DECHEMA | PRAXIS forum

PRAXISforum

01 – 02 Feb 2017

Frankfurt/Main, Germany

From Big Data to Smart Data: Big Data Analytics in Process Industry

#PRAXISforum

From experts for experts

Big Data analytics has become important to the process industry and reveals new market opportunities as well as it could lead to process advantages and cost reductions within the production. No matters whether it is the chemical, pharmaceutical, biotech, steel, energy or other related industries: enormous amounts of data are created every second and need to be analyzed to further improve processes, enhance production, develop innovative products and not only in case of maintenance to understand what will happen next. The application areas in which data analytics can be used profitably are diverse and nowhere in process industry near exhausted.

The DECHEMA PRAXISforum "Big Data Analytics in Process Industry" brings together industry and SME delegates from international market leaders, high profile end-users and solution providers in the field of data analytics.

In this PRAXISforum they have the opportunity to exchange and network with colleagues from other companies and branches, with potential cooperation partners, and get informed about the latest trends, innovations, and practices. At the same time, participants can present their needs and future requirements in direct exchange with suppliers of technologies, services, and products.

What the PRAXISfourm is about

- **By industry, for industry** – the PRAXISforum reveals market opportunities and promotes the development of data analytics, technology services and application areas.
- **Networking platform** – the PRAXISforum brings together international market leaders and high profile end-users and experts from all relevant industries.
- **High-level speakers** – best practices presentations and lessons learned from speakers at decision-maker level.
- **Relevance to applications** – the PRAXISforum provides visitors an overview of innovations for their highly specific requirements of everyday practice.

Dr. Björn Mathes
Head of PRAXISforums,
DECHEMA e.V.

PRAXISforum key topics

- Big Data analytics - where is the future?
- Best Practice examples and lessons learned:
  successful data analytics applications
- Company culture: driver or barrier for analytics projects?
- How to get the best out of your money: analytics investment
- Smart data discovery in process industry

Wednesday, 01 Feb 2017

Time	Topic	Speaker
10:00	**Registration, Opening of exhibition**	
11:30	**Opening and welcome address**	B. Mathes / Head of PRAXISforums DECHEMA e.V., Germany
11:45	*Impulse* **Standardization of Big Data Best Practice in the chemical production with typical Use Cases and commercial impact** • The Best Practice White Paper of the german standardization group FA 7.24 VDI/VDE/GMA • The McKinsey approach of Process optimization • Practical use cases of the approaches with highly optimized solutions	T. Froese / Managing Director atlan-tec Systems, Germany
12:30	**Business Analytics in the Chemical Industry** • Learn how digital is changing all aspects of our lives and what it means for the future of the chemical industry • Explore how chemical companies apply business analytics, adopt the new and burgeoning digital opportunities? • Understand how data can give us insights that can be leveraged for future value generation and growth	O. Erdenberger / Senior Manager - Resources Accenture, Germany
13:00	**Lunch and networking at exhibition floors, „topic tables“, Exhibition Walkthrough**	

Time	Topic	Speaker
14:30	**Process know-how meets data analytics to generate customer value** • Data analytics @ thyssenkrupp Industrial Solutions • Combine process know-how and data analytics features • Applications, examples and lessons learned	M. Hartmann / Vice President Product Management & Technology ThyssenKrupp System Engineering, Germany R. Kleinschmidt / Head of Technology, Innovation & Sustainability Division thyssenkrupp Industrial Solutions, Germany
15:15	**Computer-Aided Synthesis Design: An Introduction to ChemPlanner** • How does ChemPlanner help organic chemists be more creative and more efficient? • How does the sophisticated cheminformatics algorithms in ChemPlanner work? • Using an example use case, how could ChemPlanner help me in my everyday work?	D. Flanagan / Director Lab Solutions Wiley, Germany
15:45	**Interactive networking and discussion @ „topic tables“, Exhibition Walkthrough**	

Wednesday, 01 Feb 2017

Time	Topic	Speaker
16:45	**Empowering the Process Industry** • Background about Microsoft's investments and strategies in regard of digital transformation • Examples how Microsoft engage with customer in industry and support their digital strategies • Introducing the Azure IoT Platform • Showing Demo	R. Lokner / Digital Business Transformation Team Microsoft, Germany M. Feuerstein / Senior Industry Market Development Manager Microsoft, Germany
17:30	**Use Cases of Data Analytics in the Process Industry** • Soft Sensor development in Digestion, Gasification, Distillation Columns • Model Development for Electrical Load Forecasting • Model Development for Predictive Maintenance of a Granulation Plant	N. Zobel / Group leader Fraunhofer Institute for Factory Operation and Automation IFF, Germany
18:00	**FEE – Big Data for Operator Support in Chemical Plants** • Introduction of the cooperative Project FEE – Research Question and Approach • Scenario I: From Big Data to Smart Data – Event Prediction for Operator Support • Scenario II: Anomaly Detection – Big Data Approach for rare Events	M. Hollender / Researcher ABB Research Center, Germany
18:30	**Interactive networking and discussion @ „topic tables", Exhibition Walkthrough**	
19:00	**Networking Dinner**	*Location: Exhibition floor*
23:00	***End of first PRAXISforum day***	

