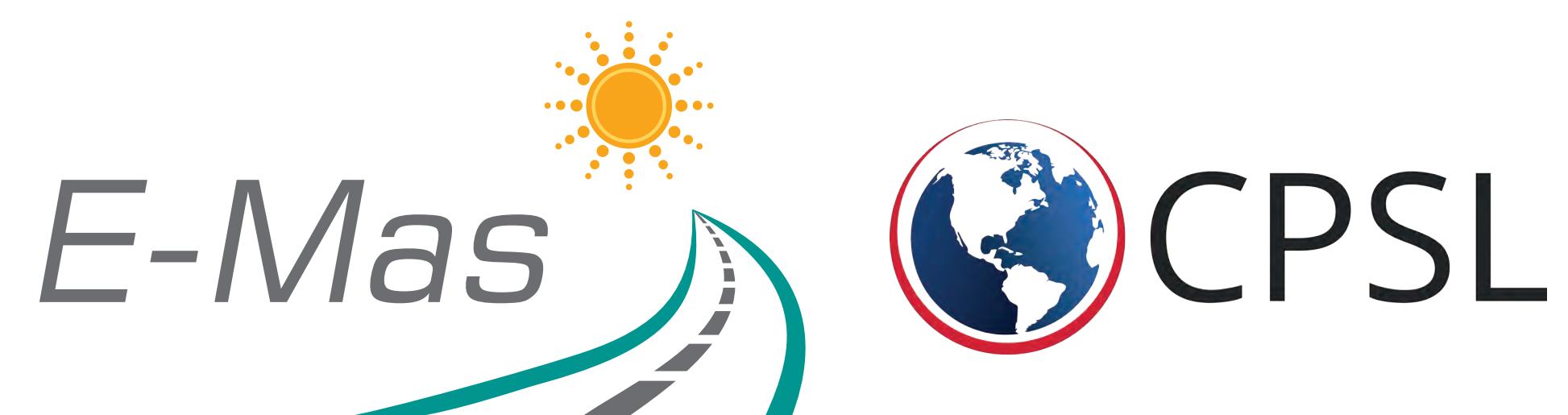




I4R.EU



February 27<sup>th</sup> to  
March 3<sup>rd</sup>, 2023



3<sup>rd</sup> E-Mas Conference

4<sup>th</sup> CPSL Conference on

The Future of Work      Production Systems and Logistics



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# CONGRESS I4R – INNOVATION FOR REALIZATION

The congress I4R joins the well-established practice-oriented German Mexican conference line E-Mas in its third edition with the fourth edition of the internationally renowned scientific conference CPSL. Next to various joint master keynotes and discussions bridging the gap between science and industry, participants from both conferences are free to join the other congress sessions. That means registering either for the practice-based 3<sup>rd</sup> E-Mas Conference „The Future of Work – Benefiting from the Digital Transformation“ or the scientific 4<sup>th</sup> Conference on Production Systems and Logistics will provide access to both conferences.

With the I4R congress, we intend to bridge various gaps that inhibit the growth of Latin American and European economies. Overcoming the persisting gap between science and industry is a need. Thus, we joined forces to provide a networking platform with I4R for top researchers, corporate leaders, and experts from Latin America and Europe.

The Institute for Industrial Management at RWTH Aachen University (FIR), want to bring together international business leaders, experts and scientists in cooperation with the event partners AE-Dual, UTEQ, EMAAC, PEM Motion and MTM Association e. V. The joint collaboration is intended to generate innovative ideas that promote the growth of national economies.

- Overcoming the persisting gap between science and industry is a need. Thus, we joined forces to provide a networking platform with I4R for top researchers, corporate leaders, and experts from Latin America and Europe.
- It is necessary to close the gap between South, Central, and North America. The developing industries in South and Central America could benefit greatly from the advances made in the highly industrialized economy of Mexico.
- The collaboration between Latin America, Germany, and Europe contributes highly to the further development of these economies.





# CLOSING THE GAP BETWEEN SCIENCE AND INDUSTRY



3<sup>rd</sup> Conference

## The Future of Work – Benefiting from the Digital Transformation

- Applying Best Practices of the Industrie 4.0
- Developing new businesses and services in the digital world
- Creating sustainable value chains
- Creating New Networks between Industry and Academia

4<sup>th</sup> Conference on

## Production Systems and Logistics

- Promoting exchange on current topics and knowledge on production systems and logistics
- Creating an innovative environment for the generation of scientific ideas
- Connecting scientists from all over the world to build a joint global network



SECRETARÍA  
DE EDUCACIÓN



PODER EJECUTIVO DEL ESTADO DE  
QUERÉTARO



SECRETARÍA DE  
TURISMO



QUERÉTARO  
MUNICIPIO



Tecnológico  
de Monterrey

Sustainable Smart  
Logistics Center



Red  
Nacional  
Centro de Creatividad  
e Innovación 4.0



EPRODI 4.0  
CENTRO DE PRODUCTIVIDAD E  
INNOVACIÓN PARA LA INDUSTRIA 4.0





3<sup>rd</sup> E-Mas Conference

# The Future of Work

## Benefiting from the Digital Transformation

Production and service industries are facing enormous challenges due to digital transformation and changes in the work environment. Leaders and experts from renowned companies, high-class practice-based researchers, and leading institutions will discuss their up-to-date solutions in hands-on experience and best-practice examples concerning technology implementation, competence development, and work design.

The 3<sup>rd</sup> international E-Mas Conference seeks to create sustainable value chains to foster new partnerships between industry and academia. It will address how to benefit from digital transformation and Industrie 4.0 in a practical approach through workshops, discussion panels, and expert contributions.

Organizers:



Co-Organizers:



Promoted by:



Administered by:





4<sup>th</sup> CPSL Conference on  
**Production  
Systems and Logistics**

The CPSL is an international conference for the scientific exchange of current findings in the field of production systems and logistics. All submitted papers will be published with open access after they have been reviewed in a two-stage peer review process by experienced scientists from renowned research institutes as well as authors of other submitted papers.

For the 4<sup>th</sup> CPSL we have thought of something special. The conference is organized in cooperation with the Institute for Industrial Management at RWTH Aachen University (FIR) and aims to establish an exchange on the idea of bridging the gap between science and industry. In addition to cutting-edge topics in the field of production systems and logistics this event will feature practical sessions and discussions with local and international industry.

Partners:





The FIR is a non-profit, intersectoral research institute at the research institution at RWTH Aachen University in the field of business organization, information logistics and corporate IT. The institute researches, qualifies, teaches and accompanies in the areas of service management, business transformation, information management and production management. With the research, development and transfer of innovative

solutions, the FIR contributes to increasing the competitiveness of companies. This is done in the appropriate infrastructure of the Smart Logistics Cluster for experimental organizational research in a methodologically sound, scientifically rigorous manner and with the direct participation of experts from industry. Concrete industrial use cases are at the center of our consideration.



## FIR Knowledge-Base

The knowledge base at [fir.rwth-aachen.de/en](http://fir.rwth-aachen.de/en) bundles all FIR information on current trend topics in digitization and networking.

### ■ 5G

[5g.fir.de](http://5g.fir.de)

[5g@fir.rwth-aachen.de](mailto:5g@fir.rwth-aachen.de)

### ■ As-a-Service-Geschäftsmodelle

[knowledge-base.fir.de](http://knowledge-base.fir.de)

[Lennard.Holst@fir.rwth-aachen.de](mailto:Lennard.Holst@fir.rwth-aachen.de)

### ■ Blockchain

[blockchain.fir.de](http://blockchain.fir.de)

[blockchain@fir.rwth-aachen.de](mailto:blockchain@fir.rwth-aachen.de)

### ■ Design-Thinking

[knowledge-base.fir.de](http://knowledge-base.fir.de)

[Gerrit.Hoeborn@fir.rwth-aachen.de](mailto>Gerrit.Hoeborn@fir.rwth-aachen.de)

### ■ Dienstleistungswende

[knowledge-base.fir.de](http://knowledge-base.fir.de)

[Lennard.Holst@fir.rwth-aachen.de](mailto:Lennard.Holst@fir.rwth-aachen.de)

### ■ Digital-Architecture-Management

[adam.fir.de](http://adam.fir.de)

[adam@fir.rwth-aachen.de](mailto:adam@fir.rwth-aachen.de)

### ■ Industrie 4.0

[industrie40.fir.de](http://industrie40.fir.de)

### ■ Künstliche Intelligenz

[kuenstliche-intelligenz.fir.de](http://kuenstliche-intelligenz.fir.de)

[kuenstliche-intelligenz@fir.rwth-aachen.de](mailto:kuenstliche-intelligenz@fir.rwth-aachen.de)

