

ACHEMA 2015

PROGRAMME

15 – 19 June 2015
Frankfurt am Main
Germany
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ORGANIZERS OF ACHEMA 2015



DECHEMA

Ausstellungs-GmbH

and

DECHEMA

Gesellschaft für Chemische Technik
und Biotechnologie e.V.

Postal Address:

Theodor-Heuss-Allee 25
60486 Frankfurt am Main
GERMANY

Internet: <http://www.achema.de>
E-mail: achema@dechema.de
Fax: +49 69 7564-201

Tel.: +49 69 7564-100
Exhibitors: -700
Lectures: -254
Visitors: -750
Press: -277, -296, -375

Accommodation Service of
Tourismus+Congress GmbH
Frankfurt am Main
Internet: <http://www.frankfurt-tourismus.de/>
E-mail: info@infofrankfurt.de
Fax: +49 69 2124 0512
Tel.: +49 69 2123 0808

Venue:
Messegelände
Ludwig-Erhard-Anlage 1
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Responsible for the contents:

Thomas Scheuring
Frankfurt am Main

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ACHEMA COMMITTEE

HONORARY DELEGATES – ACHEMA WORLDWIDE SERVICES

ACHEMA Committee

Chairman:

Jürgen Nowicki
Linde AG, Pullach

Literature, Information, Learning and Teaching Aids

Ken Fouhy
VDI Verlag GmbH, Düsseldorf

Laboratory and Analytical Techniques

Ralf Claußen
Eppendorf AG, Hamburg

Dr. Wenko Süptitz
SPECTARIS Verband der
Hightech-Industrie, Berlin

Dipl.-Wirtschaftsing.
Tobias Thiele
Köttermann GmbH & Co. KG,
Uetze

Biotechnology

Dr. Klaus Pellengahr
ORGANOBALANCE GmbH,
Berlin

Engineering

Jürgen Nowicki
Linde AG, Pullach

Mechanical Processes

Dipl.-Ing. Richard Clemens
VDMA Fachverband
Verfahrenstechnische
Maschinen und Apparate,
Frankfurt

Thermal Processes

Dipl.-Ing. Norbert Strieder
GEA Wiegand GmbH, Ettlingen

Pumps, Compressors

Valves and Fittings
Dipl.-Ing. Dagmar Bollin-Flade
Christian Bollin
Armaturenfabrik GmbH,
Frankfurt

Manfred Mörsch
BICOM

Agentur für Unternehmens-
kommunikation GmbH, Hürth

Nicole Schmidt-Seitz
KSB Aktiengesellschaft,
Frankenthal

Pharmaceutical, Packaging and Storage Techniques

Dipl.-Ing., Dipl.-Wirtschaftsing.
Friedbert Klefenz
Robert Bosch GmbH,
Waiblingen

Instrumentation, Control and Automation Techniques

Heinrich Engelhard
NAMUR/Bayer Technology
Services GmbH, Leverkusen

Gunther Koschnick
ZVEI e.V.

Fachverband Automation,
Frankfurt

Jochen Metzner
Siemens AG, Nürnberg

Gabriel Striebel
ABB AG, Mannheim

Prof. Dr.-Ing. Rolf Theenhaus
KROHNE Messtechnik GmbH,
Duisburg

Dr. Eberhard Veit
Festo AG, Esslingen

Dr. Andreas Widl
Samson AG, Frankfurt

Materials Technology and Testing

Dipl.-Ing. Clemens Schmees
Edelstahlwerke Schmees
GmbH, Langenfeld

Dipl.-Ing. (FH) Klaus Wolf
FRIATEC Aktiengesellschaft,
Mannheim

Honorary Delegates

Australia

John C. Taylor
Outotec Pty Ltd.
Level 2, 2 Brandon Park Drive
Whealers Hill VIC 3150

Brazil

Dietmar Sukop
Câmara Brasil-Alemanha
no Rio Grande do Sul
Rua Castro Alves 600
90430-130 Porto Alegre – RS

India

Maulik Jasubhai
Chemtech Foundation
26, Maker Chambers VI, 2nd Floor
Nariman Point
Mumbai 400 021

Israel

Harold Kaufman
Rontal Food Industries,
Chemistry & Pharmaceutical
Consulting Ltd.
15 Rechov Hatomer
56540 Savyon

Japan

Joachim Baczewski
Bosch Packaging Technology K.K.
3-6-7, Shibuya, Shibuya-ku
Tokyo 150-8360

Kuwait

Dr. Hasan M. Qabazard
Kuwait Institute for
Scientific Research
Petroleum Technology Dept.
P.O. Box 24885
13109 Safat

Saudi Arabia

Andreas Hergenröther
German-Saudi Arabian Liaison Office for
Economic Affairs (AHK Saudi Arabia)
Futuro Tower, 4th Floor, Al Ma'ather Street
P.O.Box: 61695
Riyadh: 11575

Spain

Dipl.-Ing. Helmut Linkmeyer
AUQUIME, S.A.
Galileo, 23-63
08028 Barcelona

Thailand

Dipl.-Ing. Suriyan Tiampet
Green World Media (Thailand) Co., Ltd.
244 Ladprao 107, Ladprao Road
Klong-chan, Bangkok
Bangkok 10240

ACHEMA worldwide Services

DECHEMA contact persons providing direct assistance
in the following countries:

Belgium/France

Ms. Vickie Nikolaou
25 rue Charles Ferdinand
Dreyfus
91640 Fontenay les Briis/
France
Tel./Fax: +33 1 64922429
E-mail: vnikolaou@wanadoo.fr

Canada/USA

Alan R. Morris
Morris Marketing, Inc.
22 Bayview Avenue
Manhasset, NY 11030/USA
Tel.: +1 516 869 0220
Fax: +1 888 316 9536
E-mail: amorris@
morrismarketinginc.com

China/Taiwan

Paul Woo
Jingguang Centre,
Office Building
Room 1410, Mail Box 8806
Hujialou, Chaoyang District
100020 Beijing/China
Tel.: +86 10 65974-621/-622
Fax: +86 10 65974-623
E-mail: paulwoo@achema.cn
Website: www.achema.cn

Great Britain/Ireland

Paul Carter
Kington Down Cottage
West Kington
Wilts, SN14 7PB/
Great Britain
Tel.: +44 7802 923250
E-mail: paul@achema.co.uk

Italy

Ms. Lilliana Realini
Studio Realini Snc
Via V Giornate, 8
20021 Bollate – MI
Tel.: +39 02 33606013
Fax: +39 02 33617637
E-mail: fiere@studiorealini.it

Korea/Malaysia/Singapore/ Thailand/Vietnam

Tae-Jik Chae
Kong Myong E & T
1001, I-want office
13 Teheran-ro64-gil
Gangnam-gu
Seoul 135-839/Korea
Tel.: +82 2 7786-792
Fax: +82 2 7786-794
E-mail: tradefairs@hanmail.net

Poland

Piotr Lukaszewicz
Messe Frankfurt POLAND
Targi Frankfurt –
Przedstawicielstwo w Polsce
ul. Moldawska 7 lok 141
02-127 Warsaw
Tel.: +48 22 494 3200
Fax: +48 22 402 1171
E-mail: piotr.lukaszewicz@
poland.messefrankfurt.com

Russian Federation

Ms. Milena Nikolova
Messe Frankfurt RUS
Leningradsky Prospect 39A
build. 80
125167 Moscow
Tel.: +7 495 649-8775 ext. 123
Fax: +7 495 649-8785
E-mail: milena.nikolova@
russia.messefrankfurt.com

Slovakia/Czech Republic

Ms. Lucie Havlova
Happy Materials
Ricanova 19
169 00 Prague 6/
Czech Republic
Tel.: +420 2 3335 5246
Fax: +420 2 2051 8448
E-mail: lucie.havlova@
happymaterials.com

Turkey

Dipl.-Ing. Ferit Orbay
Emel Sokak 3
Iclevent
34330 Istanbul
Tel.: +90 537 5405259
Mobile: +49 152 03399185
E-mail: ferit@orbay.net

Frankfurt am Main
15–19 June 2015

ACHEMA 2015
World Forum and 31st Leading International
Fair for the Process Industry

730th Event of the European
 Federation of Chemical Engineering

388th Event of the European
 Federation of Corrosion

Event of the European Society of
 Biochemical Engineering Sciences

The process industry is the key driver of innovation and growth fuelling the global economy – yet, it is at the same time undergoing a massive shake-up. Resource change, energy turnaround, globalisation, eco-efficiency, process optimisation, bioeconomy – these are the buzzwords currently putting pressure on our sector.

There is no escaping the fact: the secret of success lies in coming up with innovations at the right time and the right place – and having an instinct for the heartbeat of our industry.

Nowhere is the heartbeat of process engineering faster, more intensive, state-of-the-art and international than at ACHEMA. ACHEMA is, and will remain, the leading fair for our sector with a worldwide signalling effect. Some 3,800 exhibitors from all around the globe, showcasing a wide array of novel developments, future-oriented product ideas and services, are proof positive of the innovative power and dynamic thrust of the process industry.

ACHEMA 2015 homes in on not just one, but three up-to-the-minute focal themes: with *BiobasedWorld* ACHEMA consolidates its reputation as the major venue for industrial biotechnology; *Process Analytical Technology (PAT)* bridges the gap between process automation and laboratory analytics and will play a major role in future chemical production; while ecologically and economically efficient *Industrial Water Management* is crucial to the sustainable use of water resources.

As the world's unique overview of the latest technology trends in our industry, ACHEMA is not only a must-attend event, but a source of inspiration for all the movers and shakers in the world of the process industry.

Join us in June 2015 when, for a week, Frankfurt am Main will once again metamorphose into the chemical capital of the world!

We are delighted to invite you to take part in the 31st ACHEMA and look forward to welcoming you to Frankfurt am Main in June 2015.



Prof. Dr. Rainer Diercks
 Chairman
 DECHEMA e.V.



Jürgen Nowicki
 Chairman
 ACHEMA Committee



Prof. Dr. Kurt Wagemann
 Chief Executive
 DECHEMA e.V.



Dr. Thomas Scheuring
 CEO
 DECHEMA Ausstellungs-GmbH

OPENING SESSION

Monday, 15 June 2015

11:00 h

CongressCenter Messe Frankfurt (CMF)

Overture

Welcome Address and Opening

by the Chairman of DECHEMA e.V.
Prof. Dr. Rainer Diercks

Award

Winners of the DECHEMAX Schools Competition

Presentation of the ACHEMA Start-Up Award

in the categories

- » Industrial Biotechnology
- » Instrumentation/Analytics
- » Energy

(see also page 13)

Speech

Prof. Dr. Johanna Wanka
Federal Minister of Education and Research



Prof. Dr. Johanna Wanka

Finale

Moderator: Judith Rakers



Judith Rakers

Participation subject to registration at
www.achema.de → Visitor Service → General Programme



Congress Topics

Energy-efficient processes
 Reaction engineering
 Electrochemical technologies
 International powder & nanotechnology forum
 Additive manufacturing
 Catalysis
 Nanotechnology
 Carbon dioxide utilisation

Laboratory and analytical techniques
 Process analytics
 Hand-held spectrometers

Modular plant conception
 Integrated processes
 Power engineering
 Microprocess engineering
 Multiphase reaction engineering
 Plant control

Mixing and separation technology
 Solids processing
 Heat transfer
 Membrane technology
 Desalination

Plant components

Pharmaceutical production
 Formulation
 Continuous processing
 Safety

Plant control

Corrosion protection
 Nickel alloys, titanium and zirconium
 Materials and materials testing
 Managing corrosion

Biobased World
 Bioprocesses
 Biorefineries and processing of renewables
 Single-use technologies
 Bionics
 Development and application of novel biocatalysts

Industrial water management
 Chemical sites

Exhibition Groups

Research and Innovation



Literature, Information, Learning and Teaching Aids



Laboratory and Analytical Techniques



Engineering



Mechanical Processes



Thermal Processes



Pumps, Compressors, Valves and Fittings



Pharmaceutical, Packaging and Storage Techniques



Industrial and Labour Safety



Instrumentation, Control and Automation Techniques



Materials Technology and Testing



General Topic Biotechnology



General Topic Environmental Protection



The interdisciplinary exchange of ideas and experience between manufacturers, users, developers and scientists has always been a key concern of AICHEMA. Some 3,800 exhibitors are set to present a wide range of new developments, innovative products and cross-sectoral system solutions distributed over 16 hall levels covering around 140,000 m² of exhibition space. Visitors to AICHEMA have a unique advantage: at no other event can a comparable concentration of cutting-edge technologies and solutions from all sectors of the process industry be experienced first-hand. The vast spectrum of products and services of the AICHEMA exhibition is organised into exhibition groups, with the different branches allocated to individual hall levels, enabling visitors to pinpoint areas of interest at a glance.

Environmental Protection and Biotechnology together with the Focal Themes (see pages 8 and 9) are integral, general themes and are, therefore, represented in all the halls.



Engineering

Halls 9.1, 9.2, outdoor area

Development, planning and execution of complete production units for all sectors of chemical engineering and biotechnology; catalysts, reactors, microtechnology; CAE – computer-aided engineering; process simulation and software; plants for water and wastewater treatment, waste gas treatment, waste disposal and recycling; services from the areas of logistics, production and financing; supply chain management; chemical parks.



Mechanical Processes

Halls 5.0, 5.1, 6.0, outdoor area

Plant, apparatus, machines, equipment for mechanical processes, such as mixing, kneading, stirring, screening, filtering (including filter fabrics), centrifuging, crushing, grinding, agglomerating, homogenising, conveying, weighing; drive units and cleaning technology.



Laboratory and Analytical Techniques

Halls 4.1, 4.2, Foyer 4.1, outdoor area

Equipment, facilities, chemicals and services for research and industrial laboratories; laboratory planning and equipment; apparatus for physical and chemical analysis, including sample preparation: weighing and dosing techniques, spectroscopy, chromatography and all related areas, surface analysis, environmental analysis, laboratory diagnostics and laboratory automation; services and contract analysis.



Literature, Information, Learning and Teaching Aids

Passage 5.1 – 6.1; Foyer 4.1

International publishers of scientific and technical literature specialising in: industrial chemistry, process engineering, biotechnology, measurement and control, materials sciences, environmental protection, information systems and databases; manufacturers of learning and teaching aids for universities and vocational training as well as for continuing education at all levels.



Industrial and Labour Safety

Hall 9.1

Safety concepts for chemical plants; equipment and measures for the protection of human life and the environment, such as breathing apparatus, oxygen apparatus, protective clothing, monitoring systems, explosion protection, sound insulation, anti-electrostatic techniques, transport of hazardous substances.



Instrumentation, Control and Automation Techniques

Halls 11.0, 11.1

Industrial measurement and control equipment, systems for automatic control and monitoring of operations and processes; data processing systems and programmes for chemical science and engineering, process computers and micro-processors; analytical apparatus for continuous concentration measuring and production control, sensors; electrical engineering systems, equipment and components.

 **Pharmaceutical, Packaging and Storage Techniques**

Halls 3.0, 3.1, Forum and outdoor area

Apparatus and machinery for dosing, moulding, filling, sealing, packing, labelling and inspection as well as packaging materials; machinery for the production, manufacture and packaging of drugs; transportation and storage techniques.

 **Pumps, Compressors, Valves and Fittings**

Halls 8.0, 9.0, 9.1

Pumps and compressors for all media, for different operating conditions and loads; valves, fittings, pipelines, seals and packings; high-pressure cleaning equipment.

 **Research and Innovation**

Hall 9.2

Areas of work, study courses and research results of university institutes and research establishments in Germany and abroad, relating predominantly to the scientific fundamentals of chemical engineering: industrial chemistry, process engineering, measurement and control, mechanical and plant engineering, materials sciences, environmental protection, biotechnology.

 **Thermal Processes**

Halls 4.0, 5.1, 6.1, outdoor area

Plant, apparatus, machines, equipment for thermal processes, such as distilling, rectifying, extracting, absorbing, crystallising, drying, heating and cooling; electrochemistry, membrane processes, bioreactors, biorefineries, synthetic fibre processes, power generation, heat pumps, heat transfer and insulation techniques; clean-room technology, air-conditioning, industrial gases; innovative energy sources and storage, new battery concepts, progress in fuel cell technology.

 **Materials Technology and Testing**

Hall 11.0

Metallic and non-metallic materials and composites for chemical engineering, technical apparatus and equipment made of these materials, surface protection (e.g. enamelling, plating, plasma spraying, coating, refractory linings), welding and joining techniques, microscopy; equipment for physical and chemical testing of materials, materials analysis, metallography, physical surface measurements, diffraction analysis, non-destructive materials testing, component testing, quality assurance techniques during operations; materials and applications in photovoltaics.

Group Stands

- » Baden-Württemberg International, Stuttgart
- » Bayerische Hochschulen
- » Beijing Worldboson International Co. Ltd.
- » BMBF – Schaufenster Bioökonomie
- » CBI Centre for the Promotion of Imports from Developing Countries, Rotterdam
- » CMEC International Exhibition Co. Ltd., Beijing
- » EMCLAB, Duisburg
- » energie-cluster.ch, Bern
- » EXCELLENCE 4 LAB
- » Excellence United – The Community of Experts
- » Field Communication Lounge
- » FLUIDEX Asociación Española de Exportadores de Equipos para Manipulación de Fluidos, Bilbao
- » GAMBICA Association Ltd., London
- » Hessische Hochschulen
- » Korea Scientific Instruments Industry Cooperative, Seoul
- » LabMas Group, Spain
- » saar.is – saarland. innovation&standort e.V.
- » UBIFRANCE – French Pavilion

EXHIBITION

GENERAL TOPICS AND FOCAL THEMES

General topics: Biotechnology and Environmental Protection

Biotechnology and environmental protection are of paramount importance for the process industry – consequently they have a high profile in all the exhibition groups.

Processes targeting the conservation and efficient use of resources and also emission control are an integral part of the process industry's technology portfolio and are meanwhile well established in all sectors. As a result, the synergistic concept of production-integrated environmental protection has become one of the hallmarks of AICHEMA. On the other hand, nowhere is the integration of molecular and industrial biotechnology as tangible as at AICHEMA. Moreover, the penetration of renewable resources into areas of the process industry conventionally reserved for fossil resources has opened up novel, resource-saving reaction pathways that, in terms of efficiency and selectivity, are far superior to conventional processes. Current challenges, such as the energy turnaround, call for innovative solutions – while at the same time triggering synergies with the suppliers.

There is no doubt about it: AICHEMA once again promises to deliver exciting concepts for no less exciting challenges in 2015!

The spectrum ranges from innovative methods for processing biomass, to equipment and plant for biotechnological processes and biobased products in the chemical industry, pharmaceutical industry, food and cosmetics sectors, through to novel processes in the field of energy and resource conservation, water processing, recycling and air pollution control. All this is supplemented by the evident progress made since AICHEMA 2012 presented its focal theme "Energy carriers and storage". To summarise, AICHEMA 2015 is once again set to be the technology showcase that defines the trends for the years to come.

Focal Theme PAT: Innovative Process Analytical Technology

Since automation has triumphantly conquered all areas of the process industry, the call for innovative solutions from online analytics has made it into the next round.

Meanwhile a long time has elapsed since it was merely required to integrate sensors into the process chain. In fact, the holistic approach of PAT, combining process design, analytics and control, allows continuous tracking of critical process parameters and adjustment of critical quality attributes of the intermediate and end-products. There is an increasing tendency for conventional sensors to be supplanted by spectroscopic methods which give access to more detailed process data and, in consequence, a sound insight into system components on the molecular level.

Precise, real-time process analytics is, therefore, indispensable to future chemical production which has to comply with increasingly higher standards in terms of individualisation, quality control and process efficiency. AICHEMA 2015 adds a fresh new note to this theme by introducing a 'PAT tour' for visitors who can either use the navigation app or the print version in the AICHEMA Special brochure that is available at all the entrances.

Focal Theme: Industrial Water Management at AICHEMA 2015

For industry, water represents an indispensable component of its ongoing development. No wonder that industrial water management today ranks among the most important growth areas! Efficient industrial water management provides industry with a wide range of economic and strategic advantages:

- » For the process industry, it means that water, operating and energy costs can be reduced. Water, energy and valuable products can be recovered for production. For the global operations of the process industry, it can reduce the dependence on fresh water resources and unpredictable local restrictions and enhance production reliability.
- » For plant engineering, industrial water technology generates a high value-added potential on the international markets. This can be traced to the increasing complexity of requirements and the need for individual and, in the majority of cases, customised plants.

On account of its innovation potential and close links to production, industrial water management involves many areas of the process industry and the associated apparatus and plant engineering sector. Nowhere are apparatus and plant engineering so comprehensively presented and represented in process-oriented exhibition groups than at AICHEMA.





BiobasedWorld at ACHEMA 2015

BiobasedWorld at ACHEMA – the green thread of the bioeconomy

Today biobased processes can be found in all areas of life, often without the consumer being aware of it. Visitors to ACHEMA cannot fail to be aware of this, since BiobasedWorld weaves through ACHEMA like a green thread, making the bioeconomy tangible.

Renewable resources are the future, and many branches of industry are already using them as an alternative to oil, and not only as fuel. In terms of quantity, bioethanol in petrol and, more recently, in aviation fuel ranks among the most important products of the bioeconomy. The list of products produced on the basis of renewable sources is, however, substantially longer and is steadily increasing; it spans such diverse commodities as construction materials, active pharmaceutical ingredients, lubricants, textiles and fine chemicals.

Positioned at the interface between the process industry and biotechnology, ACHEMA is part of the bioeconomy and vice versa. As the forum for new trends and developments, it offers a platform for the exchange of ideas and know-how across disciplines and borders.

The exhibition showcases the complete spectrum of processes, technologies and services related to biomass processing, the production of biobased chemicals and biofuels, and biorefinery design.

The management of renewable resources is knowledge-based, it thrives on innovations from biotechnological research. The ACHEMA Congress is dedicating 14 lecture series to Biobased World,

which will shed light on the current state-of-the-art. Biorefinery concepts will be presented, as will novel biocatalysts. Another focus will highlight bioprocesses, from modeling to reactor design, process monitoring and product processing, through to special and bulk chemicals, active pharmaceutical ingredients and biogenic fuels.

With Horizon 2020 the European Commission has launched its most comprehensive innovation programme ever. From 2014 to 2020, 80 billion euros of funding will be available; this calls for a strategic vision. During the Bioeconomy Day on 18 June (CMF, Room Harmonie 3) experts will discuss the status of the biobased economy in Europe: "EU bioeconomy and Horizon 2020 revisited: How far have we come since ACHEMA 2012?" What is the situation in the different EU member states? What sustainability criteria must be complied with? What fresh momentum will the funding programme trigger? These are just a few of the issues that experts from industry, associations and the European Commission will address.

17 June will see the presentation of the Integrated Roadmap Automation 2025+ "Industrial Biotechnology", compiled by the Institut für Zukunftsstudien und Technologiebewertung (Institute for Futures Studies and Technology Assessment) on behalf of ZVEI. The study identifies the drivers and inhibitors affecting the use of biomass for chemicals and elucidates the prospects of a biobased chemical industry (see congress programme, page 28).

An exhibition in the foyer of Hall 4.1 brings home the fact that biobased products are part and parcel of our everyday lives. What the future may hold in store can be viewed in the Bioeconomy Window in the Galleria. From there, a variety of renewable crops along the Via Mobile make the green thread of the bioeconomy tangible.





ACHEMA online

Discover the whole world of ACHEMA 2015 on our revamped website www.chema.de. The redesigned navigation menu now makes the website a quick and easy browsing experience. Additionally, it has been optimised for display on mobile devices; no matter how far away you are, with a smartphone or tablet ACHEMA online is always at hand.

The ACHEMA website is a source of detailed, up-to-the-minute information about the exhibition, the participating companies and research institutions, the congress programme, guest events and our comprehensive range of services for visitors, exhibitors and journalists.



The home page gives you instant access to the latest bulletins on ACHEMA, the up-to-date events calendar and the most important information and is rounded off by a hall plan and files for download.

▼ EXHIBITION

'Exhibitors and Products' provides extensive information on companies from all the sectors showcased at ACHEMA. Straightforward search functions enable you to quickly and selectively make an informed choice about relevant suppliers or partners from research and industry for your projects.

THE KEY FEATURES AT A GLANCE

- » All exhibitors with their address, hall and stand
- » Short business profile in German and English
- » Detailed presentation of selected products
- » New developments
- » Potential cooperation partners for research or production
- » Licences offered or wanted
- » Agencies offered or wanted
- » Addresses of branches and subsidiaries worldwide

Whether you want to visit specific companies at ACHEMA, search for suppliers of a particular product or obtain facts about the latest innovations: never has it been easier to prepare for ACHEMA! Optionally, you can download excel files with exhibitor lists. By registering you will have access to extended functions:

- » Benefit from the 'My List' feature
- » Generate address lists from your selection
- » Contact manufacturers directly about products of interest
- » Post individual notes

By registering you can also take part in ACHEMA Partnering (→ Events).

ACHEMA online provides information on companies and research institutions even after the event. It comprehensively documents all sectors represented at ACHEMA and is an ideal resource for pinpointing suppliers and cooperation partners.

▼ CONGRESS

The congress programme of ACHEMA 2015 addresses the entire spectrum of process engineering. Our Congress Planner makes light work of sifting events of interest from the extensive range on offer. It enables you to search by lecture topic, author or keyword in the abstracts of all lectures submitted and to draw up your own personal schedule.

ACHEMA Partnering is a tried-and-tested means of forging international business contacts. Be part of the ACHEMA Community by registering on ACHEMA online! Besides using your account for exhibitor searches, from May 2015 you will also be able to access our user-friendly networking tool. Even during the run-up to ACHEMA you can use it to contact potential cooperation or business partners. With just a few clicks you can create your own business profile, select interesting contacts based on their activity profiles and expertise and schedule appointments with them at ACHEMA. ACHEMA Partnering does not cost you a cent.

▼ VISITOR SERVICE

Information from A for arrival, including air, rail and local transport connections, to Z for zip code can be found under the main menu item Visitor Service. Here, it is simple to order and immediately print out an admission ticket. International visitors will find the contact details of chambers of industry and commerce, travel agencies and other organisations in over 20 different countries.

▼ PRESS

Up-to-the-minute press releases spanning the whole gamut of ACHEMA and a comprehensive Press Service provide journalists with invaluable support for their coverage. Online press displays of our exhibitors target the direct flow of information to the international professional community. On

the AICHEMA Press pages journalists will find a regularly updated schedule of press conferences and other events, including selected events of exhibitors. Hot topics and a wide range of graphics and visual media round off the press package.

THE NEW AICHEMA APP – STAY ON THE BALL WHILE ON THE MOVE!

