a young professional in hygiene, design and food safety. I've learnt the value of collaboration and diverse expertise, which benefits both my professional and personal life. These lessons will be valuable throughout my career, from teamwork to respecting different viewpoints in discussions.

In your view, what types of professionals or roles would benefit most from joining this or any Working Group?

This Working Group is beneficial for anyone passionate about hygiene and design in the food or beverage industry. It's suitable for students, young professionals, and experienced people alike who want to improve hygiene standards. Being part of EHEDG has expanded my professional network, as each meeting introduces new people and ideas. EHEDG updates its guidelines every five years, incorporating the latest best practices, making this group valuable for any professional committed to advancing hygiene in the industry.

Nandini Ganiti, member of the EHEDG Working Group 'Cleaning in Place'





EHEDG Plenary Meeting 2024

On the 1st October 2024, EHEDG members gathered in Nantes, France, for a highly engaging and productive Plenary Meeting. The agenda was rich with organisational insights, strategic updates and collaborative workshops, all reinforcing our shared mission of advancing hygienic engineering and design.

The morning sessions focused on key developments within the EHEDG structure. Members received comprehensive updates from the Sub-Committee Working Groups, Certification, Regional Development, and Training & Education teams. A forward-looking discussion on Strategy 2030 also provided a clear roadmap for EHEDG's growth, innovation and outreach in the coming years.

With significant investments in Training & Education, e.g. new e-learning modules, central examination. The EHEDG website, e.g. company and regional landing pages, an expert network platform functionality. As well as the EHEDG networking value, e.g. investing in new Regional Sections and more exhibitions an collaborations. Lastly, investments in Working Groups by organising more face-to-face meetings and Full Working Groups Days.

In the afternoon, participants rolled up their sleeves for a series of parallel workshops. Six groups worked simultaneously on crucial themes including guidelines development, certification pathways, training and education offerings.

A special highlight of the day was the presentation of the EHEDG Fellowship Awards, an initiative designed to celebrate individuals who have made exceptional, long-standing contributions to our foundation. We were proud to honour Andres Pascual, Eric Partington, Erwan Billet, Frank Moerman, Matilda Freund and Ralf Stahlkopf. Their dedication and expertise have left a lasting impact, inspiring continued involvement from both current and future members, even beyond active professional roles.

EHEDG Fellows

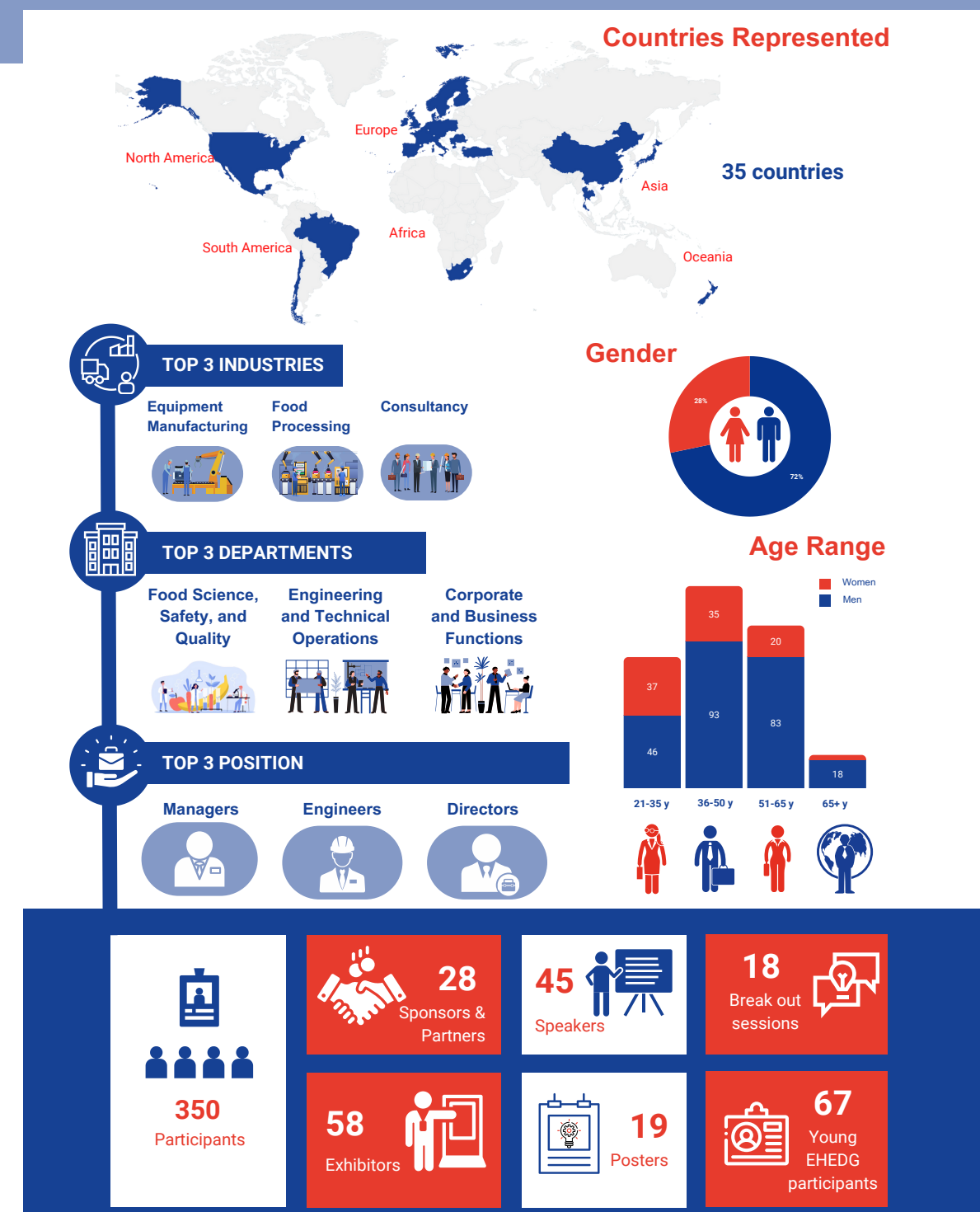
Frank Moerman,
Ralf Stahlkopf,
Eric Partington,
Matilda Freund,
Andres Pascual,
Andrew Timperley,
Hein Timmerman,
Peter Golz,
Jürgen Hofmann,
Erwan Billet,
Patrick Wouters,
Takashi Hayashi.



EHEDG World Congress 2024

The EHEDG World Congress 2024, held in Nantes on the 2nd and 3rd October, brought together 350 professionals from various countries in the world, creating a vibrant international forum for innovation, collaboration and knowledge-sharing. With over 40 expert speakers across plenary sessions and parallel tracks, the programme addressed the latest challenges and breakthroughs in hygienic design and food safety, offering valuable insights into emerging technologies and best practices in plant and equipment design.

The event's dynamic mix of presentations, workshops and networking opportunities fostered meaningful discussions and lasting professional connections. A standout highlight was the Congress Dinner at Les Machines de l'île, where attendees enjoyed an extraordinary evening of food, entertainment and networking amidst the iconic mechanical wonders of the city of Jules Verne.





ACO has been supporting the EHEDG World Congress since 2018. What motivated ACO to sponsor the EHEDG World Congress 2024?

Since becoming a proud member of the EHEDG in 2011 as the first drainage producer company, we have been part of the journey in improving hygienic standards within the food and beverage industry. We have been actively involved in various EHEDG working groups that focus on creating and updating guidelines (GL 44, GL 28 and white paper on Sustainability), that ensure the highest standards of food hygiene and safety in the industry. Our work with EHEDG shows our strong dedication to improving hygienic design, particularly through our “HygieneFirst” mission, which focuses on promoting the highest hygiene standards in drainage systems.

It makes sense for us to support the meeting of the greatest experts in the field not only with our long-standing work, but also with sponsorship, because in the end we can support our goal of food and people’s safety.

How did your experience this year compare with your expectations?

Each year, we are encouraged by the increasing interest in hygienic design across multiple sectors. While ACO was once the first drainage-focused company involved, the growing participation of other drainage specialists at the event signals that hygienic engineering remains a priority – alongside critical trends like sustainability and operational resilience.

What do you think are the benefits of events like this for companies in your industry?

In the global effort to enhance food safety, technological innovation bridges many gaps but cannot replace personal connection and cross-sector dialogue. Events like the EHEDG World Congress cre-

ate a platform for knowledge exchange, enabling companies to share expertise and perspectives beyond individual markets. Such collaboration plays a critical role in the development of robust standards that are relevant today and resilient for the future.

What are some of your key takeaways from your participation?

The discussions at this year’s Congress reaffirmed the universal challenges faced by food production facilities worldwide – from managing water, chemical, waste and energy use to achieving sustainable, hygienic operations under economic pressures. The expanding EHEDG membership across continents highlights a shared pursuit: enhancing hygiene design while adapting to global trends such as population growth and climate change. Alongside food hygiene and operational efficiency, sustainable water management emerged as a major focus. Addressing challenges in stormwater management is essential for protecting facilities from external contamination risks while supporting broader environmental goals. ACO’s integrated stormwater solutions contribute to creating resilient and sustainable food production environments.

What would you look forward to in future editions of the EHEDG World Congress?

At the recent Congress, we introduced our new pinless hygienic slot channel, designed to enhance total cleanability while maintaining discreet and robust performance. Future EHEDG editions offer an opportunity to continue sharing and validating such innovations that directly address critical hygienic design needs in food production.

At ACO, our more than 13-year collaboration with EHEDG has been both a learning experience and a platform for continuous development. Among the initiatives that grew from this cooperation is the Drainage System Assessment (DSA) – a structured risk analysis service aimed at identifying hygiene,

safety, and operational vulnerabilities related to drainage infrastructures. Real-time data collected directly from production sites, combined with global expertise, allows DSA to pinpoint critical weaknesses, such as floor cracks or system defects, that could compromise hygiene or production stability. Field data confirm that drainage areas can account for up to 70% of bacterial presence within production environments – a risk often underestimated due to the relatively small share of drainage investment (typically around 1% of total facility costs). While industry focus traditionally centers on hygienic design in production technologies, there is a growing need to also address risks originating beneath the surface. We hope future EHEDG events will continue to shine a light on these hidden but vital aspects of facility hygiene and operational safety.



Javier Lemus, Daniel Lodr & Michaela Strnadová (ACO)



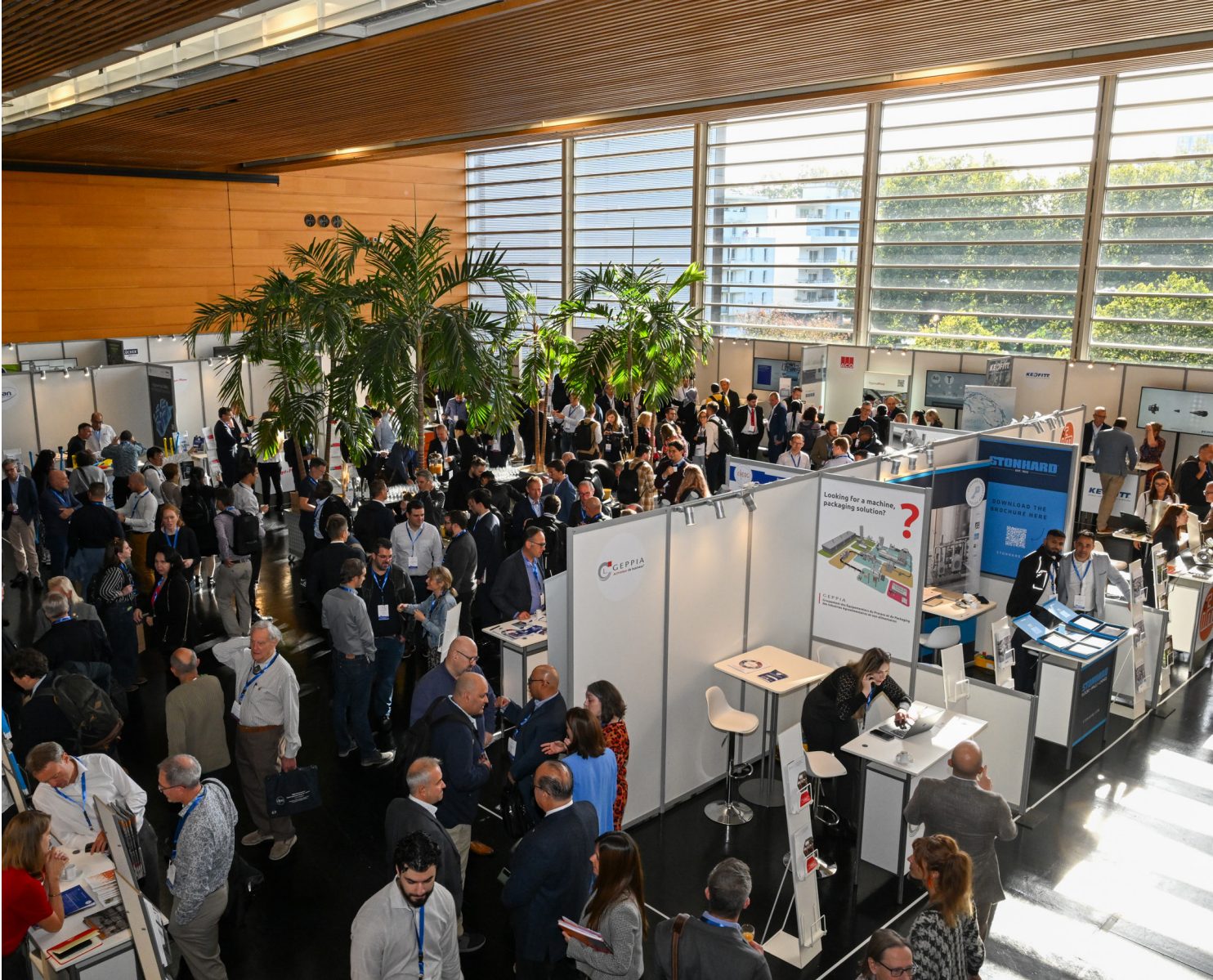


**AI Serving Food Safety:
Bridging Knowledge Gaps in
Resource-Limited Settings**

What specific challenges in food safety training do you believe AI-driven chatbots can address most effectively?
“AI-driven chatbots can address challenges in food safety training by improving accessibility and efficiency. In the context of the four pillars of food safety, particularly people management, AI can help where skilled trainers and clear materials are lacking due to a lack of budget and/or supervisors. It can quickly translate documents and create visuals, making training more understandable and effective. This ensures that essential hygienic engineering details are communicated clearly, enhancing food safety practices in resource-constrained environments.”