### ■ Machine-Learning

[knowledge-base.fir.de](http://knowledge-base.fir.de)

[Gerrit.Hoeborn@fir.rwth-aachen.de](mailto>Gerrit.Hoeborn@fir.rwth-aachen.de)

### ■ Smart Work

[aachener-smart-work.de](http://aachener-smart-work.de)

[smart-work@fir.rwth-aachen.de](mailto:smart-work@fir.rwth-aachen.de)

### ■ Process-Mining

[process-mining.fir.de](http://process-mining.fir.de)

[process-mining@fir.rwth-aachen.de](mailto:process-mining@fir.rwth-aachen.de)

### ■ Robotic-Process-Automation (RPA)

[knowledge-base.fir.de](http://knowledge-base.fir.de)

[Tobias.Schroeer@fir.rwth-aachen.de](mailto:Tobias.Schroeer@fir.rwth-aachen.de)

### ■ Subscription

[subscription.fir.de](http://subscription.fir.de)

[subscription@fir.rwth-aachen.de](mailto:subscription@fir.rwth-aachen.de)

# PUBLISH.ING



The Conference on Production Systems and Logistics (CPSL) and publish-ing. are both aimed at promoting and sharing current knowledge and ideas within the field of production and logistics research. The CPSL partners with renowned research institutions and scientific societies to create an innovative

environment where leading scientific experts can meet and exchange on their research results and studies, which are then made available open-access to the community and anyone in the field through publish-ing. publish-ing. is an open-access platform for publishing scientific papers in engineering,

focusing on building trustworthy review communities and shortening review cycle times. It combines a scientific peer-review process to ensure high paper quality with a worldwide freely accessible knowledge repository.

## Topics

### Automation



Machine Learning & Data Mining

### Business Transformation



Production Planning & Control

### Digitalisation/Industrie 4.0



Process Management

### Factory Planning



Supply Chain Management

### Knowledge Management

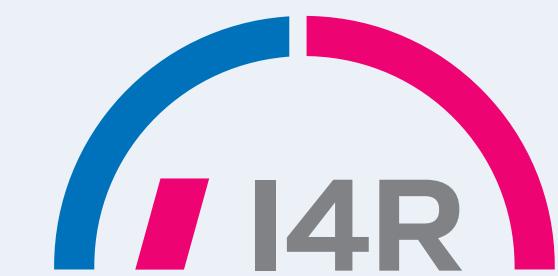


Sustainability

### Lean Manufacturing



Technology Driver



# E-Mas Programa

Día 1: Lunes 27 de Febrero 2023

14:00 – 18:00 Panel de Cooperación Alemania-América Latina: creación de un programa académico colaborativo para la I4.0

**Día 2: Martes 28 de Febrero 2023**

08:00 – 08:30 Registro de Participantes @ SUM Prepa Tec

08:30 – 09:30 Inauguración del Congreso I4R @ SUM Prepa Tec

Invitados especiales & directivos del Congreso I4R

09:30 – 09:30 Plenary Keynote 1: Closing the Gap Between Science and Industry @ SUM Prepa Tec

- Prof. Dr. Volker Stich, Former CEO, FIR at RWTH Aachen University

10:00 – 10:20 Plenary Keynote 2: Tareas Futuras para la Implementación de Industrie 4.0 en México @ SUM Prepa Tec

- Ricardo Luca, North & South America Purchasing Director, Forvia Hella Lighting

10:20 – 10:40 Pausa de Networking @ Coffee Break

10:40 – 11:00 Keynote 3: Las Habilidades Requeridas en la I4.0 (Retos en México) @ SUM Prepa Tec

- Eloi Carranza, Jefe de Ingeniería Industrial, Continental

11:00 – 11:20 Keynote 4: Centros de Innovación 4.0 como Impulsores de Desarrollo Económico y Social @ SUM Prepa Tec

- José Carlos Arredondo Velázquez, Rector, UTEQ

11:20 – 11:40 Keynote 5: Cybersecurity for Industrial Control Systems (ICS) @ SUM Prepa Tec

- Francisco Bolaños, Arquitecto IoT y Transformación Digital LATAM, CISCO

11:40 – 12:00 Keynote 6: Tendencias Digitales y Colaborativas en la Automatización @ SUM Prepa Tec

- Ricardo Alejos, Manager Software Hub Mexico, Hahn Automation

12:00 – 13:00 Almuerzo de Networking @ Carpa

13:00 – 14:20 Sesiones Interactivas

Tendencias en la Industria Manufacturera

Session Chair: Miguel Garcia @ SUM Prepa Tec1

El Futuro del Trabajo

Session Chair: German Bonilla @ SUM Prepa Tec2

MTM Methods Session Chair:

Prof. Dr. Peter Kuhlang @ Auditorio PT

Transformación Digital Ágil

- Miguel Angel García Trujillo, Consultor en Transformación Digital, Ditrats

It all starts with a good question: Real-world Strategies to Implement Artificial Intelligence in Your Operations

- J. Camilo V. Tieck, Director of Data Science and Artificial Intelligence, Home Capital

Industria 4.0: El futuro del trabajo en el Sector automotriz

- Jorge Camacho, Global Integration Manager, JANO Consultancy

Educación Dual para el Futuro Desarrollo Económico de México

- Nancy Huertas, Directora de Educación Dual, Secretaría de Educación Pública

Economía Circular y porqué no hay alternativa

- Dr. Pia Berger, Profesora investigadora, Universidad Panamericana

El Futuro del Empleo

- Ing. Agustín Paulin, GEMINI Learning Systems

Digitization and Internationalization of Trainings in the Field of Work Management

- Prof. Dr. Peter Kuhlang, CEO, MTM Association e. V.

El Método para la Eficiencia en Sistemas de Trabajo Estándar

- Rubén Avitúa, CEO, MTM México

Reducción de Tiempo Estándar y Modificación de la Carga de trabajo mediante la aplicación de MTM

- Miguel Vera, IE Procurement CT, Brose

14:20 – 14:40 Pausa de Networking @ Coffee Break

**Día 2: Martes 28 de Febrero 2023**

14:40 – 15:00 Keynote 7: Retos y Tendencias I4.0 @ SUM Prepa Tec

Jorge Iván Escareño Caballero, Gerente de Ventas de Material Didáctico y Distribuidores, Festo México

15:00 – 15:20 Keynote 8: „The future of Politics“, Metaverse, Blockchain & AI @ SUM Prepa Tec

- Karla Fernandez Gutierrez, Coordinadora de Impulso Tecnológico, Municipio de Querétaro

15:20 – 15:40 Keynote 9: Digitization and Internationalization of Trainings in the Field of Work Management @ SUM Prepa Tec

- Prof. Dr. Peter Kuhlang, CEO, MTM Association e.V.

15:40 – 16:00 Keynote 10: Evolución de los Sistemas de Producción y su Importancia en la Nueva Globalización @ SUM Prepa Tec

- Fernando Federico Madrid Mejía, Presidente, Antal Muunyal, S.A. de C.V.

16:00 – 16:20 Pausa de Networking @ Coffee Break

16:20 – 16:40 Plenary Keynote 11: ¿Cómo Sobrevivir al Abrumador Mundo de la Transformación Digital? @ SUM Prepa Tec

- Omar Rocha Nuno, Business Development Executive, Siemens
- Joaquín Amaro Cisneros, Academic & Strategic Alliances, Siemens