Thursday, 02 Feb 2017

9:00 **Re-Opening exhibition**

Time	Topic	Speaker
09:30	**Predictive Big Data Analytics in the Process Industry** • Predictive analytics use cases in the chemical industry, the steel industry, and other production processes • Predicting and preventing machine failures before they happen • Predicting critical situations as early as possible and providing recommendations for preventing them and/or fixing them • Predicting product quality issues as early as possible in the process in order to improve product quality and cost	R. Klinkenberg / Co-Founder & Head of Funded R&D RapidMiner, Germany
10:00	**Big Data Analytics for Batch Processes** • Why Big Data Analytics? • General Work Stream of Data Analysis • Analysis of Global Production Networks and Batch Characterization • Implementation of Performance Dialogue Tool	S. Thomas / Expert Team Mathematical Methods & Simulation Clariant, Germany
10:30	**Proven method to fail any analytics project with supporting real life examples** • Although we all understand the value of analytics only very few are really successful • Even Nate Silver who almost perfectly predicted past to elections in US, failed miserably on predicting the Trump's success • Where is the balance between problem complexity vs. method sophistication and experience of the environment?	D. Nikolic / Partner, Advisory Services, Analytics, EMEIA Ernst&Young, Germany
11:00	**The impact of organizational aspects and maturity on companies' success with Big Data** • In the past years, Big Data has been dominated by technological challenges • Increasingly, success factors of Big Data are recognized in the organizational dimension • Finding the right balance between organizational flexibility and standardization is becoming one main challenge	T. Hansmann / Managing Director Congenius Digital, Germany
11:30	**Interactive networking and discussion @ „topic tables", Exhibition Walkthrough**	

Thursday, 02 Feb 2017

Time	Topic	Speaker
12:45	**Big Data will be Smart Data - How Industry and SMEs Generate Business Value from Data** • What is really behind "Big Data" and "Data Analytics"? • Practical examples of successful applications of Big Data solutions • Best Practice: How do successful companies act?	J. Kamionka / Head of Business Intelligence & Big Data T-Systems Multimedia Solutions, Germany
13:15	**iPRODICT – Big Data Analytics in the Steel Production Industry** • Specific Big Data Challenges in the Steel Industry • Goals of the Project iPRODICT: Provide prescriptive analytics throughout steel casting, quality management and batch planning • Architectural Considerations: Integration of Learning Approaches and Complex Event Processing • Specific Analytical Challenges: Prediction of quality defects and post-processing steps, Process recommendations for individual order scenarios • Current State of the Project & Outlook	A. Emrich / Researcher Institute for Information Systems at German Research Center for Artificial Intelligence, DFKI, Germany
13:45	*Closing Keynote / Active Participation* **Big Data Analytics practically embedded in Innovation Management** • Innovation management practice in the Chemical Industry • Big Data Analytics as a natural component of Innovation Management practices • Best practice examples of intelligent usage of data to minimize the risks of investments in new products, technologies or processes (in fact, "without a lot of work") • How to juggle the world's predictions? *The audience will be engaged actively in this lecture.*	H. Rutten / Co-Founder & VP Research Sopheon, The Netherlands
14:30	**Lunch at exhibition floors, interactive networking and discussion @ „topic tables"**	
15:30	***End of PRAXISforum***	

The Speakers

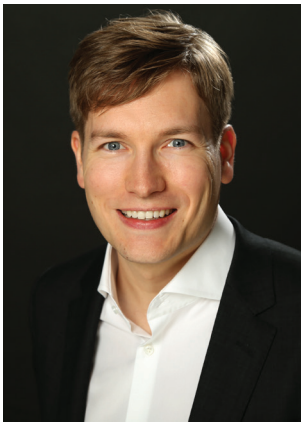
Thomas Froese
Management Director, atlan-tec Systems / Germany

"More than 50% of the companies are not willing to invest in Big Data Applications. These companies will go bankrupt in the next 10 years!"