How do you envision the future development and adoption of AI tools in the global food safety landscape?
AI is poised to play a major role in the global food safety landscape. It will become integral to computerised systems, such as metal detection and X-ray machines, improving data management and efficiency. AI tools are crucial for processing large volumes of data and highlighting food safety issues, such as microbiological results and outbreaks. As AI technology evolves, its adoption will simplify data presentation and decision-making for food safety professionals, enhancing effectiveness and ease of work.

Anthony Chemaly, CEO, (IBL Africa)



**Case study: How can hygienic
design meet the current and
future needs of the food
industry?**

What are customers demanding in terms of new products, throughput, CSR and turnover?
“Our customers are demanding several key factors: (1) productivity, (2) easy maintenance and cleaning and (3) adaptability within complex layouts. In response, we have developed a machine that innovates products with minimal losses and maintains a high level of hygiene, featuring tool-free removable belts. Additionally, our design includes a modular approach with 25% fewer parts.”

What monitoring mechanism do you have in place to track the effectiveness of your actions in addressing such needs?
“We track the effectiveness of our actions through several mechanisms. We solicit feedback from our sales and after-sales managers to refine our machines and collaborate closely with our suppliers to develop specific components. Additionally, we engage in co-construction projects with agrifood organisations and ensure our team stays aligned with hygienic design principles through various EHEDG courses. Finally, we organise co-conception sessions with different customers to continuously enhance our machines.”

Quentin Guglielmini, General Manager,
(Liftvac)

**Effects of Process and Environmental Influences on Product and Process
Optimisation**

Which topic did you present at the EHEDG World Congress 2024?
“I presented on the effects of process and environmental influences on product and process optimisation, with a particular focus on cleaning-in-place (CIP) programmes for the dairy sector.”

When assessing the hygienic design of dairy processes, what are some key factors/criteria you consider to ensure optimal hygiene?
“When assessing the hygienic design of dairy processes, I consider several key factors to ensure optimal hygiene. First, compliance with regulatory standards and guidelines is crucial, addressing both hygiene and food safety while incorporating sustainability mandates. Continuous validation and verification are essential and should be integrated into environmental management plans at the site. Additionally, it is important to involve all users across the production chain in this ongoing validation and verification process.”

What do you believe are the most pressing challenges or opportunities in the dairy industry today, particularly concerning product quality and sustainability?
“(1) Sustainability: The dairy industry faces increasing pressure to reduce its environmental footprint. This includes addressing emissions on-site, water usage, waste management and biodiversity conservation.
(2) Emerging Technologies: These technologies offer opportunities to enhance product quality assurance, improve efficiency and reduce environmental impact. Many readily available technologies can be implemented to optimise operations and enhance sustainability.
(3) Compliance with regulations and environmental standards: Processors need to stay abreast of regulatory changes and ensure compliance with environmental standards to maintain product quality and market access.”

Niamh Burke, Dairy Processing Technical Lead,
(Dairy Processing Technology Centre)



**Utilisation and Reutilisation of Water in Food and Beverage Manu-
facturing**

Which topic will you present at the EHEDG World Congress 2024 (EWC2024)?
“At EWC2024, I presented on water, which is directly linked to the work of our water working group. It focuses on its sources and the reuse of water in the food industry. Given the increasing scarcity of water, reuse is essential, but it carries certain risks. My presentation covered the technologies available to treat reused water to ensure it meets the necessary standards for food production. This approach not only supports sustainability in water usage but also contributes to energy savings in food production.”

How can we ensure water quality and safety throughout the entire production process, particularly in the context of water reuse and scarcity?
“The water group has extensively discussed the importance of treatment, distribution and storage in maintaining water quality. Hygienic design is essential for ensuring this quality. The group will address how these factors contribute to water safety throughout food and beverage production.”

Anett Winkler, Food Safety Advisor / EMEA Micro-
biologist, (Cargill)





This was your first time sponsoring an in-person EHEDG World Congress. What motivated Bioscan to sponsor the EHEDG World Congress 2024?

As this was our first ever opportunity to be involved in an EHEDG World Congress since becoming a member, we wanted to be a part of the event in order to introduce Bioscan to members of EHEDG that were not already aware of who we are and what we do. It also allowed us to showcase how our innovative services and technologies can play a key role in the world of food safety from a practical perspective, both from in-field experiences and daily challenges that we come across from global food processors.

How did your experience this year compare with your expectations?

Coming into the event we did not really know what to expect with it being our first time; however, even with little prior insight, the event certainly surpassed our expectations. It gave us strong networking opportunities and interesting discussions with key industry players. We were able to engage in the thought-provoking conversations that helped deepen our understanding of industry challenges, reinforcing the importance of collaborative efforts in enhancing food safety.

What do you think are the benefits of events like this for companies in your industry?

Events like this provide valuable platforms for companies to network and share knowledge. They allow collaboration and discussion around current challenges and emerging ideas and technologies, which are essential for advancing hygiene standards and practices across the world. As there are visitors and members from a variety of industries with different roles in food and beverage, the scope for interaction is vast and this allows for different perspectives to be shared and deliberated over.

What are some of your key takeaways from your participation?

That the overall event is extremely important for the continued challenge to maintain and improve standards of global food safety; however, there must be more emphasis placed on the everyday challenges that are faced by processors of food, as the theory of implementing positive changes only become a reality once it is practically applied and tested in the real world.

What would you look forward to in future editions of the EHEDG World Congress?

We would welcome the opportunity for companies like Bioscan and others to present on the main stage or breakout rooms for 5-10 minutes, to ensure that more people are aware of the services and products that are on offer in order to take advantage of them in their daily challenges.

Samuel Peppin, Adama Camara & Lance Prince (Bioscan)



Importance of Subject Matter Experts (SMEs) in Hygienic Design

How have you incorporated hygienic design principles into your projects?
"I have incorporated hygienic design principles into my projects by applying my expertise gained over 10 years in the food industry. This includes vertical integration projects, such as crop-to-package systems, and designing wastewater treatment facilities that comply with regulations. I've been involved in Factory Acceptance Tests for new equipment and processes and worked closely with CEOs to ensure that projects and equipment meet hygienic design standards, focusing on cleanability, accessibility, safety and efficiency."

Holistic hygienic design: how do you ensure that the SMEs from various departments are effectively involved in the process?
"Holistic hygienic design refers to creating safe and effective systems for both food products and employees. To ensure effective involvement from SMEs across various departments, we integrate a 'Food Safety Quality Risk Assessment' into the engineering schematic from the project's inception to completion. This document initiates food safety discussions early and helps establish a cross-functional team to address concerns. By fostering collaboration and learning among departments, we ensure that all aspects of the project are considered, leading to accurate and safe outcomes."

Dyanne Parnel, Hygienic Design Consultant, Director, Sanitation and Quality Design, (Standard Practices, LLC/Darigold)



Congress Topics



How to create a (production) environment that suits the needs of the product?

What challenges do food processing facilities face in maintaining hygienic conditions, especially when handling sensitive or high-risk food products?
"Food processing facilities, particularly those handling sensitive or high-risk products, face challenges in maintaining hygienic conditions due to limited knowledge of HVAC systems. While the focus is often on food production, inadequate HVAC design and maintenance can increase contamination risks. Issues such as the inability to clean air ducts or poorly placed filters can exacerbate problems. To address these challenges, companies need to either develop in-house HVAC expertise or collaborate with engineering partners. Each facility's unique needs require a long-term perspective and the application of past experiences to avoid recurring issues."

Can you share a best practice to keep in mind when designing or retrofitting high care rooms?
"A best practice when designing or retrofitting high care rooms is to implement zone segregation with controlled air pressure differentials. When following this approach, you achieve (1) effective design, (2) safety and compliance and (3) optimised performance related to energy usage and maintenance. Additionally, considering future expansion possibilities during the initial design phase helps address potential issues early and ensures smoother growth."

Harm van den Oever, Branch Manager Eindhoven/ Manager, (Volantis)



Processing Environment Monitoring in the Dairy Sector



Processing environment monitoring: What challenges is the dairy food industry currently facing?
"We have learnt a lot from recent incidents that our factory environments can support the survival of various microorganisms. While some microorganisms are beneficial, others can be spoilers or pathogens that we definitely do not want in the final product. It's crucial to focus not only on raw materials and processes, but also on the entire factory environment, to ensure the safety and quality of the dairy products."

What role does hygienic design play in enhancing food safety?
"Hygienic design is crucial for enhancing food safety and should be central to the future of factory planning. It's not only about building the factory but also about its maintainability and cleanability. Key considerations include whether the factory can be effectively cleaned, how it is designed for hygiene and whether it will remain hygienic over time. Often, the importance of hygienic design is overlooked, leading to new factories with poor design that don't stand the test of time. When acquiring new equipment or building new facilities, it's essential to consider maintenance, cleaning and hygiene, not just operational functionality."

François Bourdichon, Food Safety Microbiologist & Consultant (Food Safety - Microbiology - Hygiene)

Hygienically Designed Food Plants of the Future

How do the GFSI 2020 benchmark scopes (JI and JII) influence the design and operation of food plants?
"The GFSI 2020 benchmark scopes JI and JII have significantly influenced the design and operation of food plants by emphasising hygienic design. Recognising that hygienic design was previously under-prioritised, GFSI established a working group to enhance its focus in factory and equipment design. This led to the creation of JI and JII scopes. JI serves as a future standard for auditing equipment manufacturers and construction companies, ensuring they adhere to hygienic design principles and meet client hygiene requirements. It provides a framework for building managers and companies to be accredited for their hygienic construction practices, a new development in the sector. JII, on the other hand, improves existing hygienic design standards across the entire food supply chain, from feed and farming to food service, enhancing the overall scope of hygienic practices."

With food safety as a key driver, how do you prioritise other factors such as customer choice, climate change and energy demand in the design process?
"While food safety remains the primary driver for factory design, other factors like customer choice, climate change and energy demand are increasingly important. Recent events, such as issues with chocolate, infant formula and ready-to-eat products, underscore the fact that food safety is crucial. Unsafe food leads to factory closures, product recalls and supply shortages. However, the COVID-19 pandemic has introduced new considerations. Future factory designs must ensure safety not just for food but also for workers, addressing challenges such as separation of people and effective airflow. Additionally, climate change will affect both weather conditions and pathogen levels in raw materials, potentially increasing factory downtime due to contamination. Therefore, factories need to be designed for rapid decontamination and adaptability to higher pathogen challenges, ensuring both food safety and operational efficiency in adverse conditions."

John Holah, Director, Scientific Committee, (Pioneering Food Safety Association)





Bo James Anderson & Palle Madsbjerg (BLÜCHER)

BLÜCHER at the EHEDG World Congress 2024: Insights and Outlooks by Palle Madsbjerg and Bo James Andersen

The European Hygienic Engineering & Design Group (EHEDG) World Congress has been a cornerstone event for professionals in the hygienic engineering and design industry. BLÜCHER, a committed participant since 2018, once again sponsored the Congress in 2024. We reached out to Palle Madsbjerg, Business Development Manager, and Bo James Andersen, Global Commercial Lead – Food & Beverage at BLÜCHER, to get their insights into the event.

BLÜCHER has been supporting the EHEDG World Congress since 2018. What motivated BLÜCHER to sponsor the EHEDG World Congress 2024?

Palle Madsbjerg: For BLÜCHER, the motivation behind sponsoring the EHEDG World Congress comes from a keen interest in staying ahead of hygienic subjects and generating connections within the industry. The Congress provides an invaluable platform for exchanging information and networking with both old and new contacts, which is fundamental for our ongoing development and for staying connected with the pulse of the industry.

Bo James Andersen: From my perspective, BLÜCHER's participation is driven by our desire to contribute to global food safety and to showcase the hygienic benefits of our products. The event allows us to engage with a wide audience about the importance of hygienic design in ensuring food safety, which is important to our business.

How did your experience this year compare with your expectations?

Palle Madsbjerg: The 2024 Congress not only met but exceeded our expectations, particularly in terms of the number of contacts made. There was a noticeable increase in interactions compared to previous years, which was both refreshing and rewarding.

Bo James Andersen: Although 2024 was my first year attending, the feedback from colleagues and my own experiences highlight a very active event. The breaks from speeches were busy with activities at all stands, which made for a dynamic and engaging atmosphere.

What do you think are the benefits of events like this for companies in your industry?

Palle Madsbjerg: Events like the EHEDG World Congress are crucial for enhancing our hygienic network and maintaining focus on critical hygiene topics. They provide a forum for industry professionals to meet, share ideas, and further collaborations that drive forward hygienic practices across the board.

Bo James Andersen: Such events are pivotal in educating the industry and the public about food safety and the critical role of hygienic products. It's through these gatherings that broader awareness and understanding of these important issues can be achieved, which in turn promotes safer food production practices globally.

What are some of your key takeaways from your participation?