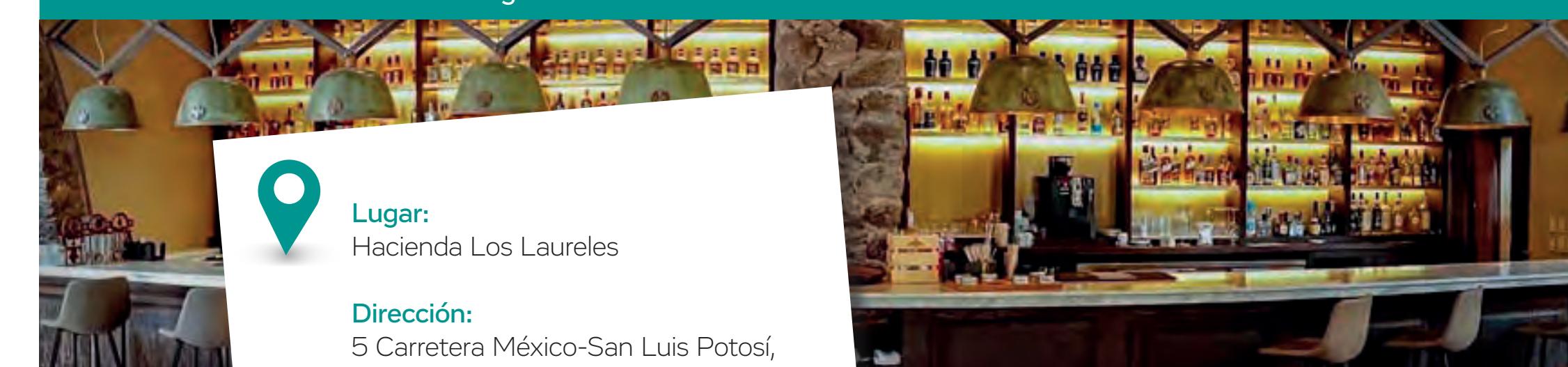
16:40 – 17:00 Panel de Discusión

- |  |   |
|--|---|
| <b>Cerrando la Brecha entre la Ciencia y la Industria @SUM Prepa Tec</b> | <ul style="list-style-type: none"> <li>• José Carlos Arredondo Velázquez, Rector, UTEQ</li> <li>• Eloi Carranza, Industrial Engineering Head, Continental</li> <li>• Karla Fernandez Gutierrez, Coordinadora de Impulso Tecnológico, Municipio de Querétaro</li> <li>• Arturo Alba, Profesor investigador, Universidad Adolfo Ibañez</li> <li>• Carlos Robles, Presidente, AMBE Engineering / Federación Mexicana de la Industria Aeroespacial</li> </ul> |
|--|---|

17:40 – 17:50 Resumen del Día @ SUM Prepa Tec

- Roman Senderek, Head of Department Smart Work, FIR at RWTH Aachen University

19:00 – 00:00 Cena de Networking



# E-Mas Programa

Día 3: Miércoles 1 de Marzo 2023



08:30 – 09:00 Registro de Participantes

09:00 – 09:20 Keynote 12: Artificial Intelligence in Industry: Challenges and Opportunities @ Carpa  
• Rafael Batres, Profesor, Tec de Monterrey

09:20 – 09:40 Keynote 13: People Experience: Desafíos y nuevas tendencias. @ Carpa  
• Gabriela Miranda, Directora General, OpenTec

09:40 – 10:00 Keynote 14: Digital Leadership to Master the Twin-Transition @ Carpa  
• Prof. Paul Mugge, Business Analytics Initiative, Poole College of Management, North Carolina State University  
• Dr. Haroon Abbu, Business Analytics Initiative, Poole College of Management, North Carolina State University  
• Dr.-Ing. Gerhard Gudergan, Deputy Managing Director, Head of Research & Innovation, FIR at RWTH Aachen University  
• Gerrit Hoeborn, Business Transformation Manager, FIR at RWTH Aachen University

10:00 – 10:20 Keynote 15: Formación de talento para la Twin-Transition (Desarrollo Sostenible y Digitalización) @ Carpa  
• Andreas Müller, Director General Adjunto, CAMEXA

10:20 – 10:40 Pausa de Networking @ Coffee Break

10:40 – 12:00 Panel de Discusión

El Impacto de la Transformación hacia la Industria 4.0 en México  
• Dr. Enrique Rabell García, Director General, CONCyTEQ  
• E. Renato Villaseñor Mendoza, Presidente del Consejo, Cluster Automotriz Querétaro  
• Oscar Olvera, Tec de Monterrey

Moderador: German Bonilla @ Carpa  
• Elisa Crespo, Presidenta Ejecutiva, ClautEdoMex  
• Carlos Muñoz, CEO, Disrupting Inc

12:00 – 12:30 Pausa Patrocinadores – Presentación de patrocinadores @ Coffee break y stands

12:30 – 13:30 Almuerzo de Networking @ Carpa

10 /

13:30 – 14:50 Sesiones Interactivas

Green Business  
Session Chair: Josef Modlmayer @ Auditorio PT

• Josef Modlmayer, Vicepresidente, EMAAC  
Economía Circular con la Valorización de Residuos  
• María Selene Luna Martínez, Consultor Ambiental, Ciencia e Ingeniería Ambiental

Conflicto de Intereses en el ODS 6 y Cómo Solucionarlos Sosteniblemente  
• Gabriel Saloma, Camia Ingeniería

Residuos Ambientales  
• Coral Montero, GT Ambiental

Electromobility  
Session Chair: Andreas Müller @ Salón 15902

Transformación Digital Sostenible  
• Andreas Müller, Director General Adjunto, CAMEXA

Sustainable Mobility Concept  
• Carl Richter, Director Consulting, PEM Motion

TBD  
• TBD

Competencias para la Industria 4.0  
Session Chair: Roman Senderek @ Salón 15903

La industria 4.0 y el Futuro del Trabajo  
• Roman Senderek, Head of Department Smart Work, FIR an der RWTH Aachen University

Capital Humano, Eslabón Perdido de la Industria 4.0  
• Rodrigo Arciniegas, Director General, Catch Consulting

Transformando Personas en Líderes Digitales  
• Octavio Miranda, Ind Tech

14:50 – 15:10 Pausa de Networking @ Coffee Break

15:10 – 15:40 Plenary Keynote 16: Valores empresariales para una transformación digital exitosa @ SUM Prepa Tec  
• Joachim Elsässer, Coordinador del proyecto, BDI PAGSID

15:40 – 15:50 Resumen del día @ SUM Prepa Tec  
• Roman Senderek, Head of Department Smart Work, FIR an der RWTH Aachen University

15:50 – 17:00 Conoce a los Expertos @ SUM Prepa Tec

19:00 – 22:00 Cena para Patrocinadores @ Hacienda Jurica



# Programa

Día 4: Jueves 2 de Marzo 2023



09:00 – 13:00 Workshops

Workshops  
Paralelos

**Workshop 1: Electromobilidad – Future of Automotive E-Mobility Production** @ UTEQ

- Carl Richter, Director Consulting, PEM Motion

**Workshop 2: Productividad y Ergonomía – Designing Productive and Ergonomic Workplaces Using MTM**

@ UTEQ

- Prof. Dr. Peter Kuhlang, CEO, MTM Association e.V.

**Workshop 3: Industrie 4.0 – IoT per Drag and Drop** @Tec de Monterrey Salón 17204

- Murtaza Abbas, Project Manager, FIR at RWTH Aachen University

13:00 – 14:00 Almuerzo de Networking

14:00 – 18:00 Workshops

Workshops  
Paralelos

**Workshop 4: Innovación, Talento y Sostenibilidad Como Estrategias: ¿Qué Falta en tu Organización?**

@ Tec de Monterrey Salón 17204

- Montserrat Rodríguez López, Gerente del Área de Desarrollo de Talento, OpenTec

**Workshop 5: Industria 4.0 – Monitoreo de los parámetros de productividad en máquinas-herramientas.**

@ Tec de Monterrey

- Victor Romero Muñoz, Tec de Monterrey.

**Workshop 6: Innovación Educativa** @ UTEQ

- Luis Gerardo González, Coordinador de Universidades Diales, Alianza Empresarial para la Educación Dual C-B-O



# PRESENTATION IN DETAIL

Día 1: Martes 28 de Febrero 2023

09:30 – 10:00 Uhr

**PLENARY KEYNOTE 1:**  
Closing the Gap Between Science and Industry



**Prof. Dr. Volker Stich**

Former CEO  
FIR at the RWTH Aachen University



**Ricardo Luca**

North & South America  
Purchasing Director  
Forvia Hella Lighting



10:00 – 10:20 Uhr

10:00 – 10:20 Uhr

**PLENARY KEYNOTE 2:**  
Tareas Futuras para la Implementación de Industrie 4.0 en México"

Requerimientos Automotrices Tier 1; La Implementación en Producción y Supply Chain