Even when you are on the move, with the mobile exhibition guide to AICHEMA 2015 you will always have the salient facts at your fingertips:

- » All AICHEMA exhibitors from A-Z with hall and stand numbers
- » Interactive hall plans for orientation on the exhibition grounds
- » Simple search functions covering all product categories, exhibition groups and halls
- » Short company profiles of exhibitors with business fields and products
- » Contact data for getting in touch directly
- » 'My AICHEMA' feature to list your favourites
- » Daily updated congress programme with all lectures and speakers
- » Your personal AICHEMA schedule
- » Share interesting exhibition stands and lectures via social media (Twitter)
- » Travel directions to AICHEMA, admission tickets, guest events, hotel reservation

By registering with AICHEMA online, enjoy extended functions within the app:

- » Free participation in AICHEMA Partnering via your smart phone
- » Ability to sync your 'My Lists' between AICHEMA online and the AICHEMA app – so, if you are logged in to AICHEMA online and start a search on your desktop, your 'My List' will automatically appear on the app, where it can be displayed and edited any time as required, and vice versa.

The AICHEMA app will be available at official app stores from mid-May 2015 free of charge. Supported devices: iPhone iOS 7 and above

and Android 4 and above. With the optional daily update you will always be a move ahead and your interactive personal AICHEMA Planner will always be at your fingertips. Ideally, bookmark www.chema.de/chema-app now! We also recommend users of tablets and smartphones with different operating systems to visit our home page.

COMPASS

Visitor information and Directions

ACHEMA online and our mobile apps for smartphones represent streamlined platforms for you to prepare your visit to AICHEMA. To complete our services we offer COMPASS, the on-site visitor information and orientation system located at all entrances and in most halls.

Catalogue AICHEMA 2015

The catalogue will be published in two volumes in time for the opening of AICHEMA 2015.

PART 1

contains an index of exhibitors by hall and an alphabetical list of exhibitors.

PART 2

contains a short index of exhibitors, search term index, index of brand names, index of exhibitors classified by country and exhibition group.

During AICHEMA 2015 the AICHEMA 2015 Catalogue can be purchased at a price of € 30.00.

Congress participants with a season ticket (including entitlement to publications) can pick up the catalogue at one of the publication counters at the entrances free of charge.

Congress publications

Abstracts of the lectures will be available at www.chema.de/congressplanner.



PRESS

PRESS CONFERENCES AND EVENTS

Information services for the press

ACHEMA ONLINE – PRESS SERVICES

- » Press releases
- » Trend reports on selected themes of ACHEMA 2015
- » Logos, graphics, multimedia
- » Schedule
- » Online press displays of exhibitors

ACCREDITATION

- » Online at <http://presse.achema.de>
- » Monday, 15 June 2015 to Friday, 19 June 2015 in the ACHEMA Press Centre
- » Monday, 15 June 2015, 9:00 – 15:00 h in the CMF
- » Monday, 15 June 2015 to Wednesday, 17 June 2015 in the Press car park

ACHEMA ON-SITE PRESS CENTRE

The Press Centre in Torhaus, Level 4, will be at the disposal of journalists every day from 15 – 19 June 2015.

Opening times during ACHEMA:

Monday to Thursday from 8:30 to 18:30 h
Friday from 8:30 to 16:00 h

- » Trend reports and up-to-the-minute information
- » Accreditation, photo/film permits
- » Workstations with Internet access
- » Exhibitors' promotional literature
- » Snacks (chargeable) and drinks
- » Lockers

CONTACT:

ACHEMA Press Office
Theodor-Heuss-Allee 25
60486 Frankfurt am Main
Germany
Tel.: +49 69 7564-277, -296, -375
Fax: +49 69 7564-272
E-mail: presse@dechema.de

During ACHEMA the Press Office will be located on the exhibition grounds in the Press Centre, Torhaus Level 4. Telephone and e-mail details remain unchanged during ACHEMA.

VDMA PRESS CONFERENCE

Wednesday, 22 April 2015 10:30 h

VDMA House

For further information: vtma.vdma.org

ACHEMA CONFERENCE FOR THE SPECIALIST PRESS

Wednesday, 6 May 2015 9:00 – 17:00 h

DECHEMA House

Industry representatives and exhibitors at ACHEMA will present technologies and trends and give a run-down on ACHEMA and the focal themes.

VCI PRESS CONFERENCE

Wednesday, 20 May 2015 11:00 h

Annual press conference of Deutsche Industrievereinigung Biotechnologie in VCI (DIB, German Association of Biotechnology Industries) with information on economic trends in the sector. A personal invitation is required; for further information: <http://www.vci.de>.

OPENING PRESS CONFERENCE

Monday, 15 June 2015 9:30 h

CMF, Room Spektrum 1 and 2

followed by the Opening Session of ACHEMA and a tour of the exhibition

PRESS BREAKFAST

Wednesday, 17 June 2015 10:00 h

ACHEMA Press Centre, Torhaus, Level 4

The general 'feel' and the trends at half-time

PRESENTATION OF THE ACHEMA MEDIA AWARD (see page 52)

Friday, 19 June 2015 14:00 h

CongressCenter Messe Frankfurt (CMF),
Room Harmonie 3

during the Closing Session of ACHEMA 2015

MEET YOUR FRIENDS (see page 58)

Monday, 15 June 2015 from 18:00 h

Portalhaus, Hall 11, Level Via





Bildquelle: Fotolia/James Steidl

ACHEMA Start-Up Award

Monday, 15 June 2015 11:00 h

CongressCenter Messe Frankfurt (CMF)

will be presented during the Opening Session (see p. 4)

Who has the best business concept and pushes the frontier of process engineering through innovative ideas and entrepreneurship? The first award of the ACHEMA Start-Up Award honours

outstanding ideas and start-ups from the fields of chemistry, process engineering and biotechnology. The awards, which come with a cash prize of 10,000 euros, will be presented to the winners in the categories of Industrial Biotechnology, Instrumentation/Analytics, and Energy during the Opening Session of ACHEMA 2015. All finalists of the ACHEMA Start-Up Award will be present at the ACHEMA Start-Up Award stand in Hall 9.2.



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Panel Discussions

Tuesday, 16 June 2015 10:30 – 12:00 h

Hall 4.0, Room Europa

Bioeconomy in the Shale-Gas Trap?

Only a few years ago it seemed quite clear that there was no alternative to a biobased economy. Then came shale gas and with it disillusionment. How are cheap resources impacting the young bioeconomy? Is it conceivable that new opportunities will open up in market segments that do not cash in on shale gas? Or will the world wake up too late from its shale-gas euphoria and miss the development of biobased processes which, in the long term, will be needed after all? And how long will the boom last? Experts from resources management, engineering and the biotechnology sector will discuss these questions.

Moderator: K. Wagemann, DECHEMA e.V., Frankfurt/D

Participants:

G.K. Kalkoffen, ExxonMobil Central Europe Holding GmbH, Hamburg/D

W. Büchele, Linde AG, Munich/D

E. Weinberg, Commerzbank AG, Frankfurt/D

H. Zinke, BRAIN AG, Zwingenberg/D

Wednesday, 17 June 2015 13:30 – 15:00 h

Hall 4.0, Room Europa

The German Energy Turnaround – Future or No-man's-land?

Is the German energy turnaround really leading to a sustainable energy supply and what will it cost consumers, industry or our European neighbours? How must energy-intensive industry position itself to maintain its competitive edge globally under these conditions? What role can renewable energies play in decarbonising the heat, transport and industrial sectors?

The panel discussion will analyse the present status and the development potential of the German energy turnaround, and brainstorm solutions to these pressing issues.

Moderator: F. Ausfelder, DECHEMA e.V., Frankfurt/D

Participants:

M. Brudermüller, BASF SE, Ludwigshafen/D

A. Zerres, Bundesnetzagentur, Bonn/D

N. Anger, European Commission, Brussels/B

J. Maćkowiak Pandera, Agora Energiewende, Berlin/D

The panel discussions will be held in German.

Plenary Lectures

Monday, 15 June 2015 13:30 – 14:30 h

Hall 4.0, Room Europa

Integrated industrial water management – Efficiency in the process industries

N. Groot, Dow Benelux B.V., Hoek/NL

N. Swinnen, Solvay SA, Brussels/B

Thursday, 18 June 2015 13:30 – 14:30 h

Hall 4.0, Room Europa

Chemical production for tomorrow's challenges

D. Van Meirvenne,

Bayer Technology Services GmbH, Leverkusen/D

The plenary lectures will be held in English.
We reserve the right to make changes to the programme.



Automation in Dialogue

Monday, 15 June to Friday, 19 June 2015

Hall 11.1 Foyer-Northwest

At ACHEMA 2015 the organisations NAMUR, ARC Advisory Group and ZVEI will once again host their joint forum “Automation in Dialogue”. On all five exhibition days a range of talks will cover the major themes of automation technology in the process industry in a variety of different formats.

In addition to high-profile panel discussions, visitors can acquire up-to-the-minute information on selected themes in “Meet the Experts” and then join the experts for an informal discussion in the foyer afterwards. The spotlight will not only be on hot topics, such as Modular Automation, IT Security, and Energy and Resource Efficiency, but also on the latest developments in Industry 4.0 (optimization of production by cyber-physical systems) and I(I)IoT. Additionally, the more time-less topics like Asset Information Management, Ex-Protection and Functional Safety will be addressed.

The Forum will also see the première of daily VIP Talks on the RED COUCH by P&A. Here, top managers of top companies and organisations will take part in a Q&A (question and answer) session with representatives of the P&A editorial staff on themes that impact our sector.

“Automation in Dialogue” will take place daily in the foyer of the ACHEMA Automation World in Hall 11, Level 1, Foyer-Northwest.

Discussion Forum Automation in Dialogue



Time	Mon. 15 June 2015	Tues. 16 June 2015	Weds. 17 June 2015	Thur. 18 June 2015	Fri. 19 June 2015
11:00 – 11:45 h		Meet the Experts Breakfast Talk Energieeffizienz und Lifecycle-Management in Prozessanlagen Eckhard Roos, Festo Gunther Windecker, BASF	Meet the Experts Breakfast Talk Funktionale Sicherheit – Daten zur Absicherung der Verfügbarkeit Bernd Schrörs, Bayer	Meet the Experts Breakfast Talk Neue Entwicklungen im elektrischen Explosionsschutz Gerold Klotz-Engmann, Endress + Hauser	Meet the Experts Breakfast Talk Information Driven Asset Performance for Operate & Maintain *) Valentijn de Leeuw, ARC
12:15 – 12:30 h		Red Couch by P&A VIP-Talk zu Themen, die bewegen	Red Couch by P&A VIP-Talk zu Themen, die bewegen	Red Couch by P&A VIP-Talk zu Themen, die bewegen	Red Couch by P&A VIP-Talk zu Themen, die bewegen
13:00 – 13:45 h	Presentation Industry in Transition *) Andy Chatha, ARC	Panel Discussion Modulare Produktion – Auswirkungen für die Automation Moderation: Ronald Heinze, VDE-Verlag	Panel Discussion Ohne IT-Security keine Industrie 4.0 Moderation: Volker Oestreich, GIT Verlag	Panel Discussion Wie wichtig ist Industrie 4.0 für die Prozessindustrie? Moderation: David Humphrey, ARC	
14:15 – 14:30 h	Red Couch by P&A VIP-Talk zu Themen, die bewegen	Red Couch by P&A VIP-Talk zu Themen, die bewegen	Red Couch by P&A VIP-Talk zu Themen, die bewegen	Red Couch by P&A VIP-Talk zu Themen, die bewegen	
15:00 – 15:45 h	Meet the Experts Tea Talk Automation Security Agenda 2020 – Ein Paradigmenwechsel für das Design industrieller Automatisierungssysteme Martin Schwibach, BASF	Meet the Experts Tea Talk Mobile Automation – Aktuelle Trends und Herausforderungen Christian Klettner, BASF	Meet the Experts Tea Talk Forschung und Entwicklung für Prozessanalytik und Automatisierung in der Prozessindustrie Michael Maiwald, BAM	Meet the Experts Tea Talk Auswirkungen von Industrie 4.0 auf die produktionsnahe Logistik Ludger Brüll, Bayer	

*) English session

Hall 4.0, Europa

13:30 PLENARY LECTURE

Integrated industrial water management – efficiency in the process industries

N. Groot, Dow Benelux B.V., Hoek/NL; N. Swinnen, Solvay SA, Brussels/B

Conclusio 1, CMF

Equipment innovations for heat transfer*

- 15:00 **Impact of low-finned tubes on condensation heat transfer and heat exchanger design**
A. Büchner, A. Reif, TU München, Garching/D; E. Estiot, M. Steinbauer, Linde AG, Pullach/D; J. El Hajal, Wieland-Werke AG, Ulm/D; S. Rehfeldt, H. Klein, TU München, Garching/D
- 15:30 **A design approach for pillow-plate heat exchangers and an analysis of their thermo-hydraulic performance based on numerical results**
M. Piper, A. Zibart, J.M. Tran, E.Y. Kenig, University of Paderborn/D
- 16:00 **Modelling of heat transfer and fluid dynamics in pillow-plate condensers based on experimental investigations**
J.M. Tran, M. Piper, E.Y. Kenig, University of Paderborn/D
- 16:30 **Investigation of innovative pillow plate thermosiphon reboilers in laboratory and pilot plant**
R. Goedecke, TU Braunschweig/D; S. Sommerfeld, Bayer Technology Services GmbH, Leverkusen/D; S. Scholl, TU Braunschweig/D
- 17:00 **Estimation of efficiency potentials generated by using innovative apparatus concepts**
M. Wesche, TU Braunschweig/D; M. Häberli, Merck KGaA, Darmstadt/D; H. Falk, Falk & Thomas Engineering GmbH, Bad Nauheim/D; V. Stelzer, Lanxess Deutschland GmbH, Köln/D; S. Scholl, TU Braunschweig/D

* organised by S. Scholl, TU Braunschweig/D

Conclusio 2, CMF

Reaction engineering

Modelling and simulation

- Modelling and simulation of vinyl chloride production by Computational Fluid Dynamics: an industrial case study**
T. Oliveira, J. Alves, A. Pereira, Federal University of Campina Grande/BR
- CFD microkinetic study of CO-PROX using monolith and foam catalysts**
I. Mitrichev, A. Jensa, E. Kol'tsova, Mendeleev University of Chemical Technology of Russia, Moscow/RUS
- Model-based optimisation of batch processes**
M. Matzopoulos, M. Patel, B. de Groot, H. Mumtaz, Process Systems Enterprise, London/UK
- Investigation of thermochemical bio-SNG production as renewable platform chemical – comparison of experiments and simulations**
S. Fendt, F. Fischer, M. Gaderer, H. Spliethoff, TU München, Garching/D
- Analysis of multiple consecutive reactions by entropic modelling**
A. Barros, N. Silva, J. Manzi, H. Bispo, Federal University of Campina Grande/BR

Fantasia 1, CMF

**Progress in laboratory and analytical technique
Development and use of fume cupboard standards –
future directions and challenges**

- In Europe**
B. Schubert, Tintschel AG, Erlangen/D, B. Winter, DECHEMA e.V., Frankfurt/D
- In the Far East**
X.Q. Lin, Esco Group of Companies, Singapore/SGP
- In America**
S. Janz, Flowscienses, Inc., Santa Fe, NM/USA
- In China**
L. Dong, Tongji University, Shanghai/CHN
- In the rest of the world**
A. Bicen, Invent UK Ltd, London/UK

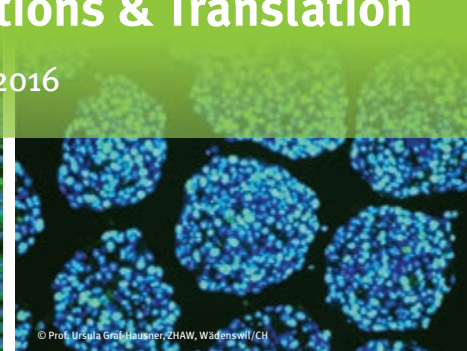
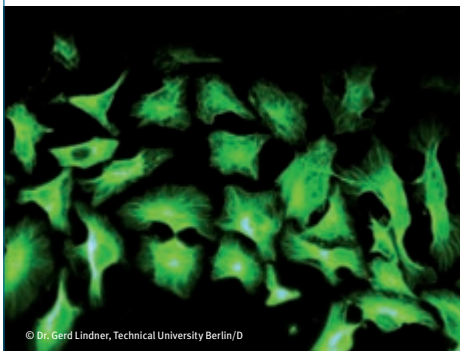


DECHEMA
Biotechnologie

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IN COOPERATION WITH

VBU Association of German
Biotechnology Companies

SWISS+ BIOTECH
National Thematic Network



Hall 4.0, Europa

13:30 PLENARY LECTURE

Integrated industrial water management – efficiency in the process industries

N. Groot, Dow Benelux B.V., Hoek/NL; N. Swinnen, Solvay SA, Brussels/B

Fantasia 2, CMF

Thermal and electrical power engineering

Heat exchanger

Heat exchanger network synthesis using subnetworks and dynamic considerations for optimal design

M. Rathjens, G. Fieg, Hamburg University of Technology/D; C. Brandt, O. Engel, XRG Simulation GmbH, Hamburg/D

Field service experiences of brazed tantalum plate heat exchanger for acids at temperatures up to 200°C

S. Eriksen, Tantaline A/S, Nordborg/DK

Optimizing your plate heat exchanger's performance to meet actual needs

M. Forslund, Alfa Laval Corporate AB, Lund/S

Safety heat exchanger for operational reliability

M. Hopp, M. Hafenstein, Deller GmbH, Siegen/D

Condition based maintenance: ensure production reliability by servicing your plate heat exchangers at the right time

D. Mellby, Alfa Laval, Lund/S

Illusion 1, CMF

Modular plant conceptions

Modularisation

3rd generation modularisation: the next step

I. Romo-Leroux, R. Westerhoven, Fluor, Haarlem/NL

Modular process engineering: new challenges to apparatus design

J. Heck, Ehrfeld Mikrotechnik BTS GmbH, Wendelsheim/D; M. Grünwald, Ruhr-Universität Bochum/D

Modular plants provide low cost, reliable hydrogen

L. Lyda, S. Parente, K. Finley, Hydro-Chem, Holly Springs, GA/USA; N. Onelli, Linde Gases, Murray Hill, NJ/USA; G. Shahani, Hydro-Chem, Blue Bell, PA/USA

Minimizing interfaces by designing integrated, modular components and processes

C. Reinke, HAVER & BOECKER OHG, Oelde/D

Innovative customized modular solutions for industries

M. Kulkarni, Praj Industries Limited, Pune/IND

Illusion 2, CMF

BiobasedWorld – novel biocatalysts: development and application

Small molecule glycosylation using transglycosidases and glycosyltransferases

15:00

B. Nidetzky, R. Gudimich, C. Luley-Goedl, Austrian Centre of Industrial Biotechnology, Graz/A; A. Gutmann, L. Bungaruang, P. Wildberger, Graz University of Technology/A

Photobiocatalytic synthesis of biogenic olefines

15:30

I. Zachos, Ruhr-Universität Bochum/D; F. Hollmann, TU Delft/NL; R. Kourist, Ruhr-Universität Bochum/D

Setting up of natural carotenoids from *Rhodococcus erythropolis*

16:00

E. Martinez-Rojas, Research and Teaching Institute for Brewing in Berlin/D; L.A. Garbe, Hochschule Neubrandenburg/D

Radical enzymes for biotechnology

16:30

C.M. Jäger, A.K. Croft, University of Nottingham/UK

Magnetically recoverable oxidoreductases as a new concept in enzymatic catalysis

17:00

E.M. Sulman, O.V. Matveeva, N.V. Lakina, V.Yu. Doluda, V.G. Matveeva, M.G. Sulman, Tver Technical University/RUS



5 - 8 June 2016 · Konzerthaus Freiburg · Germany



15th International Symposium on Loss Prevention and Safety Promotion in the Process Industries

and accompanying exhibition

www.lp2016.eu



Illusion 3, CMF

Safety

Relief systems

Sizing of bursting discs for flashing two-phase vapor/liquid flow

15:00

S. Claramunt, Rembe GmbH Safety+Control, Brilon/D

A new approach based on the life cycle analysis to increase the reliability of the safety valves

15:30

J. Basco, Lyondellbasell, Reus/E; J. Casal, Polytechnic University of Catalonia, Barcelona/E; J. Vilchez, TIP,s, Barcelona/E

Model based design of pressure relieve systems in chemical industry

16:00

M. Wendt, V. Butz, M. Strack, InfraServ GmbH & Co. Knapsack KG, Hürth/D

Influence of real phase equilibria on the sizing of pressure relief devices

16:30

S. Dreisch, M. Christ, F. Westphal, consilab Gesellschaft für Anlagensicherheit mbH, Frankfurt am Main/D

Transferability of results from laboratory tests to the production scale with respect to the design of pressure relief devices

17:00

S. Seitz, F. Westphal, consilab, Gesellschaft für Anlagensicherheit mbH, Frankfurt am Main/D

Hall 4.0, Europa

10:30 PANEL DISCUSSION

Bioökonomie in der Shale-Gas-Falle?

Chairman: K. Wagemann, DECHEMA e.V., Frankfurt/D

Panellists: G.K. Kalkoffen, ExxonMobil Central Europe Holding GmbH, Hamburg/D, W. Büchele, Linde AG, Munich/D, E. Weinberg, Commerzbank AG, Frankfurt/D, H. Zinke, BRAIN AG, Zwingenberg/D

Harmonie 1, CMF

Energy-efficient chemical multiphase processes*

- 12:30 **The Energy Alliance *Energy Efficient Multiphase Chemical Processes* – Research for efficient chemical processes**
U. Hampel, Helmholtz-Zentrum Dresden-Rossendorf/D
- 13:00 **Structured chemical reactors: experimental analysis and simulation**
B. Dietrich, S. Meinicke, X. Cai, M. Wörner, Karlsruhe Institute of Technology/D
- 13:30 **Contributions of micro process engineering for optimization of heterogeneously catalyzed multiphase processes**
P. Pfeifer, M. Cholewa, A. Kölbl, M. Kraut, R. Dittmeyer, Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen/D
- 14:00 **Periodic cellular metallic structures & porous ceramic foams – novel structures and manufacturing processes for catalysts and reactors**
A. Inayat, M. Klumpp, H. Freund, W. Schwieger, Universität Erlangen-Nürnberg, Erlangen/D; U. Petasch, J. Adler, Fraunhofer IKTS, Dresden/D; D.T. Semu, TU Dresden/D; A. Michaelis, Fraunhofer IKTS, Dresden/D
- 14:30 **On the potential to enhance the efficiency of oxidation processes – the partial oxidation of isobutane**
H. Kryk, T. Willms, Helmholtz-Zentrum Dresden-Rossendorf/D; G. Rinke, Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen/D

Harmonie 2, CMF

Industrial water management

Industrial water management and reuse

- LIFE WaterReuse: improving water management efficiency at industries with organic load**
P. Trinidad, P. Muñoz, Destilerías Muñoz Gálvez, S.A., Murcia/E; J. Aguirre, M. Susarte, M. Octavio, Destilerías Muñoz Gálvez, S.A., Murcia/E
- Meeting the challenges: membrane processes for water recovery from oily and PVC wastewater**
F. Lipnizki, A. Dupuy, Alfa Laval, Nakskov/DK
- Zero liquid discharge – „The ultimate challenge“**
S. Verma, A. Doets, Fluor, Haarlem/NL
- V-MEMD technology: vacuum multiple effect membrane distillation: innovative design and method for challenging applications**
H. Müller-Holst, memsys GmbH, Grafing/D; G. Lange, memsys clearwater, Singapore/SGP
- Case study for a BOT project**
M. Brunner, EnviroChemie GmbH, Rossdorf/D

Harmonie 3, CMF

BiobasedWorld – Biorefinery platforms

Biorefinery concepts

- Cascaded valorization of food waste using bioconversions as core processes**
L. Garcia-Gonzalez, S. Bittjebier, S. Voorspoels, M. Uyttebroek, K. Elst, W. Dejonghe, Y. Satyawali, D. Pant, K. Vanbroekhoven, H. De Wever, VITO, Mol/B
- From lab to commercial – process scale-up at Fraunhofer CBP**
T. Etter, G. Unkelbach, Fraunhofer CBP, Leuna/D; Th. Hirth, Fraunhofer IGB, Stuttgart/D
- The bio-economy as a regional, cross-sector approach – the concept, objective and structure behind the BioEconomy Cluster in Central Germany**
R. Busch, BioEconomy Clustermanagement GmbH, Halle/D
- Study of the bio-based industry in Europe**
L. Nattrass, E4tech, London/UK
- Bio Base Europe Pilot Plant: an instrument for start-ups and SMEs to bridge the gap between laboratory research and industrial production**
H. Waegeman, Bio Base Europe Pilot Plant, Gent/B

Recent developments for bubble column reactors**

- 15:00 **Multi-scale modelling of dense bubbly flows**
J.A.M. Kuipers, TU Eindhoven/NL
- 15:30 **Progress in designing industrial bubble columns**
G. Skillas, Evonik Industries AG, Hanau/D; M. Becker, Evonik Industries AG, Marl/D
- 16:00 **Large scale bubble columns in waste water treatment**
W. Rand, M. Rosner, Xylem Services GmbH, Herford/D
- 16:30 **Modeling of bubble column reactors – progress and challenges**
M. Grünewald, Ruhr-Universität Bochum/D
- 17:00 **Improved design and scale up of bubble column reactors by selected laboratory experiments**
M. Schlüter, M. Bothe, S. Rüttinger, M. Hoffmann, Hamburg University of Technology/D

Industrial water management

Energy efficiency in industrial water management

- Strategies for energy optimization in WWTP by use of online respiration measurements**
W. Arts, J. Dylla, LAR Process Analysers AG, Berlin/D
- New techniques for urban and industrial wastewater systems optimisation**
M. Matzopoulos, Process Systems Enterprise Ltd, London/UK; N. Descouins, L. Salgueiro, BlueWatt Engineering, Lausanne/CH
- Continuous Thermal Hydrolysis Process (cTHP); Novel technology results in more biogas**
J. Pereboom, L. Van Dijk, A. Hol, Sustec Consulting & Contracting, Wageningen/NL
- Boost efficiency in dewatering industrial organic sludge – innovative separation technology based on hydrothermal carbonization**
T. Wittmann, SunCoal Industries GmbH, Ludwigsfelde/D
- Energy efficiency by high temperature heat pumps in the process industry**
K. Ochsner, Ochsner Wärmepumpen GmbH, Haag/A

BiobasedWorld – Biorefinery platforms

Feedstocks and building blocks

- Bioethanol production from Jerusalem Artichoke (*Helianthus tuberosus* L.)**
S. Gross-Selbeck, Vogelbusch Biocommodities GmbH, Vienna/A
- Valorisation of bamboo towards the production of levulinic acid and sugars**
L. Appels, N. Sweygers, R. Dewil, KU Leuven Sint-Katelijne-Waver/B
- Valorization of exhaust CO₂ to chemicals and fuels using bioconversions as core processes**
L. Garcia-Gonzalez, S. Bjaracharya, S. Mozumder, S. Srikanth, M. Kunda, D. Pant, H. De Wever, VITO, Mol/B
- New biobased building blocks contributing to added functionality in sustainability-improved plastics**
S. De Wildeman, Maastricht University, Geleen/NL

* Organized by Helmholtz Energy Alliance „Energy-Efficient Multiphase Processes“

** Organized by „Campus Blasensäulen“ (M. Schlüter, TU Hamburg-Harburg/D; M. Grünewald, Ruhr-Universität Bochum)



Hall 4.0, Europa

10:30 PANEL DISCUSSION**Bioökonomie in der Shale-Gas-Falle?**

Chairman: K. Wagemann, DECHEMA e.V., Frankfurt/D

Panellists: G.K. Kalkoffen, ExxonMobil Central Europe Holding GmbH, Hamburg/D, W. Büchele, Linde AG, Munich/D, E. Weinberg, Commerzbank AG, Frankfurt/D, H. Zinke, BRAIN AG, Zwingenberg/D

Harmonie 4, CMF

Bionics@work

Biomimetics is a strategy to transfer principles of the living nature on technical constructions and processes. Well-known examples are functional surfaces and fluiddynamic shapes. Besides actual applications in lightweight and automation engineering scientists and innovative companies direct their focus more and more towards topics like swarm intelligence, organization and management. The lecture programme „Bionics@work“ again presents fascinating issues of research and development. It is realized in partnership with “Hessen-Nanotech”, “DECHEMA” and “Bionik-Netzwerk Hessen”.