Palle Madsbjerg: One of the primary benefits of participating in the Congress was the valuable input received with which to enhance our hygienic design efforts. These insights are integral to refining our processes and products.

Bo James Andersen: My interactions with guest speakers, customers, and even competitors were extremely fruitful. The discussions were not only informative but also conducted in a spirit of cooperation and mutual respect, which is important for progress in our field.

What would you look forward to in future editions of the EHEDG World Congress?

Palle Madsbjerg: For future Congresses, I look forward to the continuation of the guided introduction rounds for visitors at our exhibition stand. This was very effective this year and helped in making meaningful connections.

Bo James Andersen: I am eager to meet more interesting people, share views, and reconnect with familiar faces. The opportunity to exchange ideas and learn from others is something I value highly and anticipate with excitement for the next Congress.

In conclusion, the EHEDG World Congress remains a key event for BLÜCHER, offering significant opportunities for learning, networking, and showcasing innovations. Both Palle Madsbjerg and Bo James Andersen highlight its importance not just for individual growth, but also for advancing the industry's standards in hygienic design and food safety.

BLÜCHER

A WATTS Brand

How to prevent in-sterilities in aseptic operations. The case study of Nestlé



You mentioned that aseptic manufacturing has become a commodity over the last 20 years. How has this impacted the way food producers approach ensuring food safety and quality?

“Over the past 20 to 30 years, aseptic manufacturing has become standardised, shifting the focus from selecting the right concept and design to optimising the use of established technologies. Food producers now emphasise ease of operation, maintenance and troubleshooting of these technologies. Additionally, developing competencies and experience is crucial, requiring collaboration between food producers and technology suppliers. The goal is to ensure that technology not only meets performance needs, but also supports effective user training and experience.”

Xavier Gourlaouen, Group Manager & Aseptic Expert Liquid Packaging Product Technology & Development, (Nestlé)

Case Study: Introducing Interroll’s latest solution design for packed food applications: Special Hygienic Conveyor (SHC)



What challenges do food processing facilities face in maintaining hygienic conditions?

“With more than 10 billion people expected to be living on Earth by 2050, the steps for processing the increased amount of food being produced will also need to be increased and automation will have to be increased as well. With higher automation rates, the process steps need to be improved concerning hygiene and energy efficiency as well as waste reduction on a global scale.”

Stephan Kronholz, Vice President Hygienic Solutions, (INTERROLL)



Importance of Crack Detection Inspections



Could you provide some examples of the types/root causes of cracks that are commonly encountered in the food industry?

“Common root causes of cracks in food industry equipment include: (1) thermal cycling and fatigue, which occur from repeated heating and cooling cycles leading to expansion and contraction of stainless steel, causing cracks in welding joints; (2) pressure changes from routine operations like CIP, product changes and emergency stoppages; (3) surface vibrations and impacts from pneumatic hammers or other mechanical sources; and (4) corrosion from exposure to harsh chemicals or products, which can deteriorate stainless steel over time.”

How do cracks in equipment such as spray dryer systems, tanks or silos pose risks to food safety?

“Cracks in equipment such as spray dryers, tanks or silos can pose significant risks to food safety, primarily through cross-contamination. These cracks can harbour pathogens if the cleaning-in-place (CIP) systems do not effectively clean them. Moisture and product particles can accumulate in the cracks, creating environments conducive to microbial growth, which may compromise both the production process and the final product. For instance, in spray dryers, fine cracks that open and close with temperature fluctuations can trap bacteria, leading to contamination of subsequent batches if not detected and addressed by specialised crack detection systems.”

Samuel Peppin, Managing Director, (Bioscan)

Safeguarding hygienic plant design: a proven approach to project excellence



What is the relationship between commissioning, validation and hygienic plant design?

“The relationship between commissioning, validation and hygienic plant design is closely interconnected. Effective hygienic design begins with a thorough risk analysis at the project’s outset to address hygiene risks. These risks should be mitigated through testing during commissioning. It is essential to clearly outline hygiene standards and requirements in the User Requirements Specification (URS), whether technical or functional. During commissioning and validation, the plant’s compliance with these URS requirements is tested, which helps in determining what needs to be tested and checked.”

The food industry often overlooks key elements during these phases. What are the implications?

“Overlooking key elements during the commissioning and validation phases can have serious consequences. Short-term issues may arise, but the long-term implications can be costly, including extended commissioning phases and increased time to market. Problems identified during commissioning may reveal necessary changes to address hygiene issues, leading to additional costs and delays. Addressing these elements correctly from the outset helps avoid such hurdles and ensures a smoother process.”

What steps can be taken to mitigate risks?

“To mitigate risks, it’s crucial to invest in hygienic design early and thoroughly. This involves allocating resources to hygiene and cleaning, developing a clear User Requirements Specification (URS) and conducting a comprehensive hygiene risk analysis before conceptualising the design. A holistic approach is beneficial – consider not just the equipment but also factors that could impact product hygiene, such as the building, ventilation and interconnecting piping. Avoid a fragmented perspective by seeking independent advice to ensure all aspects are covered.”

Jeroen van den Boezem, Market Director, (NIRAS Nederland)



Habasit's Ongoing Focus on Hygienic Design: a Sponsorship, Participation, and Future Outlook

Why Habasit sponsored the EHEDG World Congress 2024

Habasit has been actively involved with the EHEDG World Congress since 2022, and this positive experience encouraged the company to sponsor the 2024 congress in Nantes. Past events proved that sponsoring helps Habasit connect with experts, share knowledge and push innovations in hygienic design. This support also reflects Habasit's core belief that improving food safety is a shared responsibility, requiring the active participation of everyone in the industry.

Beyond simply funding an event, sponsoring allows Habasit to exchange insights with other professionals, build new relationships and strengthen existing ones. By investing in this Congress, the company contributes to shaping the future of hygienic design, which is crucial for ensuring food safety. Sponsoring the EHEDG World Congress aligns with Habasit's goal: to work together with industry peers to promote high standards that benefit all.

How the 2024 Congress surpassed expectations

Despite coming in with high hopes, Habasit was impressed by how the Congress went beyond those expectations. The presentations covered a wide range of technical and regulatory topics, allowing attendees to learn from each other's experiences. In addition, the breakout sessions provided a more focused environment for detailed discussions about current and future trends in hygienic design. One highlight was seeing practical, easy-to-apply examples of hygienic improvements. Anthony Chemaly from IBL Africa showcased how simple measures can quickly raise cleanability standards in food processing plants. Habasit's own breakout session on open conveyor systems offered insights into ways to reduce cross-contamination, increase cleanability and address everyday issues

that processors face. The feedback and open dialogue from industry peers validated the importance of such discussions. It proved how crucial it is to share both challenges and solutions in real time, so everyone can learn and improve.

Why events like the EHEDG World Congress are beneficial

These gatherings create a space for component and ingredient suppliers, equipment manufacturers, and food processors to come together, exchange ideas and address common problems. They ensure that everyone's voice is heard - from industry veterans to new entrants - and highlight the shared commitment to producing safer food.

Even if a company is not presenting, attending the congress can still provide valuable insights. It offers an up-close view of the latest improvements, regulatory updates, and design innovations. Discussions at these events not only inspire fresh solutions but also help to strengthen professional networks. In other words, investing a few days in this immersive environment often sparks long-term collaborations. Over time, these partnerships can lead to industry-wide shifts in how we view and implement hygienic design.

Moreover, by participating in these forums, companies can stay ahead of evolving regulations and consumer demands. Regulations constantly change, reflecting advancements in technology and heightened public awareness of food safety issues. Being able to react quickly to these changes can give a competitive advantage. Events like the EHEDG World Congress keep industry players informed and connected, building a community that collectively works toward safer practices.

Key takeaways and the need for a multi-layered approach

A major insight from this year's Congress was the importance of both short-term and long-term strategies. Sometimes, the industry focuses so much on cutting-edge technology that it overlooks simpler solutions that could deliver immediate benefits. Yet it is equally important to pursue big ideas that might reshape the industry in the future.

- Short-term improvements: Small adjustments in conveyor systems, for instance, might involve using better materials or refining the belt surface to ease cleaning. Such changes can lower the risk of cross-contamination and reduce downtime during cleaning. These steps may seem small, but their impact on day-to-day operations can be significant.
- Long-term innovations: Meanwhile, truly disruptive ideas could transform food processing in radical ways. Although these innovations take more time to develop, they have the power to revolutionise production lines and set new standards for food safety worldwide.

Balancing both approaches helps companies remain competitive today while also preparing for tomorrow's breakthroughs. The Congress reinforced how all layers of progress, whether minor or revolutionary, must work together to improve hygiene standards in every corner of the food processing world.

Looking ahead to future EHEDG World Congresses

Habasit looks forward to upcoming EHEDG World Congress events, and especially to the chance to interact with peers in person. Meeting other experts in a shared space encourages free-flowing ideas and strengthens partnerships that can last well beyond the Congress itself.

One suggestion for future events is to host more open panel discussions which would also attract more food processors. Having multiple experts on stage debating certain topics - such as how to balance cost, performance, and hygiene - can spark new ideas and challenge conventional thinking. When diverse voices share different angles on the same issue, it often leads to creative solutions no single party could have imagined alone.

Hands-on workshops or demonstrations would also add value. These sessions allow participants to test new products, learn best practice, and experience real-world applications on the spot. Practical, concrete examples often leave a stronger impression than theoretical talks alone.

Concluding thoughts

By sponsoring the EHEDG World Congress 2024, Habasit reaffirms its commitment to raising hygienic standards in the food processing industry. Events like this bring people together to share knowledge, promote collaboration and drive meaningful change. Every dialogue, presentation, and demonstration at the Congress helps sharpen our collective understanding of food safety challenges and the methods by which we can tackle them.

For Habasit, the Congress was a chance to gain fresh perspectives from other sectors, including technology developers, equipment manufacturers, and hygiene specialists. That broad exposure is key to staying innovative. It also reinforces the belief that progress arises when companies openly trade insights, rather than silo them. When everyone works together, the entire industry moves forward - protecting consumers, improving manufacturing efficiency, and setting new benchmarks for safety.

Looking ahead, Habasit plans to continue investing in events like the EHEDG World Congress. By taking part in discussions, networking activities and hands-on demonstrations, the company stays on top of the latest advancements and ensures that it is ready to help shape the future of food processing. More importantly, this commitment puts Habasit in a position in which it can contribute solutions that benefit both customers and consumers around the world.



Enrico Visconti & Wesley Pieterse (Habasit)





Cleaning Validation of Plants

Why is validated cleanability so important in the context of food processing plants?

"Validated cleanability is crucial in food processing plants because it directly impacts product safety and market success. If a company faces a recall, the financial and reputational costs are significant. To avoid such issues, it is essential to ensure that all equipment can be effectively cleaned and validated. While regulations address the need for cleaning, existing literature often lacks specific guidance on how to achieve and validate effective cleaning processes."

What advice would you give the industry professionals looking to improve the cleanability and sterilisation of their plants?

"To enhance cleanability and sterilisation in food processing plants, begin with thorough cleaning procedures. Aim to reduce cleaning time, as the final traces of soil are the hardest to remove. Use cleaning temperatures above 100°C and ensure chemicals are used in the correct concentrations. Additionally, ensure cleaning fluids are not contaminated. The cleaning validation process is time-intensive and may take up to two years, involving statistical evaluation and trial and error, as there is no one-size-fits-all solution, especially for non-living soil."

Martin Barnickel, Lecturer in Dairy Sciences, (LVFZ Kempten)



Is it possible to achieve sustainability with hygiene operations that guarantee the necessary level of food safety?

What are the challenges associated with traditional cleaning methods in the food industry, especially concerning water and energy consumption and environmental impacts?

"Traditional cleaning methods in the food industry face significant challenges due to high water and energy consumption. These operations often use considerable amounts of potable water and energy, while the treatment of wastewater becomes increasingly costly. The key challenge is to reduce both energy and water usage while managing the environmental impacts associated with these cleaning processes."

What are the opportunities? How can hygienic design leverage them?

"Emerging opportunities in hygienic design include advancements such as foam cleaning for both open and closed surfaces. Foam cleaning allows for lower temperatures, reducing energy consumption, and uses significantly less water compared to traditional methods. By integrating such innovations into hygienic design, the food industry can improve cleaning efficiency and reduce both water and energy demands, facilitating better hygiene maintenance practices."

Thierry Benezech, Research Director, (INRAE)

Equipment Selection

How does Mondelēz approach the selection of equipment for its manufacturing processes?

"At Mondelēz, selecting equipment for our manufacturing processes is driven by a commitment to food safety, which underpins the trust consumers place in our beloved snacking brands. Our equipment must meet stringent regulatory food safety requirements and incorporate hygienic design principles such as suitable food contact materials, cleanability, smooth surfaces and ease of access and drainage. Beyond these, we ensure that equipment is safe for our colleagues to operate, clean and maintain, while also meeting electrical, utility and quality standards. We are increasingly aligning our equipment choices with our sustainability goals. Our structured approach includes (1) clearly defining project scope and deliverables, (2) assessing the technical maturity of the equipment and suppliers and (3) conducting early risk assessments to integrate requirements from the outset and learn from early deployments. This collaborative process involves working closely with engineering, HSE, OEMs and other departments."

How important is the collaboration between Original Equipment Manufacturers (OEMs) and end users in the equipment selection process?

"Collaboration between OEMs and end users is crucial in the equipment selection process. Involving OEMs early ensures that hygienic design principles are integrated into the equipment from the start, rather than as an after-thought. This approach leads to better outcomes in food safety, quality, performance and sustainability. As end users, we provide clear requirements and feedback to improve current and future designs. While we don't expect OEMs to know all our needs, we support them with training documentation and webinars to ensure our requirements are understood. We also recommend that OEMs stay updated with industry best practices and participate in organisations like EHEDG, as many of our recommendations align with EHEDG guidelines."