10:20 – 10:40 Uhr

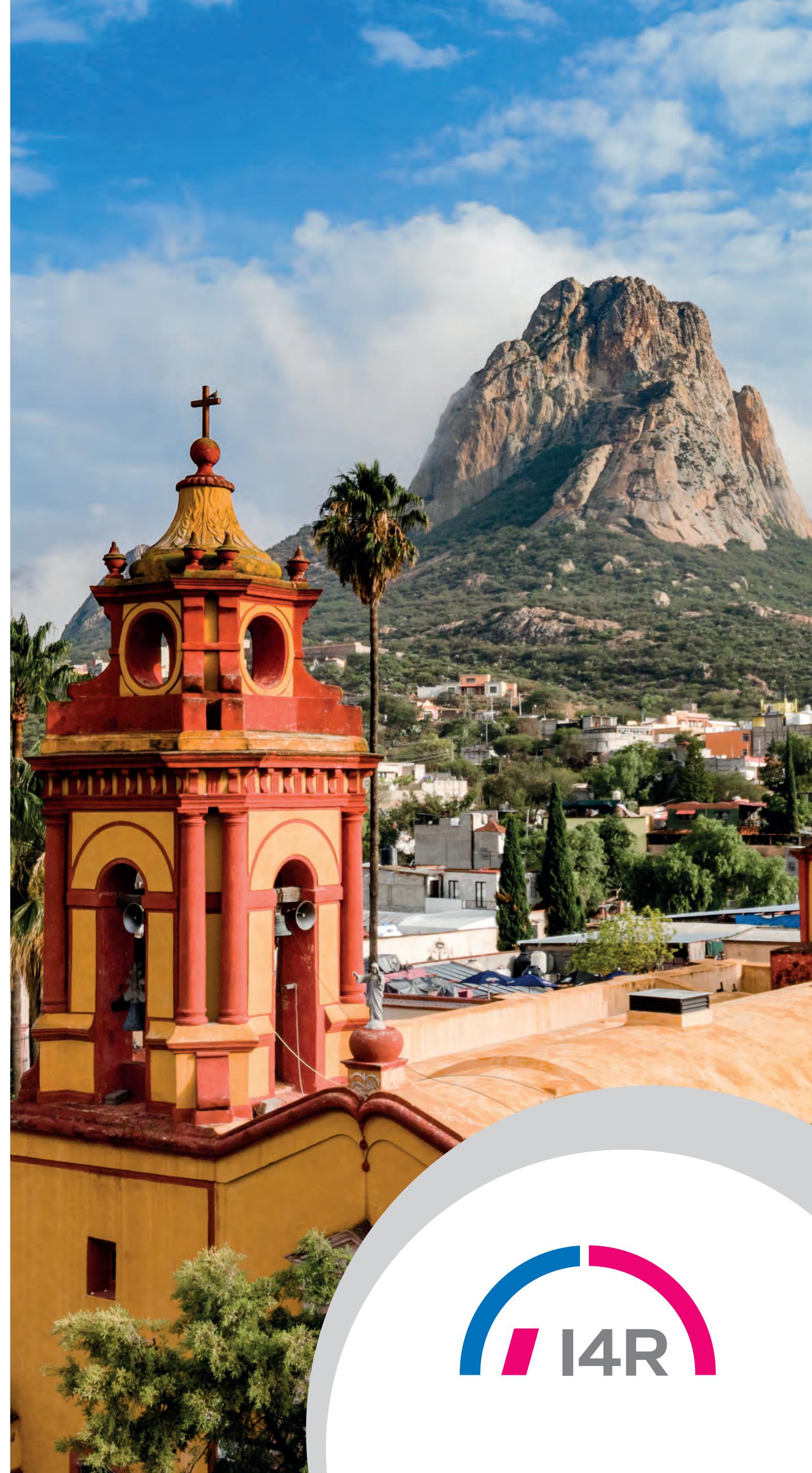
**KEYNOTE 3:**  
Las Habilidades Requeridas en la I4.0 (Retos en México)

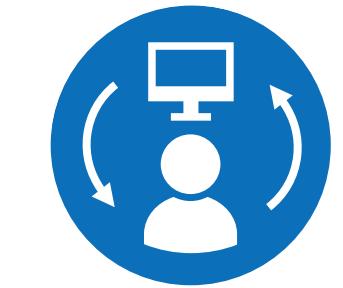
Definir cuáles son las habilidades suaves y duras para la buena implementación de la tecnología, así como los retos que nos enfrentamos como país.



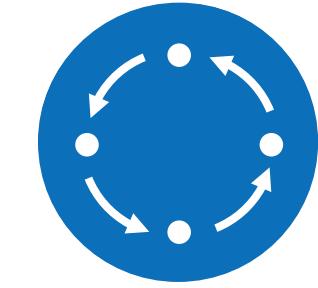
**Eloi Carranza**

Jefe de Ingeniería Industrial  
Continental





Digitalisierung  
&  
Strategie



Informations-  
technologien &  
-management



Produktion  
&  
Logistik



Service  
&  
Instandhaltung

You can find more information  
and other events online at

[smart-logistik-academy.com](http://smart-logistik-academy.com)

# PRESENTATION IN DETAIL

Día 1: Martes 28 de Febrero 2023

11:00 – 11:20 Uhr

## KEYNOTE 4:

**Centros de Innovación 4.0 como Impulsores  
de Desarrollo Económico y Social**

Promoción e integración de una Red Nacional de Centros de Creatividad e Innovación 4.0 para la formación de profesionistas a través del trabajo colaborativo entre IES, centros de investigación, empresas, gobiernos, Organizaciones de la Sociedad Civil y la sociedad en su conjunto, para dar respuesta a los grandes problemas nacionales.



**José Carlos Arredondo Velázquez**

Rector  
Universidad Tecnológica de Querétaro



**Francisco Bolaños**

Arquitecto IoT y  
Transformación Digital LATAM  
CISCO



11:20 – 11:40 Uhr

## KEYNOTE 5: **Cybersecurity for Industrial Control Systems (ICS)**

En esta sesión abordaremos el impacto a nivel regional de los ciberataques, así como los diferentes elementos necesarios para la implementación de una estrategia de ciberseguridad efectiva, hasta los aspectos tácticos para su adecuada implementación.



**Ricardo Alejos**

Manager Software Hub México  
Hahn Automation



11:40 – 12:00 Uhr

## KEYNOTE 6: **Tendencias Digitales y Colaborativas en la Automatización**

Cómo el uso de nuevas tecnologías basadas en Inteligencia Artificial, Realidad Aumentada, Programación de Bajo Código, CobiotX, etc. están mejorando la interacción hombre-máquina y ayudando a hacer más eficiente el trabajo de integración y manejo de sistemas productivos. Hablaremos también un poco del concepto Producción como un Servicio (PaaS).

# PRESENTATION IN DETAIL

Día 1: Martes 28 de Febrero 2023

14:40 – 15:00 Uhr

**KEYNOTE 7:**  
Retos y Tendencias I4.0



**Jorge Iván Escareño Caballero**

Gerente de Ventas de Material  
Didáctico y Distribuidores  
Festo México

**FESTO**



**Karla Fernández Gutierrez**

Coordinadora de Impulso Tecnológico,  
Municipio de Querétaro



15:00 – 15:20 Uhr

**KEYNOTE 8:**  
**The Future of Politics, Metaverse, Blockchain & AI.**

Discover all the possibilities that metaverse, blockchain and artificial intelligence have to change governments. „The future of politics“ will talk about how Querétaro is planning to lead and make history once again in being one of the most innovative and progressive cities in LATAM.



**Prof. Dr. Peter Kuhlmann**

CEO  
MTM Association e.V.



Today, a significant part of the training already takes place via e-learning. In addition to expanding the training courses in terms of content and languages, further issues are already being addressed. These include the development of the platform, for example regarding the individualization of learning paths. Secondly, the company-specific e-learning courses are being designed for industrial companies.





# PRESENTATION IN DETAIL

Día 1: Martes 28 de Febrero 2023

15:40 – 16:00 Uhr

## KEYNOTE 10:

**Evolución de los Sistemas de Producción y su Importancia en la Nueva Globalización**

Describir la evolución de los sistemas de producción a la actualidad y su importancia para la integración económica a través del intercambio digital, tecnología e innovación.



**Fernando Federico Madrid Mejía**

Presidente  
Antal Muunyal, S.A. de C.V.



**Joaquín Amaro Cisneros**

Academic & Strategic Alliances  
Siemens

**SIEMENS**



**Omar Rocha Nuno**

Business Development Executive  
Siemens

**SIEMENS**

16:20 – 16:40 Uhr

## PLENARY KEYNOTE 11:

**Cybersecurity for Industrial Control Systems (ICS)**

Enfrentar los retos que la Transformación Digital taren a las distintas industrias y a nuestras empresas en particular puede ser algo que genere desgaste y estrés en las organizaciones, y encontrar el camino adecuado par afrontarlo puede ser un laberinto. Es por esto que compartiremos algunos puntos para que la transformación digital en tú organización sea "A prueba del futuro".



# PRESENTATION IN DETAIL

Día 2: Miércoles 1 de Marzo 2023

09:00 – 09:20 Uhr

## KEYNOTE 12: Artificial Intelligence in Industry: Challenges and Opportunities

Artificial Intelligence provides a wide spectrum of tools and methods which can benefit industry. The presentation will show examples of the application of artificial intelligence in manufacturing, new product and service design, supply chain, agriculture, and health and discuss future challenges and opportunities.