Harmonie 5, CMF

Mixing and separation**Extraction**

Purification of active ingredients: a transfer from batch to countercurrent multicolumn chromatography processes
C. Textor, U. Maschke, F. Sander, KNAUER Wissenschaftliche Geräte GmbH, Berlin/D; T. Mueller-Spaeth, ChromaCon AG, Zurich/CH

CFD-based design of gravity separators for the phase separation of liquid-liquid dispersion
R. Jesse, M. Castano Martinez, L. Reinecke, Franken Filtertechnik KG, Huerth/D

Disc supported Taylor-Couette flow in liquid-liquid extraction
E. Aksamija, M. Siebenhofer, University of Technology Graz/A

Continuous enantioseparation in miniaturized extraction columns – equilibrium studies and process development
A. Holbach, N. Kockmann, TU Dortmund/D

Removal of Cd(II) and Co(II) from sulphate medium using a newly synthesized calix[4]arene derivatives
K. Belhamel, University of Bejaia/DZ; A. Casnati, University of Parma/I

Conclusio 1, CMF

Integrated chemical processes in liquid multiphase systems*

Hydroformylation of long chain olefins and renewables using TMS systems: design of new reaction systems in laboratory scale 12:30
T. Gaide, A.J. Vorholt, A. Behr, TU Dortmund/D

Hydroformylation of long chain olefins and renewables using TMS systems: Process development in miniplant scale 13:00
T. Gaide, J. Dreimann, A. Behr, A.J. Vorholt, TU Dortmund/D

Surfactant-based multiphase systems as reaction media: process concept for the rhodium-catalyzed hydroformylation of 1-dodecene 13:30
T. Pogrzeba, R. Schomäcker, TU Berlin/D

Hydroformylation in microemulsions on a mini-plant scale: operation challenges and solution approaches 14:00
M. Illner, D. Müller, E. Esche, R. Schomäcker, G. Wozny, TU Berlin/D

Hydroformylation in a Pickering emulsion 14:30
D. Stehl, A. Carl, K. Gawlitza, R. von Klitzing, TU Berlin/D; T. Skale, A. Drews, HTW Berlin/D; L. Hohl, M. Kraume, T. Hamerla, R. Schömäcker, TU Berlin/D

Bionics@work**Part II**

Detailed programme will be available at www.chema.de/congressplanner

Mixing and separation**Fluid-fluid**

Development of an optimisation approach for structured packings based on numerical investigations
A. Olenberg, E.Y. Kenig, University of Paderborn/D

Scale up methodology for fine chemical industry – the influence of the mixing in the process
M. Bentolila, VisiMix Ltd., Jerusalem/IL and The Hebrew University of Jerusalem/IL

Challenges in designing large scale production units in the cosmetic and healthcare industry
A. Lukas, EKATO SYSTEMS GmbH, Schopfheim/D

New techniques for optimising periodic adsorption process operation
M. Matzopoulos, M. Patel, B. de Groot, H. Mumtaz, Process Systems Enterprise, London/UK

Sizing of fluid particles in multiphase systems – an overview
S. Maaß, SOPAT GmbH, Berlin/D; M. Kraume, TU Berlin/D

Integrated chemical processes in liquid multiphase systems*

Mass transfer in micellar three phase reaction systems 15:00
N. Paul, T. Pogrzeba, T. Hamerla, R. Schomäcker, M. Kraume, TU Berlin/D

Drop size distributions in stirred micellar multiphase systems 15:30
L. Hohl, M. Kraume, TU Berlin/D

Membrane filtration of w/o Pickering emulsions 16:00
T. Skale, A. Drews, HTW Berlin/D; M. Kraume, D. Stehl, R. von Klitzing, TU Berlin/D

Process control strategies and identification of kinetic parameters based on dynamic optimization 16:30
M. Gerlach, M.M. Kaiser, University of Magdeburg/D; B. Hentschel, G. Kiedorf, Max Planck Institute for Dynamics of Complex Technical Systems, Magdeburg/D; A. Jörke, University of Magdeburg/D; C. Hamel, University of Magdeburg/D and University of Applied Sciences, Köthen/D; A. Seidel-Morgenstern, K. Sundmacher, University of Magdeburg/D and Max Planck Institute for Dynamics of Complex Technical Systems, Magdeburg/D

FSOPT – a tool for early stage process synthesis utilizing experiments, equation-based models and optimization 17:00
J. Steinle, S. Engell, TU Dortmund/D

* Organised by Collaborative Research Center/Transregio 63, supported by Deutsche Forschungsgemeinschaft – DFG

Hall 4.0, Europa

10:30 PANEL DISCUSSION**Bioökonomie in der Shale-Gas-Falle?**

Chairman: K. Wagemann, DECHEMA e.V., Frankfurt/D

Panellists: G.K. Kalkoffen, ExxonMobil Central Europe Holding GmbH, Hamburg/D, W. Büchele, Linde AG, Munich/D, E. Weinberg, Commerzbank AG, Frankfurt/D, H. Zinke, BRAIN AG, Zwingenberg/D

Conclusio 2, CMF**Recovery of value from secondary raw materials***

12:30	Improving the recycling of technology metals C. Hagelüken, Umicore & Co. KG, Hanau – Wolfgang/D
13:00	Extraction of critical metals H. Bart, S. Willersinn, University of Kaiserslautern/D
13:30	Leaching – enrichment – separation: technologies for the recycling of metallic resources T. Schiestel, Fraunhofer IGB, Stuttgart/D
14:00	Recycling of fibre-compound materials R. Stauber, Fraunhofer Project Group Materials Recycling and Resource Strategies IWKS, Alzenau/D
14:30	The final solution to phosphate-recycling? P. Fröhlich, V.G. Greb, M. Bertau, TU Bergakademie Freiberg/D

Fantasia 1, CMF**Exchange of testing labs****Automated liquid handling**

Current state of automated liquid handling systems and applications D. Freystadt, Gilson S.A.S., Villiers le Bel/F
New technologies in automated liquid handling N. Spindler, TECAN Group Ltd., Männedorf/CH
Recent global developments in volumetric performance assessment G. Rodrigues, ARTEL, Westbrook, ME/USA
Non-contact liquid handling P. Koltay, University of Freiburg and BioFluidix GmbH, Freiburg/D
Closing round: unmet needs – audience questions and prepared topics D. Freystadt, Gilson S.A.S., Villiers le Bel/F; N. Spindler, TECAN Group Ltd., Männedorf/CH; G. Rodrigues, ARTEL, Westbrook, ME/USA; P. Koltay, University of Freiburg and BioFluidix GmbH, Freiburg/D

Fantasia 2, CMF**Managing corrosion with fluoropolymers***

Improved sealability and reduced maintenance costs at chemical plants with ePTFE gaskets G. Staerke, W.L. Gore & Associates GmbH, Putzbrunn/D
Cost reduction with fluorothermoplastics in sulfuric acid applications G. Bueche, Quadrant EPP AG, Lenzburg/CH
Fluoropolymers lining as corrosion barrier for vessels L.A. Stamm, Plaston Germany GmbH, Dinslaken/D
Energy efficiency, environmental protection, plant availability – proven technology for flue gas applications F. Meng, Wallstein Thermal Technology (Beijing) Co., Ltd., Beijing/CHN
Environmental improvement of waste incinerators in Asia with ePTFE filter bags O. Petzoldt, W.L. Gore & Associates GmbH, Putzbrunn/D

Solids processing

15:00	T+ process for vacuole free pellets S. Deiss, F. Glöckner, R.-K. Mürb, M. Nieder, Automatik Plastics Machinery, Grossostheim/D
15:30	The use of a shallow fluidized bed as heat exchanger of a Stirling engine H.L. Zhang, J. Degrève, KU Leuven, Heverlee/B; J. Baeyens, University of Warwick, Coventry/UK; R. Dewil, KU Leuven, Sint-Katelijne-Waver/B
16:00	Study on the crystallization of lithium carbonate Y. Sun, University Halle-Wittenberg/D; X. Song, East China University of Science and Technology, Shanghai/CHN; J. Yu, East China University of Technology, Shanghai/CHN; M. Jin, J. Ulrich, University Halle-Wittenberg/D
16:30	New agitator bead mill Alpha S. Mende, NETZSCH-Feinmahltechnik GmbH, Selb/D
17:00	Modelling of fluid bed drying at different scales in drug product manufacture H. Mumtaz, S. Bermingham, Process Systems Enterprise Ltd, London/UK

Progress in laboratory techniques

High-sensitivity analytical techniques for process characterization and monitoring: versatile instruments for label-free protein analysis in downstream bioprocessing H. Wünsche, Pall Life Sciences, Dreieich/D
Multi-angle light scattering goes micro: coupling MALS to UHPLC M. Chen, A. Berges, S. Kenrick, Wyatt Technology Corp., Santa Barbara, CA/USA; D. Roessner, Wyatt Technology Europe, Dernbach/D
Comparison of polymer separation by size exclusion chromatography and asymmetric flow field flow fractionation S. Podzimek, University of Pardubice/CZ; C. Johann, D. Roessner, Wyatt Technology Europe, Dernbach/D
The use of antimony electrodes for the pH-measurement in abrasive and other ambitious matrices M. Decker, Kurt-Schwabe-Institut für Mess- und Sensortechnik e.V. Meinsberg, Waldheim/D; S. Bause, University of Applied Sciences, Mittweida/D; W. Vonau, M. Berthold, F. Gerlach, P. Teichmann, Kurt-Schwabe-Institut für Mess- und Sensortechnik e.V. Meinsberg, Waldheim/D
X-ray based concentration profiling to analyse stability and consolidation of both transparent and highly opaque dispersions A. Zierau, D. Kavianpour, T. Sobisch, D. Lerche, LUM GmbH, Berlin/D

Managing corrosion with fluoropolymers*

Universal multilayer hoses made with conductive Teflon® PTFE inner liner A. Aehle, ELAFLEX- Gummi Ehlers GmbH, Hamburg/D
Failure analysis and solutions F. Hingott, TÜV SÜD Chemie Service GmbH, Frankfurt/D
Surface technologies with fluoropolymers – selection and application K. Fischer, Impreglon SE, Lüneburg/D
Chemical asset protection: fluoroplastic coatings lead the way J. Hofmans, Chemours Belgium BVBA, Kollo/B; P. Huesmann, Chemours, Wilmington, DE/USA
A new class of perfluoroplastic provides design options for ultrahigh temperature and extremely harsh environments J. Driebeek, Chemours International Operations Switzerland Sàrl, Le Grand Saconnex/CH

* Organised by ProcessNet-Working group Raw Materials and Circular Economy

* Organized by Chemours International Operations Switzerland Sàrl, Le Grand Saconnex/CH; a fully-owned subsidiary of E.I. du Pont de Nemours and Company



Hall 4.0, Europa

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Illusion 1, CMF**Electrobiotechnology*****Towards hybrid microbial – enzymatic biofuel cells with extended lifetime**

S. Sané, J. Eipper, S. Kerzenmacher, University of Freiburg/D

Putting the „spark“ in bioreactors: from sketch to bench

L.F.M. Rosa, C. Gimkiewicz, C. Stang, T.R. dos Santos, S. Hunger, A. Zehnsdorf, F. Harnisch, Helmholtz-Zentrum für Umweltforschung, Leipzig/D

Electro-enzymatic system to overcome enzyme instabilities in H₂O₂-dependent biocatalysis

A. Horst, T. Krieg, J. Schrader, D. Holtmann, DECHEMA-Forschungsinstitut, Frankfurt/D

The electrode as interface between electrochemistry and microbiology: recent developments and prospects

I. Schmidt, A. Baudler, S. Riedl, U. Schröder, TU Braunschweig/D

Molecular engineering of microbial electrocatalysts for microbial electrosynthesis applications

M. Rosenbaum, S. Schmitz, K. Kaufmann, T. Kirchner, S. Nies, B. Molitor, A. Henrich, RWTH Aachen University/D

Illusion 2, CMF**Microprocess engineering****Microstructured equipment****The Plug & Play reactor: a highly flexible device for heterogeneous reactions in continuous flow mode**

H. Gruber-Wölfler, G.J. Lichtenegger, Graz University of Technology/A; H. Kitzler, K. Obermaier, One-A Engineering Austria GmbH, Vöcklabruck/A; J.G. Khinast, Graz University of Technology/A

Let the light flow – photochemistry in a pilot scale flow photoreactor

S. Gremetz, C. Horn, P. Jean, O. Lobet, Corning SAS, Avon/F

Influence of design parameters on heat and mass transfer of a modularized, milli-structured reactor

P. Biessey, M. Grünewald, Ruhr-Universität Bochum/D; J. Heck, Ehrfeld Mikrotechnik BTS GmbH, Wendelsheim/D

Determination of mixing efficiency of micro structured mixers by isothermal heat balance calorimetry

A. Pashkova, DECHEMA-Forschungsinstitut, Frankfurt am Main/D; L. Greiner, Hochschule Mannheim/D; J.Z. Bloh, DECHEMA-Forschungsinstitut, Frankfurt am Main/D

Microchannel heat exchanger reactors for sustainable production of fuels and electric energy

G. Kolb, Fraunhofer ICT-IMM, Mainz/D

Illusion 3, CMF**Beyond compliance based process safety: the European paradigm*****EPSC: state of the practice**

L. Allford, European Process Safety Centre (EPSC), Rugby/UK

12:30

Keynote Lecture**An EPSC member's journey towards zero leaks and spills**

H. Schwarz, BASF SE, Ludwigshafen/D

13:00

13:30

A European perspective on accepting major accident risk

K.-J. Niemitz, Clariant Produkte (Deutschland) GmbH, Sulzbach/D

14:00

Rust never sleeps – the challenge of corrosion under insulation (CUI)

P. de Bruyn, Total Petrochemicals, Brussels/B

14:30

Handheld vibrational spectrometers****Approved technologies made handheld – new possibilities and approaches**

A. Fey, A. Giannikos, analyticon instruments gmbh, Rosbach/D

Material identification through packages using 1064 nm excitation Raman spectroscopy

V. Ciobotă, C. Dentinger, Rigaku Raman Technologies, Inc., Wilmington/USA

Compact and high-performance IR sensors for process and portable instruments

U. Kantojärvi, J. Mäkinen, Spectral Engines Oy, Helsinki/FIN; J. Suhonen, Spectral Engines Oy, Oulu/FIN; J. Mannhardt, Spectral Engines Oy, Eschach/D; J. Antila, Spectral Engines Oy, Helsinki/FIN

Ultra-miniature wireless NIR spectrometer for on-line process monitoring applications

N. O'Brien, C. Pederson, JDS Uniphase Corporation, Santa Rosa, CA/USA

Novel applications of handheld vibrational spectrometers and the transfer and re-utilization of benchtop spectrometer data

U. Hoffmann, nir-tools, Essen/D; F. Pfeifer, H.W. Siesler, University of Duisburg-Essen, Essen/D

Microprocess engineering**Applications****Extractive metals recovery in microchannels**

S. Willersinn, H.-J. Bart, TU Kaiserslautern/D

Micro reaction platform for an automated enzymatic reaction control of mobile magnetic micro reactors

H. Al-Kaidy, R. Ulber, N. Tippkötter, TU Kaiserslautern/D

Experimental investigations and kinetic modelling of the base catalyzed ethanlysis for biodiesel production in microreactors

S. Schwarz, E.S. Borovinskaya, W. Reschetilowski, Dresden University of Technology/D

Rapid prototyping for fast and easy optimization of microstructured photoreactors

D. Ziegenbalg, Ü. Tastan, University of Stuttgart/D

Direct synthesis of hydrogen peroxide based on microreactor technology – from gas-liquid-solid reactor design to parallel reactor operation

T. Inoue, AIST, Tsukuba, Ibaraki/J

Safety**Ignition hazards and lessons learnt****Keynote Lecture****Safety in operations: an experimental lecture about explosions**

R. Hoekstra, H. Lawinger, BASF SE, Ludwigshafen/D

15:00

15:30

Electrostatic ignition hazards associated with dissipative filters

M. Glor, S. Forestier, P. Meier, Swiss Process Safety GmbH, Basel/CH

16:00

A step forward in industrial safety, do we need to earth small aluminium bags?

S. Forestier, T. Gmeinwieser, TÜV Süd Process Safety, Basel/CH

16:30

Progress in process safety through statistical evaluation of incidents and performance indicators

K. Jörg, BASF SE, Ludwigshafen/D

17:00

* Organised by DECHEMA working group Electrobiotechnology in Cooperation with Deutsche Bundesstiftung Umwelt (DBU)

** Organised by H.W. Siesler, University of Duisburg-Essen/D

* Organised by EPSC – European Process Safety Centre

Hall 4.0, Europa

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Spektrum, CMF

International Powder and Nanotechnology Forum*
Crystallization

10:30	Opening J. Ulrich, University of Halle-Wittenberg
11:00	Advanced operation design for anti-solvent crystallization based on solution composition trajectory H. Takiyama, Tokyo University of Agriculture and Technology (TUAT)/J
11:30	Crystal shape – evolution and characterization H. Briesen, TU München, Freising/D
12:00	Mechanism of mutual incorporation of branched chain amino acids and isomorphous amino acids in batch crystallization T. Kamei, Ajinomoto Co., Inc., Kawasaki/J
12:30	Crystallization behavior at liquid-liquid interface under an electric field Y. Shirakawa, T. Kishimoto, Doshisha University, Kyotanabe/J
	13:00 Poster session

Brilliant, 4.1

Course: High performance energy efficient heat exchangers and their industrial applications**Why You Should Attend**

- By attending the course you will learn the following topics that can add to your process industry knowledge.
- » Practical knowledge about high performance compact and not-so-compact heat exchangers, and their advantages and limitations
 - » Understanding key modeling aspects of complex high performance heat exchangers
 - » Use of heat transfer enhancement technology to improve performance of conventional heat exchangers
 - » Industrial application case studies including heat recovery applications

Introduction and Course Description

The course begins with classification of exchangers based on the degree of compactness. It then covers basic concepts of heat exchanger effectiveness and the impact of flow configuration on heat exchanger performance. Compact heat exchangers such as plate and plate-fin heat exchangers are discussed in detail along with their design and modelling aspects. Besides the use of compact heat exchangers, high performance heat exchange can also be achieved by employing heat transfer enhancement technology within conventional exchangers. The course focuses on some illustrative practical examples of benefits of enhanced heat transfer.

10:30

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17:30

International Powder and Nanotechnology Forum*
Powder technology

15:00	Dry separation using a gas-solid fluidized bed for waste treatment and mineral processing J. Oshitani, Okayama University/J
15:30	Applications of atomic force microscopy in particle technology J. Fritzsche, TU Bergakademie Freiberg/D; M. Rudolph, Helmholtz-Zentrum Dresden-Rossendorf/D and Helmholtz Institute Freiberg for Resource Technology/D; U.A. Peuker, TU Bergakademie Freiberg/D
16:00	DEM-CFD simulation of particle-drying in fluidized bed T. Tsuji, J. Fujimoto, T. Tanaka, Osaka University, Suita/J
16:30	Science based evaluation of fluidized bed spray granulation processes S. Heinrich, TU Hamburg-Harburg/D
17:00	17:15 Welcome Reception

Course: High performance energy efficient heat exchangers and their industrial applications

Guest lecturers will highlight specific aspects of heat exchanger technology used within industrial context. They will share their experience and knowledge from mainly three different heat exchanger technology sectors. These sectors include heat exchanger fabricators, operating process companies, as heat exchanger users, and finally E&C companies. Guest lecturers will also illustrate specific process benefits, in terms of energy and operating cost savings, obtained by using better heat exchanger technology for industrial applications including heat recovery.

Who Should Attend?

Practicing process industry professionals, who are either new to the subject area or want to expand their heat transfer knowledge.

Course Registration

There is no course registration fee but you are strongly recommended to contact the course leader at Vishwas.Wadekar@Institut-PS2E.com to register in advance.

The registered participants will receive the course timetable which will provide detailed breakdown of the topics covered in the course. Please contact the course leader if you need further information.

Course Leader

Dr. Vishwas Wadekar is Technology Director, Process Heat Transfer at PS2E Institute in France. He has been working with industrial heat transfer for nearly 30 years, specializing in compact exchangers, enhanced heat transfer and heat recovery systems. He is a chemical engineering graduate of Mumbai University, with a PhD in mass transfer.

* Organized by the committee of IPNF 2015

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中国 北京 2016年 5月 9日-12日

www.achemasia.de

Harmonie 1, CMF

Developments in desalination*

10:30	Integration of innovative technologies in process water plants J. Henkel, Dow Water & Process Solutions, Rheinmuenster/D; M. Slagt, Dow Water & Process Solutions, Terneuzen/NL
11:00	Innovative UF membranes in challenging sea water T. Bittinger, J. Wunram, P. Buchta, R. Winkler, inge GmbH, Greifenberg/D
11:30	Small-scale efficient seawater reverse osmosis plants M. Beery, J. Ludwig, L. León, akvolution GmbH, Berlin/D
12:00	Reverse osmosis testings: being as representative as possible in the lab scale A. Kempter, S. Sujandi, R.P. Baumann, M. Kellermeier, K. Odiot, BASF SE, Ludwigshafen/D
12:30	Seawater desalination using membrane distillation: a comprehensive investigation based on two pilot plants A. Hagedorn, G. Fieg, Hamburg University of Technology (TUHH)/D; F. Groß, J. Koschikowski, Fraunhofer ISE, Freiburg/D; T. Mann, MAHLE Industrial Filtration GmbH, Hamburg/D

Harmonie 2, CMF

Industrial water management

Treatment of complex wastewaters

Evaluation of the removal of carbamazepine, diclofenac, ibuprofen, sulfamethoxazole, iopromide, sotalol and primidone from wastewater by ozone/UV T. Scheers, L. Jacoby, Leuven University College/B; K. Van Eyck, J. Degrève, R. Dewil, KU Leuven/B
A kinetic study on the UV/H₂O₂ advanced oxidation process: influence of process parameters on the reaction rate K. Van Eyck, S. Verschoren, R. Dewil, K.U. Leuven, Sint-Katelijne-Waver/B
Application of glow discharge plasma for the removal of phenolic components from chemical industry wastewater B. Dewil, B. Kerremans, S. Van Damme, K.U. Leuven, Sint-Katelijne-Waver/B
Electrochemical wastewater treatment for industrial applications D. Woisetschläger, B. Humpl, VTU Engineering GmbH, Grambach/A; M. Siebenhofer, Institute of Chemical Engineering and Environmental Technology, Graz/A; M. Koncar, W. Glasl, VTU Engineering GmbH, Grambach/A
Full-scale sequencing batch reactor design and operation for treatment of target compounds from a pharmaceutical facility J. Devine, Alfa Laval Ashbrok Simon Hartley, Houston, TX/USA; J.G. Cleary, HDR Inc., Mahwah, NJ/USA

Harmonie 3, CMF

BiobasedWorld – Microalgae biorefinery*

Wastewater bioremediation using microalgae biomass for the production of biofuels and biochemical C. González-Fernández, IMDEA ENERGY, Madrid/E; M. Ballesteros, CIEMAT, Madrid/E
Sustainable bioenergy production by combining microalgae culture and anaerobic treatment of domestic wastewater I. de Godos Crespo, FCC aqualia, Chiclana de la Frontera, Cádiz/E; Z. Arbib, FCC aqualia, Chiclana de la Frontera/E; B. Llamas Moya, FCC aqualia, Madrid/E; E. Lara Corona, FCC aqualia, Sevilla/E; F. Rogalla, FCC aqualia, Madrid/E
Facilitating microalgae production and biorefineries through the introduction of Industrial Symbiosis concepts P. Møller, Kalundborg Municipality/DK
A microalgae biorefinery for complete valorization of wet biomass for commodity products F. F. García-Cuadra, J.M. Fernández-Sevilla, F.G. Ación, E. Molina-Grima, University of Almería/E
Microalgal biomass harvesting through drainage P. Lopez, University Complutense of Madrid/E; C. Reparez, Everis Energia y Medioambiente, Madrid/E; C. Negro, University Complutense of Madrid/E

Hall 4.0, Europa

13:30 PANEL DISCUSSION

Deutsche Energiewende – Zukunft oder Abseits?