- 1989: Dipl.-Ing Technische Chemie, Hochschule Niederrhein
- 1989 - 1994: Application Specialist @Foxboro
- Since 1994: Management Director of atlan-tec Systems GmbH
- Since 2014: Chairman of Standardization Committee FA 7.24 Big Data
- Since 2016: External Senior Advisor, McKinsey

Oliver Erdenberger
Senior Manager - Resources, Accenture / Germany

"Using analytics helps generate competitive advantage and realize potential you haven't been aware of before. New data-driven business models leveraging digital technology are emerging, and they are challenging traditional businesses."



Oliver Erdenberger is an experienced chemical industry professional, having worked for about 10 years at Clariant (IT / Marketing) and Celanese (Supply Chain) before he moved into a management consulting position in 2012. In his current role at Accenture he is responsible to support Business Analytics Program in the Chemical Industry. Outside his client work, he is coordinating the Chemicals Professional Community in Germany, Austria and Switzerland at Accenture.

- 2015 – 2014: Senior Manager Chemical Industry at Accenture Consulting
- 2012 – 2015: Supply Chain Consultant at Camelot Management Consultants
- 2007 – 2012: Global Supply Chain Planner at Celanese
- 2005 – 2006: Global Marketing Pigments & Additives at Clariant
- 2002 – 2004: Trainee (IT / Business Process Management) at Clariant

The Speakers

Matthias Hartmann
Vice President Product Management & Technology,
ThyssenKrupp System Engineering / Germany

- 1992: Electrical Engineering, Universität Hannover, degree: Diploma
- 1992 - 1994: Project leader, Ernst Winter & Sohn, Norderstedt
- 1994 - 1996: Research Associate, Institut für Fertigungstechnik Hannover
- 1996: PhD, Institut für Fertigungstechnik, Hannover: „Prozeßüberwachung beim Stabstirn-Trennschleifen von monokristallinem Silizium“
- 1996 - 2004: Project leader / Sales plant assembly, Johann A. Krause Maschinenfabrik GmbH, Bremen
- 2004 - 2007: Head of Engineering Design, ThyssenKrupp Krause GmbH, Bremen
- 2007 - 2010: Head of Gear Assembly Systems, ThyssenKrupp Krause GmbH, Bremen
- Since 2010: Vice Product Management & Technology, ThyssenKrupp System Engineering GmbH

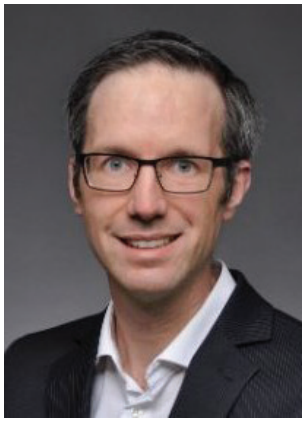
“The application of data analytics will improve efficiency in the chemical industry!”

Ralph Kleinschmidt
Head of Technology, Innovation & Sustainability Division,
thyssenkrupp Industrial Solutions / Germany

- 07/2016 – today: thyssenkrupp Industrial Solutions AG, Head of Technology, Innovation & Sustainability Division
- 05/2014 – 06/2016: thyssenkrupp Industrial Solutions AG, Head of Technology Development Department
- 06/2001 – 04/2014: Technology Management Department, Direction and processing of R&D-Projects in collaboration with operating units and external partners
- 1999 – 2001: Direction of the laboratory at an incineration and treatment plant
- 1996 – 1999: Doctorate at the MPI for research on coal, Mülheim / Ruhr, in the field of polymer chemistry and catalysis
- 1990 – 1996: Studies in Chemistry at the Heinrich-Heine-University, Düsseldorf

The Speakers

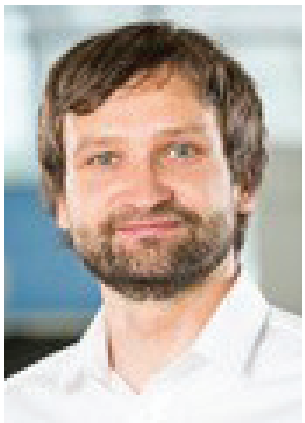
David Flanagan
Director Lab Solutions, Wiley / Germany



"Chemical space is big. Very big. Published and unpublished data only cover only an exceedingly small part of possible small molecule space. Machine learning and algorithmic prediction tools can help fill in the explored parts of chemical space. What kinds of data sources and prediction tools will come next?"