James Hartley, Global Sanitation Director, (Mondelēz International)



OPC: The next level of hygiene

Given that your presentation will focus on the OPC, what is the significance of cleaning routines in food manufacturing, particularly in processed food sites?

"The significance of cleaning routines in food manufacturing, especially at processed food sites, lies in their manual execution by operators, which highlights the need for comprehensive training. Proper training ensures that operators use consistent chemicals, concentrations and temperatures and adhere to uniform routines. The objective is to achieve repeatable and reliable cleaning results."

How can productivity and sustainability be enhanced with hygienic design?

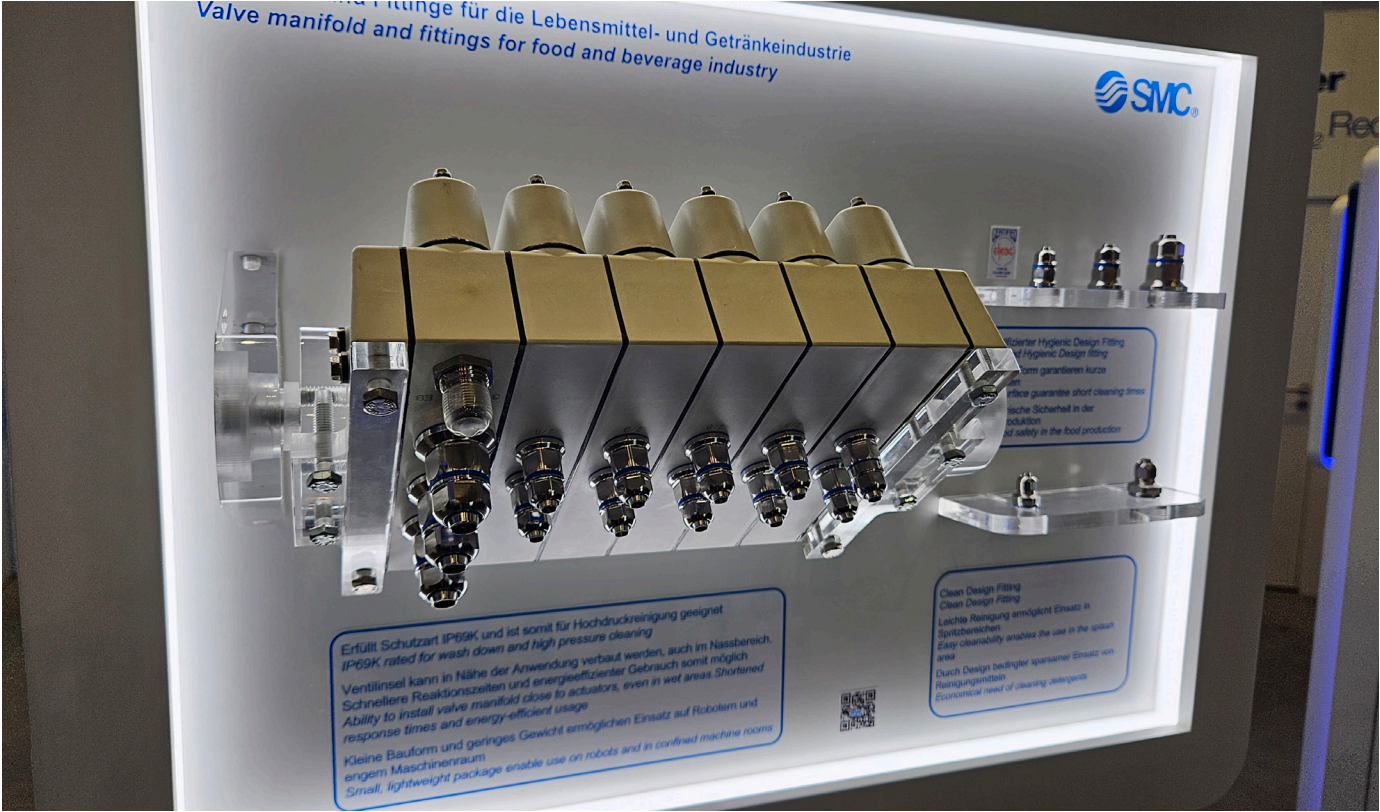
"Enhancing productivity and sustainability with hygienic design involves addressing the impact of poor design on cleaning processes. Inefficient hygienic design can make cleaning unsustainable and reduce productivity due to increased cleaning time. During audits, we not only evaluate the effectiveness of cleaning chemicals and procedures but also assess the accessibility of equipment to ensure efficient and sustainable cleaning practices."

What role do events like the EHEG World Congress play in facilitating collaboration and knowledge-sharing within the industry?

"Events like the EHEDG World Congress play a crucial role in facilitating collaboration and knowledge-sharing within the industry. They bring together customers, OEMs and suppliers, which supports the coordination of activities and enhances overall industry interaction and cooperation."

Ester Fernandez, Processed Food Application Specialist, (Diversey, a Solenis company)





SMC has been supporting the EHEDG World Congress since 2018. What motivated SMC to sponsor the EHEDG World Congress 2024?

Personally, I've been involved with EHEDG since about 2013 and have always recognised the importance of EHEDG and their published guidelines for the food sector. For many years, there was a slow acceptance of the need for hygienically designed machines in the UK, but more recently with the GFSI (Global Food Safety Initiative) releasing Scope JI and JII, we have seen an increase in both end user customers and original machine manufacturers wanting to discuss all manner of subjects related to hygienic design. With environmental concerns and cost pressures placing an increasingly heavy burden on businesses, hygienic design - if done correctly - gives a business the opportunity to cut its operating costs (labour, cleaning chemicals, time) and increase their productivity, as quicker cleaning times lead to increased machine availability and hence production. As a market leader in the food automation sector, it is vital that we at SMC align ourselves to industry needs and design trends so as to better service our customers.

How did your experience this year compare with your expectations?

The World Congress in Nantes was a superbly organised event, and the quality of the presentations and the quality of the delegates were exceptional. Where else can you meet with globally renowned

experts in their field and chat and exchange ideas all in one place? There were delegates literally from all around the world and from all manner of food manufacturers and so a good discussion on food safety and hygienic topics could always be had. Networking at this level gives SMC an insight into market trends and product development opportunities. We would recommend the sponsorship opportunity to any OEM or service provider involved in food manufacturing.

What do you think are the benefits of events like this for companies in your industry?

For us at SMC, it is an opportunity to fast-track our product development and ensures that the products we're looking to develop adhere to best practice guidelines in the food industry. Naturally, as an equipment manufacturer producing products that are both easy to clean and hygienically designed leads to a greater adoption of our products across industry. Original equipment manufacturers and end users can be safe in the knowledge that, by specifying SMC components in their URS (User Requirement Specification), they are mitigating any potential contamination risk across their business. Sponsoring the EHEDG World Congress also allows us to position SMC as the knowledge leader in our segment and enables us to develop lasting partnerships with both original equipment manufacturers and end users.

What are some of your key takeaways from your participation?

I would say there has never been a greater focus on hygienic design and food safety and, for me, now is the time that equipment manufacturers, and food producers must look to raise their game. EHEDG provides the perfect platform from which to gain insights, share experience and help drive process improvement across food manufacturing.

What would you look forward to in future editions of the EHEDG World Congress?

I think the food processing sector would like to see tangible, quantitative case studies from a business which has adopted hygienic design as a cornerstone of its business compared to designing food processing machinery in conventional ways. Quantifying the financial benefits for a business of adopting hygienic design principles is often difficult to demonstrate, as benchmarking metrics are seldom considered between a standard machine and a hygienically designed machine. Case studies which are able to demonstrate to senior managers a reduced total cost of ownership over the production life of a machine would be very beneficial in overcoming the standard "that's too expensive" line. I would also like to see greater representation from equipment manufacturers involved in the World Congress as, without the equipment manufacturers, you're missing half of the solution.



Bruno Briatte, Steve Arnold (SMC) & Simon Burns (Cardiff Metropolitan University)



Shining a light on the global cleaning industry

How can best practices in the professional cleaning and hygiene industry be applied to food safety and hygienic design?

“Best practices in the professional cleaning and hygiene industry can greatly improve food safety and hygienic design by focusing on sustainability, efficiency and resource conservation. Incorporating IoT and AI technologies can enhance cleaning processes through data-driven insights. However, the most critical aspect is comprehensive training for all employees involved in cleaning – beyond just cleaning staff – to build a strong safety culture and emphasise the importance of maintaining a clean environment without cutting corners.”



Robert Stelling, Director Professional Cleaning & Hygiene, (RAI Amsterdam/Interclean)



Holistic Hygienic Design

Given that your presentation focused on the holistic hygienic design, why should it be considered an essential prerequisite for all equipment and facilities used in food handling?

“Over the years, we have recognised that contamination sources within food production environments can spread to food contact surfaces or directly to the food. Aerosols, people touching various surfaces and transferring contamination all contribute to this risk. Incorporating hygienic design into all equipment and surfaces in the factory environment would further minimise the risk of contamination reaching the food product.”



What advice would you offer to food industry professionals seeking to improve their understanding and implementation of hygienic design practices in their operations?

“For those looking to enhance their understanding of hygienic design, I recommend EHEDG and 3-A. Both organisations have extensive expertise and a wealth of knowledge. On the EHEDG website, you can access over 50 guidelines. Key guidelines include: GL 8, which covers the principles of hygienic design and is available free of charge in multiple languages; GL 32, which addresses materials of construction; and GL 44, which focuses on factory buildings and infrastructure. Additionally, EHEDG offers both basic and advanced courses in hygienic design, providing a solid foundation for applying these principles in any facility.”

Why should people attend the EHEDG World Congress?

“The EHEDG World Congress consolidates a wealth of expertise in a single event, attracting over 400 attendees, many of whom are field experts. If you’re not attending a presentation, experts are available for informal discussions on any challenges you might face. EHEDG members are highly committed to sharing their knowledge and insights.”

Debra Smith, Global Hygiene Specialist, (Vikan)



The art of cleaning and disinfection with hygienic design. How to deliver productivity, employee satisfaction, food safety and sustainability

What key elements define a strong hygienic design in an OPC setup and in CIP applications?

“From an OPC perspective, accessibility is vital for hygienic design. Design flaws, like overlapping conveyor belt flaps, create areas which cleaning chemicals can’t reach, leading to residue build-up and microbiological risks. Drainability and avoiding dead legs are also crucial. Non-drainable areas can trap water, promoting biofilm growth, while dead legs, often due to poor design, are difficult to clean effectively.”

How can a well-implemented hygienic design affect employee satisfaction?

“Hygienic design simplifies tasks, making them safer and more efficient. It is human nature that humans want to do the simplest things. When equipment is well designed, people can complete their work without unnecessary strain or risk of injury, such as from bending or reaching difficult areas. This not only ensures safety but also saves time by preventing avoidable issues.”



Adam Ruskin, Product Leader Food Safety & Technical Support, (Ecolab)



This was your first time sponsoring an in-person EHEDG World Congress. What motivated Actalia to sponsor the EHEDG World Congress 2024?

Actalia has been a leader in the domain of food safety for the past 40 years, a position that comes with significant responsibilities in ensuring safe food for all. In this regard, we have been contributing through our various units across different aspects of food safety, with one of our key focuses being the promotion of hygienic design within the food industry. Sponsoring the EHEDG World Congress 2024 was an honour for us, as it aligns perfectly with our mission to build collaboration, provide innovative solutions for our clients and build networks to address emerging topics in food safety. We recognised this event as a unique platform for connecting with experts, innovators and key stakeholders from around the globe. It provided us with the opportunity to exchange ideas, learn from others and share our mission and commitment to creating a safer food world. By sponsoring the congress, we aim to strengthen our engagement with the international community, reaffirm our leadership in food safety and contribute to shaping the future of hygienic design.

How did your experience this year compare with your expectations?

The experience met our expectations, especially in terms of the level of engagement, exchange of ideas and potential for collaboration. We were delighted to meet food safety stakeholders who shared a common vision and we valued the opportunity to have in-depth discussions with many of them. Unfortunately, due to time constraints, we could not explore some conversations as fully as we would have liked. Nevertheless, it was an incredibly enriching and productive experience overall.



What do you think are the benefits of events like this for companies from your point of view?

From my point of view, events like this benefit companies by offering a unique platform for connecting with stakeholders who are otherwise hard to reach, such as scientists, industry leaders and decision-makers. They create opportunities to exchange knowledge, understand industry challenges and explore solutions collaboratively. For companies, it is also a chance to gain visibility, share their mission and establish new collaborations that can drive growth and innovation in their field.

What are some of your key takeaways from your participation?

The organisation of the congress was seamless and I would like to thank the management team for their efforts. I thoroughly enjoyed the event, particularly the discussions on real-life problems. The presentations were of high quality and the success stories about implementing hygienic design, such as the case study in Turkey, were truly inspirational. Emerging trends, like the use of AI in the food safety field, showcased the consortium's adaptability and awareness, as well as the conscious improvements happening in this domain. Knowledge sharing on the health impact of daily-use items, such as PFAS, highlighted future opportunities to find sustainable replacements. The diversity of presentations, ranging from policy-making to core research, added a unique and enriching dimension to the event. Most importantly, the interactions with experts provided a valuable platform for explaining our mission while learning about the challenges faced by the industry. These discussions reaffirmed our potential to contribute solutions and also underscored the need for continued efforts in this field.

The event emphasised the importance of robust collaboration among academia, industry and policymakers to address real-world scenarios and drive meaningful improvements in food safety. Overall, it was an enlightening experience with valuable insights and opportunities for growth.

What would you look forward to in future editions of the EHEDG World Congress?