Chairman: F. Ausfelder, DECHEMA e.V., Frankfurt/D

Panelists: M. Brudermüller, BASF SE, Ludwigshafen/D; A. Zerres, Bundesnetzagentur, Bonn/D; N. Anger, European Commission, Brussels/B, J. Maćkowiak Pandera, Agora Energiewende, Berlin/D

Developments in desalination*

15:00	Salt production: praxis orientated zero liquid discharge N. Heyn, Terrawater GmbH, Kiel/D
15:30	Polymer film heat exchanger for seawater desalination: falling film enhancement and fouling mitigation C. Dreiser, L.J. Krätz, H.-J. Bart, University of Kaiserslautern/D
16:00	High performance polymer compounds – a new class of material for heat exchangers in corrosive environments D. Moses, T. Orth, P. Mueller, Technoform Kunststoffprofile GmbH, Lohfelden/D
16:30	Wetting characteristics of different tube materials and their influence on crystallization fouling in falling film seawater evaporators A. Stärk, H. Glade, University of Bremen/D; K. Loisel, K. Odiot, A. Feßenbecker, A. Kempter, S. Nied, BASF SE, Ludwigshafen/D
17:00	Absorption of SO₂ in seawater and brine C. Cox, M. Luckas, C. Pasel, D. Bathen, University Duisburg-Essen/D

* Organised by Dr.-Ing. Heike Glade, University of Bremen/D

Industrial water management

Recovery of valuables from wastewater

Nutrient recovery by novel membrane stripping J. Pereboom, L. Van Dijk, L. Luning, Sustec Consulting & Contracting, Wageningen/NL
Recovery of carboxylic acids from effluents via extraction and reactive distillation D. Painer, S. Lux, M. Siebenhofer, Graz University of Technology/A
Cultivation of microalgae in wastewater and conversion into a soil additive by hydrothermal carbonization B. Hupfaut, M. Koch, A. Dumfort, M. Rupprich, Management Center Innsbruck/A; A. Bockreis, Universität Innsbruck/A
Adsorption of phosphates onto granular ferric hydroxide as a robust end-of-pipe purification strategy N. Lambert, R. Dewil, K.U. Leuven, Sint-Katelijne-Waver/B
The value of wastewater: examples from industrial and urban wastewater projects C. Jungfer, K. Wendler, T. Track, DECHEMA e.V., Frankfurt/D

Latest insight on lignocellulosic biorefineries**

The investigation of biomass sugar as the feedstock for PlantBottle packaging M. Schultheis, The Coca-Cola Company, Atlanta, GA/USA; H. Ren, The Coca-Cola Company, Shanghai/CHN; K. Stadler, The Coca-Cola Company, Berlin/D
Environmental and economic performance of process alternatives for multi-feedstock cellulosic sugar production J. Villegas, University of Geneva/CH; K. Harding, University of the Witwatersrand, Johannesburg/ZA; M. Patel, University of Geneva/CH
Cellulosic ethanol: commercialization and application in biofuels and biochemicals M. Barbach, P. Corvo, C. Heikaus, Clariant Produkte (Deutschland) GmbH, Munich/D
Overcoming the challenges to large-scale deployment M. Rubino, Beta Renewables S.p.A., Tortona/I
Renewable chemical platforms and biobased materials D. Cross, F. Moesler, Renmatix, Inc., King of Prussia, PA/USA
17:30 Integrated corn ethanol and corn stover ethanol production: a step towards a biorefinery? H. Bosch, Royal DSM NV, Heerlen/NL

* Co-organized by ANQUE – Asociación Nacional de Químicos de España, Madrid/E

** Organized by University of Geneva/CH



Harmonie 4, CMF

Materials

Use of improved dual-laminate piping for caustic soda in the chemical industry

E. Burggraf, R. Troschitz, STEULER-KCH GmbH, Siershahn/D

CPVC piping systems in demanding industrial applications

P. Killburn, Lubrizol Advanced Materials Europe BVBA, Brussels/B

Compatibility of metallic tank and polymeric sealing materials with biofuels

M. Weltschew, R. Bäßler, Federal Institute for Materials Research and Testing (BAM), Berlin/D

Compatibility of materials and wall coatings for VHP decontamination

G. Lauth, STERIS Deutschland GmbH, Köln/D

Harmonie 5, CMF

Mixing and separation

Fluid-solid

High-frequency flow reversal (HFFR) enables stable cross-flow microfiltration with micro sieves

F. Liebermann, MicroSieve Technologies GmbH, Feldmeilen/CH

Protein purification by Solvent Freeze Out (SFO) technology

X. Yu, Universität Halle-Wittenberg/D; J. Wang, Tianjin University/CHN; J. Ulrich, Universität Halle-Wittenberg/D

Dielectrophoresis – a promising technology for continuous particles fractionation

F. Du, Y. Wang, G. Pesch, M. Baune, J. Thöming, University of Bremen/D

A new device for coupling of calorimetric and volumetric equilibrium measurements

C. Bläker, M. Luckas, C. Pasel, D. Bathen, University of Duisburg-Essen/D

A new concept of melt layer crystallization for high viscous feed streams

F.J. Eisenbart, J. Ulrich, University Halle-Wittenberg/D

Spektrum, CMF

International Powder and Nanotechnology Forum*
Nano-bio technology and microreactor**Synthesis and characterization of monodisperse nickel nanoparticles using a microreactor**

10:30

M. Miyahara, S. Watanabe, Kyoto University/J; M. Ito, S. Sago, Noritake Co. Ltd., Aichi/J

Chemical and process-design intensification and use for micro-flow particle synthesis

11:00

V. Hessel, T. Noel, Q. Wang, Eindhoven University of Technology/NL

Morphology control of Lithium ion battery electrode with nano materials by using continuous kneading process

11:30

T. Fukui, KURIMOTO, Ltd., Osaka/J

Chemical nanotechnologies: from molecules to functional nanostructures for energy and health applications

12:00

S. Mathur, University of Cologne/D

Nano and fine particles surface design for aggregation and dispersion behavior control in liquid to apply various functional material

12:30

H. Kamiya, Tokyo University of Agriculture and Technology, Koganei/J; M. Iijima, Yokohama National University/J

13:00 Poster session

Hall 4.0, Europa

13:30 PANEL DISCUSSION

Deutsche Energiewende – Zukunft oder Abseits?

Chairman: F. Ausfelder, DECHEMA e.V., Frankfurt/D

Panellists: M. Brudermüller, BASF SE, Ludwigshafen/D; A. Zerres, Bundesnetzagentur, Bonn/D; N. Anger, European Commission, Brussels/B, J. Maćkowiak Pandera, Agora Energiewende, Berlin/D

Materials

Powders, foams, composites

Development of application tailored multi-scale sized powders

P.J. Masset, M. Méry, C. Schmetterer, G. Wolf, Fraunhofer UMSICHT, Sulzbach-Rosenberg/D

Plastics pelletizing technology – discover hidden efficiency

H. Mueller, F. Gloeckner, Automatik Plastics Machinery GmbH, Grossostheim/D

Ceramic foams – multifunctional player in the world of cellular materials

G. Standke, J. Adler, A. Fuessel, D. Boettge, Fraunhofer IKTS, Dresden/D

Retrofitting, protection and safety with micro reinforced ultra-high performance concrete

S. Hauser, DUCON Europe GmbH & Co.KG, Mörfelden-Walldorf/D

Ceramic composite material with carbon nanotubes fabricated by spark plasma sintering

N. Fedosova, P. Faikov, N. Popova, E. Koltsova, E. Zharikov, D. Mendeleev University of Chemical Technology of Russia, Moscow/RUS

Plant control

Process automation and new software tools

Plant asset management in the process industry – reality and future trends

S. Gamp, Endress+Hauser Messtechnik GmbH+Co. KG, Weil am Rhein/D

Chemical plant analytics – find the fast track to increased profits & reduced process variability

J. Honga, Metso Automation Oy, Pietarsaari/FIN; M. Martin, North American Chemical Company, Houston, TX/USA

Issues and considerations in calculating economic and operating benefits from Point-of-Work implementations

S. Ceasar, Apex Supply Chain Technologies GmbH, Rüsselsheim/D

A new dawn in refining – how next generation software tools are adding unparalleled flexibility to refinery operations

R. Calder, Schneider-Electric, Crawley/UK; H. Gulati, Schneider-Electric, Lake Forest, CA/USA

Automatic control chart development to statistical analysis of an aspen plus dynamics model

H. Bispo, N. Silva, Federal University of Campina Grande/BR

International Powder and Nanotechnology Forum*
Pharmaceutical technology**Coupling biorelevant release testing with PBPK modelling to predict in vivo drug performance after oral administration**

15:00

J. Dressman, University of Frankfurt/D

Cocrystal formation and thermal behaviors based on binary phase diagrams

15:30

K. Terada, Toho University, Funabashi/J

Novel pharmaceutical cocrystal consisting of paracetamol and trimethylglycine, a new promising cocrystal former

16:00

T. Fukami, Meiji Pharmaceutical University, Tokyo/J; T. Suzuki, Nihon University, Chiba/J; K. Tomono, Nihon University, Chiba/J; C.-M. Lehr, Saarland University, Saarbrücken/D

N.N.

16:30

C.-M. Lehr, Saarland University, Saarbrücken/D

Development of polymeric nanoparticle carrier for drug delivery system and design as solid dosage forms

17:00

H. Yamamoto, C. Takahashi, N. Ogawa, Y. Kawashima, Aichi Gakuin University, Nagoya/J

17:30 Closing remarks

Prof. Kawashima

* Organized by the committee of IPNF 2015

Conclusio 1, CMF

Catalysis

10:30	Applications of a novel perfluorosulfonic acid (PFSA) in heterogeneous catalysis C. Oldani, L. Merlo, Solvay Specialty Polymers Italy SpA, Bollate (MI)/I; M. Gebert, Solvay Specialty Polymers, Düsseldorf/D
11:00	The alternative production process of basic organic raw material from syngas W.S. Yang, J.W. Teng, H.X. Liu, J.T. Liu, J.H. Zhu, H.L. Guo, SINOPEC, Shanghai/CHN
11:30	Catalytic engineering: reduction of metal catalyst losses in reactors via hydrazine technology T. Hembem, University of Phoenix, Lincoln Park/USA
12:00	Catalyst deactivation in high performance slurry reactors N. Drefs, G. Kettenbach, T. Blocher, Buss ChemTech AG, Pratteln/CH
12:30	New routes for syngas production – DryReforming at elevated pressure A. Behrens, N. Schödel, S. Hoffmann, Linde AG, Pullach/D; E. Schwab, A. Milanov, S. Altwasser, BASF SE, Ludwigshafen/D; S.A. Schunk, G. Wasserschaff, hte GmbH, Heidelberg/D

Conclusio 2, CMF

Falsified Medicines Directive*

Aktuelles zur EU-Richtlinie zum Schutz vor Arzneimittelfälschung

Aktueller Stand der Gesetzgebung und Überblick über die Projekte M. Bergen, securPharm e.V., Frankfurt/D
Praktische Umsetzung der Falsified Medicines Directive in Deutschland T. Beer, ACS PharmaProtect GmbH, Berlin/D
DataMatrix sprengt Grenzen – „Neue Wege der Automatischen Identifikation für Kennzeichnung serialisierter Packungen – Neues aus der Normierung, Rechteck-Codes, Lieferdaten und Internetadresse im Code“ H. Oehlmann, European Health Industry Business Communication Council, Naumburg/D
Herausforderungen und Umsetzung der Serialisierung in einer Verpackungslinie V. Ditscher, OCS Checkweighers GmbH, Schwäbisch Hall/D
Verwendung der Tamper Verification Features als Sicherheitsmerkmal T. Brückner, Bundesverband der Pharmazeutischen Industrie e.V., Berlin/D

Fantasie 1, CMF

Risk assessment and sustainability in the focus of lab planning*

Minimum requirements of risk and operational concepts in the certification of DGNB and BNB C. Heinekamp, dr. heinekamp Labor- und Institutsplanung GmbH, Karlsfeld/D
EGNATON training target for groups – trigger presentation P. Neurieder, Max-Planck-Society, Munich/D
Sustainable planning process of research buildings S. Borger, University of Zurich/CH
Certifications and EPDs – necessity or dispensable K. Kreuzer, Lab Concept GmbH, Lauben/D
Design of particular building engineering devices if the user is still unknown when planning with respect of OHS P. Dockx, Van Looy Group NV, Antwerp/B

Hall 4.0, Europa

13:30 PANEL DISCUSSION

Deutsche Energiewende – Zukunft oder Abseits?

Chairman: F. Ausfelder, DECHEMA e.V., Frankfurt/D

Panellists: M. Brudermüller, BASF SE, Ludwigshafen/D; A. Zerres, Bundesnetzagentur, Bonn/D; N. Anger, European Commission, Brussels/B, J. Maćkowiak Pandera, Agora Energiewende, Berlin/D

Catalysis

15:00	Catalyzing energy research – polymers and other materials as examples M. Schneider, Chemspeed Technologies AG, Augst/CH
15:30	Effect of carbon support on oxygen reduction activity and corrosion resistance of Pt-based catalysts for middle-temperature DMFC S. Mariappan, J.-F. Drillet, DECHEMA-Forschungsinstitut, Frankfurt am Main/D
16:00	Recent achievements of quantum chemical simulations: CH-functionalization, polymer-catalysis, batteries M. Chęcinski, A. Kulesza, K. Stier, CreativeQuantum GmbH, Berlin/D
16:30	Effect of liquid-phase reduction on catalytic performance of Pd-Ag/Al₂O₃ in acetylene selective hydrogenation M. Takht Ravanchi, M. Rahimi Fard, S. Fadaee Rayeni, Petrochemical Research and Technology Co., Tehran/IR
17:00	Mn₂Ce_{1-x}O₂ catalysts for low temperature oxidation of diesel engine exhaust P. More, M.K. Dongare, S.B. Umbarkar, CSIR-National Chemical Laboratory, Pune/IND

Worldwide best practices in eco-efficient construction and management of chemical parks**

The future of the chemical industry: megatrends and their implications for chemical industry and chemical parks H. Utikal, Provdavis Hochschule, Frankfurt/D
Chemical parks as regional engines for value creation: some international case studies D.A. Gottschald, Chemie-Cluster Bayern, Munich/D
The low carbon industrial park – meeting the challenge M. Lewis, North East Process Industry Cluster, Wilton/UK
Limburg and its open innovation policy on the campuses in the knowledge axis M. Paul, Maastricht University/NL
The „verbund“- basis for value creation E. Grigat, CHEMPARK – Currenta, Leverkusen/D
17:30 Plenary discussion: Beyond site integration advantages – from chemical parks to chemical regions moderated by Dr. Hanny Nover, Director ECRN Brussels office

Risk assessment and sustainability in the focus of lab planning*

Specific risks of vivariums and restrictions when planning I. Müller-Stahn, dr. heinekamp Labor- und Institutsplanung GmbH, Karlsfeld/D
OHS and air exchange rates – is it really in contradiction with sustainability? C. Herry, Erlab D.F.S.S.A.S, Val de Reuil/F
Risk assessment with respect of technical gases W. Bischoff, GC DRUVA GmbH, Fulda/D
Laboratory working areas 4.0 C. Müller, WALDNER Laboreinrichtungen GmbH & Co. KG, Wangen/D
Auxiliary air supply in fume cupboards – different physical impact principles J. Liebsch, Juergen Liebsch – Forschung und Entwicklung, Weiler/D

* Organisiert durch secuPharm e.V.

** Organisiert by the European Chemical Regions Network (ECRN) and Chemie-Cluster Bayern

* Organised by EGNATON e.V. – European Association for Sustainable Laboratories



Fantasie 2, CMF

Energy efficient processes

Thermal energy storage and recovery

Experimental investigation of process concepts for PCM thermal energy storage

P. Wiesauer, W. M. Samhaber, Universität Linz, Leonding/A

Thermal energy storage for energy efficient processes

A. Wörner, M. Linder, S. Zunft, German Aerospace Center – DLR e.V., Stuttgart/D

The combined use of powder circulation and encapsulated phase change materials in concentrated solar power plants

H. Zhang, J. Degréve, KU Leuven, Heverlee/B; J. Baeyens, University of Warwick, Coventry/UK

Optimal thermal energy storage integration in batch processes using pinch analysis

D. Olsen, T. Eiholzer, P. Liem, B. Wellig, Lucerne University of Applied Sciences and Arts, Horw/CH

A decision supporting methodology for heat integration and total site targeting of chemical processes

T. Bohnenstädt, G. Fieg, Hamburg University of Technology/D

Illusion 1, CMF

Reaction engineering

Reactor design

Misconceptions in design of three-phase fixed-bed reactors. Novel approaches to construction of new plants and upgrading existing facilities

L.B. Datsévich, University of Bayreuth and MPCP GmbH, Mistelgau/D; F. Grosch, R. Wolfrum, MPCP GmbH, Mistelgau/D

From lab to pilot scale: scale-up and optimization of fast pyrolysis for biomass upgrading

A. Funke, N. Dahmen, J. Sauer, Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen/D

Design and scale-up of multitubular reactors

M. Matzopoulos, B. de Groot, H. Mumtaz, M. Patel, Process Systems Enterprise, London/UK

Selective microwave heating: a route to differentiated and intensified industrial chemical/material manufacturing

D. Irvine, S. Kingman, P. Palade, C. Dodds, S. Ison, University of Nottingham/UK

Multi-purpose plants – planning according to their own special rules

K. van Beijeren, InfraServ GmbH & Co. Knapsack KG, Hürth/D

Illusion 2, CMF

BiobasedWorld – Bioprocesses

Monitoring and modelling

Possibilities and limits of PAT compliant measuring systems for online determination of the biomass concentration 10:30

I. Stempin, University of Applied Sciences Mittelhessen, Gießen/D; Z. Kovács, Corvinus University of Budapest/H; D. Salzig, P. Czermak, University of Applied Sciences Mittelhessen, Gießen/D

Process Raman spectroscopy for in-line monitoring of dynamic cell cultures in real time 11:00

C. Uerpmann, A. Pitters, Kaiser Optical Systems SARL, Lyon/F

Next generation bioprocess control 11:30

K. Voll, Eppendorf, Inc., Enfield, CT/USA

Chromatography Analysis and Design Toolkit (CADET) 12:00

S. Leweke, E. von Lieres, Forschungszentrum Jülich/D

Oscillating oxygen and substrate supply conditions trigger metabolic regulation in *C. glutamicum* 12:30

M. Limberg, T. Aryani, W. Wiechert, M. Oldiges, Forschungszentrum Jülich GmbH/D

Hall 4.0, Europa

13:30 PANEL DISCUSSION

Deutsche Energiewende – Zukunft oder Abseits?

Chairman: F. Ausfelder, DECHEMA e.V., Frankfurt/D

Panelists: M. Brudermüller, BASF SE, Ludwigshafen/D; A. Zerres, Bundesnetzagentur, Bonn/D; N. Anger, European Commission, Brussels/B; J. Maćkowiak Pandera, Agora Energiewende, Berlin/D

Energy efficient processes

Thermal energy storage and recovery

Energy recovery from process exhaust streams

C. Rowlands, Spirax Sarco, Cheltenham/UK

Heat recovery in drying processes by direct steam condensation

M. Schreiner, University of Bremen/D; F. Curtius, vermacon GmbH & Co. KG, Lindau/D; J. Thöming, University of Bremen/D

Storage and utilisation of high grade waste heat

C. Stiller, S. Hübner, A. Alekseev, Linde AG, Pullach/D

Chemical transformation and storage of thermal energy for the utilization of industrial waste heat

M. Molenda, M. Linder, German Aerospace Center (DLR), Stuttgart/D

Enhanced heat transfer tubes – compact and efficient

J. Moreno, Wieland Thermal Solutions, Esposende/P; T. Lang, Wieland Thermal Solutions, Ulm/D

Reaction engineering

Special reactors

Introduction latest twin screw continuous processor for reacting, mixing, kneading and evaporating

T. Ishimaru, KURIMOTO, LTD., Osaka/J

Advanced flow reactor technology – industrial production made real

Y. Jiang, Corning Incorporated, NY/USA

Process optimization of a gas-liquid reaction in a rotating packed bed centrifuge

G. Grim, ANDRITZ KMPT GmbH, Vierkirchen/D

Characterization of a multi-stage counter-current rotating packed bed

K. Neumann, M. Grimm, P. Lutze, TU Dortmund/D

Fast-tracking biodiesel production with microwave irradiated reactor

L. A. Jermolovicius, L. C. M. Cantagesso, R. B. do Nascimento, E. R. de Castro, E. V. S. Pouzada, J. T. Senise, Instituto Mauá de Tecnologia, São Caetano do Sul/BR

BiobasedWorld – Bioprocesses

Downstream processing

A unified process development strategy for batch and continuous chromatography 15:00

K. Lacki, A. Forss, R. Nordberg, GE Healthcare Life Sciences, Uppsala/S

In-situ and downstream approaches for succinic and itaconic acid recovery 15:30

H. De Wever, W. Van Hecke, K. Elst, VITO, Mol/B

Simulated Moving Bed Chromatography as an alternative capturing tool for bio-based chemicals 16:00

E. Haimer, Vogelbusch Biocommodities GmbH, Vienna/A

Enabling innovative approaches for simplifying mAb purification via matched component, multi-mechanism clarification 16:30

J.F. Hester, 3M Purification Inc., St. Paul, MN/USA; S. Winterfeld, 3M Deutschland GmbH, Neuss/D

Affinity platforms for the purification of antibody fragments 17:00

J. Royce, G. Jagschies, A. Forss, A. Gronberg, G. Rodrigo, M. Gruvegard, GE Healthcare Life Sciences, Uppsala/S

Illusion 3, CMF

Safety

Human and organizational factors

10:30	Raising the bar on process safety A. Zwaan, Fluor, Haarlem/NL
11:00	Implementation of a Process Safety Excellence (PSE) program at various sites of an international chemical company R. Kauer, TÜV SÜD Industrie Service GmbH, München/D; M. Brey, Kienbaum Management Consultants, Düsseldorf/D
11:30	Achieving process safety by supporting plant personnel in emergency situations U. Fischbach, Arbeitsschutz, Umweltschutz und Anlagensicherheit, Oberwil/CH
12:00	Building an effective process safety culture F. Coumans, BST, Leuven/B
12:30	The impact of the operator on plant safety G. Fernholz, Schneider Electric, Neuss/D

Consens, Hall 4.C

Nickel alloys, titanium and zirconium in the chemical process industry*

New chemical processes; a challenge for material selection K. Schütze, Evonik Industries AG, Hanau/D
Nickel alloys in chemical processes at DSM – Practical examples T. Wellauer, DSM Nutritional Products AG, Sisseln/CH
Suitability of nickel alloys and titanium for applications in acids at 200 °C R. Bäßler, BAM – Federal Institute for Materials Research and Testing, Berlin/D; C. Schmidt, VDM Metals GmbH, Altena/D; H. Alves, VDM Metals GmbH, Werdohl/D
Properties of two new corrosion resistant nickel-alloys R. Behrens, VDM Metals GmbH, Altena/D
Performance of high alloyed steels and nickel alloys under highly sour conditions in the presence of elemental sulfur G. Schmitt, IFINKOR – Institute for Maintenance and Corrosion Protection Technologies n.f.p.-Ltd., Iserlohn/D

Dimension, Hall 4.2

Integrierte Roadmap „Industrielle Biotechnologie“

Tandemvortrag Vorstellung der Integrierten Roadmap „Industrielle Biotechnologie“ M. Winzenick, Zentralverband Elektrotechnik- und Elektronikindustrie (ZVEI) e.V., Frankfurt/D; S. Behrendt, Institut für Zukunftsstudien und Technologiebewertung gGmbH (IZT), Berlin/D
Firmen-Statements zur Roadmap von: » T. Böhlend, Evonik Industries AG, Hanau/D » K. Köhler, Endress + Hauser Messtechnik GmbH & Co.KG, Weil am Rhein/D » U. Vogel, Samson AG, Frankfurt/D » N.N. Siemens AG

Hall 4.0, Europa

13:30 PANEL DISCUSSION

Deutsche Energiewende – Zukunft oder Abseits?

Chairman: F. Ausfelder, DECHEMA e.V., Frankfurt/D

Panellists: M. Bruder Müller, BASF SE, Ludwigshafen/D; A. Zerres, Bundesnetzagentur, Bonn/D; N. Anger, European Commission, Brussels/B, J. Maćkowiak Pandera, Agora Energiewende, Berlin/D

Process safety vision 20/20*

15:00	Committed culture C. Cowley, Cowley Associates, Leigh/UK
15:30	Vibrant management systems N.N., CCPS, New York, NY/USA
16:00	Disciplined adherence to standards N.N., AIChE, New York, NY/USA
16:30	Intentional competency development N.N., AIChE, New York, NY/USA
17:00	Enhanced application of lessons learned N.N., AIChE, New York, NY/USA

* Organised by Center for Chemical Process Safety (CCPS)

Nickel alloys, titanium and zirconium in the chemical process industry

Fabrication experience with nickel alloys and reactive metals W. Hofmann, ASE Apparatebau GmbH, Chemnitz/D
Nickel alloys and Titanium clad plates for chemical and petrochemical applications S. Pauly, Nobelclad Europe, Rivesaltes/F
Industrial grade zirconium for chemical process industry C. Palmer, P. Witt, Sandvik Materials Technology, Sandviken/S; H. Alves, VDM Metals GmbH, Werdohl/D
New experiences with welding and fabrication of nickel alloys M. Wolf, VDM Metals GmbH, Altena/D
New challenges in use of well-known nickel alloys in CPI related to global sourcing strategies in developing markets K. Schweier, B. Lorschach, Bayer Technology Services GmbH, Leverkusen/D

* Organised by VDM Metals GmbH

NANORA

14:30 Welcome Representative from the state of Hessen and C. Tokamanis, European Commission, Brussels/B NANORA, the Nano Regions Alliance, is dedicated to making life easier for European companies in the field of nanotechnology, helping them to get solutions to the market and to find the right ones for their own business. This Session will showcase the results of two years of NANORA support activities, share success stories and provide an outlook on future Alliance activities. Companies will learn about the many ways in which NANORA can support them, e.g., through matchmaking activities based on a unique transnational database of nano players, advice on suitable funding opportunities, and the organization of joint trade missions to exciting nanotechnology markets. Companies can also use the opportunity to hook up with organizations that have already been supported by NANORA, get to know the NANORA team and liaise with high-profile European business and policy contacts. The complete programme will be available at www.achema.de/congressplanner
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ACHEMA 2018



11 – 15 June 2018

Frankfurt am Main, Germany

www.achema.de



Harmonie 1, CMF

Pharmaceutical production

Formulation technology

10:30	<p>Stability by microencapsulation – a novel formulation for long term preservation of probiotics</p> <p>T. Brandau, E. Brandau, BRACE GmbH, Karlstein/D</p>
11:00	<p>Solving your sticking problems with Tableting Science</p> <p>R. Blanchard, I Holland Ltd, Nottingham/UK</p>
11:30	<p>Dynamic freeze drying for bulk manufacture of sterile lyophilized microspheres – process and case study of industrial application</p> <p>B. Luy, M. Plitzko, Meridion Technologies GmbH, Muellheim/D</p>
12:00	<p>Fast dissolving tablets – a new application trend of freeze casting in food and pharmaceutical industry</p> <p>P. Nguyen, J. Ulrich, University Halle-Wittenberg/D</p>
12:30	<p>Continuous granulation and drying – modular concepts for R&D and production</p> <p>D. Leister, Thermo Fisher Scientific, Darmstadt/D</p>

Harmonie 2, CMF

Nanotechnology

<p>Tailor-made particles: synthesis, properties and application</p> <p>A. Musyanovych, R. Sperling, M. Maskos, Fraunhofer ICT-IMM, Mainz/D</p>
<p>Influences on structure of CNT-modified PEEK during melt-spinning process</p> <p>T. Benczek, W. Steinmann, D. Pico, T. Gries, RWTH Aachen University/D</p>
<p>High throughput strategies to improve the formulation and bioavailability of drug candidates</p> <p>J. Grace, Chemspeed Technologies UK Ltd., York/UK</p>
<p>Production of nano particles by colloidal grinding</p> <p>T. Hanke, Retsch GmbH, Haan/D</p>
<p>Nanotechnological applications and its potential benefits for the environment</p> <p>W. Dubbert, Federal Environment Agency (Umweltbundesamt), Dessau-Roßlau/D</p>

Harmonie 3, CMF

EU-Bioeconomy and HORIZON 2020 revisited: How far have we come since ACHEMA 2012?*