Dr. David Flanagan is Director, Lab Solutions at Wiley and responsible for Wiley ChemPlanner. After receiving his PhD in Polymer Science and Engineering from the University of Massachusetts Amherst in 2004, he joined Wiley-VCH (Weinheim, Germany) as an editor for Advanced Materials. He went on to become Editor-in-Chief of Advanced Functional Materials before moving to digital product management in 2012. The Lab Solutions group at Wiley develops evidence-based prediction tools that combine high-quality data with sophisticated cheminformatics to better serve the unmet needs of laboratory researchers.

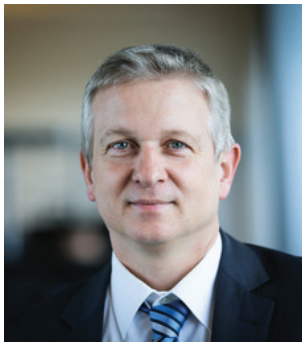
Nico Zobel
Group Leader, Fraunhofer Institute for Factory Operation and Automation IFF / Germany



"One of the major challenges will be to generate use cases of the analysis of data from heterogeneous sources."

- 2003: Dipl.Ing. of Energy and Process Engineering from Techische Universität Berlin (Germany) and Illinois Institute of Technology, Chicago (USA)
- 2007: Dr.-Ing. In Reaction Engineering from Techische Universität Berlin (Germany)
- 2007 – 2013: Junior Research Group Leader at Techische Universität Berlin (Germany)
- Since 2013: Group Leader at Fraunhofer Institute for Factory Operation and Automation, Magdeburg (Germany)

The Speakers



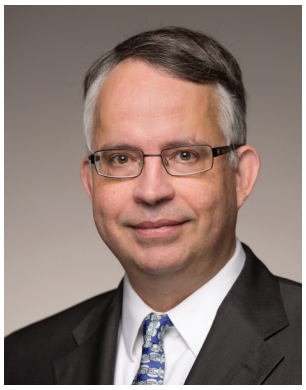
Matthias Feuerstein
Industry Solution Executive, Microsoft / Germany

Matthias Feuerstein, is an Industry Solution Executive at Microsoft in Germany focusing on digital solutions for customers in the process industry. Matthias is working very close with the Microsoft Account teams as well as industry partners in many industry specific areas. He is working currently on new solution scenarios based on the Microsoft cloud platforms and supporting customers in their journey of the digital transformation.

"Technology is playing an increasing role in everything we do, shaping growth, disrupting industry landscapes, and providing the catalyst for transformation. In the process industry, digital technology provides actionable solutions to challenges and groundbreaking opportunities for innovation. It is imperative that industry players explore the possibilities presented by digital transformation."

Robert Lokner
Digital Business Transformation Team, Microsoft / Germany

Robert Lokner is a member of the Digital Business Transformation Team in Germany. The objective is the identification of new business models, improvement of operational excellence and increasing user/customer experience in industries like Automotive, Manufacturing, Process-Industry/F&B as well as in cross-industry solutions.



Martin Hollender
Researcher, ABB Research Center / Germany

"The major challenge for Big Data Analytics in Process Industries are not scalable architectures or clever algorithms, but remains to have the right data in the right quality to address relevant and pressing issues. Today's information system infrastructure often prevent us often from obtaining this right data in an efficient data."

After studying at the Institute for Automatic Control at TU Darmstadt, Manfred Hollender received 1994 a PhD from the University of Kassel (Laboratory of Man-Machine-Systems). Afterwards he held several positions at Eurisco and ABB and earned a lot of experience as independent software consultant. Since 2004 he is a principal scientist at ABB corporate research.

The Speakers

Ralf Klinkenberg
Co-Founder & Head of Funded R&D, RapidMiner / Germany

"Predictive Big Data Analytics and Machine Learning will transform most industries by supporting better informed and more customized decisions by both, humans and machines, increasing agility and efficiency, lowering costs, enabling better and more customized products and services, forecasting risks and opportunities, and increasing automation. Early adopters will gain significant competitive advantages, while others are likely to be left behind."

Ralf Klinkenberg is the co-founder and head of funded R&D of the Predictive Analytics software provider RapidMiner. He has more than 20 years of experience in data mining, text mining, predictive analytics, machine learning, big data and applications in many industries. In 2001, he founded the open-source project RapidMiner with Dr. Ingo Mierswa and Dr. Simon Fischer, and in 2007 he founded the company RapidMiner with Dr. Ingo Mierswa.

Sindy Thomas
Expert Team Mathematical Methods & Simulation, Clariant / Germany

"Big Data opens up many opportunities in different areas of a chemical company. Besides toolsets and technology, mind-set and communication skills are additional success factors for these novel approaches."