As a sponsor, we often find that the time available for interaction with delegates is quite limited, which is understandable but still challenging. In future editions, we would appreciate opportunities for more focused engagement, such as through workshops where sponsors can actively demonstrate their capabilities. This would allow delegates and attendees to experience real-life applications of our work and better understand our contributions to the field. While this might pose logistical challenges, it is an idea worth considering for enhancing the overall experience.

Additionally, a dedicated session for sponsors to interact with each other would be highly beneficial. Since much of our time is spent at our counters, we often miss the opportunity to explore other sponsors' displays or exchange insights with them. A collaborative session would not only strengthen partnerships among sponsors but also encourage innovative ideas and shared solutions.

Finally, it could be valuable to include informal networking events or roundtable discussions focused on specific themes, such as emerging trends or shared challenges in food safety and hygienic design. These sessions could encourage open dialogue, foster collaboration across disciplines and ensure that both sponsors and attendees leave with actionable insights. Such initiatives would further enrich the congress experience for all participants and promote long-term cooperation among stakeholders.

Aurelie Hanin & Piyush Kumar (Actalia)





CSF has been supporting the EHEDG World Congress since 2021. What motivated CSF to sponsor the EHEDG World Congress 2024?

We chose to sponsor the EHEDG World Congress 2024 as part of our commitment to advancing global hygienic design standards.

Our objectives for participating in and sponsoring the Congress were:

- Enhancing our industry leadership and visibility by highlighting our expertise and innovations;
- Building meaningful collaborations with industry experts and potential clients through networking opportunities;
- Staying ahead of hygienic design trends and best practice through knowledge exchange and learning.

Through this sponsorship, CSF Inox SpA aims to actively contribute to the discussion on hygienic design, share our expertise and innovations, and solidify our role as a leading provider of advanced solutions for the pharmaceutical, food, and beverage industries.

How did your experience this year compare with your expectations?

We experienced a very well-organised event in which we could schedule our attendance at interesting speeches and revealing presentations. We also enjoyed the informal atmosphere, both during the daytime and at the night event, which fostered networking with all participants and visitors. It also encouraged active engagement in all the speeches, exceeding our expectations.

What do you think are the benefits of events like this for companies in your industry?

For us the main benefits are the possibility of staying at the cutting edge of hygienic design and being recognised for this, as we constantly drive our resources in that direction, continuously raising the bar of hygienic design level in our products.

What are some of your key takeaways from your participation?

Among all the interesting talks, we found that the common thread could be condensed in the mantra of adopting a risk-based, holistic approach to hygienic design. Once this philosophy becomes ingrained in food plant procedures, all the stakeholders in the supply chain would be involved.

Another emerging thread was the usage of AI applied to HD, which is not surprising as we all know that generative AI is becoming more widespread in all industrial branches.

What would you look forward to in future editions of the EHEDG World Congress?

We would like to see even greater participation by all the producers and more technical insights into closed equipment.



Luigi Genitoni (CSF Inox S.p.A)



EHEDG World Congress 2024

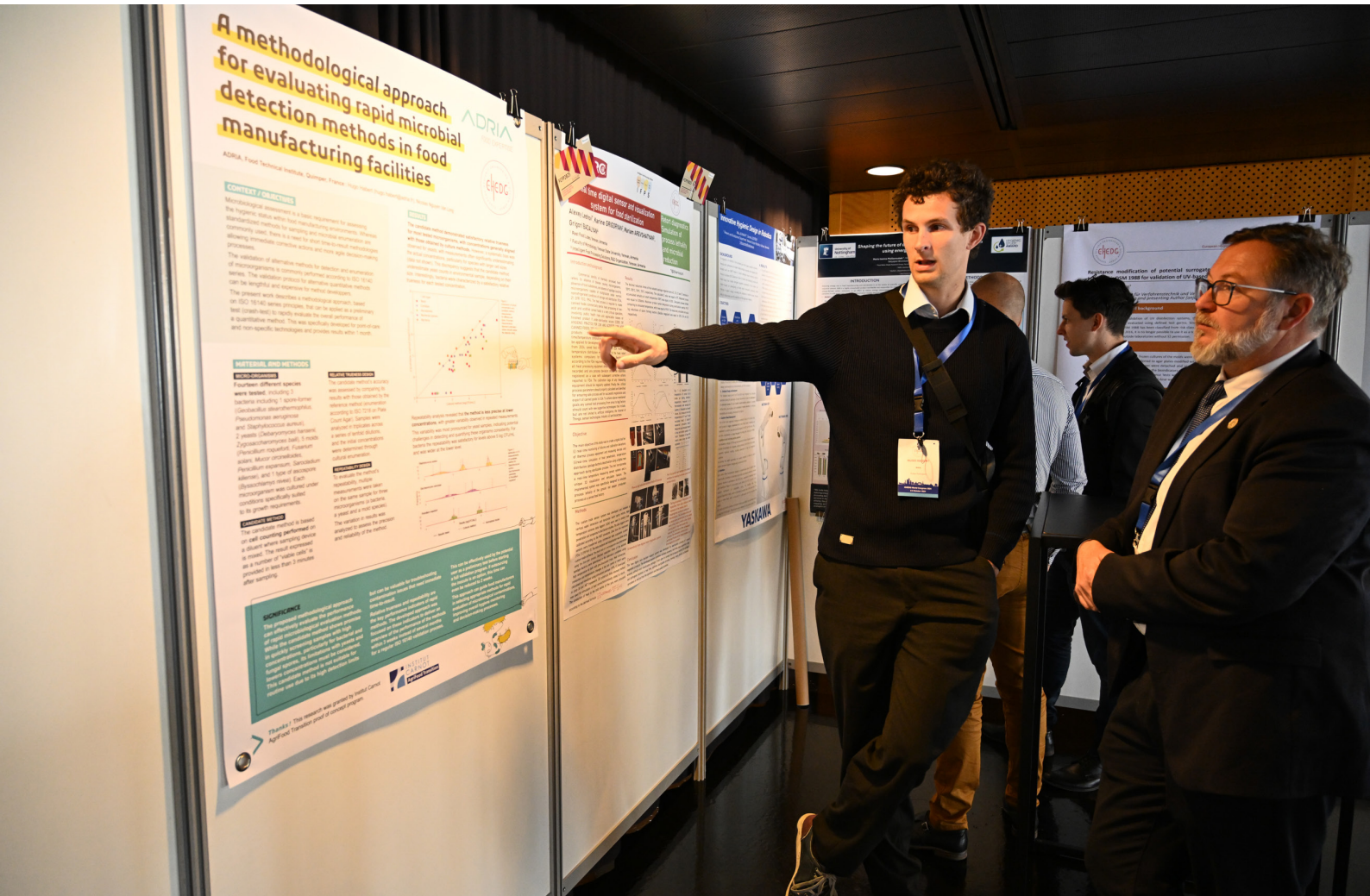
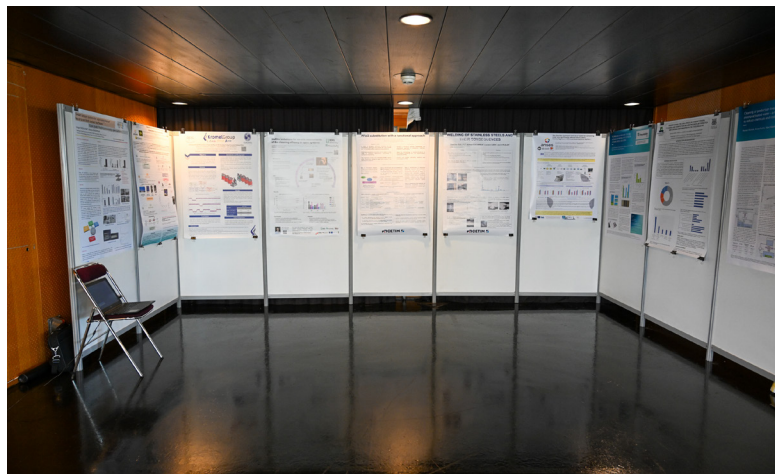
2 & 3 October | Nantes, France
'Achieving hygienic excellence by design'



Research Poster session

At every EHEDG World Congress, the Poster Competition stands as a vibrant platform for bridging the gap between academia and industry. It is here that emerging researchers, students and young professionals have the opportunity to showcase their latest findings, ideas and innovations in hygienic engineering and design.

This competition plays a vital role in fostering the next generation of experts, encouraging dialogue between academic institutions and industry leaders. By bringing fresh perspectives to real-world challenges, it not only highlights promising talent, but also supports the continuous evolution of food safety, product quality and sustainable practices across the sector.



'Smart sensor system for rapid detection of bacteria on food contact surfaces. Case study: Poultry processing open surfaces'

Could you please introduce yourself and outline your academic or professional background?

Thank you for inviting me to this interview. My name is Grigori Badalyan. Currently, I am the director of an intelligent food processing solutions company in Armenia. I have over 15 years of experience in food safety, food engineering and food technologies. My current focus is on developing smart systems, sensors and solutions for the food industry. I hold a doctoral degree in Engineering from the University of Bonn and have gained research experience at several European institutions, such as Fraunhofer and Corvinus University in Budapest. That's a brief overview of my background.

What motivated you to submit your poster to the EHEDG World Congress 2024?

The EHEDG Congress, especially the 2024 event in France, is a platform where science meets industry. It's a unique opportunity for professionals from engineering companies and those with scientific backgrounds to connect. I was motivated to present my work on sensor systems for the food industry, as well as to enhance my professional network. Additionally, it was a chance to reconnect with the EHEDG community after a break since my initial involvement in 2008. The Congress served as an excellent opportunity to restart my activities within this community.

In what ways do you think participating in this competition has impacted your research or career perspective?

Participating in the competition significantly enhanced my professional network. I received various project invitations, which have influenced my career trajectory in Armenia. Overall, it has been a great accelerator for my career.

Is there a strong Armenian presence in the EHEDG network?

Currently, our activities in Armenia are just starting. During the Congress, I introduced my strategy for expanding the EHEDG presence in Armenia. This includes introducing new technologies and helping people understand EHEDG principles practically in their factories and institutions. Simply sharing guidelines isn't enough; we need to provide more explanations and practical demonstrations for better understanding.

What advice would you give to students or professionals considering submitting their research to future EHEDG Congresses?

I have several key pieces of advice:

1. Mixed content: Your poster should include both industrial and scientific elements. Unlike purely scientific conferences, EHEDG events emphasise practical solutions that can be quickly implemented in the industry.
2. Practical solutions: Focus on solving real-world problems that the industry faces and ensure the solution is directly applicable.
3. Relevance: The issue your poster addresses should be current and resonate with industry professionals worldwide.
4. Impact: Present a unique element – something that stands out and shows your solution's practical utility. Judges look for ideas that can genuinely help the industry. Make sure your solution is realistic and practical, as impractical technologies often fail to gain traction.

Did you find the application and judging process fair? Was it challenging compared to other poster competitions?

It was somewhat challenging but fair overall. I didn't expect to win first place, though I had a feeling I would be placed somewhere. The process was competitive but rewarding.



Grigori Badalyan
(Intelligent Food Processing Solutions, Yerevan State University)

‘Cleaning of food production lines with plasma-activated water’



Roman Murcek,
Group Cleaning Technologies (Fraunhofer Institute for Process Engineering and Packaging IVV)

Could you please introduce yourself and your academic or professional background?

My name is Roman Murcek and I am a researcher at the Fraunhofer IVV. I studied mechanical engineering in Dresden with a specialisation in processing technology and packaging machines. Over the past 12 years at Fraunhofer, I have continued to specialise in hygienic production and cleaning technologies.

What motivated you to submit your poster to the EHEDG World Congress 2024?

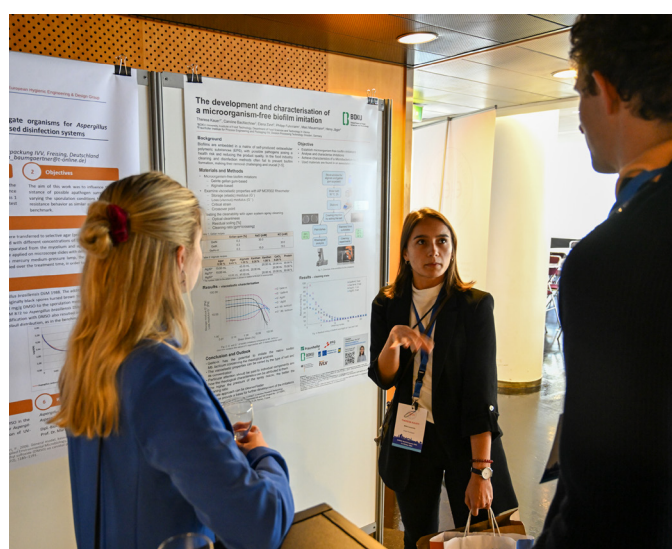
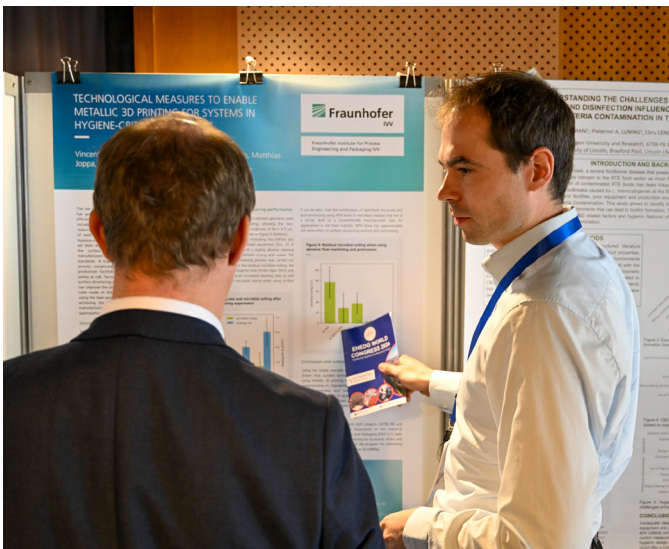
We believe that the use of plasma-activated water for the simultaneous cleaning and disinfection of production facilities in the food industry has enormous potential. The technology is still in the early stages of development. It is therefore currently particularly important to raise awareness of the topic in the industry so that it can be successfully transferred to facilities in the future. The EHEDG World Congress seemed perfectly suited for this in our eyes.