Bioeconomy and HORIZON 2020: challenges and opportunities

<p>Welcome</p> <p>K. Wagemann, DECHEMA e.V.</p>
<p>Renewable raw materials in the EU chemical industry</p> <p>J. Rothermel, Verband der Chemischen Industrie e.V. (VCI), Frankfurt/D</p>
<p>Status quo of HORIZON 2020 (working title)</p> <p>N.N.</p>
<p>PPPs for the Bioeconomy / The BBI joint initiative: connecting biobased value chains and networks in Europe</p> <p>M. Wubbolts, DSM Innovation Center, Geleen/NL</p>
<p>SPIRE – catalyst for cross-industry partnerships</p> <p>P. Nagler, Evonik Industries AG, Hanau/D</p>
<p>Bioeconomy in Germany (working title)</p> <p>C. Neumann, Federal Ministry of Food and Agriculture, Berlin/D</p>
<p>Bioeconomy – a systemic approach to sustainability</p> <p>H. van Liempt, Federal Ministry of Education and Research, Berlin/D</p>
<p>Bioeconomy Netherlands: "The Green Deal"</p> <p>J. van Esch, Ministry of Economic Affairs, The Hague/NL</p>
<p>13:00 Bioeconomy France (working title)</p> <p>C. Luguel, Association "Industries & Agro-Ressources" (IAR), Laon/F</p>

Hall 4.0, Europa

13:30 PLENARY LECTURE

Chemical production for tomorrow's challenges

D. Van Meirvenne, Bayer Technology Services GmbH, Leverkusen/D

Pharmaceutical production

Sterile manufacturing

15:00	<p>Automated washing principles and common mistakes</p> <p>O. Van Houtte, STERIS Canada Corporation, Quebec City/CDN; P. Lopolito, STERIS Corporation, Saint Louis, MO/USA</p>
15:30	<p>A new pre-filled syringes integrated solution for automatic handling, transfer and transport nest-and-tubs</p> <p>J. Net, E. Lepot, STERISYS Sàrl, Weiswampach/L</p>
16:00	<p>New concepts for the planning of liquid and lyophilized high potent fill & finish facilities</p> <p>H. Schaz, NNE Pharmaplan, Bad Homburg/D</p>
16:30	<p>Clean rooms requirements for optimal decontamination with vaporized H₂O₂</p> <p>G. Lauth, STERIS Deutschland GmbH, Köln/D</p>
17:00	<p>Trends and innovations in sterile manufacturing</p> <p>A. Kunzelmann, io-consultants, Heidelberg/D</p>

Nanotechnology

<p>Ionic liquids as effective dispersants for easy- and safe-to-handle nanodispersions</p> <p>J. Wimberg, T.J.S. Schubert, B. Iliev, IOLITEC Ionic Liquids Technologies GmbH, Heilbronn/D</p>
<p>Continuous production of polymeric nanoparticles in microfluidic structures</p> <p>A. Eberhardt, D. Boskovic, S. Loebbecke, Fraunhofer ICT, Pfinztal/D</p>
<p>Microencapsulation and industrial applications for uniform controlled release particles</p> <p>T. Brandau, E. Brandau, BRACE GmbH, Karlstein/D</p>
<p>RISE microscopy: Raman imaging meets scanning electron microscopy</p> <p>U. Schmidt, T. Dieing, A. Jauss, H. Fischer, J. Toporski, O. Hollricher, WITec GmbH, Ulm/D</p>
<p>Comprehensive characterization of nanoparticles using field-flow fractionation coupled with multi-angle light scattering and ICP-MS</p> <p>G. Heinzmann, F. Meier, T. Klein, Postnova Analytics GmbH, Landsberg/D</p>

EU-Bioeconomy and HORIZON 2020 revisited: How far have we come since ACHEMA 2012?*

Sustainability Requirements along the bio-based value chain

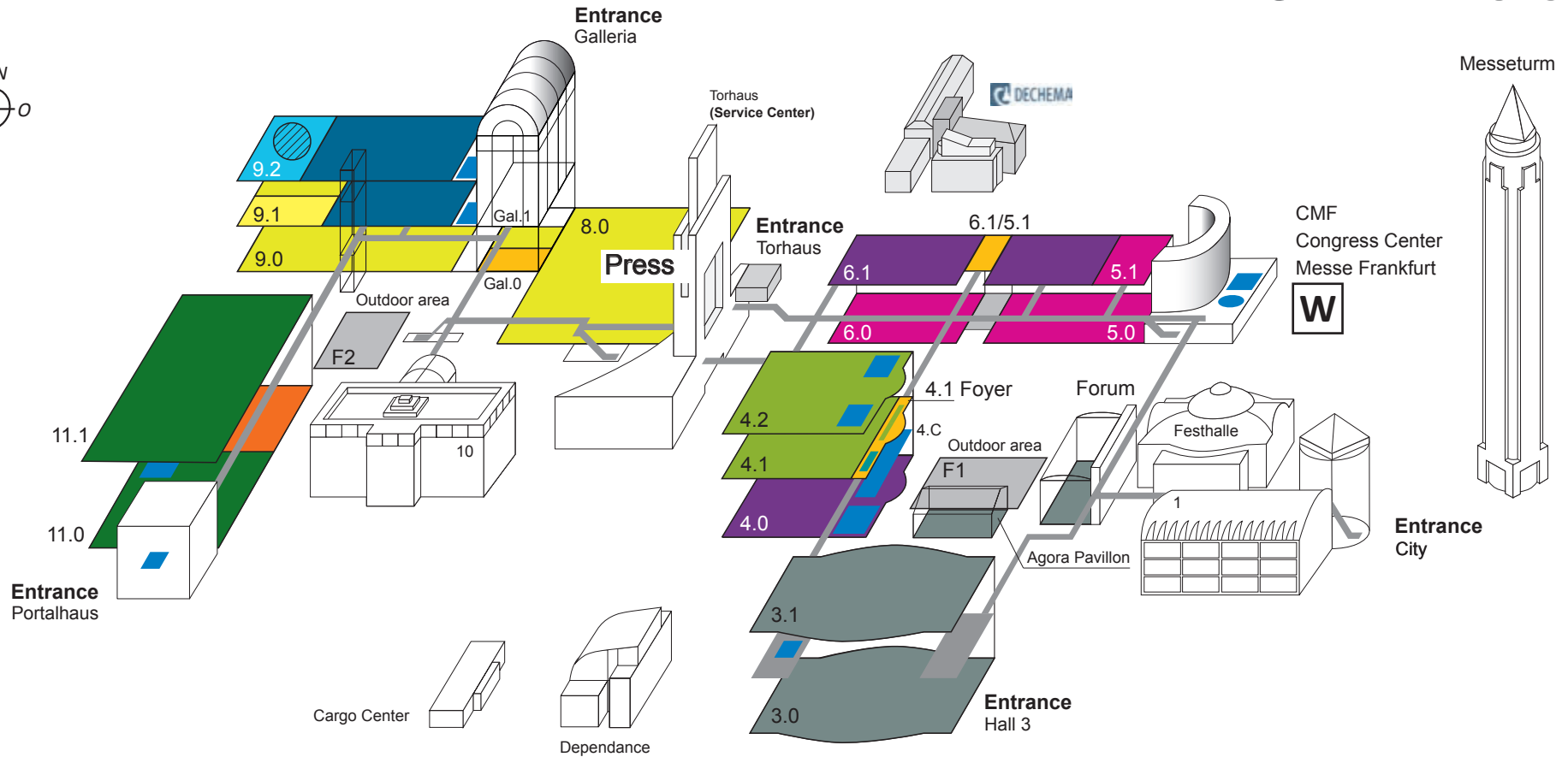
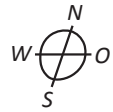
<p>Opportunities and challenges of sustainable biomass for industrial, food and feed use</p> <p>M. Fleckenstein, WWF, Berlin/D</p>
<p>Standardisation and public procurement (working title)</p> <p>A. Boenke, European Commission, Brussels/B</p>
<p>Sustainability for bio-based products:</p> <p>» Bio-based and biodegradable plastics (working title)</p> <p>» What is the meaning of „bio-based“ for lubricants?</p> <p>M. Versari, Novamont GmbH, Eschborn/D, R. Luther, Fuchs Europe Schmierstoffe GmbH, Mannheim/D</p>
<p>Sustainability for bio-based products – bio-based surfactants</p> <p>J. Tropesch, BASF SE, Ludwigshafen/D</p>
<p>16:45 Beyond the horizon – for a “European Industry Renaissance” Round table discussion</p> <p>Chair: C. Patemann Pannelists: M. Wubbolts, P. Nagler, A. Schütte, A. Bönke, C. Bastioli</p>

* Organised by DECHEMA e.V., The European Renewable Resources and Materials Association (ERRMA), Fachagentur Nachwachsende Rohstoffe e.V. (FNR) and Verband der Chemischen Industrie e.V. (VCI)


Exhibition Halls

Plan 1

ACHEMA 2015



-  Engineering
-  Research and Innovation
-  Laboratory and Analytical Techniques
-  Literature, Information, Learning and Teaching Aids
-  Mechanical Processes
-  Instrumentation, Control and Automation Techniques
-  Pharmaceutical, Packaging and Storage Techniques
-  Pumps, Compressors, Valves and Fittings
-  Industrial and Labour Safety
-  Thermal Processes

-  Materials Technology and Testing

-  Lecture Rooms
-  Congress Office
-  Discussion Corner
-  Departure factory tours

- CMF**
Harmonie 1 - 5
Spektrum
Conclusio 1 + 2
Fantasie 1 + 2
Illusion 1 - 3
- Hall 3 Via West**
Facette
- Hall 4.0**
Europa
- Hall 4.C**
Alliance
Consens
Entente

- Hall 4.2**
Brillianz
Dimension
- Hall 9.1**
Genius
Logos
- Hall 9.2**
Dialog
- Hall 11.0**
Granat
- Portalhaus**
Frequenz

OVERALL TIME PLANNER

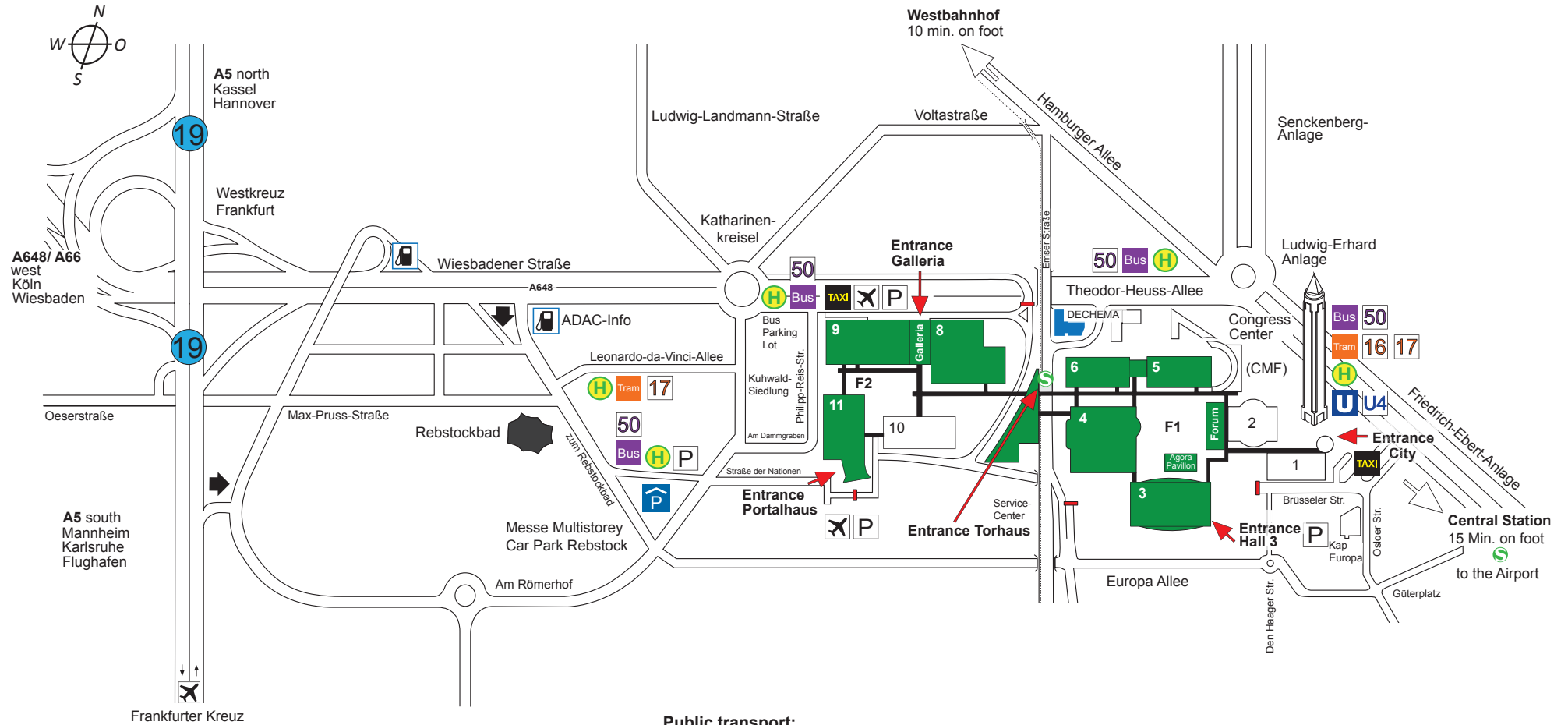
Room	Harmonie 1	Harmonie 2	Harmonie 3	Harmonie 4	Harmonie 5	Spektrum	Conclusio 1	Conclusio 2	Fantasia 1	Fantasia 2	
Hall	CMF*	CMF*	CMF*	CMF*	CMF*	CMF*	CMF*	CMF*	CMF*	CMF*	
Monday, 15.06.	11:00	Opening Session									
	13:30	Hall 4.0, Europa: Plenary lecture / Groot/Swinnen									
	15:00						Equipment innovations for heat transfer	Reaction engineering Modelling and simulation	Progress in laboratory and analytical technique Development and use of fume cupboard standards – future directions and challenges	Thermal and electrical power engineering Heat exchanger	
Tuesday, 16.06.	10:30	Hall 4.0, Europa: Panel Discussion / Bioökonomie in der Shale-Gas-Falle?									
	12:30	Energy-efficient chemical multiphase processes	Industrial water management Industrial water management and reuse	BiobasedWorld – Biorefinery platforms Biorefinery concepts	Bionics@work	Mixing and separation Extraction	International Powder and Nanotechnology Forum Crystallization	Integrated chemical processes in liquid multiphase systems	Recovery of value from secondary raw materials	Exchange of testing Labs Automated liquid handling	Managing corrosion with fluoropolymers
	15:00	Recent developments for bubble column reactors	Industrial water management Energy efficiency in industrial water management	BiobasedWorld – Biorefinery platforms Feedstocks and building blocks	Bionics@work	Mixing and separation Fluid-fluid	International Powder and Nanotechnology Forum Powder technology	Integrated chemical processes in liquid multiphase systems	Solids Processing	Progress in laboratory techniques	Managing corrosion with fluoropolymers
Wednesday, 17.06.	10:30	Developments in desalination	Industrial water management Treatment of complex wastewaters	BiobasedWorld – Microalgae biorefinery	Materials	Mixing and separation Fluid-solid	International Powder and Nanotechnology Forum Nano-bio technology and microreactor	Catalysis	Falsified Medicines Directive: Aktuelles zur EU-Richtlinie zum Schutz vor Arzneimittelfälschung	Risk assessment and sustainability in the focus of lab planning	Energy efficient processes Thermal energy storage and recovery
	13:30	Hall 4.0, Europa: Panel Discussion / Deutsche Energiewende – Zukunft oder Abseits?									
	15:00	Developments in desalination	Industrial water management Recovery of valuables from wastewater	Latest insight on lignocellulosic biorefineries	Materials Powders, foams, composites	Plant Control Process automation and new software tools	International Powder and Nanotechnology Forum Pharmaceutical technology	Catalysis	Best practices eco-efficient constr managem chemical parks	Risk assessment and sustainability in the focus of lab planning	Energy efficient processes Thermal energy storage and recovery
Thursday, 18.06.	10:30	Pharmaceutical production Formulation technologies	Nanotechnology	EU-Bioeconomy and HORIZON 2020 revisited: How far have we come since ACHEMA 2012?	Ceramic membranes for efficient separation	PRAXISforum Mixing and separation	Innovative process analytical technology Data analysis and process control	Site excellence forum	Power to chemicals	Continuous processing in pharmaceutical and fine chemicals production	Energy efficient processes Energy efficient chemical transformations
	13:30	Hall 4.0, Europa: Plenary lecture / van Meirvenne									
	15:00	Pharmaceutical production Sterile manufacturing	Nanotechnology	EU-Bioeconomy and HORIZON 2020 revisited: How far have we come since ACHEMA 2012?	Membranes and processes	PRAXISforum Mixing and separation	Innovative process analytical technology Measurement and testing technologies	Site excellence forum	Materials Corrosion and selection of plant materials	Continuous processing in pharmaceutical and fine chemicals production	Energy efficient processes Energy efficient unit operations
Friday, 19.06.	10:30	Pharmaceutical technology	Electrochemical technologies Modularisation	BiobasedWorld – Microalgae biorefinery		PRAXISforum Mixing and separation	BiobasedWorld – Biotechnology	Commodities Global feedstock changes in the chemical industry	Materials Materials for harsh environments	Plant components Seal systems	Additive manufacturing
	14:00	Closing Session, CMF, Harmonie 3									

Illusion 1	Illusion 2	Illusion 3	Consens	Dimension	Brillanz	Facette	Granat	Logos/Genius	General Events
CMF*	CMF*	CMF*	Hall 4.C	Hall 4.2	Hall 4.2	Hall 3 VIA West	Hall 11.0	Hall 9.1	
Hall 4.0, Europa: Plenary lecture / Groot/Swinnen									11:00 ACHEMA-Gründerpreis CMF, Harmonie 13:00 Automation im Dialog Hall 11.1, Foyer Nordwest 14:30 Lehrerfortbildung Hall 9.2, Room Dialog 18:00 Meet your friends Portalhaus, Hall 11, Via
Modular plant conception Modularisation	BiobasedWorld – Novel biocatalysts: development and application	Safety Relief systems						PRAXISforum Plant control	
Hall 4.0, Europa: Panel Discussion / Bioökonomie in der Shale-Gas-Falle?									11:00 ACHEMA worldwide Business Forum Houston, Texas – USA Petrochemicals Center Hall 9.2, Discussion Corner 11:00 Automation im Dialog Hall 11.1, Foyer-Nordwest 13:00 Schülerveranstaltung Hall 4.C, Room Entente/Alliance 16:00 India Day Portalhaus, Hall 11, Via, Raum Frequenz 16:00 GDCh TopThemes Hall 4.0, Room Europa 17:15 Japanese Reception Hall 4.C, Room Concorde 19:00 Frankfurt Evening in the Römer (special invitation)
Electro-biotechnology	Microprocess engineering Microstructured equipment	Beyond compliance based process safety: the European paradigm			Course: High performance energy efficient heat exchangers and their industrial applications			PRAXISforum Plant components	
Handheld vibrational spectrometers	Microprocess engineering Applications	Safety Ignition hazards and lessons learnt			Course: High performance energy efficient heat exchangers and their industrial applications			PRAXISforum Plant components	
Reaction engineering Reactor design	BiobasedWorld – Bioprocesses Monitoring and modelling	Safety Human and organizational factors	Nickel alloys, titanium and zirconium in the chemical process industry	Integrierte Roadmap „Industrielle Biotechnologie“	PRAXISforum Labor-technik	PRAXISforum Pharmaceutical production	PRAXISforum Innovative process analytical technology	PRAXISforum Safety	10:00 International Workshop „The Man-Machine Interface“ Portalhaus, Hall 11, Via, Raum Frequenz 10:30 Investments in Brazil – opportunity or illusion? Hall 4.0, Room Europa 11:00 Automation im Dialog Hall 11.1, Foyer-Nordwest 11:00 ACHEMA worldwide Business Forum Saudi Downstream Forum @ ACHEMA Hall 9.2, Discussion Corner 12:00 Chinese Lunch Reception Forum, Room Panorama 13:00 Schülerveranstaltung Hall 4.C, Room Entente/Alliance 13:30 International Workshop „The Man-Machine Interface“ Portalhaus, Hall 11, Via, Room Frequenz
Hall 4.0, Europa: Panel Discussion / Deutsche Energiewende – Zukunft oder Abseits?									
Reaction engineering Special reactors	BiobasedWorld – Bioprocesses Downstream processing	Process Safety Vision 20/20	Nickel alloys, titanium and zirconium in the chemical process industry	NANORA	PRAXISforum Laboratory techniques	PRAXISforum Pharmaceutical production	PRAXISforum Innovative process analytical technology	PRAXISforum Safety	
BiobasedWorld – Biorefinery platforms Feedstocks and building blocks	BiobasedWorld – Bioprocesses Reactors	Safety Safety assessment of hazardous substances		Analytics & surfaces with nanotechnologies	PRAXISforum Laboratory techniques				10:00 International Workshop „The Man-Machine Interface“ Portalhaus, Hall 11, Via, Room Frequenz 11:00 Automation im Dialog Hall 11.1, Foyer-Nordwest Jobvector career day Hall 9.2, Discussion corner
Hall 4.0, Europa: Plenary lecture / van Meirvenne									
BiobasedWorld – Biorefinery platforms Processing of biomass	BiobasedWorld – Bioprocesses Reactors	Paving the way towards CO ₂ recycling		Why funding is more than getting money	PRAXISforum Laboratory techniques				
Chemical engineering Plant engineering	BiobasedWorld – Specialty chemicals, pharma intermediates and food ingredients	Industrial carbon dioxide utilisation			PRAXISforum Single-use				10:00 Informationsplattform für Ingenieure in der Produktion Hall 9.2, Discussion Corner 11:00 Automation im Dialog Hall 11.1, Foyer-Nordwest 14:00 ACHEMA-Medienpreis CMF, Harmonie 3

Transport Links

Plan 2

ACHEMA 2015



Public transport:



S-Bahn (surface rail)
Lines S3, S4, S5, S6



Underground Line U4
Bockenheimer Warte - Bornheim



Tram 16 Offenbach - Ginnheim
Tram 17 Rebstockbad - Hauptbahnhof



Bus 50 Höchst Bahnhof -
Bockenheimer Warte



Express bus
Airport - Entrance Galleria



Shuttle bus



Taxi



Tram stop
Bus stop



Access to car park



Harmonie 4, CMF

Ceramic membranes for efficient separation*

Ceramic membranes for the cleaning of ground and drinking water

C. Goebbert, A.G. Roth, A. Perdun, Nanostone Water GmbH, Halberstadt/D

Ceramic nanofiltration membranes

T. Fahrenwaldt, V. Prehn, T. Wölfel, Inopor GmbH, Veilsdorf/D

Ceramic hollow fiber membranes – a platform technology for multiple applications

S. Schütz, F. Ehlen, I. Unger, D. Winkler, H. Rupp, MANN+HUMMEL GmbH, Ludwigsburg/D; S. Kariveti, C. Wang, MANN+HUMMEL, Singapore/SGP

Nanoporous inorganic membranes for gas separation

H. Richter, M. Weyd, I. Voigt, Fraunhofer IKTS, Hermsdorf/D

Dehydration of organic solvents with inorganic membranes

A. Stobbe, Andreas Junghans – Anlagenbau und Edelstahlbearbeitung GmbH & Co. KG, Frankenberg/D

Spektrum, CMF

Innovative process analytical technology

Data analysis and process control

Chemometrics for process modelling and control

A.M. de Juan Capdevila, University of Bcelona/E

Big data analytics and its application in plant asset management

J. Schlake, B. Klöpffer, ABB AG Corporate Research Center Germany, Ladenburg/D

Taking advantage of PAT and process control for Golden Batch strategies

M. Joksich, Siemens AG Österreich, Wien/A; M. Besenhard, B. Kavsek, Siemens AG Österreich, Graz/A

Employing DoE in the lacquer industry (and elsewhere)

S. Feiler, Ph. Solut, AICOS Technologies AG, Basel/CH

Managing time delay in industrial sampling systems

T. Waters, D. Slejko, R. Rieken, Swagelok Company, Solon, OH/USA

Conclusio 1, CMF

Site excellence forum*

Delivering site excellence to chemical and pharmaceutical sites – challenges, best practices and case studies

L. Meier, H. Niehues, Infracerv GmbH & Co. Höchst KG, Frankfurt/D

Optimizing global value chains through process excellence – contribution of academic partners to site development

H. Utikal, T. Bayer, Provadis School of International Management and Technology, Frankfurt/D

Reducing chemical supply chain risks through site selection

S. Frerick, Infracerv Logistics GmbH, Frankfurt/D

Best practice case study: regulatory management of major infrastructure projects in complex environments

H. Noichl, Infracerv GmbH & Co. Höchst KG, Frankfurt/D

Hall 4.0, Europa

13:30 PLENARY LECTURE

Chemical production for tomorrow's challenges

D. Van Meirvenne, Bayer Technology Services GmbH, Leverkusen/D

Membranes and processes**

Flat sheet ceramic membranes – development – manufacturing – application

P. Bolduan, atech innovations gmbh, Gladbeck/D

New developments in the field of process water

R. Günther, Envirochemie GmbH, Roßdorf/D

Membrane contactors – from first lab results to an established technology for a wide range of applications

M. Ulbricht, J. Schneider, Membrana GmbH, Wuppertal/D; P. Peterson, Membrana Charlotte, NC/USA

Dynamic ultrafiltration with rotating membranes – a new method to produce highly enriched milk protein concentrates

U. Kulozik, TU München, Freising-Weihenstephan/D

Filter in Tank system FIT. A new dynamic filtration process with ceramic membrane discs

K. Schöneberg, GEA Westfalia Separator Group GmbH, Oelde/D

Innovative process analytical technology

Measurement and testing technologies

Status and challenges of process analytics

F. Leinweber, BASF SE, Ludwigshafen/D

Fast electrical impedance tomography for multiphase measurements

M. Gevers, P. Gebhardt, T. Musch, Ruhr-Universität Bochum/D

Quantum cascade laser spectroscopy for inline monitoring of microfluidic processes

D. Boskovic, W. Schweikert, S. Panic, U. Mitrikeviciute, S. Loebbecke, Fraunhofer ICT, Pfingztal/D

Evaluation of Raman gas spectroscopy in HC-PCF as a PAT tool

V. Sandfort, C. Bolwien, Fraunhofer IPM, Freiburg/D

Novel instrumentation based on cavity enhanced laser absorption for real-time monitoring and control of industrial processes

M. Gupta, A. Fahrland, R. Provencal, D. Baer, ABB, Mountain View, CA/USA

Site excellence forum*

Trends in industrial waste management: current challenges and state of the art concepts

T. Appel, Infracerv GmbH & Co. Höchst KG, Frankfurt/D

German energy shift: best practices in securing a reliable and efficient energy supply and seizing new market opportunities

D. Vahland, Infracerv GmbH & Co. Höchst KG, Frankfurt/D

Leaving the security mainstream: applying innovative concepts to site security to deliver measurable results in security and savings

W. Bergelt, Infracerv GmbH & Co. Höchst KG, Frankfurt/D

Best practice case study: optimizing occupational safety at industrial sites with state-of-the-art e-learning

M. Öttl, Infracerv GmbH & Co. Höchst KG, Frankfurt/D

Wanted: best practices in winning the „war for talent“ and mastering the demographic shift