Rafael Batres

Profesor  
Tec de Monterrey



Gabriela Miranda

Directora General  
OpenTec



16 /

09:20 – 09:40 Uhr

## KEYNOTE 13: People experience: Desafíos y nuevas tendencias.

Se identificarán los recursos y estrategias competitivas que tienen las industrias para la retención y desarrollo de talento, tomando en cuenta el papel de la organización, cultura, liderazgo, competencias, potencial y valor de los colaboradores.





# PRESENTATION IN DETAIL

Día 2: Miércoles 1 de Marzo 2023

09:40 – 10:00 Uhr

## KEYNOTE 14: Digital Leadership to Master the Twin-Transition

How can you lead your company into a completely new future against the backdrop of globally recognized climate targets and the potentials of digital transformation? We present the practice of digitally developing and digitally mature organizations – particularly those of their leaders, and we present specific trust-building actions of leaders. In addition, we present results from our international study with leaders of successful companies and show what new leadership qualities are driving their success in this highly transformative process we are all in.



**Prof. Dr. Paul Mugge**

Business Analytics Initiative  
Poole College of Management  
North Carolina State University

**NC STATE**  
UNIVERSITY



**Dr.-Ing. Gerhard Gudergan**

Deputy Managing Director  
Head of Research & Innovation  
FIR at RWTH Aachen University



**Dr. Haroon Abbu**

Business Analytics Initiative  
Poole College of Management  
North Carolina State University



**Gerrit Hoeborn**

Business Transformation Manager  
FIR at RWTH Aachen University





# PRESENTATION IN DETAIL

Día 2: Miércoles 1 de Marzo 2023

10:00 – 10:20 Uhr

## PLENARY KEYNOTE 15:

Formación de Talento para la Twin-Transition  
(Desarrollo Sostenible y digitalización)

En esta ponencia se abordará la formación de talento en el contexto de la „Twin-Transition”, es decir, el proceso de transición hacia un futuro sostenible y digitalizado. Se discutirán las habilidades y conocimientos necesarios para enfrentar los desafíos de esta transición, así como las estrategias y metodologías más efectivas para desarrollar estas habilidades en las nuevas generaciones de trabajadores. También se analizarán los retos y oportunidades que presenta esta formación de talento en el ámbito empresarial, educativo y social.



**Andreas Müller**

Director General Adjunto  
CAMEXA



AHK

Deutsch-Mexikanische  
Industrie- und Handelskammer  
Cámara Mexicano-Alemana  
de Comercio e Industria | CAMEXA



**Joachim Elsässer**

Coordinador del proyecto  
BDI PAGSID



**PAGSID**

Asociación para  
el desarrollo industrial sostenible  
Alemania - Alianza del Pacífico  
BDI ANDI CCE CONCAMIN COPARMEX SNI SOFOFA

15:00 – 15:20 Uhr

## PLENARY KEYNOTE 16:

Valores empresariales para una transformación digital exitosa

Los valores de la empresa tienen un impacto en la relación que desarrollan con sus colaboradores, clientes, socios y/o accionistas. Implementar los valores de la empresa es la única forma de generar confianza en el lugar de trabajo y para lograr una transformación digital exitosa es importante entender que el concepto de empresa debe evolucionar a un sistema de valor, asegurando un desarrollo industrial sostenible.



# CPSL CONFERENCE LOCATION



Tecnológico de Monterrey  
Stantiago de Querétaro, Mexico

**Conference:**  
Querétaro Campus – Tecnológico de Monterrey Prol. Tecnológico 801  
Col. San Pablo



## Session Chair

For the execution of the conference, we have assigned Session Chairs to all sessions. The selection has been made randomly. All selected Session Chairs will give their own presentation in the following or preceding session. Personal preferences could not be considered during the selection process – we kindly ask all designated Session Chairs to accept the task and to implement it to the best of their knowledge and belief. If you are session chair for a presentation session at the conference, you will find an asterisk (\*) next to your name.

As a session chair, your main responsibility is to keep the session running smoothly, to ensure that all presenters have an opportunity to share their research effectively, and to stick to the set schedule. Here are some key instructions on what you need to do:

1. Familiarize yourself with the schedule and the presentations: Before the session begins, make sure you know the order of presentations, the titles of the talks, and the names of the presenters (not by heart but with the help of this program).
2. Introduce the session and presenters: Begin the session by welcoming the audience and introducing the speaker and their institute before each presentation.
3. Keep time: It is crucial to keep the session running on schedule. Make sure that each presenter has the allotted time to present their research. You can use a timer to signal when the time is up. Give the presenter a notice when 2 minutes are left to finish their presentation.
4. Ask questions: After each presentation, give the audience an opportunity to ask questions. Encourage them to ask clarifying questions or seek additional information about the research. All the session chairs are of course also welcome to ask their questions – especially if there are not many questions from the audience.
5. Help with opening presentations: If a presenter encounters technical difficulties with the CPSL notebook or their own laptop, offer to help troubleshoot the issue or contact technical support for assistance.
6. Support the presenters: Throughout the session, remain engaged and supportive of the presenters. Provide encouragement and constructive feedback on their research, and make sure they feel comfortable and confident presenting to the audience.

# Program

## Day 2: Tuesday, 28 February 2023

The session chairs are marked with (\*).

08:00 – 08:40 **Get Together** @ SUM Prepa Tec 1

08:30 – 09:30 **Opening Ceremony** @ SUM Prepa Tec 1

09:30 – 10:00 **Keynote: Digitalization in Business and Society – the New Normal** @ SUM Prepa Tec 1

- Prof. Dr. Volker Stich, Former CEO, FIR at RWTH Aachen University

10:00 – 10:20 **Plenary Keynote 2 (EMAS) Industry Keynote** @ SUM Prepa Tec 1

10:20 – 10:40 **Break** – All Session Chairs meet @ SUM Prepa Tec 1 for a short briefing

10:40 – 12:00 **Session 1-1** @ Auditorio PT

**Session Chair:**  
Martin Welsing

**Autonomous Load Profile Recognition in Industrial DC-Link Using an Audio Search Algorithm**

- Raoul Laribir, Philipp Harscherr, Jonas Knapp, Kai Peter Birker, Alexander Sauer  
Institute for Energy Efficiency in Production, University of Stuttgart, Germany

**Application of a Reinforcement Learning-based Automated Order Release in Production**

- Günther Schuh, Seth Schmitz, Jan Maetschke, Tim Janke, Hendrik Eisbein  
Werkzeugmaschinenlabor WZL, RWTH Aachen University, Germany

**Classification of Product Data for a Digital Product Passport in the Manufacturing Industry**

- Lukas Stratmann, Gerrit Hoeborn, Christoph Pahl, Prof. Dr. Günther Schuh  
FIR at RWTH Aachen University, Germany

**Method for Specifying Location Data Requirements for Intralogistics Applications**

- Jakob Schyga, Markus Knitt, Johannes Hinckeldeyn, Jochen Kreutzfeldt  
Institute for Technical Logistics, Hamburg University of Technology, Germany

12:00 – 13:00 **Lunch Break**

13:00 – 14:20 **Session 2-1** @ Arena

**Session Chair:**  
Jonas Müller

**Evaluating the Ecological Sustainability of Production Networks – A Data-based Approach**

- Günther Schuh, Seth Schmitz, Tino X. Schlosser, Martin Welsing\*  
Werkzeugmaschinenlabor WZL, RWTH Aachen University, Germany

**Literature Review of Process Models in Asset- and Maintenance-Management-Systems**

- Philipp T. Kraker  
Lehrstuhl für Wirtschafts- und Betriebswissenschaften, Montanuniversität Leoben, Germany

**A Cognitive Assistance System To Support The Implementation Of Machine Learning Applications In Manufacturing**

- Jannik Rosemeyer, Laurenz Beck, Joachim Metternich  
Institute for Production Management, Technology and Machine Tools, TU Darmstadt, Germany

**Evaluating Ecological Sustainability For The Planning and Operations Of Storage Technologies**

- Philipp Braun, Hendrik Rose, Niklas Hesslein, Harsha Vadapalli, Johannes Hinckeldeyn, Jochen Kreutzfeldt  
Institute for Technical Logistics, Hamburg University of Technology |Germany

14:20 – 14:40 **Break**

10:40 – 12:00 **Session 1-2** @ Room 15902

**Session Chair:**  
Philipp Nettessheim

**Path Prediction For Efficient Order Release In Matrix-Structured Assembly Systems**

- Peter Burggräf, Tobias Adlon, Esben Schukat German Bluvstein  
Werkzeugmaschinenlabor WZL, RWTH Aachen University, Germany