In what ways do you think participating in this competition has impacted your research or career perspective?

Since the main purpose of the participation was the publication of the topic, the aspect of the competition was more of secondary importance. Nevertheless, a fact like that motivates you to raise your quality standards even higher than they already are.

What advice would you give to students or professionals considering submitting their research to future EHEDG World Congresses?

Make sure that your research follows good scientific practice and always critically question your own results. Also ask yourself what needs to happen so that your topic can really be implemented in a practical industrial application in the future.



‘Innovative hygienic design in robotics’



Miha Jevnikar R&D Engineer - Robotics Division (Yaskawa Europe Robotics)

Could you please introduce yourself and outline your academic or professional background?

Hello, everyone. My name is Miha Jevnikar and I'm from Ljubljana, Slovenia. I have a master's degree in mechanical engineering from the Faculty of Mechanical Engineering at the University of Ljubljana, where I specialised in mechanics. During my academic journey, I actively participated in various projects that helped me build a strong foundation in engineering principles and practical problem-solving. After completing my master's degree, I joined Yaskawa Europe Robotics as an R&D engineer. My primary responsibilities there include developing new robots. My work involves conducting various types of testing, performing finite element analysis, 3D modelling, prototyping and more, all aimed at delivering innovative and high-performing robotic solutions.

What motivated you to submit your poster to the EHEDG World Congress 2024?

One of our recently completed projects focused on developing manipulators designed with hygienic principles in mind. During the early stages of this project, we became familiar with the EHEDG organisation and its resources. As our team progressed, we became EHEDG members, which gave us access to an extensive library of documents prepared by the organisation. The EHEDG guidelines provided significant insights that shaped our approach and ensured our robot design met the highest standards for hygienic engineering. Upon completing the robot, we were thrilled to have the opportunity to present our work at an event like the EHEDG World Congress. It was the ideal platform to showcase our innovation, contribute to the ongoing dialogue on hygienic engineering and design practices and build new connections.

In what ways do you think participating in this competition has impacted your research or career perspective?

Participating in the competition has been a truly rewarding experience. Winning the third place award for our poster was an incredible honour, and we are all deeply grateful for the recognition. The acknowledgment from EHEDG and its network provided additional validation of our team's efforts. The experience allowed me to present our research to a specialised audience and receive valuable feedback from industry experts. It broadened my perspective on global challenges in hygienic engineering and motivated us to pursue innovative solutions in our future work. It also gave us greater confidence in sharing ideas and encouraged me personally to continue contributing to advancements in hygienic design principles within robotics.

What advice would you give to students or professionals considering submitting their research to future EHEDG World Congresses?

I would strongly encourage everyone to participate in events like the EHEDG World Congress. It's an invaluable opportunity to share research and connect with experts and like-minded individuals from across the industry. Building these connections fosters collaboration, professional growth and fresh perspectives that might not be accessible otherwise. The process of preparing and presenting your work at such a high-profile event also sharpens your communication skills. Additionally, the feedback and recognition you receive can provide extra motivation and validation for your efforts. My advice would be to embrace the challenge and see it as an opportunity for both professional growth and personal enrichment.

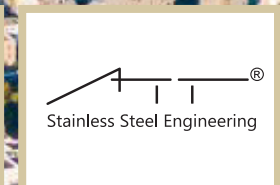


EHEDG Congress Dinner 2024



Thank you to all our
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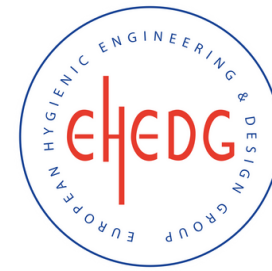
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EHEDG WORLD CONGRESS 2026

7&8 October 2026 | VIENNA, AUSTRIA



SCIENTIFIC POSTER AREA

AT THE EHEDG WORLD CONGRESS 2026

Sponsorship Opportunities



SILVER



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BRONZE

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2 Staff members

8m2 Booth

2 Staff members

4m2 Booth

1 Staff member

Exposure in 2025 & 2026 via EHEDG Online Congress 2025, Newsletter & Yearbook

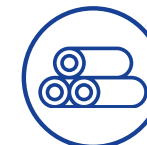
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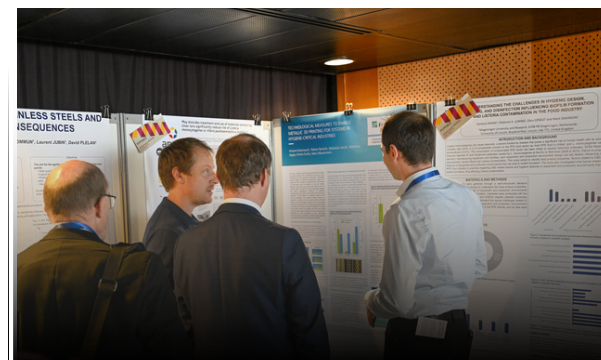
Sustainability



Water

Scientific Poster Area

Showcase areas you excel in and present your work in the form of a poster

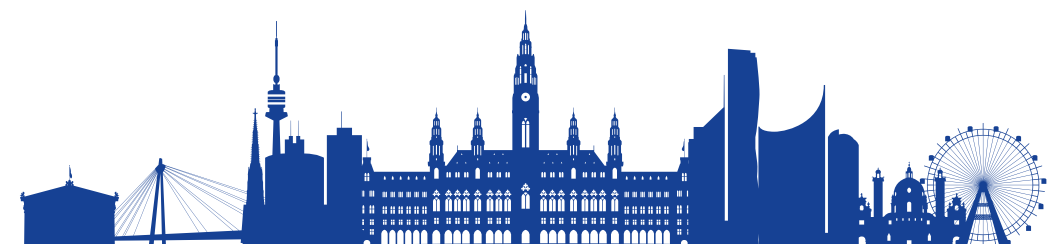


Networking

Your chance to connect with new contacts and explore new business relationships during the EHEDG World Congress 2026



Sign up



PFAS Update

In consultation with a group of subject-matter experts from member companies, EHEDG has drafted a **Position Paper** on the potential ban of PFAS on food contact surfaces in food manufacturing/processing equipment. This document was submitted to the European Chemicals Agency (ECHA) and the relevant authorities in summer 2023, urging them to take our recommendations into consideration and to work collaboratively to develop an effective solution.

The ECHA and authorities from Denmark, Germany, the Netherlands, Norway and Sweden released a progress update in November 2024.

We have asked PFAS experts Eva Fleischmann and Christian Geubert, contributors to the Position Paper, to tell us a little more about that.

Could you share the latest updates from ECHA? What is the significance of the consultation feedback in shaping the restriction proposals for PFAS?

Eva Fleischmann: Based on the more than 5,600 comments during the six-month consultation phase in 2023, ECHA's committees, RAC and SEAC, have decided to take a sector-based approach to the assessment of PFAS. Most relevant for the EHEDG members: in December 2024 ECHA completed its provisional evaluation of the sector of food contact materials and packaging.

Based on the comments submitted, new fields of application could be identified that have not yet been considered in the restriction dossier before. Importantly, this applies to sealing applications where a broad range of fluoropolymers are used in professional and industrial applications, including seals, pipe lining, gaskets, valve parts, etc. Especially in the case of fluoropolymers, the submitted comments provided insightful data which demonstrated that this is a class of materials of enormous importance for the stakeholders, so that they are now being considered with increased attention during the ongoing proceedings. Once all sectors have been evaluated, the consolidated final opinion by RAC and SEAC will be made available.

How does the aim of substituting PFAS 'where feasible today' align with the timeline and readiness of industries reliant on these substances?

Christian Geubert: From our point of view there will be limited fields where substitution might be feasible: the European Sealing Association estimates not more than 20% of the applications. Basically these 20% apply to products where diverse environmental conditions are present, with overlapping and very general fields of application, like sensors for example; the trend towards the standardisation and streamlining of equipment portfolios led to the application of fluoropolymers (FKM, FFKM, PTFE and others,) in order to avoid several versions of an almost identical product in the equipment and to avoid confusion, larger inventories or more complex replacement procedures. Given that the sensors see only water-based contact media, EPDM might be sufficient.

With food applications, however, the material choice becomes more complicated, when CIP/SIP, fatty products and flavours might be present and require different seals in different locations of the manufacturing line. In that specific example, producers might even need to come up with dedicated production lines, with sensors equipped with different elastomeric materials. Communication about proper use along the supply chain becomes detrimental, and the exchange of products between the manufacturing lines might not be possible anymore; thus, production flexibility will decrease. We can even expect higher downtimes, due to the lower lifetimes of the non-fluoropolymer materials.

What challenges might arise in minimising PFAS emissions during their life cycle for applications in hygienic design and engineering?

Eva: The intention of the Dossier is to minimise emissions of PFAS to avoid further build-up in the environment and subsequent exposure to humans and the environment.

In order to achieve this, an immediate ban as well as a ban with temporary exceptions was proposed in the first draft of the Dossier. In addition, a third option is now being considered, where additional restrictions and requirements for fluoropolymers during manufacturing, service life and end of life ensure a minimisation of PFAS emissions into the environment.

Resulting challenges for applications in hygienic design and engineering could arise from the additional cost for implementing new technologies and processes to ensure compliance with future regulations. This includes the monitoring of PFAS components through the supply chain, effective waste management and technological limitations in cases when the use of PFAS components poses an unwanted risk of emissions without the possibility of a technologically equivalent PFAS-free replacement.

"Fluoropolymers are a class of materials of enormous importance for stakeholders — now considered with increased attention during the ongoing proceedings."



Christian Geubert, Product Leader Sealing Materials (Angst+Pfister Group), member of several EHEDG Working Groups



Dr. Eva Fleischmann, Application Engineer Global Process Industry, Technical Service & Innovation, Freudenberg Industrial Services (Freudenberg Sealing Technologies), Chair of the EHEDG Working Group 'Elastomeric Seals'

What role should EHEDG play in supporting industries to navigate these changes, particularly for applications where PFAS are critical for safety and performance?

Christian: EHEDG should continue to push for exchange within the supply chain, in order to synchronise efforts and share knowledge between component and equipment manufacturers, integrators and end users, for the sake of food safety. EHEDG is an excellent place for these exchanges, as one person or a limited group might miss the others' vital knowledge. Especially the creation and publishing of position papers like the one for PFAS helps to overcome the potential suspicion one member on their own will arouse, when other market participants do not communicate about the problem at all. This is especially valid for smaller companies, not necessarily having the necessary in-house power to do the research and communication needed for influencing legislation successfully.

Finally, EHEDG might have the chance to enable fact- and science-based discussions for the safe use of fluoropolymers, given that they have proven their safety by fulfilling food and sometimes even pharmaceutical compliance testing.

University of Pretoria



New Institute
Member

Could you please introduce yourself and your organisation?

My name is Gyebi Duodu. I am a Professor and Head of the Department of Consumer and Food Sciences at the University of Pretoria in South Africa.

How does being an EHEDG member align with the University's mission and academic goals?

An important element of the University of Pretoria's mission is to pursue recognition and excellence in its core functions of teaching and learning, research and community engagement. In alignment with this mission, our department seeks to provide top quality learning opportunities to develop future leaders in Food Science and other related disciplines. Being an EHEDG member places us in a strategic position to help achieve this mission.

How do you integrate EHEDG principles into your curricula?

We have integrated aspects of EHEDG's hygienic design curriculum into our 3rd year Food Engineering course for BSc Food Science students. We have also instituted a mini-workshop on hygienic design for our BSc Honours Food Science students.

Does the University of Pretoria conduct any research in the field of hygienic design? If so, can you elaborate on key projects?

We do not conduct research specifically in the field of hygienic design in the department at the moment, but I expect this to change in the very near future. Elsewhere in the University, there could be ongoing research in the field of hygienic design most likely in the Faculty of Engineering, Built Environment and Information Technology.

How do you plan to raise awareness about the importance of hygienic design in the African context?

We have a large group of alumni who come from various parts of the African continent. We see them as a strategic mouthpiece through which we can raise awareness about the importance of hygienic design in the African context.

Gyebi Duodu, Professor and Head of the Department of Consumer and Food Sciences (University of Pretoria)



UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
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Could you please introduce yourself and your background?

My name is Ana Cristina Morales, and I am the Director of Global Food Safety at Grupo Bimbo. I am a chemical engineer by training and have been with the company for 14 years. During my time here, I've had the opportunity to work in various areas, starting in operations, then moving into technical services, and ultimately focusing on food safety and quality – areas that have shaped my current role.

A bit about Grupo Bimbo: the company was founded in 1945 as a family-owned start-up in Mexico City and has grown to become the largest baking company in the world. With over 75 years of history, our journey has been guided by the vision of our founders, who aimed to create a sustainable and highly productive organisation. From an initial offering of just four products, we now boast a portfolio of over 9,000 products, 100 unique brands, 150,000 associates and more than 200 bakeries across 35 countries.

Being part of such an iconic company – one I grew up with and whose products were a staple in my home – has been an incredibly fulfilling experience. It's truly a privilege to contribute to the legacy of Grupo Bimbo.

How does Grupo Bimbo approach food safety and quality assurance across such a diverse range of products?

At Grupo Bimbo, food safety and product quality are fundamental to our vision and strategy of 'Nourishing a Better World'. Our approach is guided by three pillars: we bake for you, we bake for life and we bake for nature.