R. Engelhardt, E. Schwinghammer, Provadis School of International Management and Technology, Frankfurt/D

* Organized by working group „ceramic membranes“ of DKG, DGM, ProcessNet and DGMT

** Organised by German Society for Membrane Technology, DGMT

* Organized by Infracerv GmbH & Co. Höchst KG, Frankfurt/D

Conclusio 2, CMF

Power to chemicals

10:30	Ammonia as a storage medium of for fluctuating energy sources, especially regenerative energy sources J. Johanning, ThyssenKrupp Industrial Solutions, Dortmund/D
11:00	Power-to-liquids: synthetic fuels from a sustainable pathway R.-U. Dietrich, D. König, N. Baucks, A. Wörner, German Aerospace Center, Stuttgart/D
11:30	Storage of excess power from renewables in chemicals using polygeneration IGCC gasification plants C. Kiener, M. Fleischer, Siemens AG, Munich/D
12:00	Tailored and superstructured foams as catalyst support for highly exothermic processes L. Kiewidt, J. Thöming, University of Bremen/D
12:30	Comparison of biological and catalytic methanation for power-to-gas applications M. Götz, A. McDaniel Koch, F. Graf, Karlsruhe Institute of Technology (KIT)/D

Fantasia 1, CMF

Continuous processing in pharmaceutical and fine chemicals production

Keynote Lecture From flow schemes to continuous processing – a new paradigm in the pharmaceutical industry H.-J. Federsel, AstraZeneca, Cheshire/UK
Pharmaceutical production in flow – the toolbox! D.M. Roberge, P. Elsner, Lonza AG, Visp/CH
Making chemistry fit for flow and transforming it to intensified end-to-end process design V. Hesse, G. Kolb, T. Noel, Q. Wang, Eindhoven University of Technology/NL
Continuous crystallisation and manufacturing X. Ni, NiTech® Solutions Ltd, Edinburgh/UK

Fantasia 2, CMF

Energy efficient processes

Energy efficient chemical transformations

The reformer steam iron process for hydrogen production G. Voitic, S. Nestl, V. Hacker, Graz University of Technology/A
Process development for the direct synthesis of dimethyl ether A. Peschel, H. Schmaderer, N. Schödel, Linde AG, Pullach/D; J. Fendt, H. Klein, TU München, Garching/D
Whole plant optimisation of ethylene production M. Matzopoulos, H. Mumtaz, B. de Groot, M. Patel, Process Systems Enterprise, London/UK
ODC technology P. Hofmann, S. Köberle, ThyssenKrupp Electrolysis GmbH, Dortmund/D
Energy efficient processes in the polymer industry R. Kunkel, LIST AG, Arisdorf/CH

Hall 4.0, Europa

13:30 PLENARY LECTURE

Chemical production for tomorrow's challenges

D. Van Meirvenne, Bayer Technology Services GmbH, Leverkusen/D

Materials

Corrosion and selection of plant materials

15:00	Corrosion in cooling water systems G. Grötsch, H. Leonhard, TÜV SÜD Chemie Service GmbH, Frankfurt am Main/D
15:30	Polyamines in the water-steam cycle of industrial power plants – alternative corrosion protection agents for optimized plant performance K. Cramer, J. Muenz, C. Brief, CWB Wasserbehandlung GmbH, Berlin/D
16:00	Hands-on experience with the use of a passive layer testing pad H. Leonhard, TÜV SÜD Chemie Service GmbH, Frankfurt am Main/D; A. Burkert, J. Lehmann, BAM Federal Institute of Materials Research and Testing, Berlin/D
16:30	Modern selections of plant materials of construction M. van den Broek, D. Farias Moreno, R. Spier, J.-W. Rensman, Fluor, Haarlem/NL
17:00	Preliminary discussion and testing before operating F. Hingott, TÜV SÜD Chemie Service GmbH, Frankfurt am Main/D

Continuous processing in pharmaceutical and fine chemicals production

Keynote Lecture Panta rhei – continuous-flow catalysis for the pharmaceutical and fine chemicals industries W. Leitner, RWTH Aachen
Producing more with less – continuous flow reactors for the development of flexible & sustainable production processes C. Wiles, Chemtrix BV, Geleen/NL
Keynote Lecture Large-scale cGMP continuous manufacture of pharmaceuticals in practice: opportunities & pitfalls C. Stückler, DPX Fine Chemicals Austria GmbH & Co. KG, Linz/A

Energy efficient processes

Energy efficient unit operations

Plastics pelletizing technology – energy efficiency issues C. Makert, H. Müller, Automatik Plastics Machinery GmbH, Grossostheim/D
A route to more sustainable processing: scale up of industrial microwave heating processes S. Kingman, P. Palade, C. Dodds, S. Ison, D. Irvine, University of Nottingham/UK
Increase of energy efficiency in horizontal mixers J. Schultz, C. Schmidthals, T. Meyer, Gebrüder Lödige Maschinenbau GmbH, Paderborn/D
Open new opportunities of distillation columns through cyclic distillation technology B. Maleta, Maleta Cyclic Distillation LLC OÜ, Tallinn/EST; O. Bedruk, O. Shevchenko, National University of Food Technologies, Kiev/UA
Costs and energy consumption for creating fine water droplets H. Lutz, Lechler GmbH, Metzingen/D



Illusion 1, CMF

BiobasedWorld – Biorefinery platforms

Feedstocks and building block

10:30	<p>Synthesis of platform chemicals from renewable resources by applying micro reaction technology <u>T. Türcke</u>, S. Löbbbecke, Fraunhofer ICT, Pfinztal/D</p>
11:00	<p>Accelerated phototrophic process development: light meets microtiter plates <u>H. Morschett</u>, Forschungszentrum Jülich GmbH/D; D. Ritter, C. Müller, T. Welters, m2p-labs GmbH, Baesweiler/D; W. Wiechert, M. Oldiges, Forschungszentrum Jülich GmbH/D</p>
11:30	<p>Bioconversion of renewable feedstocks and (agri/food) residues into lactic acid J. Venus, Leibniz-Institute for Agricultural Engineering Potsdam-Bornim (ATB)/D</p>
12:00	<p>Sustainable recycling of poly lactate based waste P. Ballmann, <u>M. Müller</u>, S. Dröge, Test and Research Institute Pirmasens/D</p>
12:30	<p>Fluid salt cracking – a new process for the production of aromatic compounds J. Forstner, Fraunhofer-Institut für Chemische Technologie, Pfinztal/D</p>

Illusion 2, CMF

BiobasedWorld – Bioprocesses

Reactors

<p>Seed train design and optimization for animal cell suspension culture <u>B. Frahm</u>, Ostwestfalen-Lippe University of Applied Sciences, Lemgo/D; <u>P. Pörtner</u>, S. Kern, Hamburg University of Technology/D; T. Hernández Rodríguez, Ostwestfalen-Lippe University of Applied Sciences, Lemgo/D</p>
<p>Cultivation of CHO cells in a non-cylindrical stirred tank bioreactor M. Kradolfer, Pall Corporation, Fribourg/CH</p>
<p>Virus production from bench scale to industrial scale: disposable fixed-bed bioreactor technology J. Castillo, <u>P. Lefebvre</u>, S. Knowles, Pall Life Sciences, Brussels/B</p>
<p>The growth of industrial biotechnology: implications for pump, valve and mechanical seal manufacturers W. Newton, Flowserve Corporation, Newark/UK</p>
<p>Continuous biocatalysis in a compact dynamically mixed flow reactor G. Gasparini, <u>K. Shillington</u>, AM Technology, Runcorn/UK</p>

Illusion 3, CMF

Safety

Safety assessment of hazardous substances

<p>Thermal stability and runaway reactions – comparison and industrial relevance of appropriate test methods <u>A. Ahrens</u>, M. Krack, M. Nau, B. Vollbrecht, Siemens AG, Frankfurt am Main/D</p>
<p>An alternative way to determine the Self-Accelerating Decomposition Temperature by using the adiabatic heat-pressure accumulation test <u>S. Kimpel</u>, J. Horn, J. Franke, consilab Gesellschaft für Anlagensicherheit mbH, Frankfurt am Main/D</p>
<p>Experimental and theoretical investigation of decomposition mechanism of deflagrating substances <u>S. Salg</u>, M. Malow, BAM Federal Institute for Materials Research and Testing, Berlin/D</p>
<p>Processing of hazardous and energetic materials in microreactor plants T. Tuercke, A. Mendl, D. Boskovic, J. Antes, <u>S. Loebbecke</u>, Fraunhofer ICT, Pfinztal/D</p>
<p>Opportunities and limitations of the use of in-silico tools by SMEs – practical experiences <u>K. Kümmerer</u>, C. Rücker, W.M.M. Ahmed, C. Leder, Lüneburg University/D; D. Schwartz, Bruno Bock Thiochemicals GmbH, Marschacht/D</p>

Hall 4.0, Europa

13:30 PLENARY LECTURE

Chemical production for tomorrow's challenges

D. Van Meirvenne, Bayer Technology Services GmbH, Leverkusen/D

BiobasedWorld – Biorefinery platforms

Processing of biomass

15:00	<p>Processing woody biomass – pilot plant and simulation prove feasibility and profitability of LX-Process <u>F. Streffer</u>, maxbiogas GmbH, Marienwerder/D; K. Brandt, INOSIM Consulting GmbH, Dortmund/D</p>
15:30	<p>Lignocellulosic biofuels <u>N. Schwaiger</u>, H. Pucher, R. Feiner, TU Graz/A; L. Elmaier, P. Pucher, BDI-BioEnergy-International AG, Grambach/Graz/A; M. Siebenhofer, TU Graz/A</p>
16:00	<p>Ionic liquids for biomass dissolution <u>B. Iliev</u>, T.J.S. Schubert, IOLITEC Ionic Liquids Technologies GmbH, Heilbronn/D</p>
16:30	<p>Carbo-V biomass gasification – status after application of sound engineering practices S. Petersen, Linde Engineering Dresden GmbH/D</p>
17:00	

BiobasedWorld – Bioprocesses

Reactors

<p>Modelling of batch and membrane bioreactor by CFD R.R. Safarov, Association of experts on biomedical, cell technologies and regenerative medicine NP „Aktremed“, Moscow/RUS; <u>E.V. Guseva</u>, N.V. Menshutina, Mendeleev University of Chemical Technology of Russia, Moscow/RUS</p>
<p>Critical parameters of an oncolytic measles virus production process <u>T.A. Grein</u>, F. Petry, D. Jaeger, M. Kress, University of Applied Sciences Mittelhessen (THM), Giessen/D; M.D. Muehlebach, Paul-Ehrlich-Institut, Langen/D; D. Salzig, P. Czermak, University of Applied Sciences Mittelhessen (THM), Giessen/D</p>
<p>Bioprocess software – What everyone wants! A. Allman, Infors AG, Bottmingen/CH</p>
<p>Agitation and mixing challenges in fermentation and cell cultivation application D. Felezeu, Pierre Guerin SAS Biolafitte, Mauze/F</p>
<p>Biofilm remediation strategies P. Lopolito, STERIS Corporation, Saint Louis, MO/USA</p>

Paving the way towards CO₂ recycling

The objective of the workshop is to contribute to the development of uses of CO₂ so that it is seen as a resource rather than a waste product.

To do so, the project SCOT (Smart Carbon Dioxide Utilisation) will propose a Strategic Research Agenda for Europe in the field of CO₂ recycling and structural/funding measures to foster the development of CO₂ recycling. In addition, the project will put in place activities that enable the creation of an EU network in this field, able to foster smart specialization.

Complete programme will be available at www.chema.de/congressplanner.



Dimension, Hall 4.2

Analytics & surfaces with nanotechnologies

10:30 Surface modification and functionalization is one major area of nanotechnological inventions and innovations. Scratch resistance, anti-fog, anti-reflective and self-cleaning properties are functionalities efficiently integrated by nanotechnological materials and processes. Analytical challenges and opportunities are also important in this regard. The reliable analysis of nano-coatings or implemented nanomaterials is an important aspect of successful market penetration of nanotechnological innovations and, later on, process control. Experts from industry and academia will talk about related success stories.

11:30 Complete programme will be available at www.achema.de/congressplanner.

12:00

12:30



27 – 30 October 2015
Veranstaltungsforum Fürstentfeldbruck · Germany

ESCRE 2015
European Symposium
on Chemical Reaction Engineering
– CRE Providing Tomorrow's Solutions –
www.dechema.de/escre2015




ESCRE 2015
European Symposium on
Chemical Reaction Engineering



EFCE
Event No. 721

Hall 4.0, Europa

13:30 PLENARY LECTURE

Chemical production for tomorrow's challenges

D. Van Meirvenne, Bayer Technology Services GmbH, Leverkusen/D

Why funding is more than getting money

15:00 When it comes to 'funding', often everything is down to numbers. While acquiring state funding, convincing a venture capitalist to join in or getting a bank loan is undisputedly the central aspect, there is much more to this topic. What should be considered when creating a European consortium to participate in Horizon 2020 calls? Which pitfalls await inventors when it comes to patenting? How important is the role of the right communication strategy? This session, organized by Hessen-Nanotech, will provide answers to these questions. But of course, venture capital and state funding are addressed as well.

16:00 Complete programme will be available at www.achema.de/congressplanner.

16:30

17:00



Gesellschaft für Chemische Technik
und Biotechnologie e.V.

10. – 11. November 2015 · DECHEMA-Haus · Frankfurt am Main

Industrietage Wassertechnik
www.dechema.de/wassertechnik2015




PROCESNET
EINE INITIATIVE VON DECHEMA UND VDI-GVC




Deutsche Gesellschaft
für Membrantechnik

Harmonie 1, CMF

Pharmaceutical technology

- 10:30 **Aerogels as innovative support matrices for active substances**
D. Lovskaya, A. Lebedev, I. Lebedev, N. Menshutina, Mendeleev University of Chemical Technology of Russia, Moscow/RUS
- 11:00 **Multistructural alginate encapsulation of drugs, cells and cellular therapeutics**
O. Gryshkov, N. Hofmann, Leibniz University Hannover/D; T. Mueller, Hannover Medical School/D; B. Glasmacher, Leibniz University Hannover/D
- 11:30 **Crystalline micro container systems – a new method of agent encapsulation**
J. Seidel, J. Ulrich, Universität Halle-Wittenberg
- 12:00 **Challenges in human mesenchymal stem cell expansion process according to good manufacturing practice**
J. Leber, N. Köster, M. Blumenstock, D. Salzig, University of Applied Sciences Mittelhessen, Giessen/D; P. Czermak, University of Applied Sciences Mittelhessen and University Gießen/D and Kansas State University, Manhattan, KS/USA
- 12:30 **Characterization and structure analysis of erythromycin A thiocyanate heterosolvates crystallized from acetone solvent**
J. Huang, University Halle-Wittenberg/D; Q. Yin, J. Wang, Tianjin University/CHN; J. Ulrich, University Halle-Wittenberg/D

Harmonie 2, CMF

Electrochemical technologies

Modularisation

- Diamond electrodes – properties, fabrication, applications**
M. Ruffer, DiaCCon GmbH, Fürth/D
- New concept for large scale Redox-Flow-Systems**
N. Bredemeyer, N. Tenhumberg, ThyssenKrupp Industrial Solutions, Dortmund/D; G. Polcyn, P. Toros, ThyssenKrupp Electrolysis, Dortmund/D
- Computer simulation of lithium ion batteries as predictive tool for battery design and material optimization**
J. Zausch, Fraunhofer ITWM, Kaiserslautern/D
- Maintaining measurement consistency when upscaling**
B. Ottersten, Endress+Hauser Conducta GmbH+Co.KG, Gerlingen/D

Harmonie 3, CMF

BiobasedWorld – Microalgae biorefinery

- Microalgal biorefinery: process design and economic assessment**
G. Olivieri, M.H.M. Eppink, Wageningen University/NL; M.J. Barbosa, Wageningen University and Research Centre/NL; R.H. Wijffels, Wageningen University/NL
- Microalgal biomass use in aquaculture – an overview**
A. Otero, Santiago de Compostela University/E
- PUFACHain – a value chain following the biorefinery concept from algal biomass to lipid-based products**
T. Friedl, A. Kryvenda, M. Lorenz, Universität Göttingen/D; S. Durm, EurA Consult AG, Elfwangen/D
- High added value microalgae substances by GRAS processes: scale-up of supercritical CO₂ extraction intensified with high power ultrasounds**
E. Casas Sanz, M. García Suárez, J. Montañés Barahona, A. Tornero Martos, J. García Reverter, AINIA Centro Tecnológico (AINIA technological centre), Paterna (Valencia)/E
- Production and characterization of biogenic, micro-structured calcite particles – an unconventional product from microalgae**
I. Hariskos, C. Postena, M. Vurakb, Karlsruhe Institute of Technology (KIT)/D

Conclusio 2, CMF

Materials

Materials for harsh environments

- 10:30 **Partially fluorinated polymers in handling of aggressive fluids**
B. Neubauer, Solvay Specialty Polymers, Brussels/B; G. Biressi, Solvay Specialty Polymers, Bollate/I
- 11:00 **A new nickel alloy with exceptional fabricability and thermal stability for metal dusting environments**
V. Deodshumukh, P. Crook, Haynes International, Kokomo, IN/USA
- 11:30 **Defining the Operational Limits of Tantalum and Tantalum Alloys in the CPI**
P. Aimone, H.C. Starck, Inc., Newton, MA/USA
- 12:00 **Tantalum surface alloy – exploring the service condition limits**
S. Eriksen, Tantaline A/S, Nordborg/DK
- 12:30 **Coatings for harsh environments and high temperature applications**
P.J. Masset, E. Drechsler, A. Förg, C. Weih, S. Wöllmer, Fraunhofer UMSICHT, Sulzbach-Rosenberg/D

Fantasie 1, CMF

Plant components

Seal systems

- Environmental temperature influences on Plan 53B mechanical seal systems**
J. Van Dam, Flowserve Engineered Products Division, Roosendaal/NL
- Improving reliability while reducing maintenance cost & downtime of large pumps and rotating shaft equipment with split mechanical seals**
T. Evans, John Crane Inc., Morton Grove, IL/USA
- Technology to silence audible seal noise**
M. Kalodimos, T. Steigerwald, John Crane Inc., Morton Grove, IL/USA
- Guidelines for finding the perfect balance between environmental protection, safety and costs, when selecting gaskets for glass-lined equipment**
G. Mokus, W.L. Gore & Associates GmbH, Putzbrunn/D
- CurveFlow™ – a new generation of distribution area for gasketed plate heat exchangers (gPHE's)**
E. Kulenovic, O. Ekström, Alfa Laval Corporate AB, Lund/S

Illusion 1, CMF

Chemical engineering

Plant engineering

- Dehydrogenation of propane and butanes to propylene and butylenes**
S. Wenzel, ThyssenKrupp Industrial Solutions, Dortmund/D
- Defying habits: when 'old' becomes 'vintage'**
B. Sierra Meseguer, Fluor, Haarlem/NL
- PSA technology, more than a hydrogen purifier**
T. Keller, Linde Engineering, Pullach/D
- Online and noninvasive investigation of bubble columns with Electrical Resistance Tomography (ERT)**
A. Deutschmann, K. Jobst, Fraunhofer IKTS, Dresden/D
- Production of HF from H₂ from H₂SiF₆**
T. Dahlke, M. Eckmann, R. Cant, Buss ChemTech AG, Pratteln/CH



Spektrum, CMF

BiobasedWorld – Biotechnology

Immobilization of peroxidases on textile carrier materials

K. Kiehl, K. Opwis, Deutsches Textilforschungszentrum Nord-West gGmbH, Krefeld/D; J.S. Gutmann, Deutsches Textilforschungszentrum Nord-West gGmbH, Krefeld und Universität Duisburg-Essen/D

Optimization of an inclusion body-based production of recombinant proteins in *Escherichia coli*

D. Hoffmann, University of Applied Sciences Mittelhessen, Gießen/D; P. Czermak, University of Applied Sciences Mittelhessen and University Gießen/D and Kansas State University, Manhattan, KS/USA; D. Salz, University of Applied Sciences Mittelhessen, Gießen/D

Standardization in the field of biotechnology – activities of DIN

J. Venus, Leibniz-Institute for Agricultural Engineering Potsdam-Bornim (ATB), Potsdam/D

Recombinant protein production processes using *Bombyx mori* cell lines

G. Sprick, D. Salz, P. Czermak, University of Applied Science Mittelhessen, Gießen/D

Bioprocess design for mushroom polysaccharides production of anticancer/immunomodulating activities in industrial scale

H.A. El Enshasy, Universiti Teknologi Malaysia, Johor Bahru/MAL; R. Hattı-Kaul, Lund University/S; R. Abd Malik, N.Z. Othman, Universiti Teknologi Malaysia, Johor Bahru/MAL

Fantasia 2, CMF

Additive manufacturing

Use metal additive manufacturing to increase efficiency and system performance. What can MAM do better than other technologies?

M. Felsch, 3D Systems – LayerWise, Darmstadt/D

Additive manufacturing of organic materials

N.N., 3D Systems – Layerwise

3D printing in process industry: performance parts manufactured from high nickel super-alloys by selective laser melting

C. Kiener, Y. Kuesters, M. Schaefer, Siemens AG, Berlin/D

New approaches for ceramic microstructured reactors

E. Reichelt, TU Dresden/D; U. Scheithauer, G. Ganzer, Fraunhofer IKTS, Dresden/D; S. Kaiser, TU Dresden/D; M. Jahn, A. Michaelis, Fraunhofer IKTS, Dresden/D

Efficiency-enhanced process equipment made by additive manufacturing technologies

F. Enzenberger, M. Lodes, Universität Erlangen-Nürnberg, Fürth/D; C. Körner, R.F. Singer, H. Freund, W. Schwieger, P. Wasserscheid, Universität Erlangen-Nürnberg, Erlangen/D

Conclusio 1, CMF

Global feedstock changes in the chemical industry

Feedstock flexibility as a key to success

W. Huismann, DOW Chemicals, Schwalbach/D

10:30

Prospects of a biobased production

T. Hirth, Fraunhofer-Institut für Grenzflächen- und Bioverfahrenstechnik, Stuttgart/D

11:00

Alternative carbon sources at the interface of the chemical and energy sector – challenges and opportunities for catalysis

W. Leitner, RWTH Aachen/D

11:30

Biobased production of acrylic acid and acrylonitrile from lactic acid

E. Klemm, Universität Stuttgart/D

12:00

One size does not fit all – raw material change in the chemical industry

E. Schwab, BASF SE, Ludwigshafen/D

12:30



Illusion 2, CMF

BiobasedWorld – Specialty chemicals, pharma intermediates and food ingredients

Rare hydrophilic mannosylerythritol lipids – microbial production, surfactant properties and downstream processing

M. Günther, T. Hirth, S. Rupp, S. Zibek, Fraunhofer IGB, Stuttgart/D

Enzymatic conversion of Stevia extracts: taste improved sweetener compositions

S.C. Spohner, Universität Gießen/D; H. Quitmann, University of Applied Sciences Mittelhessen, Gießen/D; P. Czermak, Fraunhofer IME, Gießen/D

Bioactive compounds from lipophilic extracts of *Retama sphaerocarpa* growing wild in Algeria

R. Touati, K. Belhamel, University of Bejaia/DZ; S.A.O. Santos, A.J.D. Silvestre, S.M. Rocha, University of Aveiro/P

Bio-based surfactant for enhanced oil recovery and oil spill treatment

Q.-Q. Zhang, East China University of Science and Technology, Shanghai/CHN; J.-D. Gu, University of Hong Kong/CHN; W. Sand, University of Duisburg-Essen/D; B.-Z. Mu, East China University of Science and Technology, Shanghai/CHN

Determination of the average growth rates of protein crystals for equipment design

R. Oswald, J. Ulrich, Universität Halle-Wittenberg/D

Illusion 3, CMF

Industrial carbon dioxide utilisation

Materials for the 21st century – can carbon come from CO₂?

B. Rieger, TU München, Garching/D

10:30

CO₂-based polyurethanes on the way to commercial scale

K. Malsch, C. Gürtler, M. Wohak, Bayer MaterialScience AG, Leverkusen/D; A. Wolf, Bayer Technology Services GmbH, Leverkusen/D; N. von der Assen, A. Bardow, W. Leitner, T. Müller, RWTH Aachen/D

11:00

Evaluation of economic and environmental potentials of using CO₂ in chemical processes

R. Scheumann, L. Winter, M. Finkbeiner, TU Berlin, Berlin/D

11:30

Combinatorial screening of catalyst materials for electrochemical CO₂ reduction

J. Grote, A. Zeradjanin, S. Cherevko, P. Beese-Vasbender, K.J.J. Mayrhofer, Max-Planck-Institut für Eisenforschung GmbH (MPIE), Düsseldorf/D

12:00

Environmentally sustainable syngas production from carbon dioxide and hydrogen

A. Bode, BASF New Business GmbH, Ludwigshafen/D; D.W. Agar, TU Dortmund/D; K. Biker, ThyssenKrupp Industrial Solutions AG, Dortmund/D; V. Göke, Linde AG, Pullach/D; M. Hensmann, VDEh-Betriebsforschungszentrum GmbH, Düsseldorf/D; D. Klingler, BASF SE, Ludwigshafen/D; U. Janhsen, ThyssenKrupp Steel Europe AG, Duisburg/D; J. Schlichting, Linde AG, Pullach/D; S.A. Schunk, hte GmbH, Heidelberg/D

12:30



ACHEMA



ACHEMA PRAXISforums

Monday, 15 June to Friday, 19 June 2015

The ACHEMA PRAXISforums will focus on industrial applications, trends, novel products and services in chemical engineering, biotechnology and the process industry. Here, market- and practice-oriented presentations will be held in the direct vicinity of the exhibition groups concerned.

The PRAXISforums will feature first-hand accounts of tried-and-tested solutions. Practitioners and experts from the sector will hold short presentations on themes covered by the exhibition groups, for instance process analytical technologies, plant components, plant control, laboratory and analytical techniques, safety, mixing and separation, pharmaceutical production and single-use technologies.

The PRAXISforums offer manufacturers, suppliers and users a unique opportunity to find out about the latest trends, technologies and innovations and to communicate directly with experts who deal with similar issues both across all industries and along the value chain. Further questions concerning potential solutions and their compliance with standards can be discussed during the PRAXISforums or in-depth directly at the exhibition stands.

Make the most of the PRAXISforums to learn about new developments, trends and products in your sector that meet highly specific requirements of everyday practice. Participation in the PRAXISforums is free of charge to all ACHEMA visitors with a valid day or season ticket.