**Curriculum Learning in Job Shop Scheduling using Reinforcement Learning**

- Constantin Waubert de Puiseau, Hasan Tercan, Tobias Meisen  
Chair of Technologies and Management of Digital Transformation, Bergische Universität Wuppertal, Germany

**Why Companies Fail With Objectives And Key Results: An Analysis Of Implementation Frameworks**

- Clara Herkenrath, Gerrit Hoeborn, Volker Stich  
FIR at RWTH Aachen University, Germany

**Design Model For Traceability-Supported Assessment Of Product Carbon Footprint**

- Phillip Bausch, Astrid Weyand, Matthias Weigold, Joachim Metternich  
Institute for Production Management, Technology and Machine Tools, TU Darmstadt, Germany

13:00 – 14:20 **Session 2-2** @ Room 15902

**Session Chair:**  
Tim Benedikt Walter

**Towards Robustness of Production Planning and Control Against Supply Chain Disruptions**

- Tobias Wittmeir, Michael Heider, André Schweiger, Michaela Krä, Jörg Hähner, Johannes Schilp, Joachim Berlak  
Institute of Computer Science, Universität Augsburg, Germany

**Beyond Pareto Analysis: A Decision Support Model for the Prioritization of Deviations with Natural Language Processing**

- Yuxi Wang, Lukas Longard, Christian Hertle, Joachim Metternich  
Institute for Production Management, Technology and Machine Tools, TU Darmstadt, Germany

**Bridging Data Gaps in the Food Industry – Sensor-equipped Metal Food Containers as an Enabler for Sustainability**

- Peter Burggräf, Fabian Steinberg, Tobias Adlon, Philipp Nettessheim\*, Jan Salzwedel  
Chair for International Production Engineering and Management, University of Siegen, Germany

**Investigating the Role Of Digitalization in OPEX Programs – A Case Study From the Pharmaceutical Industry**

- Lorenzo Pirrone, Matteo Bernasconi, Thomas Friedli  
Institute of Technology Management, University of St.Gallen, Switzerland

# Program

## Day 2: Tuesday, 28 February 2023

The session chairs are marked with (\*).

14:40 – 16:00 Session 3-1 @ Auditorio PT

Session Chair:  
Martin Benter

### Modelling and Control of Aqueous Parts Cleaning Machines for Demand Response

- Daniel Fuhrlander-Völker, Benedikt Grosch, Matthias Weigold  
Institute for Production Management, Technology and Machine Tools, TU Darmstadt, Germany

### Method For Identifying and Evaluating the Fields of Application of a Digital Twin

- Fabio Oettl, Sebastian Dietl, Christian Göltl, Daniel Müssig, Johannes Schilp  
Department of Applied Computer Science, University of Augsburg, Germany

### Sociotechnical Assessment of Risks in the Use of Business Analytics

- Jonas Müller\*, Gina Hermes, Gerrit Hoeborn, Volker Stich  
FIR at RWTH Aachen University, Germany

### A Linear Programming Model for Renewable Energy Aware Discrete Production Planning and Control

- Vincent Adomat, Christian Kober, Maryam Ahanpanjeh, Jens P. Wulfsberg  
Institute of Production Engineering, Helmut-Schmidt-University, Germany

14:40 – 16:00 Session 3-2 @ Room 15902

Session Chair:  
Jonas Knapp

### Towards Finding Optimal Solutions For Constrained Warehouse Layouts Using Answer Set Programming

- Pascal Kaiser, Andre Thevapalan, Moritz Roidl, Gabriele Kern-Isbner, Marco Wilhelm  
Chair of Material Handling and Warehousing, TU Dortmund, Germany

### Analysis of Strategic Business Ecosystem Role Models for Service-Oriented Value Creation Systems

- Gerrit Hoeborn, Agustin Gonzalez  
FIR at RWTH Aachen University, Germany

### Specification of 5G networks for Agricultural Use Cases Using the Example of Harvesters Operated by Swarm Robotics

- Tim Benedikt Walter\*, Kerstin Lörsch, Max-Ferdinand Stroh, Volker Stich  
FIR at RWTH Aachen University, Germany

### Flexibility-Driven Planning of Flow-Based Mixed-Model Assembly Structures

- Nils Föhlisch, Peter Burggräf, Tobias Adlon, Christopher Kapella  
Laboratory for Machine Tools and Production Engineering, RWTH Aachen University, Germany

16:00 – 16:20 Break

16:20 – 16:40 Plenary Keynote 3 (EMAS) Industry Keynote @ SUM Prepa Tec 1

16:40 – 17:30 Podium Discussion – How to close the Gap between Science and Industry? @ SUM Prepa Tec 1

17:30 Closing of the First Conference Day

20:00 Gala Dinner (CPSL & EMAS) @ Hacienda Los Laureles

Stand: 27.02.023 | Subject to change.

# Day 3: Wednesday, 01 March 2023

The session chairs are marked with (\*).

08:40 – 09:00 Get Together @ SUM Prepa Tec 1

09:00 – 09:40 Keynote: Digital Leadership to Master the Twin-Transition @ SUM Prepa Tec 1

- Dr. Gerhard Gudergan  
FIR at RWTH Aachen University, Aachen, Germany
- Dr. Haroon Abbu  
Business Analytics Initiative, Poole College of Management, North Carolina State University, Raleigh, USA
- Prof. Paul Mugge  
Business Analytics Initiative, Poole College of Management, North Carolina State University, Raleigh, US
- Gerrit Hoeborn  
FIR at RWTH Aachen University, Aachen, Germany

09:40 – 10:20 Derivation of MTM-UAS® Analyses From Virtual Reality Tools Using MTMmotion®

- Martin Benter\*  
MTM ASSOCIATION e. V., Germany

Sesion 4  
@SUM PrepaTec1 Implementation-specific Barriers and Measures for Chatbots in B2B Customer Service

- Daniela Greven, Kathrin Endres, Shugana Sundralingam, Volker Stich  
FIR at RWTH Aachen University, Germany

10:20 – 10:40 Break

10:40 – 12:00 Session 5-1 @ SUM Prepa Tec 1

Session Chair:  
Franziska  
Zielenbach Development of Data-based Business Models to Incentivise Sustainability in Industrial Production

- Felix Hoffmann, Tobias Koch, Markus Weber, Matthias Weigold, Joachim Metternich  
Institute of Production Management, Technology and Machine Tools, TU Darmstadt, Germany

Analysis Of Uncertainty Over The Factory Life Cycle

- Lennart Hlingst, Peter Nyhuis  
Institute of Production Systems and Logistics (IFA), Leibniz University Hannover, Germany

Ontology-based assistance system for control process reconfiguration of Robot-Based Applications

- Aleksandra Mueller, Waldemar Jesse, Simon Storms, Werner Herfs, Christian Brecher  
Werkzeugmaschinenlabor WZL, RWTH Aachen University, Germany

Source Management in DC Microgrids: An Industrial Application

- Isabella Bianchini, Jonas Knapp\*, Simon Riethmüller, Thorben Kwiatkowski, Xiaotian Yang, Alexander Sauer  
Institute for Energy Efficiency in Production, University of Stuttgart, Germany

12:00 – 13:30 Lunch Break

10:40 – 12:00 Session 5-2 @ SUM Prepa Tec 2 + MS-Teams

Online Session

Data Enabled Failure Management Process (DEFMP) across the Product Value Chain

- Robin Günther, Martin Wende, Sebastian Baumann, Felix Bartels, Sebastian Beckschulte, Goy Hinrich Korn, Robert H. Schmitt  
Laboratory for Machine Tools and Production Engineering WZL, RWTH Aachen University, Germany

Energy-Flexible Job-Shop Scheduling Using Deep Reinforcement Learning

- Mine Felder, Daniel Steiner, Paul Busch, Martin Trat, Chenwei Sun, Janek Bender, Jivka Ovtcharova  
FZI Research Center for Information Technology, Germany

An Expert System-Based Approach for Improving Energy Efficiency of Chamber Cleaning Machines

- Borys Ioshchikhes, Ghada Elserafi, Matthias Weigold  
Institute of Production Management, Technology and Machine Tools, Technical University of Darmstadt, Germany

Framework for Context-Sensitive Dashboards Enabling Decision Support on Production Shop Floor

- Karl Lossie, Niklas Birk, Sagibaan Sivasubramaniam, Robert H. Schmitt  
Fraunhofer Institute for Production Technology IPT, Germany

# Program

## Day 3: Wednesday, 01 March 2023

The session chairs are marked with (\*).