Given the company's growth through acquisitions, we've historically managed a variety of food safety and quality systems shaped by diverse local and national regulations. In recent years, however, we've been focused on integrating these systems into a unified global framework. This integrated system spans the entire value chain, enabling us to maintain consistent standards across all our operations worldwide.

By doing so, we ensure we not only meet consumer expectations but also consistently deliver safe, high-quality products to tables around the world. At its core, food safety is non-negotiable – there's only one standard for safety. To achieve this, we emphasise returning to the basics and letting science drive the implementation of our food safety practices.

What message would you like to convey to your stakeholders regarding Grupo Bimbo's commitment to EHEDG and hygienic design?

Becoming a member of EHEDG marks a significant step in our journey towards establishing a unified global food safety system across the 35 countries where Grupo Bimbo operates. Integrating hygienic design as a foundational component of our prerequisite programmes ensures that both our existing and future manufacturing sites align with the highest standards of safety and efficiency.

By joining EHEDG, we would like to emphasise our commitment and dedication to our consumers and stakeholders: delivering safe, high-quality food remains at the heart of everything we do. By embedding hygienic design principles into our operations, we are reinforcing our promise to prioritise safety, sustainability and excellence at every stage of our value chain.



New Company Member



*Ana Cristina Morales,
Director of Global Food Safety,
(Grupo Bimbo)*



New Company Member



YASKAWA

Could you please introduce your organisation?

With annual sales of 556 billion yen (around 3.53 billion euros, at the end of the fiscal year on 28 February 2023), Yaskawa is a globally active technology supplier in the field of robotics as well as drive and control technology. Founded in Japan in 1915, Yaskawa has been true to the philosophy of delivering the highest quality products for over 100 years, earning it a leading position worldwide. Yaskawa has developed from an engine manufacturer to an automation provider and finally to a solution provider with the i3-Mechatronics Industry 4.0 concept. Yaskawa's business activities consist of Drives (GA700 frequency inverters), Motion Control (Sigma-7 servo drives and servo motors, machine controls), Robotics (Motoman industrial robots, robot systems), System Engineering (generators and converters) and Information Technology (software-based products). The Yaskawa portfolio also includes control technology, visualisation systems and chip solutions from the former VIPA GmbH in Herzogenaurach, Germany. This includes PLC controls, I/O systems and visualisation systems. The Profichip brand will continue to be operated by Yaskawa as a separate product division, "Profichip Embedded Solutions".

This makes Yaskawa one of the few companies in the world that can offer components, systems and solutions for almost all indus-

tries from a single source. With extensive investment in research and development, the company has produced a large number of inventions, patents and innovations. This technological ambition has led the business units to a significant market position in various industries, including: mechanical engineering and plant engineering (pumps/compressors, cranes and hoists, elevator industry, semiconductor and battery production equipment, packaging machines, textile machines, digital printing machines, equipment for the extraction and processing of wood, glass, metal, stones/earths) as well as in vehicle construction and assembly and handling technology. Industrial robots of the Motoman brand are used, for example, in robot-based welding, laboratory automation, packaging & handling and automated painting. Yaskawa Europe GmbH, headquartered in Hattersheim near Frankfurt, is divided into the Drives Motion Controls (automation, drive and control technology) and Robotics (industrial robots, systems) business units and serves the markets of Europe, Africa, the Middle East and the former Soviet Union.

What motivated Yaskawa Europe to become a member of EHEDG?

Yaskawa Europe was motivated to become a member of the European Hygienic Engineering & Design Group (EHEDG) to enhance our commitment to hygienic design and engineering

standards. By joining EHEDG, Yaskawa aims to ensure that our products meet the highest hygiene requirements, particularly for applications in the food, pharmaceutical and biotechnology industries. This membership allows us to stay updated with the latest guidelines and best practice, ensuring our equipment is safe, efficient and compliant with industry regulations.

What are the key challenges Yaskawa addresses with robotics in food and beverage applications?

The integration of robots in hygienically sensitive industries, such as food processing and pharmaceuticals, requires strict compliance with GMP Grade A. These industries demand stringent hygienic practices, making the design of robotic systems particularly challenging. The key challenges include minimising particle emissions, eliminating external screws, and ensuring effective sealing.

Can you share examples of your hygienically designed solutions in food handling, packaging or processing?

Hygienic handling robots for the food industry and life sciences



Pharmabotix uses Yaskawa's Motoman HD8 Hygienic Design Robot for filling smaller batches



Motoman HD7/HD8 - Hygienic handling robots for the life sciences sector



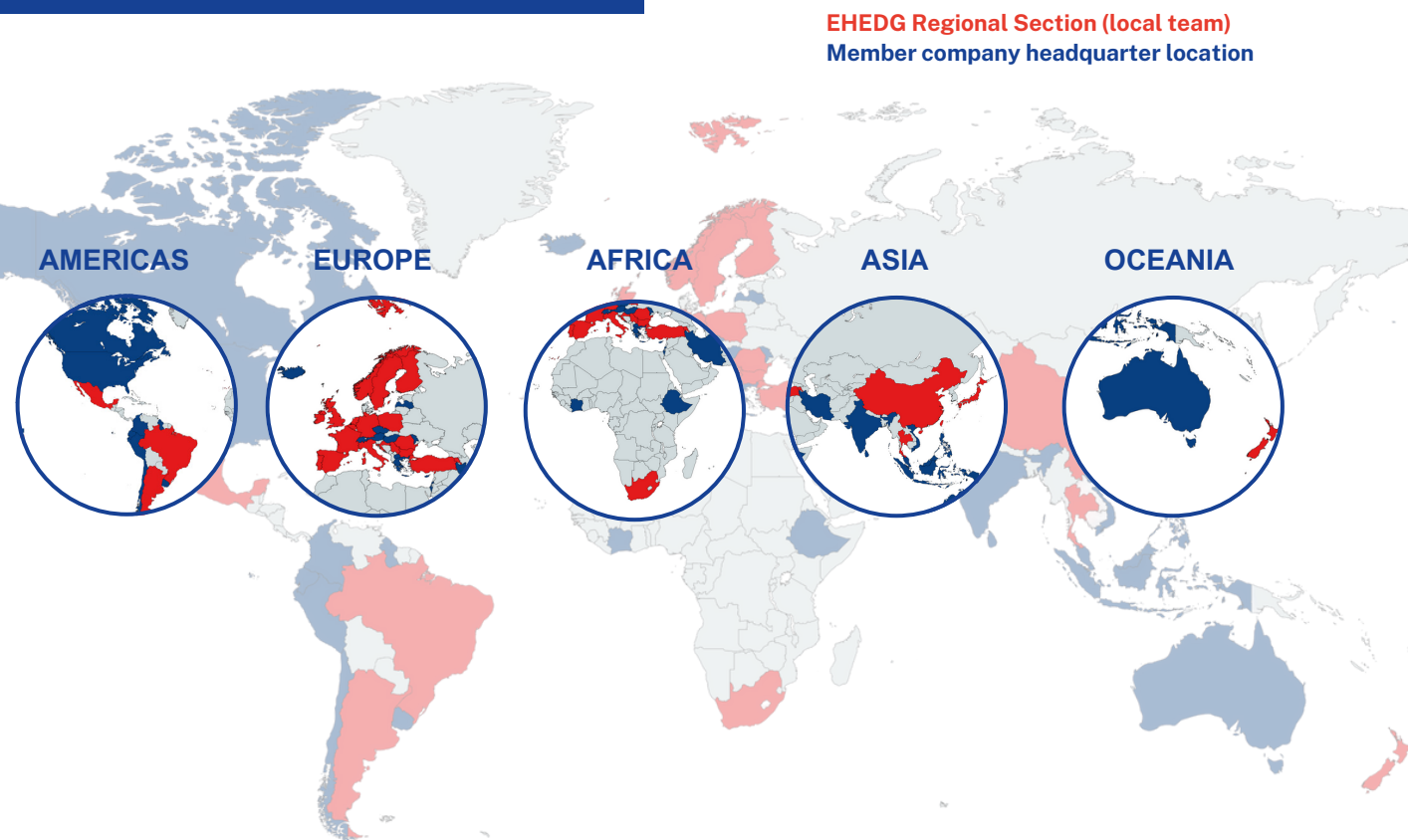
Automated containment cell with MOTOMAN HD7 for research and smaller laboratories





OUR FACTS & FIGURES 2024

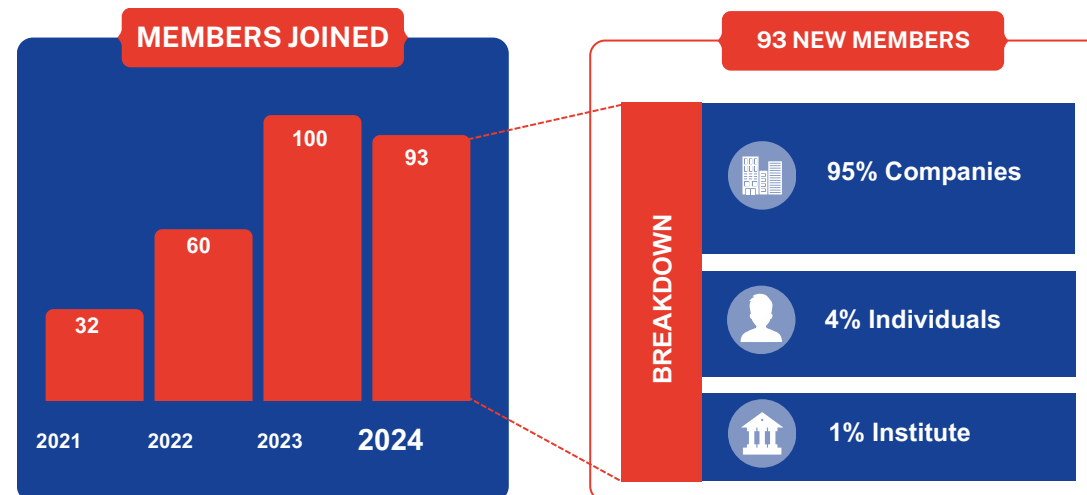
OUR GEOGRAPHICAL PRESENCE



OUR MEMBERS

800+
members

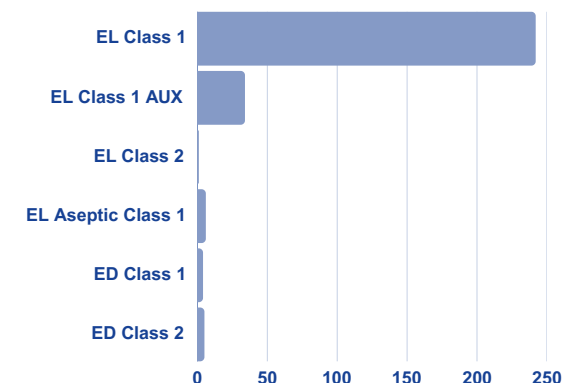
93 new members in 2024



OUR WORKING GROUPS



OUR CERTIFICATION PROGRAMME



EHEDG offers two main types of equipment certification:

- **Type EL** for Equipment cleaned with Liquids
- **Type ED** for Equipment dry cleaned only

EHEDG Guideline Overview

B Raw materials

Handling
Storage

12 22 31 36
40 41 44 49
53 55 58

A Building, Utilities

Drainage Doors Water
Zoning Filters Construction
Floors Air handling Materials
Walls Steam

5 6 7 8 12 13 14 17 19 28
31 32 34 35 44 47 49 50 51 58

L Packing

29 46 48 49
53 58

C Processing

1 2 6 8 17 18 20 22 25 28
31 33 34 36 38 40 41 42 43 44
45 49 50 51 52 53 55 57 58

G Tanks

6 49 50 51
52 55 58

K Heating

Baking
1 6 12 31 55 58

M Welding

8 16 58

N Pipe couplings

10 48 58

H Conveyors

23 29 36 43 49 55 58

I Pipes

6 9 14 16 20 23 28
35 36 41 49 51 58

D Valves

1 5 6 7 14
17 20 38 40 41
49 50 55 58

E Sensors

12 37 43 58

F Seals

8 13 14 16
17 22 25 29
40 42 43 48
58

J Pumps

17 23 50 58

Guidelines	1	2	5	6	7	8	9	10	12	13	14	16	17	18	19	20	22	23	25	28	29	31
A: Building & Utilities			x	x	x	x			x	x	x		x		x					x		x
B: Raw materials								x								x						x
C: Processing	x	x		x		x							x	x		x	x		x	x		x
D: Valves	x		x	x	x						x		x			x						
E: Sensors									x													
F: Seals						x				x	x	x	x			x		x			x	
G: Tanks				x																		
H: Conveyors																	x				x	
I: Pipes				x			x			x	x					x		x		x		
J: Pumps													x					x				
K: Heating	x			x				x														x
L: Packing																					x	
M: Welding						x						x										
N: Pipe Couplings								x														

	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	57	58
	x		x	x									x			x		x	x	x						x
					x				x	x			x					x			x		x			x
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Financials 2024

We are pleased to present the annual financial results of the EHEDG Foundation, a not-for-profit organisation committed to promoting awareness of hygienic design and engineering across diverse sectors of the food processing industry. Our mission is advanced through the development of practical guidelines and innovative solutions, while providing a global platform for knowledge exchange and professional networking.

Memberships, Trainings & Guidelines

This year has been defined by notable progress and impactful outcomes. We welcomed 93 new members, broadening our community and strengthening our collective commitment. The average membership contributions rose again this year, underscoring the growing support and active engagement from our stakeholders. In addition, demand for our guidelines increased again year on year, with a 14% rise in downloads and a sales increase of over 20%—clear evidence of their relevance and value. The number of professionals trained in hygienic design grew by nearly 20%, highlighting a strong and rising demand for our educational offerings.