SCHEDULE

Monday, 15 June 2015

Plant control
Hall 11, Room Granat

Tuesday, 16 June 2015

Plant components
Hall 9.1, Room Logos/Genius

- » Pollution control and corrosion protection
- » Digital plant engineering and cost management
- » Pumps

Wednesday, 17 June 2015

Process analytical technology
Hall 11, Room Granat

- » PAT in biotechnological and chemical plants
- » New innovations in PAT

Wednesday, 17 June 2015

Industrial and labour safety
Hall 9.1, Room Logos/Genius

Wednesday, 17 June 2015

Pharmaceutical production
Hall 3 West, Room Facette

- » Trends in the pharmaceutical industry
- » Pharmaceutical packaging

Wednesday, 17 June 2015**Thursday, 18 June 2015**

Laboratory techniques
Hall 4.2, Room Brillanz

- » Laboratory planning in practice

Thursday, 18 June 2015**Friday, 19 June 2015**

Mixing and separation
CMF, Room Harmonie 5

- » Distillation and Adsorption
- » Solid-Liquid Separations
- » Liquid-Liquid Mixing and Separation

Friday, 19 June 2015

Single-use Technologies
Hall 4.2, Room Brillanz

- » Design concepts
- » Scale-up with single-use bioreactors
- » New developments in single-use technologies



Hall 11.0, Granat

Monday, 15 June

PRAXISforum Plant control

15:00	Prototyping a batch process control system using ISA-S88 and ISA-S95 design patterns C. Garvey, HAL Software Limited, Dun Laoghaire/IRL
15:20	Pilot scale study on the forthcoming world's largest MBR facility K. Westling, O. Samuelsson, C. Baresel, H. Royen, IVL Swedish Environmental Research Institute AB, Stockholm/S; N. Dahlén, Stockholm Vatten AB/S
15:40	Sensitivity analysis and robust chemical process design M. Bortz, J. Schwientek, R. Welke, Fraunhofer ITWM, Kaiserslautern/D; J. Burger, E. von Harbou, R. Benfer, TU Kaiserslautern/D; S. Blagov, R. Böttcher, N. Asprion, BASF SE, Ludwigshafen/D; K.-H. Küfer, Fraunhofer ITWM, Kaiserslautern/D; H. Hasse, TU Kaiserslautern/D
16:00	Intelligent soft sensor applied to quality product control in a high-purity extractive distillation column T. Neves, S. Villar, W. Ramos, R. Brito, Federal University of Campina Grande/BR
16:20	Integrating spectroscopic methods in refineries G. Shahnovsky, T. Cohen, R. McMurray, Modcon-Systems Ltd., Acco/IL
16:40	Ergonomic design of information and communication technologies to improve safety in process control P. Jeschke, B. Lafrenz, S. Wischniewski, Federal Institute of Occupational Safety and Health, Dortmund/D
17:00	Troubleshooting the pellet line (not only...) R. Muerb, Automatik Plastics Machinery GmbH, Grossostheim/D
17:20	Emergency and precaution management process and the daily job of fire- and disaster-protection-officers S. Pretsch, Malberg, Leipzig/D

Hall 9.1, Logos/Genius

Tuesday, 16 June

PRAXISforum Plant components

Digital plant engineering and cost management

10:30	Industry 4.0 with MS-Excel? A. Fricke, J.C. Schöneberger, C. Staudenmeyer, Chemstations Europe GmbH, Berlin/D
10:50	Moving from 3D to 6D D. van de Reep, Fluor B.V., Haarlem/NL
11:10	Mobile and cloud computing in engineering and operation – vision, challenges and advantages of mobile and cloud computing at Bayer R. Meyer-Rössl, Autodesk Inc, Wels/A; M. Ring, Bayer Technology Services GmbH, Dormagen/D
11:30	Manage project costs before they occur – cost engineering in chemical and pharmaceutical projects M. Friedrich, T. Jüngst, Siemens AG, Frankfurt am Main/D
11:50	Facilitating the use of sealless pumps in solids laden pumping applications M. Moy, Flowserve Corporation, Addison, IL/USA
12:10	Non-pulsating metering pumps (triplex plunger and diaphragm) H. Morikawa, Fuji Techno Industries Corporation, Hirakata/J
12:30	Process efficiency, reliability and safe performance in a bio-economic production are trademarks of the NETZSCH Pumps R. Willis, NETZSCH Pumpen & Systeme GmbH, Waldkraiburg/D
12:50	Energy efficiency of centrifugal pump systems – a holistic approach T. Paulus, KSB AG, Frankenthal/D

Hall 9.1, Logos/Genius

Tuesday, 16 June

PRAXISforum Plant components

Pollution control and corrosion protection

15:00	How to make extractive operating Continuous Emission Monitoring Systems (CEMS) more affordable G. Haberzettl, ABB Automation GmbH, Frankfurt am Main/D
15:20	Advanced emission control systems S. Heidenreich, Pall GmbH, Crailsheim/D; B. Doll, Pall GmbH, Dreieich/D
15:40	Current emission standards for fugitive emission valves – ISO 15848 versus TA-Luft M. Häffner, Armaturenfabrik Franz Schneider GmbH + Co. KG, Nordheim/D
16:00	Heavy-duty corrosion protection in chemical industry – fluorothermoplastic linings M. Lotz, Quadrant EPP AG, Lenzburg/CH
16:20	Corrosion protection in pickling plants M. Salehi, A. Hopp, STEULER-KCH GmbH, Siershahn/D
16:40	Zirconium for use in hydrochloric acid environments R. Sutherland, ATI Specialty Alloys and Components, Albany, OR/USA
17:00	Cost effective strategies for chemical equipment from tantalum T.L. Ladwein, Aalen University/D; G. Raab, Tantec GmbH, Gelnhausen/D
17:20	Reduction of emissions from urea plants M. Schmitz, ThyssenKrupp Industrial Solutions, Dortmund/D

Hall 4.2, Brillianz

Wednesday, 17 June

PRAXISforum Laboratory techniques

10:30	Photodynamic disinfection for cleanroom (PDC) – new technologies for gentle disinfection of surfaces R. Gfrerer, Ortner Reinraumtechnik GmbH, Villach/A
10:50	Single overhead emergency safety showers: operation with favorable decontamination effect V. Heil, U. Seifert, L. Swiatek, Fraunhofer UMSICHT, Oberhausen/D; T.H. Brock, BG RCI, Heidelberg/D
11:10	Efficient air control concepts for innovative laboratories B. Schoeler, Waldner Laboreinrichtungen GmbH & Co.KG, Wangen/D
11:30	Don't gamble with physical properties S. Hauke, S. Loew, B. Häfner, A. Ohligschläger, Siemens AG, Frankfurt am Main/D
11:50	Conversion of existing material locks to decontamination locks J. Ortner, Ortner Reinraumtechnik GmbH, Villach/A
12:10	Live Experimental Lecture Storage of hazardous materials in 21st century laboratories S. Kunkel, asecos GmbH, Gründau/D
12:30	
12:50	

Hall 4.2, Brillianz

Wednesday, 17 June

PRAXISforum Laboratory techniques

15:00	Sustainable laboratories – selecting energy efficient lab S. Springer, Waldner Laboreinrichtungen GmbH & Co.KG, Wangen/D
15:20	Tips and tricks for cultivation in microtitre plates D. Bruecher, Infors AG, Bottmingen/CH
15:40	Emission of dust in a fume cupboard: introduction of a new containment test method J. Liebsch, Juergen Liebsch – Forschung und Entwicklung, Weiler/D
16:00	COD analysis – new method vs. dichromate method W. Arts, W. Genthe, LAR Process Analysers AG, Berlin/D
16:20	BMS system – BACnet/IP on field devices for laborcontrol B. Ruhwinkel, Schneider Elektronik GmbH, Steinbach/D
16:40	A modified surface plasmon resonance instrument with improved sensitivity S. Ananthi, University of Madras, Chennai/IND; K. Padmanabhan, Anna University, Chennai/IND; M. Rajavelan, University of Madras, Chennai/IND

Hall 3 VIA West, Facette

Wednesday, 17 June

PRAXISforum Pharmaceutical production

10:30	Advanced microwave freeze drying – latest development & examples P. Püschner, Püschner GmbH & Co. KG, Schwanewede/D
10:50	Efficient, high-titer monoclonal antibody production in a fed-batch process using single-use stirred tank and rocking bioreactor systems T. Falkman, O. Larsson, E. Fäldt, GE Healthcare Life Sciences, Uppsala/S
11:10	Scaling-up stem cell manufacturing J. Castillo, T. Boyv, Pall Life Sciences, Brussels/B
11:30	Drop pelletizing of low viscous material B. Kampfmann, H. Müller, R.-K. Mürb, M. Nieder, Automatik Plastics Machinery, GROSSSTHEIM/D
11:50	Cleaning in place (CIP) of adhesive solutions. What has to be kept in mind? S. Moll, io-consultants, Heidelberg/D
12:10	Advantages and applications of VHP low temperature terminal surface sterilization for pharmaceutical manufacturing processes and products J. Mattila, STERIS Finn-Aqua, Tuusula/FIN
12:30	Risks of using spare parts from suppliers rather than from the OEM in the tablet production S. Deol, Fette Compacting, Schwarzenbek/D
12:50	Single-use systems integrity testing: a practical approach H. Pora, Pall Life Sciences, St Germain en Laye/F

Hall 3 VIA West, Facette

Wednesday, 17 June

PRAXISforum Pharmaceutical production

15:00	Flexible facilities – today and tomorrow G. Moelgaard, NNE Pharmaplan, Gentofte/DK
15:20	Validation in the life cycle of pharmaceutical production and the new annex 15 H. Fabritz, NNE Pharmaplan, Bad Homburg/D
15:40	The world's first FF912 diagnostic system applying NAMUR NE 107 principles in a pharmaceutical production environment L. Klausmann, Endress+Hauser Process Solutions AG, Reinach/CH; J. Zobel, Novartis Pharma AG, Basel/CH; D. Brand, Endress+Hauser Process Solutions AG, Reinach/CH
16:00	Sustainable facility design in the pharmaceutical industry J. Trapl, M+W Group, Stuttgart/D
16:20	Containment in packaging T. Fricke, IMA S.p.a, Ozzano dell'Emilia (Bo)/I
16:40	Laser marking with color change R. Kluson, Videojet Technologies GmbH, Limburg/D
17:00	Object-oriented and knowledge based risk management B. Gübitz, VTU Engineering GmbH, Grambach/A
17:20	Update on progress towards a global traceability framework S. Craig, Domino Printing Sciences, Cambridge/UK

Hall 11.0. Granat

Wednesday, 17 June

PRAXISforum Innovative process analytical technology

10:30	Analyser device integration – the power of analytical data C. Hobbs, ABB Ltd., Cambridgeshire/UK
10:50	A new and very simple viscosity measurement at reference temperature dedicated to chemical and petrochemical process L. Belliere, P. Burg, C. Thierry, Sofraser SAS, Villemandeur/F
11:10	A miniaturized flame ionization detector in silicon-glass or multilayer ceramic microsystems technology W. Kuipers, KROHNE Messtechnik GmbH, Duisburg/D; C. Koch, KROHNE Innovation GmbH, Duisburg/D; M. Deilmann, KROHNE Messtechnik GmbH, Duisburg/D; C. Lenz, S. Ziesche, Fraunhofer IKTS, Dresden/D
11:30	On-line TOC monitoring in GMP parts washers O. Van Houtte, M. Dion, STERIS Canada Corporation, Quebec City/CDN; G. Verghese, STERIS Corporation, Saint Louis, MO/USA
11:50	Fiber-optical process analytical technology in bioreactors M. Sandmann, M. Münzberg, L. Bressel, R. Hass, J. Mießner, O. Reich, University of Potsdam/D
12:10	In-line particle size measurement of pellet fluidized bed coating in laboratory and pilot scale D. Wiegel, Anhalt University, Bernburg/D; G. Eckardt, Parsum GmbH, Chemnitz/D; M. Guttzeit, M. Jacob, Glatt GmbH, Weimar/D; B. Wolf, Anhalt University, Bernburg/D
12:30	PAT in bioprocess development – a strategy for more efficiency and higher product quality S. Zelle, Eppendorf AG – Bioprocess Center Europe, Jülich/D
12:50	Stand-off methane leakage detection for biogas plants J. Herbst, F. Axtmann, J. Erb, A. Lambrecht, Fraunhofer IPM, Freiburg/D

Hall 11.0. Granat

Wednesday, 17 June

PRAXISforum Innovative process analytical technology

15:00	Fast NIR spectroscopy of surfaces using super continuum light sources M. Pfeiffer, S. Fieberg, B. Halford, F. Kühnemann, A. Lambrecht, Fraunhofer IPM, Freiburg/D
15:20	Photoacoustic measurement system for monitoring of the CO/CO₂-ratio during the pig iron production A. Eberhardt, University of Freiburg/D; S. Rademacher, A. Kürzinger, Fraunhofer IPM, Freiburg/D; S. Palzer, University of Freiburg/D; J. Wöllenstein, Fraunhofer IPM, Freiburg/D
15:40	Modified onsite-sampling for the study of liquid and solid aerosols in compressed gas systems under process conditions C. Rodewald, Pall GmbH, Bad Kreuznach/D
16:00	In-line particle sizing probe as a PAT-tool in high-shear and fluid-bed processes S. Dietrich, Parsum GmbH, Chemnitz/D
16:20	New innovations in process gas chromatography – standardization and modularity make process analytics more economical H. Mahler, Siemens AG, Karlsruhe/D
16:40	Paying less for a barrel G. Shahnovsky, T. Cohen, R. McMurray, Modcon-Systems Ltd., Acco/IL
17:00	Applications of FTIR spectroscopy for online process analytics and control A. Boos, D. Sellin, M. Bothe, J. Timmermann, J. Fagaschewski, S. Baum, M.-A. Christlieb, G.M. Shibabaw, S. Bohne, L. Hiltnerhaus, H.K. Trieu, M. Schlüter, A. Liese, Hamburg University of Technology (TUHH)/D
17:20	Advanced FTIR system to characterize photocatalytic activity and passivity M. Wanner, Fraunhofer IPA, Stuttgart/D; A. Roos, Gasmet Ansyco GmbH, Karlsruhe/D

Hall 9.1. Logos/Genius

Wednesday, 17 June

PRAXISforum Industrial and labour safety

10:30	Inherently safer design of stirred reactors. VisiMix® approach Y. Nehamkim, VisiMix Ltd., Jerusalem/IL
10:50	Innovative proof testing safety instrumented systems G. Klotz-Engmann, Endress+Hauser Messtechnik GmbH+Co. KG, Weil am Rhein/D
11:10	Compact safety solution M. Garbsch, JUMO GmbH & Co. KG, Fulda/D
11:30	How to prevent the electrostatic charging of processing equipment situated in flammable and combustible (ATEX) atmospheres M. O'Brien, Newson Gale, Nottingham/UK
11:50	Does explosion protection exclude fire protection from inflammable dusts? Definitely NO using the example of our filter technology! K. Rabenstein, Herding GmbH Filtertechnik, Amberg/D
12:10	Safe disinfection with flammable solvents in pharmaceutical production M. Steinkrauss, O. Heinrich, C. Kubainsky, E. Huxol, Swissi Process Safety GmbH, Basel/CH
12:30	Emission reduction and explosion risk minimization D. Moncalvo, M. Davies, PROTEGO – Braunschweiger Flammenfilter GmbH/D
12:50	Explosion protection concepts with flame arresters T. Heidermann, PROTEGO – Braunschweiger Flammenfilter GmbH/D

Hall 9.1. Logos/Genius

Wednesday, 17 June

PRAXISforum Industrial and labour safety

15:00	Overview of basic principles of explosion protection with a focus on explosion protection type Intrinsic Safety Ex i and new requirements H. Kaeuper, Phoenix Contact Electronics GmbH, Bad Pyrmont/D
15:20	Advances in rupture disc detection: from membrane to magnetic R. Trotter, M. Cislighi, Elfab Ltd, Tyne & Wear/UK
15:40	Flexible aids for ergonomic and safe handling of goods G. Ng, Espresso System Technology Pte Ltd, Singapore/SGP; M. Soedjede, T. Gross, Espresso Deutschland GmbH, Kassel/D
16:00	The safe outsourcing of chemical processes, the big challenge for multi-product chemistry A. Schnyder, Schnyder Safety in Chemistry Ltd., Rieden-Nussbaumen/CH
16:20	A holistic approach of alarm management by data mining C. Xu, ABB Automation GmbH, Mannheim/D; N. Van Damme, D square Deutschland GmbH, Bitburg/D
16:40	Safety upgrades for solid/liquid separation systems U. Hochegger, F. Gosch, E. Harrer, ANDRITZ AG, Graz/A

CMF, Harmonie 5

Thursday, 18 June

PRAXISforum Mixing and separation

Distillation and adsorption

10:30	Enhance tray performance with better utilization of active area G. Mosca, Sulzer Chemtech Italy, Milano/I; C.P. Ang, Sulzer Chemtech Singapore/SGP; M. Pilling, Sulzer Chemtech, OK/USA
10:50	Distillation tower gamma scanning – now a quantitative tool for measuring useful capacity L. Pless, Tracerco, Pasadena, TX/USA
11:10	Latest developments in the field of random packing W.J. Huang, Sulzer Shanghai Engineering & Machinery Works Ltd/CHN; C. von Scala, Sulzer Chemtech AG, Winterthur/CH
11:30	Hydraulic design of packed dividing wall columns H. Jansen, T. Rietfort, Julius Montz GmbH, Hilden/D; I. Dejanovic, University of Zagreb/HR; Z. Olujic, TU Delft/NL
11:50	Ad- und desorption of sulfur compounds in natural gas processing V. Chowaniec, C. Pasel, M. Luckas, University of Duisburg-Essen/D; D. Bathen, University of Duisburg-Essen and Institute of Energy and Environmental Technology e.V. (IUTA)/D
12:10	Review of liquid distributor development Q. Yang, H. Chin, Sulzer Chemtech Pte Ltd, Singapore/SGP; C. Bachmann, Sulzer Chemtech AG, Winterthur/CH

CMF, Harmonie 5

Thursday, 18 June

PRAXISforum Mixing and separation

Solid-liquid separations

15:00	Autonomous process control for optimum filtration D. Dominiak, J. Svendsen, R. Højsholt, Grundfos Holdings A/S, Bjerringbro/DK
15:20	Cleaning-in-place – meeting the requirements; the BHS-RPF in the pharmaceutical and food industry T. Ochel, BHS-Sontheofen GmbH/D
15:40	DNA-templated ceramic nanofiltration membrane T. Kirkmann, D. Cassidy, S. MacKay, Cerahelix, Orono, ME/USA
16:00	Miniaturization of a high gradient magnet separator for lab scale reaction procedures H. Al-Kaidy, R. Ulber, N. Tippkötter, TU Kaiserslautern/D
16:20	Control processing for disc stack centrifuge and decanter centrifuge T. Hartmann, GEA Westfalia Separator Group GmbH, Oelde/D
16:40	VisiMix new release "VisiMix RSDE" (Rotor Stator Dispenser Emulsification) L. Braginsky, VisiMix Ltd., Jerusalem/IL
17:00	Dielectrophoretical intensification of submicron particle filtration G. R. Pesch, F. Du, M. Baune, J. Thöming, University of Bremen/D

Hall 4.2, Brillianz

Thursday, 18 June

PRAXISforum Laboratory techniques

10:30	Sustainability through safety storage cabinets for passive and active storage A. Hanning, DÜPERTHAL Sicherheitstechnik GmbH & Co. KG, Karlstein/D
10:50	Lab in a box – guidelines for modular lab designs C. Kern, Waldner Laboreinrichtungen GmbH&Co.KG, Wangen/D
11:10	Laboratory fume cupboards – the most sustainable solution F. Buchholz, Köttermann GmbH & Co KG, Uetze/D
11:30	Advanced technologies for improving air quality while reducing costs V. Vervoux, Erlab D.F.S S.A.S., Val de Reuil/F
11:50	Safety and environmental protection in laboratories – made in Germany L. Schiedering, FRIATEC Aktiengesellschaft, Mannheim/D
12:10	Sustainable laboratory concepts in modular construction S. Boeckly, M. Arnold, Cadolto Fertiggelände GmbH & Co. KG, Cadolzburg/D
12:30	Live Experimental Lecture Safe storage concepts for flammables in modern laboratories S. Kunkel, asecos GmbH, Gründau/D
12:50	

Hall 4.2, Brillianz

Thursday, 18 June

PRAXISforum Laboratory techniques

Laboratory planning in practice

15:00	New laboratory building or reconstruction – demand planning C. Heinekamp, dr. heinekamp Labor- und Institutsplanung, Karlsfeld/D
15:20	Laboratory buildings – project management, planning costs and timing D. Schmitz, Schmitz.Reichard GmbH, Aachen/D
15:40	Zero net energy laboratory building : case study in New England J. Knowles, BR+A Consulting Engineers, LLC, Watertown, MA/USA
16:00	Laboratory design and equipment C. Leenen, Carpus+Partner AG, Aachen/D
16:20	Interface between laboratory planning and building services engineering A. Jaeger, SCHOLZEJAEGER GmbH, Stuttgart/D
16:40	Integrated laboratory planning – implementation and tenders J. Hamer, EUROLABORS AG, Kassel/D
17:00	Commissioning of HVAC in laboratories B. Schubert, Tintschl Bioenergie und Strömungstechnik AG, Erlangen/D
17:20	Laboratories – initial operation and processing R. Mühlbacher, IRM R. Mühlbacher GmbH, Hildesheim/D

CMF, Harmonie 5

Friday, 19 June

PRAXISforum Mixing and separation

Liquid-liquid

- | | |
|-------|--|
| 10:30 | Detailed flow modelling of mixing tanks based on the Lattice Boltzmann approach in XFlow
H. Maier, gridlab GmbH, Graz/A; D. Holman, R. Brionnaud, Next Limit Technologies, Madrid/E |
| 10:50 | Mechanical seals for use at low process temperatures
B. Reichert, EKATO SYSTEMS GmbH, Schopfheim/D |
| 11:10 | Applications of pervaporation for low temperature product recovery
S. Lux, T. Winkler, D. Painer, M. Siebenhofer, Graz University of Technology/A |
| 11:30 | Optimizing crude oil separations
S. Maaß, SOPAT GmbH, Berlin/D |
| 11:50 | Numerical tools for the design of mixing systems
N. Rohn, M. Stadtaus, EKATO Rühr- und Mischtechnik GmbH, Schopfheim/D |
| 12:10 | Reduce down-time and operational cost by using centrifugal separators for the cleaning of lubrication oil, hydraulic oil and compressor oil
B. De Meulemeester, Alfa Laval Corporate AB, Tumba/S |
| 12:30 | Determination of bubble size distributions in highly turbulent systems
R. Panckow, TU Berlin/D; G. Commande, University of Palermo/I; S. Maaß, SOPAT GmbH, Berlin/D; M. Kraume, TU Berlin/D |

Hall 4.2, Brillianz

Friday, 19 June

PRAXISforum Single-use technologies

- | | |
|-------|---|
| 10:30 | Integrated design concepts for single-use manufacturing facilities
G. Dudziak, io-consultants, Heidelberg/D |
| 10:50 | Scale up of a CHO fed-batch process from 250 mL to 2000 L in single-use bioreactors
G. Greller, Sartorius Stedim Biotech GmbH, Göttingen/D |
| 11:10 | Easy scale up and down with orbital shaken bioreactors (from µL to 2500 L)
T. Anderlei, T. Bürgin, A. Richter, Adolf Kühner AG, Birsfelden/CH; C. Bürki, F. Wurm, ExcellGene SA, Monthey/CH; J. Büchs, RWTH Aachen/D |
| 11:30 | Single-use bioreactor technology in fermentation – current challenges and future prospects
S. Kleebank, DASGIP Information and Process Technology GmbH – an Eppendorf Company, Jülich/D; A. Niehus, Eppendorf AG – Bioprocess Center Europe, Jülich/D |
| 11:50 | Integrated single-use tangential flow filtration solutions for downstream processing
N. Pathier, Pall Life Sciences, St Germain en Laye/F |
| 12:10 | New options in single-use diaphragm valve technology
V. Rüttimann, GEMÜ Group, Ingelfingen-Criesbach/D |
| 12:30 | Mitigating the risk of implementing single-use assemblies for final sterile filling
S. Walker, EMD Millipore, Bedford, MA/USA |
| 12:50 | Single-use clinical scale filling system – from design to delivery
J. Barry, Pall Life Sciences, Portsmouth/UK |

PRAXISforum

29.–30.09.2015
DECHEMA-Haus
Frankfurt/Main

DECHEMA

PRAXIS
forum

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www.dechema.de/praxisforum



PRAXISforum-Partner:

Hessen

Nanotech

STUDY COURSES

FOR STUDENTS – TEACHER PROGRAMME – SCHOOL GROUPS

ACHEMA Study Courses

Monday, 15 June to Friday, 19 June 2015

Students from universities, universities of applied sciences and higher education institutions (including PhD students) can visit ACHEMA 2015 free of charge provided they have been registered as a group in advance and are accompanied by a member of their teaching staff to supervise the group at ACHEMA.

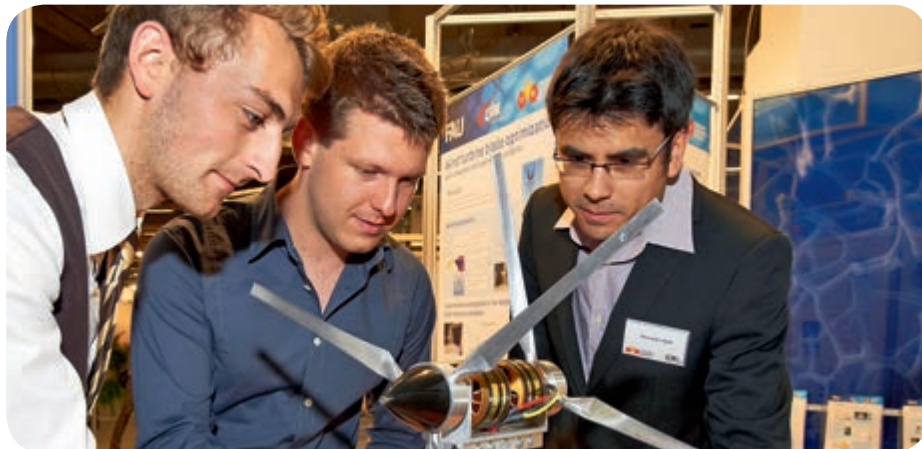
Similarly, secondary school groups (recommended from 10th grade) can visit ACHEMA free of charge if they have been registered as a group and are accompanied by their subject teacher. Registered accompanying staff will receive a free season ticket for ACHEMA 2015.

Travel and accommodation arrangements must be made by the student groups themselves.

The teaching staff of the student groups are responsible for organising, preparing and consolidating the visit to ACHEMA; the organisers cannot offer guided tours.

Pupils and students visiting ACHEMA on their own can purchase a reduced-price day ticket at the ticket offices on presentation of a valid student identity card.

If you have any questions during your visit, the Information counters at the entrances will be pleased to help you.



Teacher Programme

Monday, 15 June 2015 14:30 h

Hall 9.2, Room Dialog

What's new in process engineering and biotechnology? How does this impact our everyday lives? Scientists from research and industry will present hot topics that you can integrate into your ACHEMA visit or your teaching. The exact topics and information on recognition as further education in the individual German federal states can be found at www.achema.de/studienzyklus.

In the morning and after the lectures teachers are free to visit the Congress and Exhibition for their own information or to prepare a visit with a school group.