13:30 – 14:50 Session 6-1 @ SUM Prepa Tec 1

### Development of a Comparative Assessment Method for Additive and Conventional Manufacturing with Regard to Global Warming Potential

- Leonie Pauline Pletzer-Zelgert, Bruna Pereira de Souza, Moritz Kolter, Marzia Traverso, Johannes Henrich Schleifenbaum  
Digital Additive Production, RWTH Aachen University, Germany

### Customer Perspective on The Purchase and Use of Sustainable And Innovative Furniture in a Co-Creation Process

- Franziska Zielenbach\*, Tobias Schröer, Volker Stich  
FIR at RWTH Aachen University, Germany

Session Chair:  
Stefan Leachu

### Is Sustainable Maintenance a Support- or Standalone Function? A Definition

- Christina Bredebach  
Graduate School of Logistics, TU Dortmund, Germany

### Evaluation of an Capacity-oriented, Agent-based Order Release for Matrix-structured Assembly Systems

- Peter Burggräf, Tobias Adlon, Esben Schukat, Nina Katharina Weber  
Werkzeugmaschinenlabor WZL, RWTH Aachen University, Germany

13:30 – 14:50 Session 6-2 @ SUM Prepa Tec 2

### Challenges of Production Planning and Control for Powder Bed Fusion of Metal With Laser Beam: A Perspective from the Industry

- Lukas Bauch, Andreas Wilhelm, Moritz Kolter, Johannes Henrich Schleifenbaum  
Digital Additive Production, RWTH Aachen University, Germany

### Optimizing Investment Planning for District Heating Coupling of Industrial Energy Systems Using MILP

- Thomas Kohne, Daniel Piendl, Matthias Weigold  
Institute of Production Management, Technology and Machine Tools, TU Darmstadt, Germany

### Force Weighting Approach to Calculate Spinal Cumulative Loading for Ergonomic Workforce Planning in Production

- Laura Johnen, Cathrin Deutz, Alexander Mertens, Verena Nitsch, Christopher Brandl  
Institute of Industrial Engineering and Ergonomics, RWTH Aachen University, Germany

### Review and Development of Revenue Models for A Co-Creation Platform in the Furniture Sector

- Regina Schrank, Günther Schuh, Daniel Wentzel, Lennard Holst  
FIR at RWTH Aachen University, Germany

14:50 – 15:10 Break

15:10 – 15:40 Plenary Keynote 2 (EMAS) Industry Keynote @ SUM Prepa Tec 1

15:40 – 15:50 Break

15:50 – 17:10 Session 7-1 @ SUM Prepa Tec 1

### Cascading Scenario Technique Enabling Automated and Situation-based Crisis Management

- Stefan Leachu\*, Jokim Janßen, Natalie Gdanitz, Merlit Kirchhäuser, Sabine Janzen, Volker Stich  
FIR at RWTH Aachen University, Germany

Session Chair:  
Shiva Abdoli

### Anticipatory Inventory Management for Realizing Robust Production Processes in Engineer-To-Order Manufacturing: A Modeling Approach

- Alexander Wenzel, Lennart Hingst, Peter Nyhuis  
Institute of Production Systems and Logistics (IFA), Leibniz University Hannover, Germany

### A Fuzzy Inference System-Based Approach for Assessing Strategic Capabilities in Global Production Networks

- Gwen Louis Steier, Kevin Gleich, Sina Peukert, Gisela Lanza  
Karlsruhe Institute of Technology (KIT), wbk Institute of Production Science, Germany

### A Systematic Literature Review of Blockchain-Based Traceability Solutions

- Fabian Dietrich  
ESB Business School, Reutlingen University, Germany

15:50 – 17:10 Session 7-2 @ Auditorio PT

### Approach for Data-Based Optimization in Cell Finishing of Battery Production

- Achim Kampker, Heiner Hans Heimes, Benjamin Dorn, Sarah Wennemar\*  
Chair for Production Engineering of E-Mobility Components, RWTH Aachen University, Germany

### Procedure for Hybrid Process Analysis and Design

- Günther Schuh, Seth Schmitz, Marco Schopen  
Werkzeugmaschinenlabor WZL, RWTH Aachen University, Germany

### Towards Factory location planning using GIS

- Justin Hook, Chris Macdonald, Peter Nyhuis  
Institute of Production Systems and Logistics (IFA), Leibniz University Hannover, Germany

### Computer Aided Inspection Planning for Automation of On-Machine Inspection of Customised Milling Parts

- Jonas Krebs, Lars Roedel, Gregor Mueller  
Fraunhofer Institute for Manufacturing Engineering and Automation IPA, Germany

# Program

## Day 3: Wednesday, 01 March 2023

The session chairs are marked with (\*).

17:10 – 18:30 Session 8-1 @ SUM Prepa Tec 1

### Using Data-Centric Platforms to Improve Demand Forecasting and Capacity Utilization for Less Digitized Multi-Site Quarrying Businesses

- John von Stamm, Jonas Mueller, Gerrit Hoeborn, Julian Lassen, Volker Stich  
FIR at RWTH Aachen University, Germany

### Synthesis of Artificial Coating Images and Parameter Data Sets in Electrode Manufacturing

- Achim Kampker, Heiner Hans Heimes, Benjamin Dorn, Henning Clever, Marcel Drescher, Robert Ludwigs  
Chair for Production Engineering of E-Mobility Components, RWTH Aachen University, Germany

### Digitalisation And Its Impact on Leadership Competences in Production Work

- Bernd Dworschak, Alexander Karapidis  
Fraunhofer Institute for Industrial Engineering, Germany

### Digital Twin and Value Stream Mapping of Warehousing in Era of Industry 4.0

- Shiva Abdoli\*  
School of Mechanical and Manufacturing Engineering, UNSW Sydney, Australia

16:50 – 18:10 Session 8-2 @ Auditorio PT

### Development of a Digital Planning Tool For Dimensioning and Investment Cost Calculation in an Early Factory Planning Phase

- Leonard Rieke, Tobias Heinen, Cihan Cevirgen, Finn Laßmann, Peter Nyhuis  
Institute of Production Systems and Logistics (IFA), Leibniz University Hannover, Germany

### Concept for Databased Sales and Resource Planning for Re-Assembly in the Automotive Industry

- Günther Schuh, Seth Schmitz, Marco Schopen, Henning Neumann  
Laboratory for Machine Tools and Production Engineering, RWTH Aachen University, Germany

### Data-driven Prediction of Internal Turbulences in Production Using Synthetic Data

- Jan Schuhmacher, Thomas Bauernhansl  
University of Stuttgart, Germany

### Demands and Challenges for SME Regarding the Human-centred Implementation of Innovative Technologies and AI

- Annika Franken\*, Christine Manthei, Roman Senderek, Volker Stich  
FIR at RWTH Aachen University, Germany

18:30

Closing of the Second Conference Day

# Program

## Day 4: Thursday, 02 March 2023

The session chairs are marked with (\*).

08:40 – 09:00 Get Together @ SUM Prepa Tec

09:00 – 09:40 Keynote: Sustainable Manufacturing for Circular Economy @ SUM Prepa Tec

- Professor I. S. Jawahir, Ph.D.  
Professor and James F. Hardymon Chair in Manufacturing Systems & Director  
of Institute for Sustainable Manufacturing at University of Kentucky

09:40 – 10:20 Session 9 @ SUM Prepa Tec 1

### Systematisation Approach: Handling Insufficient Data Quality

- Tobias Schröer, Jokim Janßen, Günther Schuh, Volker Stich  
FIR at the RWTH Aachen, Germany

### Toward Responsible Use of Digital Technologies in Manufacturing Companies through Regulation

- Günther Schuh, Max-Ferdinand Stroh, Lara Johanning  
FIR at the RWTH Aachen, Germany

10:20 – 10:40 Break

Stand: 27.02.023 | Subject to change.



# Program

## Day 4: Thursday, 02 March 2023

The session chairs are marked with (\*).