Working Groups

EHEDG prioritised the enhancement of its product portfolio, with a particular focus on updating and developing hygienic design guidelines tailored to the food industry. We allocated additional resources, organised a Chairs and a Full Workings Group Days, which were attended by large numbers of co-chairs and Working Group members to accelerate project delivery. Investments supported the activities of 32 Working Groups, collectively addressing 43 guideline topics. This resulted in the publication of 6 new guidelines, with several more soon to be published.

Regional Development

We extended our global presence by investing in more activities in our Regional Sections, we introduced a new Regional Section and are building local teams to establish new regions and revitalise existing ones. These regional hubs play a key role in promoting EHEDG’s resources and sharing hygienic design knowledge, particularly among SMEs and educational institutions.

Major Events, Marketing & Communication

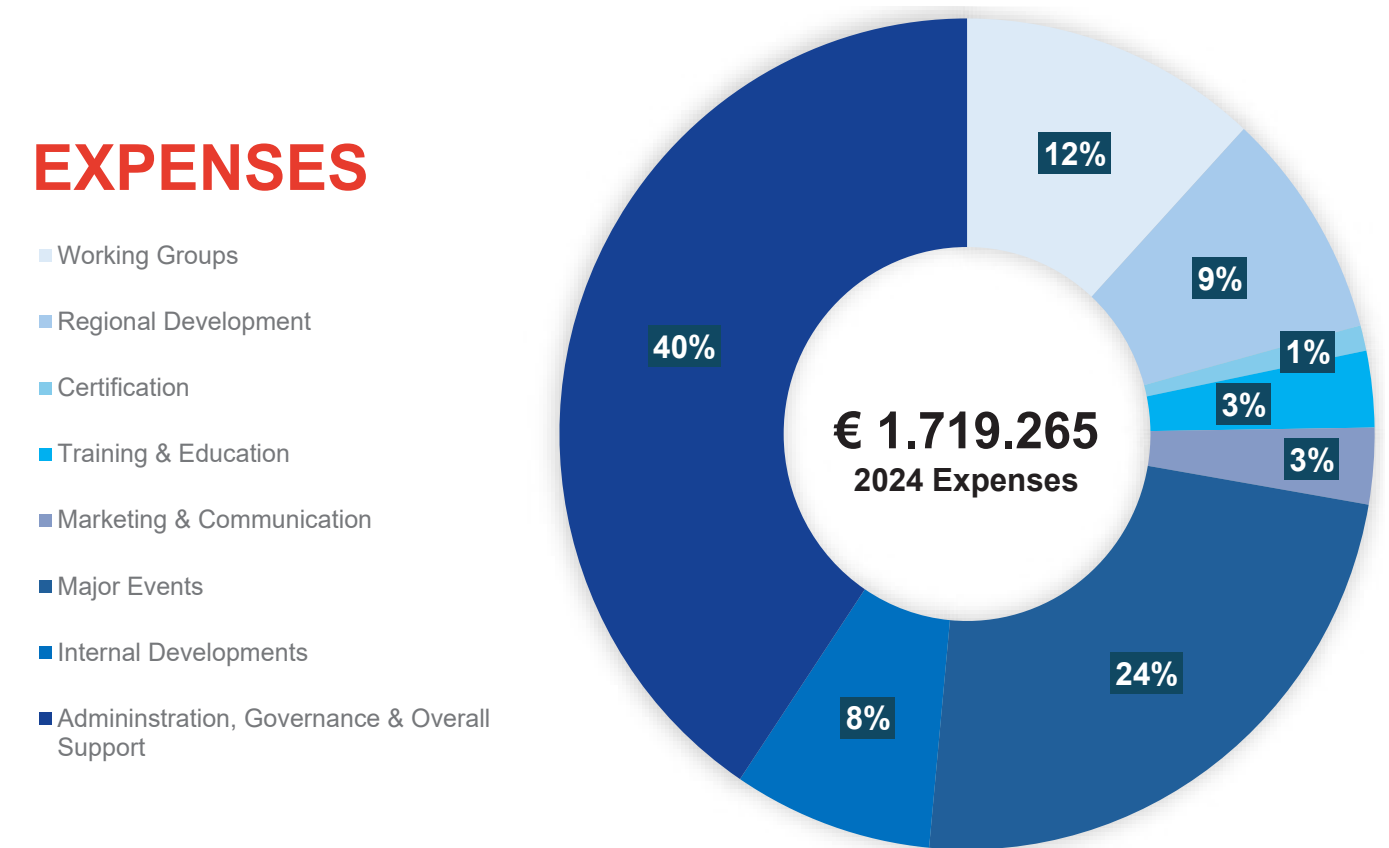
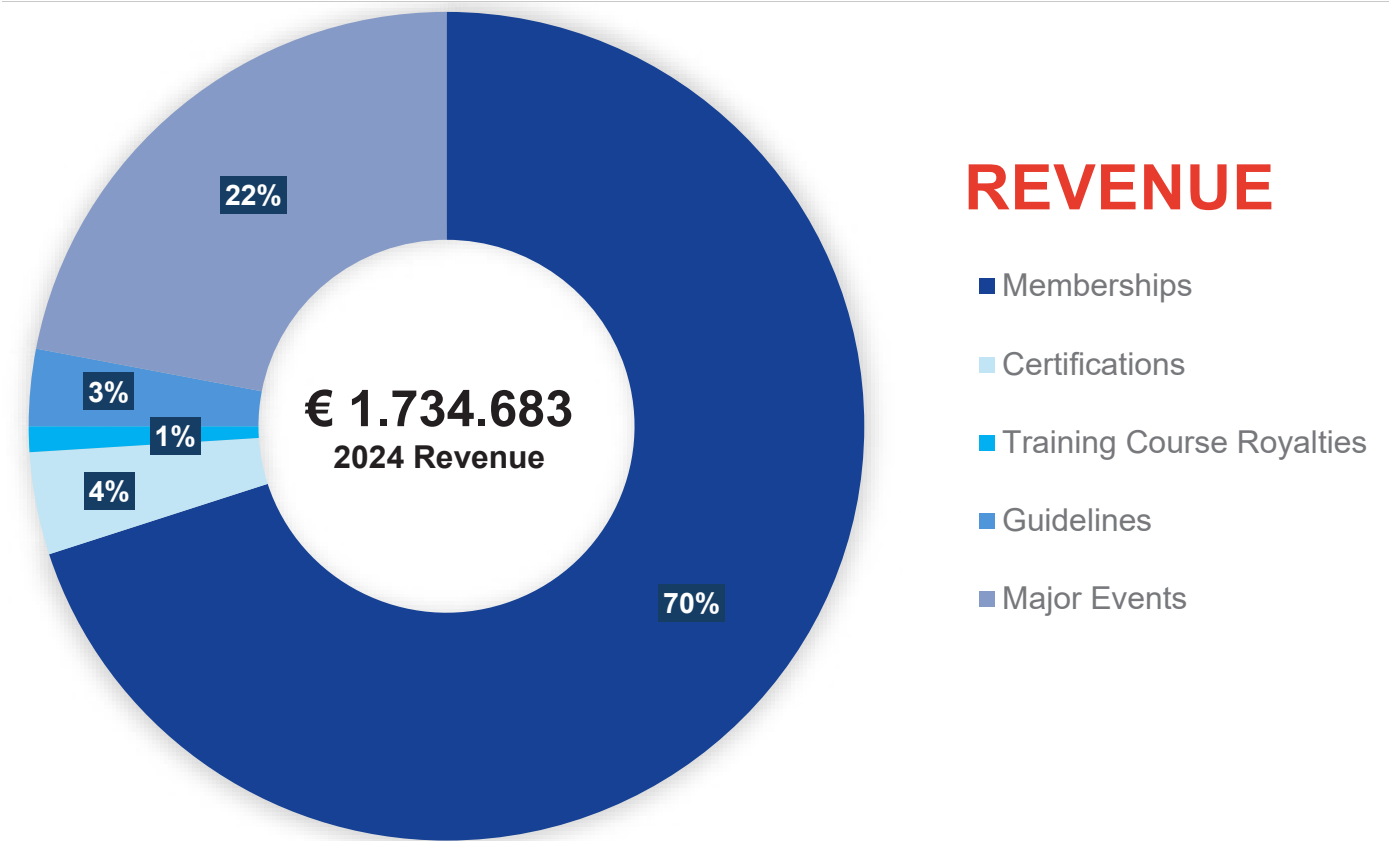
EHEDG successfully hosted its World Congress 2024, attracting over 350 global participants. The event featured rich discussions on Food Safety, Quality, Productivity, and Sustainability, promoting active participation and expert exchange. As said we also launched the inaugural Full Working Groups Days, bringing together over 120 dedicated volunteers to align on scopes, progress, and future working methods. To engage younger audiences and nurture new talent, we advanced the EYE Mentorship Programme in partnership with Young EFFoST. Our ongoing webinar series continued to spotlight critical hygienic design issues, fostering dialogue and learning.

Internal Developments

Strategic investments in IT infrastructure resulted in improved website performance, with richer content, enhanced search capabilities and extra functionality to support our World Congress.

Administration, Governance & Overall Support

Our commitment to cross-industry collaboration remained strong. EHEDG continued to partner with fellow not-for-profits and participated in major food congresses to drive the harmonisation of hygienic design and food safety standards—ensuring our stakeholders stay informed and our mission continues to grow on a global scale.





Wrapped
2024



Working Group meetings: Cleaning in Place, Water Management & Chocolate Processing.

EHEDG World Congress dinner, Plenary Meeting & Full Working Group Day



Thank you!



Regional Section activities: China & Turkey

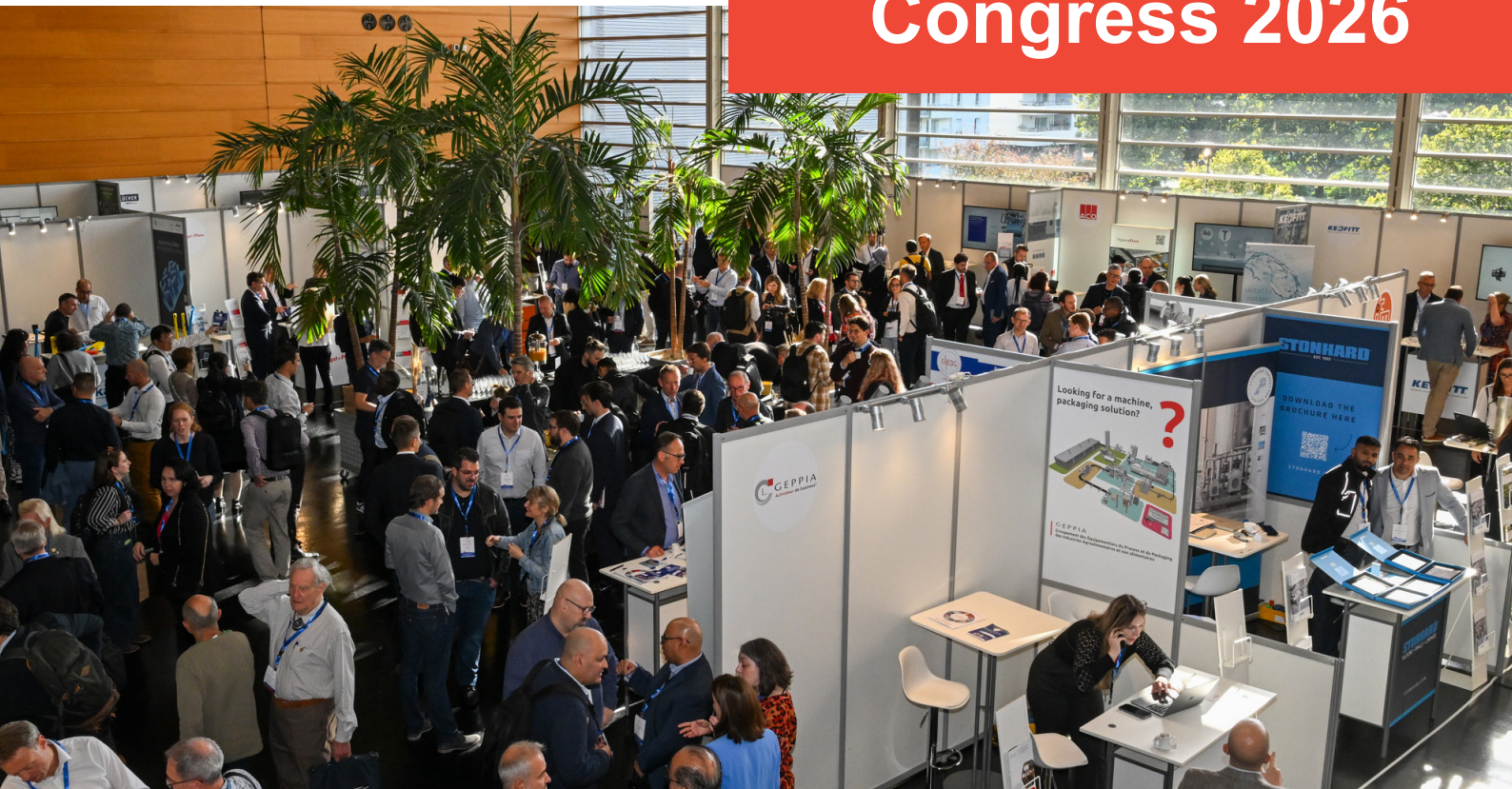
International Conferences:
3-A Conference 2024
CFIA Rennes, Dubai International Food Safety Conference (DIFSC)





7 & 8 October | Vienna, Austria
“Hygienic Design and Engineering; Ensuring Food Safety and Optimising Production”

EHEDG World Congress 2026



EHEDG Online Congress 2025

Join us online!
5 & 6 November

