

# 2024 GLOBAL CONFERENCE ON PROCESS SAFETY & BIG DATA



EPSC



**Explore the  
transformative  
impact of data  
on Process  
Safety**

**PROGRAM BOOK**

**OCTOBER 29 - 30, 2024**

**Leonardo Royal Hotel Frankfurt  
Frankfurt am Main, Germany**

Co-organized by CCPS & EPSC

# 2024 GLOBAL CONFERENCE ON PROCESS SAFETY & BIG DATA



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## SPECIAL THANKS TO THIS YEAR'S SPONSORS

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Dear Participants,

On behalf of the Center for Chemical Process Safety® (CCPS®) and the European Process Safety Center (EPSC), we are pleased to welcome you to the 2024 Global Conference on Process Safety and Big Data. We are thrilled to host this in-person conference at the Leonardo Royal Hotel Frankfurt in Frankfurt am Main, Germany.

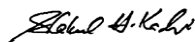
This is the ninth edition of the conference in Europe, jointly organized by CCPS and the EPSC. With presenters and attendees from around the world, the conference program features four keynote presentations, three panel discussions, and more than fifteen technical presentations focusing on digitalization and tools to improve Process Safety. This conference series started in 2016, and we received excellent feedback from all attendees and stakeholders. Those who attended these events have felt that Big Data, in relation to Process Safety, is an emerging area and we must stay abreast with this important, evolving subject, as it can deliver exceptional value to our key stakeholders. This event will serve as a common platform that brings together our key stakeholders - industry, academia, governmental regulatory agencies, and labor organizations, to lead the way in improving industrial Process Safety and achieving Process Safety excellence.

We would like to acknowledge our technical planning committee and presenters, who worked tirelessly to put together the best presentations that you will enjoy at this conference.

It is with the generous support of our sponsors and exhibitors that conferences like this are made possible. We are thankful for their dedication and contribution to the global Process Safety community.

Finally, we would also like to thank all of you for attending this conference. It is an excellent opportunity to exchange between peers and learn from experts about Process Safety and Big Data. We hope as you participate; your time will be well spent, enriching, and inspiring.

We sincerely hope that you will enjoy the conference!



Shakeel H. Kadri  
Executive Director &  
CEO CCPS



Eline Beulens  
Cargill Senior Director Process  
Safety Chair of the EPSC Board

**THANKS TO OUR...**

**PLANNING COMMITTEE  
MEMBERS**

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Executive Director & CEO, CCPS

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Empirisys

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**EXHIBITORS**

**AcuTech Consulting Group Inc.**

**Enablon SAS**

**Sphera**

**Primatech Inc.**

**Voovio**

**PROGRAM AGENDA - October 29, 2024**

<b>9:00 AM – 9:15 AM</b>	<b>WELCOME ADDRESS:</b> Shakeel Kadri, CCPS
<b>9:15 AM - 9:50 AM</b> <b>Keynotes Session</b> <b>Chair: Shakeel Kadri</b>	<b>KEYNOTE:</b> Digitalization Journey at OQGN Maryam Alburaidi, OQGN (OQ)
<b>9:50 AM - 10:25 AM</b>	<b>KEYNOTE:</b> Integration of AI in Process and Plant Safety – A Paradigm Change? Jürgen Schmidt, CSE
<b>10:25 AM – 11:40 AM</b>	<b>PANEL DISCUSSION:</b> Control Room of the Future: How generative AI Can Improve Operational Decision Quality in Process Safety” Moderator: Daniel Mottaghi, TotalEnergies Panelist: Salah Ali Mohammed Al Balushi, OQEP, Jürgen Schmidt, CSE, Randy Garabedian, Covestro
<b>11:40 AM – 12:10 PM</b>	<b>Coffee Break</b>
<b>12:10 PM – 1:50 PM</b> <b>Session Chairs:</b> <b>Randy Garabedian</b> <b>and Willi Meier</b>	<b>Applying AI / Case Studies</b>
	Uses of AI for HAZOP / PHA - Paul Baybutt, Primatech Inc.
	Practical Application and Validation of Enhanced Acoustic Leak Detection through Data Augmentation - Deniz Quick, CSE gmbH
	The Energy Sector is Using State-of-the-Art Methane Leak Detection Technology to Reduce Emissions - Simon Bunegar, Grandperspective GmbH
	HAZOP Assistant, The New Co-Pilot for Process Safety - Angel Casal, Vysus Group
<b>1:50 PM – 2:50 PM</b>	<b>Lunch</b>
<b>2:50 PM – 4:05 PM</b> <b>Session Chair:</b> <b>Tony Downes</b>	<b>Applying AI / Case Studies / Practical Examples</b>
	Maximising the Value of Existing Process Safety Data: Three Case Studies from Empirisys - Morgan Walters, Gus Carroll, Empirisys
	STORM - Safety Tool for Operators and Remote Monitoring in Early Leak Detection - Xavier Watremez, TotalEnergies