10:40 – 12:30 Session 10-1 @ SUM Prepa Tec 1

Session Chair:  
Christoph Frey

### Application-oriented Method for Determining the Adhesion between Insulated Flat Copper Wire and Impregnation Resin

- Achim Kampker, Heiner Hans Heimes, Benjamin Norbert Dorn, Florian Brans, Henrik Christoph Born\*  
Chair for Production Engineering of E-Mobility Components, RWTH Aachen University, Germany

### Conceptualization of an AI-based Skills Forecasting Model for Small and Medium-Sized Enterprises (SMEs)

- Charlotte Frierson, Jana Wrobel, Drs. Roman Senderek, Volker Stich  
FIR at the RWTH Aachen, Germany

### Towards a Design of a Software-Defined Manufacturing System Based on a Systematic Literature Review for Enabling a Decentralised High-Rate Electrolyser Production

- Alexander Brandstetter, Henry Himmelstoss, Monika Ristling, Daniel Schel, Michael Oberle  
Fraunhofer Institute for Manufacturing Engineering and Automation, Germany

### Extended Production Planning of Reconfigurable Manufacturing Systems by Means of Simulation-based Optimization

- Sebastian Behrendt, Marco Wurster, Marvin Carl May, Gisela Lanza  
Karlsruhe Institute of Technology (KIT), wbk Institute of Production Science, Germany

### An Approach Towards Securing Future Viability of SMEs In A VUCA World Using Artificial Intelligence To Increase Resilience

- Lena Wecken\*, Tobias Heinen, Peter Nyhuis  
Institute of Production Systems and Logistics (IFA), Leibniz University Hannover, Germany

10:40 – 12:50 Session 10-2 @ SUM Prepa Tec 2 + MS-Teams

Online Session

### Design Principles for The Sales Of Smart Product Service Systems

- Benedikt Moser, Achim Kampker, Volker Stich, Lennard Holst  
FIR at RWTH Aachen University, Germany

### Collaborative Implementation of Product-Service Systems in Business Ecosystems – Empirical Investigation of Neutral Third Parties as a Success Factor

- Jan Lukas Schmitt, David Maximilian Dörr, Thomas Bauernhansl  
Fraunhofer-Institut für Produktionstechnik und Automatisierung IPA, Germany

### Critical conditions for Factory Ramp-up Planning in SMEs

- Maria Thomassen, Lars Skjelstad  
SINTEF Digital, Norway

### Synergy Analysis Methodology for Decreasing Fuel Cell Production Costs

- Achim Kampker, Heiner Hans Heimes, Mario Kehrer, Sebastian Hagedorn, Niels Hinrichs, Tobias Pfeifer  
Production Engineering of E-Mobility Components, RWTH Aachen University, Germany

### Evaluation of Event-driven IT-architectures as enabler for Industry 4.0

- Sebastian Kremer, Leon Konrad, Max-Ferdinand Stroh, Günther Schuh  
FIR at RWTH Aachen University, Germany

### Training of PDCA Cycle Using a Catapult in a Virtual Learning Environment

- Amelie Karcher, Timo Köring, Detlef Gerhard, Bernd Kuhlenkötter  
Chair of Production Systems, Ruhr-University Bochum, Germany

12:30 – 13:30 Lunch Break

13:30 – 15:10 Session 11-1 @ SUM Prepa Tec 1

Session Chair:  
Jonas Eichholz

### A Review of Process Innovations in the Cell Finishing of Lithium-Ion Batteries in Large-Scale Production

- Jan Felix Plumeyer, Nils Menebröker, Henning Clever, Lukas Kokozinski, Saskia Wessel, Heiner Hans Heimes, Achim Kampker  
Chair for Production Engineering of E-Mobility Components, RWTH Aachen University, Germany

### Characteristics for Verifying 5G Applications in Production

- Murtaza Abbas, Max Stroh, Volker Stich  
FIR at RWTH Aachen University, Germany

### Design Model of an Ecosystem for Resilient and Sustainable Value Creation of SMEs in Single and Small Batch Production

- Günther Schuh, Gerret Lukas, Christoph Frey  
Laboratory for Machine Tools and Production Engineering (WZL), RWTH Aachen University, Germany

### Evaluation of Business Model Innovation towards Industry 4.0 via Cross-industry

- Mohammadhossein Chitsazzadeh, Roman Senderek, Volker Stich, (Eva Walbröl)  
FIR at RWTH Aachen University, Germany

### Opportunities And Challenges of The Asset Administration Shell for Holistic Traceability in Supply Chain Management

- Nils Kuenster\*, Fabian Dietrich, Daniel Palm  
ESB Business School, Reutlingen University, Germany

13:30 – 15:20 Session 11-2 @ SUM Prepa Tec 2 + MS-Teams

Online Session

### Maturity SCAN 4.0 – An Analysis and Discussion of Results From the Scanning of Digital Capabilities adopted in Argentinian CPG companies

- Lourdes Perea Muñoz, Marcel Hagemann, Lucila Palandella, Paz Cagliari  
Facultad de Ingeniería, LIDTUA-CIC- Centro de Industria 4.0, Universidad Austral, Argentina

### Digital Twin in the Battery Production Context for the Realization of Industry 4.0 Applications

- Robert Ludwigs, Jessica Schmied, Henning Clever, Heiner Heimes, Achim Kampker  
Chair of Production Engineering of E-Mobility Components, RWTH Aachen University, Germany

### Deriving Digital Energy Platform Archetypes for Manufacturing – a Data-Driven Clustering Approach

- Sebastian Duda, Lukas Fabri, Can Kaymakci, Simon Wenninger, Alexander Sauer  
Fraunhofer Institute for Manufacturing Engineering and Automation, University of Stuttgart, Germany

### Proposing a Cyber-Physical Production Systems Framework Linking Factory Planning and Factory Operation

- Adrian Langer, Christian Ortmeier, Tim Abraham, Christoph Herrmann  
Institute of Machine Tools and Production Technology (IWF), TU Braunschweig, Germany

### Method for Climate Strategy Development in Industrial Companies

- Stefan Seyfried, Astrid Weyand, Thomas Kohne, Matthias Weigold  
PTW TU Darmstadt, Germany

### Process-oriented Evaluation System for the Use of Robotic Process Automation

- Christian Ortmeier, Adrian Langer, Kira Welzel, Tim Abraham, Christoph Herrmann  
Institute of Machine Tools and Production Technology (IWF), TU Braunschweig, Germany

15:10 – 15:20 Break

# Program

## Day 4: Thursday, 02 March 2023

The session chairs are marked with (\*).

15:20 – 17:00 Session 12-1 @ SUM Prepa Tec 1

Session Chair:  
Nils Kuenster

### Categorizing Challenges and Potentials of Digital Industrial Platforms

- Jonas Eichholz\*, Michael Baumeister, Alexander Kreyenborg, Daniel Hefft, Nick Große, Michael Henke  
Lehrstuhl für Unternehmenslogistik, TU Dortmund, Germany

### Potentials and Implementation Strategies for Flexible Battery Cell Production

- Achim Kampker, Heiner Heimes, Benjamin Dorn, Henning Clever, Artur Scheibe  
Production Engineering of E-Mobility Components, RWTH Aachen University, Germany

### Reference Data Model for Customer Success Management in the Subscription Business of Manufacturing Companies: Findings from the German Manufacturing Industry

- Lennard Holst, Günther Schuh, Volker Stich  
FIR at RWTH Aachen University, Germany

### Operational concepts for the deployment of AI-supported maintenance strategies at Distribution System Operators to enable the energy and mobility transition

- Kajan Kandiah, Lars Frehen, Max-Ferdinand Stroh, Volker Stich  
FIR at RWTH Aachen University, Germany

### Data science to measure the last mile processes in the logistics

- Verónica Saavedra Gastélum, Carlos Alberto González Almaguer, Beatriz Murrieta Cortés, Claudia Zubieta Ramírez,  
Lourdes Jazmin Muciño García  
Tecnológico de Monterrey, Mexico

15:20 – 17:00 Session 12-2 @ SUM Prepa Tec 2 + MS-Teams

Session Chair:  
Lena Wecken

### Development of a Data Concept For An Algorithm to Enable Relay Traffic for Trucks

- Kira Frings, Max-Ferdinand Stroh, Sijmen Boersma, Volker Stich, Florian Wehling  
FIR at RWTH Aachen University, Germany

### Development of Cyber-Physical-Systems for Fluid Manufacturing Systems

- Ali Bozkurt, Christian Fries, Timur Tasçi, Urs Leberle, Daniel Kessler, Markus Joos, Manuel Hagg,  
Bernd Neuschwander, Moritz Hinderer  
Institute of Mechanical Handling and Logistics, University of Stuttgart, Germany

### Laser Drying of Graphite Anodes for the Production of Lithium-Ion Batteries – a Process- And Material-Side Analysis for Sustainable Battery Production

- Sebastian Wolf, Daniel Neb, Florian Höltig, Barkin Özkan, Henning Clever, Benjamin Dorn, Heiner Heimes, Achim Kampker  
PEM, RWTH Aachen University, Germany

### Data science to measure the last mile processes in the logistics

- Verónica Saavedra Gastélum, Carlos Alberto González Almaguer, Beatriz Murrieta Cortés, Claudia Zubieta Ramírez,  
Lourdes Jazmin Muciño García  
Tecnológico de Monterrey, Mexico

17:00

Closing of the Last Conference Day

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