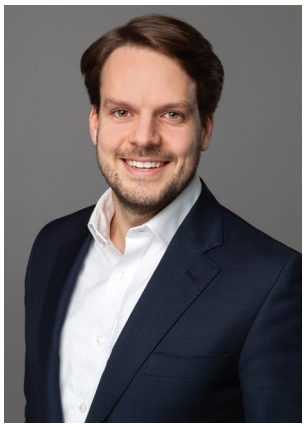
Sindy Thomas has studied Chemical Engineering at the Technical University of Dresden. She did her diploma thesis at Merck, Darmstadt on kinetic studies of the production of specialty chemicals. Since 2011 Sindy is working as a process engineer at Clariant in Group Process Technology and is responsible for projects that deal with process simulations and data analytics.

The Speakers

Drazen Nikolic
Partner, Advisory Services, Analytics, EMEIA, Ernst&Young / Germany

"If you do not understand the problem, you are not able to frame the right question. No wonder, that analytics based solution deliver unsatisfactory results."

Drazen Nikolic is Partner at Ernst & Young's. He has over 25 years of international experience shaping information and technology based solutions as well as delivery of complex IT systems for global companies.
Drazen is leading Analytics services for GSA region. His focus is on supporting international clients in shaping and delivering analytics enabled solutions from commercial excellence to supply chain optimization. Some of these solutions include strategic components like shaping information and technology enabled new business models. Drazen is focusing on clients in Health care and Life Sciences, Retail and Automotive industry sectors.



Thomas Hansmann
Managing Director, Congenius Digital / Germany

"It is not (only) about technology - without the right organization, Big Data will not become a successful part of any company."

Thomas Hansmann is Managing Director of Congenius Digital. He is consulting companies on Big Data topics with a focus on data driven decision making and data driven corporate development. Before founding Congenius Digital, he has spent several years in the pharmaceutical industry, running global Big Data projects. Besides that, Thomas has spent several years in science, analyzing success factors and relevant capabilities for dealing successfully with the topic of Big Data.

The Speakers

Jens Kamionka
Head of Business Intelligence & Big Data, T-Systems Multimedia Solutions / Germany

"With enormous capacity and real-time data processing, Big Data now provides us with the basic prerequisites for many exciting applications in the context of digital transformation. However, many companies still fail to address security, infrastructure or data quality issues. I will show in my lecture how you can create the necessary conditions in your company and ensure that investments in data analytics are also profitable."

Jens Kamionka has been with T-Systems for 9 years. During this time, he has dealt, among other things, with the strategic development of new focus topics and the opening up of new markets. Since 2016, he has been responsible for the development of the Big Data and Data Analytics area, and has been responsible for the strategic implementation of digital transformation at a large number of companies from industry and small and medium-sized enterprises.

Andreas Emrich
Researcher, Institute for Information Systems at German Research Center for Artificial Intelligence, DFKI / Germany

"From our perspective, one of the biggest challenges for the process industry is the complicated traceability of instances throughout the production process. This leads to complicated tracking mechanisms that also affect the analytics solutions, requiring to integrate both instance-related and aggregated analysis."

Andreas Emrich is a researcher at the Institute for Information Systems (IWi) at the German Research Center for Artificial Intelligence (DFKI) and works more than 15 years in research projects. He received a Masters degree in Business Administration and Computer Science ("Dipl.-Wirtsch.-Ing.") from University of Kaiserslautern. His research interests are intelligent systems, recommender systems and big data technologies in Business Process Management. He led several local, national and international research and industry projects and co-authored more than 50 peer-reviewed papers. Andreas is member of IEEE, ACM, GI and AIS.

The Speakers

Huub Rutten
VP Research, Sopheon / The Netherlands

"1. Companies that don't manage to integrate Big Data Analytics as a day to day component of their development processes, are close to their end. Industry 4.0 won't wait.

2. Companies that think Big Data Analytics is something for their marketing department, and not relevant to all other functions, will not have a long life anymore.

3. Big Data Analytics will be surrounding not only organizations but also (professional) individuals permanently and comprehensively. The Haves will win, the Have Nots will lose."

Dr. Huub Rutten is co-founder of Sopheon and as VP Research responsible for Research and Application Development. Sopheon delivers software and consultancy to large organizations focusing on Innovation Management processes. It helps to optimize these processes for sustainable Growth. Sopheon's software product "Accolade" is seen as market leading enterprise software for EIM in industries like Food, Chemicals and Consumer Goods. Dr. Huub Rutten's scientific and professional background is in Linguistics, Social and Cognitive Sciences. Since 20 years his focus is Innovation Management culture, processes and software. He works with many large and medium size chemical companies and has built a wealth of experience in this field.

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Any questions?

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