	<p>Conceptualizing Pressure Relief Requirements in the Design Phase: A Modeling Approach Based on Historical Data Nancy Faulk, Siemens Energy</p>
<b>4:05 PM – 4:35 PM</b>	<b>Coffee Break</b>
<b>4:35 PM – 6:15 PM</b> <b>Session Chair:</b> <b>Willi Meier</b>	<b>Business Cases for Digitalization / Big Data Analytics</b>
	<p>Predicting Dissolved Oxygen Concentration in Wastewater Treatment Plants Using Machine Learning Techniques - Sena Kurban, Turkish Petroleum Refineries Corporation (TUPRAS)</p>
	<p>Transforming Process Safety with Digital Twin and Augmented Reality: A New Era in Permit-to-Work and LOTO Management - Sascha Kunze, Hybird</p>
	<p>A Review Paper on Process Safety - Laura Edwards, The University of the West Indies</p>
	<p>Leveraging Inspection Database Management System to Bridge Between Data Analytics and Big Data - Payam Jamshidi, Siemens Energy</p>
<b>6:15 PM</b>	<b>RECEPTION</b>



## PROGRAM AGENDA - October 30, 2024

9:00 – 9:15	<b>WELCOME ADDRESS:</b> Tijs Koerts, EPSC
9:15 - 9:50 <b>Session Chair: Tijs Koerts</b>	<b>KEYNOTE:</b> How Can Big Data Support the Transition to NetZero Gus Carroll, Empirisys
9:50 - 11:05 AM	<b>PANEL DISCUSSION:</b> Ensuring Reliability of Current and Future Technology Developments for Digital Solutions in Process Safety Applications  Moderator: Abdul Aldeeb, Siemens Energy, Arturo Trujillo, DEKRA Panelists: Angel Casal, Vysus Group, Paul Baybutt, Primatech Inc., Payam Jamshidi, Siemens Energy
11:05 AM – 11:35 AM	<b>Coffee Break</b>
11:35 AM – 12:10 PM	<b>Generative Artificial Intelligence and Big Data Analytics for Process Safety</b>
12:10 AM – 02:00 PM <b>Session Chair: Abdul Aldeeb</b>	<b>KEYNOTE:</b> Leveraging Artificial Intelligence to Improve Process Safety in the Chemical Industry Paul Böhm, Accenture
	Enhancing Process Safety Management with Digital Solutions - Salah Ali Mohammed Al Balushi, Safa Hamed Zahran Al Hatmi, OQEP
	Leveraging Operational Risk Management (ORM) Digital Twins for Enhanced Process Safety in Hazardous Industries - Andy Bartlett, Sphera
	The Quest for a Fundamental Upgrade in Chemical Operator Qualification Methods - Susanna Voges, Bas Janssen, Voovio
02:00 PM – 03:00 PM	<b>Lunch</b>
3:00 PM - 4:15 PM	<b>PANEL DISCUSSION:</b> Health monitoring of safety systems or protection layers Moderator: Christian Demski, Dow Panelist: Volker Hirsch, Siemens, Paul Tours, Wolters Kluwer, Andy Bartlett, Sphera
4:15 PM - 5:05 PM <b>Session Chair: Tijs Koerts</b>	<b>Process Safety Management and Permit To Work</b>
	How Dynamic Barrier Management Drives Effective Process Safety Management - Ruben Mejias, Wolters Kluwer
	The Impact of Digital Technologies on Operational Safety and Health (OSH) Control of Work (COW) - Mohamed Bayoumy, Sphera
5:05 PM	<b>Vote of Thanks</b>

## **AIChE® Volunteer and Meeting Attendee Conduct Guidelines**

AIChE's volunteers are the core of the Institute and make all of its programs, conferences and educational efforts possible. These offerings provide excellent opportunities for AIChE members and meeting attendees to gain greater technical expertise, grow their networks, and enhance their careers. AIChE events provide engineers, scientists, and students a platform to present, discuss, publish and exhibit their discoveries and technical advances.

At all times, volunteers and meeting attendees should act in accordance with AIChE's Code of Ethics, upholding and advancing the integrity, honor and dignity of the chemical engineering profession. AIChE's Board of Directors has developed these guidelines to foster a positive environment of trust, respect, open communications, and ethical behavior. These guidelines apply to meetings, conferences, workshops, courses and other events organized by AIChE or any of its entities and also to volunteers who conduct other business and affairs on behalf of AIChE.

Specifically:

1. Volunteers and meeting attendees should understand and support AIChE's Code of Ethics.
2. Volunteers and meeting attendees should contribute to a collegial, inclusive, positive and respectful environment for fellow volunteers and attendees, and other stakeholders, including AIChE staff.
3. Volunteers and meeting attendees should avoid making inappropriate statements or taking inappropriate action based on race, gender, age, religion, ethnicity, nationality, sexual orientation, gender expression, gender identity, marital status, political affiliation, presence of disabilities, or educational background. We should show consistent respect for colleagues, regardless of discipline, employment status, and organizations for which they work, whether industry, academia, or government.
4. Disruptive, harassing or other inappropriate statements or behavior toward other volunteers, members, and other stakeholders, including AIChE staff, is unacceptable.
5. Volunteers and meeting attendees should obey all applicable laws and regulations of the relevant governmental authorities while volunteering or attending meetings. Volunteers and meeting attendees taking part in any AIChE event, including the Chem-E-Car Competition®, should also comply with all applicable safety guidelines.



# Explore the transformative impact of data on Process Safety

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