Events for Pupils

**Tuesday, 16 June and
Wednesday, 17 June 2015, at 13:00 h**

Hall 4.C, Room Entente/Alliance

What exactly is "the process industry"? How can you become a biotechnologist? At these one-hour information events experts will present study and career options. Process engineering, chemistry and biotechnology students will talk about their everyday life as a student and answer questions from the audience. Young professionals will describe their experiences at the beginning of their careers and give tips on how to make a successful career start.



For updated information and registration for the Study Courses, please visit www.achema.de/studienzyklus.
Deadline for registrations: 15 May 2015.

jobvector Careers Forum

Monday, 15 June to Friday, 19 June 2015

Hall 9.2, Stand E66

On all the fair days the jobvector team will be at hand to assist you with all aspects revolving around careers. Find current, industry-specific job openings at the exclusive ACHEMA Careers Forum! Interesting lectures with strategic tips on career prospects will be held on each day of the fair between 12:00 and 13:00 h. The whole team is looking forward to welcoming you at the jobvector stand.

Thursday, 18 June 2015

Whole day

Hall 9.2, Stand E84

Meet employers on the jobvector career day!

On 18 June 2015 jobvector – Germany's leading job portal for engineers and scientists – is organising a specialised recruiting event at ACHEMA.

On the jobvector career day experts and managers seeking new challenges at all stages of their careers can talk directly to HR managers. Graduates and young or experienced professionals can seek advice from innovative, fast-growing companies and apply for a position on the spot.

For detailed information, participating companies and free registration, visit: www.jobvector.de/jobvector-career-day.

Programme:

» Meet employers

Job-hunters will have an opportunity to learn about career opportunities and prospects in a one-on-one talk with HR managers. Committed, open-minded professionals can introduce themselves personally and gain a first impression. The jobvector "Job wall" is where applicants will find numerous up-to-date job openings for engi-



neers and scientists offered by both the participating companies and ACHEMA exhibitors.

» Forum

At the Forum in Hall 9.2 different companies will present themselves in a variety of interesting lectures and inform you about career options, entry-level opportunities and career advancement. The highlight is a live job interview which will then be analysed, providing you with a sound basis for your own interviews.

» CV Check

In cooperation with a personnel agency, jobvector offers a free, subject-specific CV check. Your application documents will be analysed in small groups by experts and then optimised. Early registration for the free jobvector CV check is necessary as the number of places is limited.

Additionally, each visitor will receive a welcome gift: the careers guide "Karrieretrends für Naturwissenschaftler & Ingenieure" (Career Trends for Scientists and Engineers, in German). Moreover, job-hunters can have a professional application photo taken on the spot.

The jobvector team is looking forward to your visit!

www.jobvector.com



GUEST EVENTS

BUSINESS FORUM – BIOECONOMY CONFERENCE

ACHEMA worldwide Business Forum

Tuesday, 16 June 2015 11:00 – 13:00 h

Hall 9.2, Discussion Corner

Houston, Texas – USA Petrochemicals Center

Houston – Low cost oil and gas from increased local/national production portends huge petrochemicals investment.

with contributions from

- » Greater Houston Partnership
- » Linde Engineering
- » Samson Controls, Inc.
- » Fluor Corporation – construction outlook
- » IHS Corp.
- » Shell Chemical Company

followed by a snack at lunchtime, an opportunity for informal talks

Moderator: Marvin L. Baker, High Technology Associates, Houston

This event will be held in English.

ACHEMA worldwide Business Forum

Wednesday, 17 June 2015 11:00 – 13:00 h

Hall 9.2, Discussion Corner

Saudi Arabia Downstream Forum @ ACHEMA

Get an idea of Saudi Arabia's strategy to cope with the game-changing shale-gas boom, and be informed about investment opportunities in the country which still is in possession of the world's largest fossil reserves.

with contributions from

- » The Royal Commission of Jubail
- » SADARA PlasChem Park
- » Linde Engineering
- » SABIC
- » TASNEE
- » et al.

followed by a snack at lunchtime, an opportunity for informal talks

Moderator: Andreas Hergenröther, Delegate of German Industry and Commerce for Saudi Arabia, Bahrain and Yemen, Riyadh

This event will be held in English.

European Conference on the Bioeconomy

Thursday, 18 June 2015 10:30 – 17:45 h

CMF, Room Harmonie 3



EU Bioeconomy and HORIZON 2020 revisited: How far have we come since ACHEMA 2012?

High-profile speakers from German and other European institutions and industry will analyse the status quo of the bioeconomy. What is the current situation of the bioeconomy in the European Union? What progress has been made in the individual member states? How do policy initiatives and funding programmes react to this challenge? Additionally, examples from selected product groups will demonstrate the extent to which bio-based products have already reached the market.

This follow-up conference to the event at ACHEMA 2012, which culminated in the compilation of the ACHEMA Manifesto, traces the development of the bioeconomy over the past three years.

Themes:

- » Bioeconomy and HORIZON 2020: Challenges and Opportunities
- » Bioeconomy in the Member States
- » Sustainability Requirements along the Bio-based Value Chain
- » Panel discussion: Beyond the Horizon – for a “European Industrial Renaissance”

www.achema.de/biobasedworld



Information Platform for Production Engineers

Friday, 19 June 2015 10:00 – 12:00 h

Hall 9.2, Discussion Corner

The “Information Platform for Production Engineers” is an initiative of VDI-GVC (The Association of German Engineers – Technical Division: Chemical and Process Engineering), addressing practice-oriented problems confronting production engineers and all aspects of the production plant.

The concept, which facilitates a practice-oriented exchange of ideas and experience within a region, is now established in five regional groups. It will be presented and moderated by experts. Moreover, typical tasks of production engineers, such as mobile maintenance, spare parts management, pumps as well as future subjects, will be explained and discussed based upon short contributions.

Programme

Moderation: R. Goedecke, Consulting Process Technology Rodenbach, L. Woppowa, VDI e.V. Düsseldorf, S. Zeck, BASF SE Ludwigshafen

Introduction

10:00 – 10:15 h

Introduction to the Information Platform (concept, regional groups, tasks of production engineers)

Professional profile of the production engineer

10:15 – 10:30 h

What the profession involves today

Topical maintenance issues

10:30 – 10:50 h

Mobile maintenance

10:50 – 11:10 h

Spare-parts management

11:10 – 11:30 h

Pumps

Close of event

11:30 – 11:45 h

Future topics and forthcoming events of the regional groups

VDI

Motivation

In keeping with their motto “Nothing works without us”, production engineers have a great responsibility and a heavy workload. The Information Platform for Production Engineers has made a name for itself as an active special interest group and a major training initiative. Production engineers meet regularly in the different regional groups and VDI working parties to discuss topical themes encountered in their working environment, build up a network and exchange practice-oriented ideas and information. For detailed information:

www.vdi.de/gvc/bing

The event will be held in German.



GUEST EVENTS

CLOSING SESSION – ACHEMA MEDIA AWARD

Closing Session

Friday, 19 June 2015 14:00 h

CongressCenter Messe Frankfurt (CMF),
Room Harmonie 3



» Opening address

Rainer Diercks, Chairman of DECHEMA e.V.

» Presentation of the ACHEMA Plaque

» Presentation of the ACHEMA Media Award

» Award lecture

» Presentation of the ACHEMA 2015 research sponsorship donations

to the Max Buchner Research Foundation

ACHEMA Media Award

will be presented during the Closing Session

Well researched and well communicated contributions are the prerequisite for making science and technology comprehensible and relevant to everyday life for non-scientists. These are the criteria for the presentation of the

ACHEMA Media Award in recognition of distinguished journalistic achievements in TV, radio, print or online media that successfully communicate a theme from the ACHEMA spectrum to a broader public. The ACHEMA Media Award has been awarded every three years since 1997; it comes with a cash prize of 10,000 euros.



Investing in Brazil – Opportunity or Illusion?

Wednesday, 17 June 2015 10:30 – 12:00 h

Hall 4.0, Room Europa

Even in professional circles Brazil is often associated solely with renewable resources – the keyword being bioethanol. At the same time reports on Brazil's enormous oil reserves in the Atlantic state that, due to the oil price slump, it is no longer profitable to tap them.

The fact that Brazil's chemical industry is the sixth largest in the world is often simply overlooked. Over the past 20 years Brazil's imports of chemical products have increased tenfold. Does this country still offer attractive investment opportunities or is the Brazilian dream a bubble about to burst?

These issues will be discussed by representatives of leading Brazilian business institutions and companies in the framework of AICHEMA 2015:

- » Milton Costa Filho, IBP, Rio de Janeiro
- » Felipe Pereira, BNDES, Rio de Janeiro
- » Paulo Coutinho, BRASKEM, São Paulo
- » Rodrigo Gedeon, APEXBRASIL, Brasília

Moderator:

- » Fernando Figueiredo, ABIQUIM, São Paulo

The panel discussion will be held in English.

GDCh Gesellschaft Deutscher Chemiker

Tuesday, 16 June 2015

16:00 h

Hall 4.0, Room Europa

“GDCh TopThemes”

is an exciting event format of the Gesellschaft Deutscher Chemiker (German Chemical Society). The GDCh is pleased to invite you to the second event of this format at the AICHEMA 2015. This second Top Theme is:

Displays, Screens, Flat Screens – LCs, LEDs and OLEDs: Millions of Lights...

which at the same time is the title of a very popular song in Germany: “Millionen Lichter” by Christina Stürmer. And there are many more modern songs about light, mostly connected with love.

For chemists love, among other things, means creating new materials. They have done so much to find materials and solutions to lighten the darkness. What a benefit for mankind! With increased awareness of environmental safety, sustainable development and savings, chemists have also developed fascinating new possibilities for generating light in displays.

As part of the GDCh TopThemes experts from the industry will introduce the past, present and future of screens and displays, and thereby ‘illuminate’ the chemical and technical backgrounds.

The event will also feature an entertaining light-show and accompanying audio presentation. Details of the programme can be found on the homepage of the GDCh at www.gdch.de.

Attendance at the event is free of charge. Anybody interested in the topic and of course members and friends of the GDCh are cordially invited to the event and to the following reception, which will be held in Hall 4.0, Room Europa of the Frankfurt exhibition grounds.

Frankfurt am Main, February 2015



Wolfram Koch
Executive Director



International Powder and Nanotechnology Forum 2015

Tuesday, 16 June to Wednesday, 17 June 2015

CongressCenter Messe Frankfurt (CMF)
Room Spektrum

IPNF2015 is the forum for the exchange of ideas between industry and academia and a platform for interdisciplinary cooperation in the field of powder technology. This third event at AICHEM is organised with the joint support of the Society of Chemical Engineers, Japan (SCEJ) and DECHEMA.

It gives us great pleasure to invite all participants at AICHEM to learn about the latest developments in the field of powder technology, in particular about innovations and technological trends in Japan. The Forum will present cutting-edge technology, the key themes being materials, nanotechnology/biotechnology, crystallisation, pharmaceutical production and also microreactor design and operation. These themes reflect not only strengths specific to the Japanese process industry, but at the same time concern many sectors of the process industry in general, from the chemical and pharmaceutical industries to the energy sector through to environmental technology.

Organiser

Committee of the International Powder and Nanotechnology Forum 2015 (IPNF2015)

Honorary Chairs:

Y. Kawashima, Aichi Gakuin University/J

J. Ulrich, Martin-Luther-Universität

Halle-Wittenberg/D

Chairs:

H. Kamiya, Tokyo University of Agriculture and Technology/J

S. Heinrich, Technische Universität Hamburg/D

Vice-Chairs:

S. Mathur, Universität Köln/D

Y. Shirakawa, Doshisha University/J

Secretariats:

H. Takiyama, Tokyo University of Agriculture and Technology/J

H. Yamamoto, Aichi Gakuin University/J

IPNF 2015

Schedule

(see also pages 22 and 25)

Plenary and keynote lectures

Tuesday, 16 June 2015

10:30 – 13:00 h	Session 1: Crystallisation
13:00 – 15:00 h	Poster Session
15:00 – 17:00 h	Session 2: Powder Technology

Wednesday, 17 June 2015

10:30 – 13:00 h	Session 3: Nanotechnology/ Biotechnology, Microreactors
13:00 – 15:00 h	Poster Session
15:00 – 17:30 h	Session 4: Pharmaceutical Technology

Exhibition stand

Monday, 15 June to Friday, 19 June 2015

10:00 – 17:00 h

Hall 5.1, Stand A40

Poster exhibition

Tuesday, 16 June and Wednesday, 17 June 2015,

13:00 – 15:00 h

CongressCenter Messe Frankfurt (CMF),
Room Spektrum

The Poster Exhibition presents in condensed form points of departure for an international exchange of ideas between science and applied research and also, therefore, business opportunities for a wide range of sectors.

For the latest information and updated conference programme, please visit www.ipnf2015.com. Participation in the Powder and Nanotechnology Forum 2015 is free and open to all AICHEM visitors bearing a valid day or season ticket. No registration is necessary. The conference language is English.



International Workshop

The Man-Machine Interface

“Man, machine and safety: an unbeatable team!” Safe man-machine interface design, particularly from the viewpoint of ergonomics and demographic change, is the focus of an international workshop organised by the ISSA Chemistry Section together with the ISSA Machine and System Safety Section and Heidelberger Verein zur internationalen Förderung der Prävention in der chemischen Industrie e.V. (Heidelberg association for the international promotion of prevention in the chemical industry) which will take place on 17 and 18 June 2015 in the framework of AICHEMA. In cooperation with SUVA (Swiss National Accident Insurance Fund), INRS (French National Institute for Research and Occupational Safety), National Institute for Insurance against Accidents at Work, Italy (INAIL), AUVA (Austrian Workers' Compensation Board) and BG RCI (German Employers' Liability Insurance Association for the Raw Materials and Chemical Industry) the Workshop has attracted a number of high-profile speakers.

The Workshop comprises three thematic blocks:

Wednesday, 17 June 2015 10:00 – 12:30 h

Measures to combat the manipulation of protective devices

Wednesday, 17 June 2015 13:30 – 15:30 h

Demographic change and diversity in the workplace and the related challenges for prevention

Thursday, 18 June 2015 10:00 – 12:30 h

Communication and risk assessment

**Venue: Portalhaus (Hall 11), Level VIA,
Room Frequenz
Frankfurt exhibition grounds**

Attendance at the Workshop is free and is open to all interested parties, but it is necessary to have an admission ticket for AICHEMA 2015 and to register in advance. To register, please contact michaela.frenzel@bgrci.de.



Conference languages

All lectures and discussions will be simultaneously translated into German, English and French.

Up-to-date information and a detailed schedule can be found at www.issa.int/prevention-chemistry. If you have any questions, please contact

ISSA Chemistry Section
c/o BG RCI
Attn. Mr. Niels Schurreit
Kurfürsten-Anlage 62
69004 Heidelberg
GERMANY
Tel.: +49 6221 5108-35000
E-mail: niels.schurreit@bgrci.de

The International Sections for Prevention in the Chemical Industry and for Machine and System Safety are part of the International Social Security Association (ISSA). Since their foundation they have been committed to the prevention of occupational accidents and diseases: Together with Heidelberger Verein zur internationalen Förderung der Prävention in der chemischen Industrie e.V. (Heidelberg Society for the International Promotion of Prevention in the Chemical Industry) they regularly address the latest health protection and safety issues.

**In conjunction with the Workshop:
the BG RCI exhibition stand in Hall 9.1,
Stand A84**

“Man, machine and safety: an unbeatable team!” is the theme of the exhibition stand.

Most of the exhibits on the stand are interactive, providing visitors with an informative, hands-on experience of machine safety systems. The exhibits will be complemented by an attractive programme, including

- » Experimental shows covering all aspects of noise
- » Stage shows on and around the exhibits
- » Daily competition with prizes

Updated information on the BG RCI exhibition stand

and the full programme can be obtained via www.bgrci.de or from

BG RCI
Kurfürsten-Anlage 62
69115 Heidelberg
Germany
Tel. +49 6221 5108-24610
E-mail: Frauke.Strohmeier@bgrci.de

Frankfurt Evening in the Römer

Tuesday, 16 June 2015

19:00 Uhr

The traditional Frankfurt Evening, held on the occasion of ACHEMA, takes place in the Römer.

The joint hosts are the City of Frankfurt am Main, Messe Frankfurt GmbH and DECHEMA.

(by special invitation of the City of Frankfurt only)



Frankfurt City Tours

Frankfurt looks back on centuries of history. There is so much to discover in and around Frankfurt: from the Romans to modern skyscrapers. Located in the very centre of Germany, the city is an ideal starting point for excursions by land, water and air, from museums to the skyline, for shopping or pleasure.

A variety of suggestions and offers can be found on the website of Tourismus+Congress GmbH Frankfurt am Main:
<http://www.frankfurt-tourismus.de>



Fotos: ©Tourismus+Congress GmbH Frankfurt am Main

To join in a factory tour, please register online at www.achema.de → Visitor Service → General Programme. Your registration will be final on receipt of payment of the participation fee by credit card (American Express, MasterCard, VISA).

When registering, please name up to three factory tours in order of preference so that, if your first choice is oversubscribed, one of your other choices can be considered. More than one visit can be booked, provided there are vacancies.

The fees charged are not admission charges, but only a contribution towards expenses. Cancellations are possible at the Service and Information counter in the CMF by 12:00 h the day before the tour. A cancellation charge of € 10.00 (incl. VAT) will be retained. Payment reversals will be made shortly after AICHEM 2015.

Participants in factory tours are required to carry a valid identity card or passport. Some companies insist on the exclusion of competitors' employees. If it is not possible for you to attend a factory tour for this reason, the participation fee will be refunded. Purchase of a factory tour ticket implies acceptance of these conditions. In cases of doubt, please contact the Service and Information counter in the CMF in advance of the tour.

The majority of tours will be held in English. The tours take place at the visitor's own risk; the companies disclaim any liability. Photography during the tours is subject to permission by the organiser. The minimum age for participants is 16. Sturdy shoes are essential.

All tours will be made by coach, departing from and returning to the square in front of the main entrance of the CMF (see Hall Plan). The times quoted refer to the departure and return times of the coaches.

Tours with insufficient bookings may be cancelled at short notice. In such cases, the participation fee will be refunded. Subject to change.

Factory Tours

Monday, 15 June 2015

1) ESOC (European Space Operations Centre), Darmstadt

Guided tour of main control centre and various satellite models, short film about the role and goals of the European Space Operations Centre (visitors from non-ESA countries are required to register no later than 5 weeks before the scheduled tour)

http://www.esa.int/About_Us/ESOC

13:00–17:00 h € 25.00

Tuesday, 16 June 2015

2) KIT – Karlsruher Institut für Technologie, Eggenstein-Leopoldshafen

The guided tour comprises an introduction to the main activities, a round trip of the area and a visit to several scientific and technical research facilities

www.kit.edu

8:30–16:00 h € 25.00

3) ZDF – Sendezentrum (Broadcasting Centre), Mainz

Guided tour of TV broadcasting centre (studios/production areas), including a short film outlining the centre (tour in German with English interpreter)

www.zdf.de

13:00–17:00 h € 25.00

Wednesday, 17 June 2015

4) Merck KGaA, Darmstadt

Presentation of Merck's research and production, viewing of pharmaceutical production and chemicals warehouse, career opportunities at Merck

www.merckgroup.com

8:30–13:30 h € 25.00

Thursday, 18 June 2015

5) ZDF – Sendezentrum (Broadcasting Centre), Mainz

Guided tour of TV broadcasting centre (studios/production areas), including a short film outlining the centre (tour in German with English interpreter)

www.zdf.de

9:00–13:00 h € 25.00

6) GSI Helmholtzzentrum für Schwerionenforschung (Centre for Heavy Ion Research), Darmstadt

Introductory presentation of the facilities and research at GSI. Afterwards, a tour through selected research stations

www.gsi.de

9:00–13:00 h € 25.00

7) Deutsche Lufthansa AG, Technical Facilities, Frankfurt

Lufthansa flight training: training facilities for cockpit and cabin personnel; Lufthansa engineering; overhaul hangars with a look at some of the Lufthansa fleet; engine shops; corporate film

www.lufthansa.com

14:00–19:00 Uhr € 25.00

Friday, 19 June 2015

8) Merck KGaA, Darmstadt

Presentation of Merck's research and production, viewing of pharmaceutical production and chemicals warehouse, career opportunities at Merck

www.merckgroup.com

8:30–13:30 h € 25.00

9) Infraserv GmbH & Co. Höchst KG, Frankfurt

Guided bus tour through Industriepark Höchst with its 90 companies for pharmaceutical, chemical and biotechnological services

www.industriepark-hoechst.com

9:00–12:30 h € 25.00

Meet your Friends

**PORTAL
HAUS**₁₁

Monday, 15 June 2015
from 18:00 h
Portalhaus, Hall 11, Level Via
For exhibitors, journalists
and AACHEM visitors



Time to celebrate!

Monday, 15 June is the opening day of ACHEMA ... so after working hard towards this day, "play hard" is the name of the game. Let the sun set on the first ACHEMA evening and chill out at a fantastic party in a relaxed ambience in the most beautiful exhibition grounds in the world!

Meet your friends and colleagues and let us spirit you away from the daily grind to entertain you with culinary delights and hot music. Be a part of the ACHEMA community!

Tickets at www.achema.de → Visitor Service → General Programme

Price € 30.00 incl. buffet, drinks and VAT

Exhibitors and co-exhibitors are entitled to two free tickets, subject to availability, which can be activated online; additional tickets are chargeable and can be booked via the on-line exhibitor portal.

Accredited journalists receive one free ticket, which can be activated online.

FAMDÜSAX – they don't need a microphone, they don't need an amplifier, not even a stage! Even so, the all-female FAMDÜSAX quartet will blow your mind with their stunning new standards from swing to James Brown arranged for their four saxophones. This makes for big band mood! The magical sounds and rhythms the four artists coax from their instruments are electrifying. This high-energy show is infectious!

MissFizz – with 15 years of playing to audiences the world over under their belts they're better than ever before and still as passionate about music as on day one. These multi-talented international musicians and vocalists play top hits from pop, soul, Latin, rock and jazz and have a feeling for working a room and connecting with the audience. Their canny combination of sexy show-biz razzmatazz, power and emotion will soon have you dancing with abandon and move you to tears of joy. Don't miss out on this!



Opening hours

Monday, 15 June to Thursday, 18 June 2015

9:00 to 18:00 h for visitors
8:00 to 19:00 h for exhibitors

Friday, 19 June 2015

9:00 to 16:00 h for visitors
8:00 to 19:00 h for exhibitors

Admission fees

ACHEMA provides a wide range of information and services for visitors. Even if you only make a two-day visit, it is worth purchasing a season ticket, since the fee includes the ACHEMA Catalogue (see page 11). All tickets entitle you to visit the exhibition and participate in the exhibition and congress programme.

BENEFITS

- A** Visit to the exhibition
- B** Participation in all congress events
- C** ACHEMA Catalogue (see page 11)
- D** Participation in a factory tour – transportation costs are charged (see page 57)

All visitors to ACHEMA and their guests can participate in the Opening Session with reception and the Closing Session, but these events are subject to registration and places are limited (see pages 4 and 52). Please register on the Internet at www.achema.de → Visitor Service.

Admission tickets	Fee €	Benefits included
SEASON TICKETS (not transferable)		
» for those employed in trade and industry	80.00	A, B, C, D
» for those employed in universities, public authorities, associations	60.00	A, B, C, D
» for students, pensioners, the unemployed and disabled	30.00	A, B, C, D
» for accompanying persons (only family members and only in conjunction with a season ticket)	15.00	A, B, D
» for students, trainees, pupils, pensioners, the unemployed and disabled	15.00	A, B

DAY TICKETS

» Day ticket	35.00	A, B
» Reduced day-ticket rate for students, trainees, pupils, pensioners, the unemployed and disabled	6.00	A, B

Lost or mislaid tickets cannot be replaced.

Please only order and print out full-price day and season tickets at www.achema.de → Visitor Service. Reduced-price tickets are only available at the ticket offices on the spot.



Day and season ticket orders

Day and season tickets can be ordered on the Internet (www.achema.de → Visitor Service).

Day and season tickets will also be on sale at the ticket offices at the entrances.

Day tickets can only be ordered in advance in quantities of at least 20 tickets (orders to: tageskarten@achema.de). Day and season tickets for students, pupils, trainees, the unemployed, handicapped persons and pensioners can only be purchased at the ticket offices on the spot, subject to presentation of the relevant supporting documents/ID.

Season tickets for accompanying persons

can only be ordered in conjunction with a season ticket. Season tickets for accompanying persons are issued to family members only and should also be ordered on the Internet.

Advance registration for participants in the “**Study Courses**” and **School groups**, see page 48.

Day and season tickets ordered online are **payable by credit card** (American Express, MasterCard, VISA) or PayPal. On completing your order, please print out your AICHEMA ticket directly.

Cancellation

Day and season tickets are non-returnable and non-refundable.

Tickets for the General Programme

Please order tickets for the General Programme on the Internet www.achema.de → Visitor Service → General Programme. Orders will be confirmed in writing by e-mail. Payment is by credit card (American Express, MasterCard, VISA). You will subsequently receive an invoice, noting receipt of your payment, by post.

Documents

All documents will be available for collection from 15 June 2015 at the Congress Office in the CMF. Unpaid fees can be settled in cash (euros) or by credit card (see above) when picking up the documents.

Entrances / Ticket Offices / Service and Information Counters

- » City Entrance (tram and “U” train station “Festhalle/Messe”)
- » Congress Office CMF (tram and “U” train station “Festhalle/Messe”)
- » Torhaus (“S” train station “Messe”)
- » Galleria (multi-storey car park and Rebstock parking area)
- » Hall 3 Entrance (multi-storey car park and Rebstock parking area)
- » Portalhaus (multi-storey car park and Rebstock parking area)

Services:

- » Day and season tickets (ticket offices)
- » General programme (see page 56)
- » Factory tours (see page 57)
- » RMV TourTickets and Frankfurt Card (see page 64)
- » AICHEMA Catalogue (see page 11)
- » General visitor information
- » Information about DECHEMA e.V.
- » Information about the Study Courses (see page 48)

Additionally, accommodation can be booked at the Tourismus+Congress GmbH counters in the Service Center, Torhaus, Level 3 (see page 62).

Congress Office until 12 June 2015

in DECHEMA House:

DECHEMA e.V.
Congresses
Theodor-Heuss-Allee 25
60486 Frankfurt am Main

Visitor information:

E-Mail: visitor@achema.de
Tel.: +49 69 7564-167/-750
Fax: +49 69 7564-304/-176

Lecture programme:

Tel.: +49 69 7564-254
E-Mail: lecture@achema.de
Internet: www.achema.de → Congress

Business hours:

Mon.–Thurs. 8:30–17:00 h
Fri. 8:30–15:00 h

Congress Office from 15 June 2015

in the CongressCenter of Messe Frankfurt (CMF):
Tel.: +49 69 7564-254

Lecture management:

in the CongressCenter of Messe Frankfurt (CMF):
Tel.: +49 69 7564-254

Business hours of all offices:

Mon.–Thurs. 8:00–18:00 h
Fri. 8:00–16:00 h



VISITOR SERVICE

RESERVATION OF ACCOMMODATION – SERVICE FACILITIES

Reservation of accommodation

Reservation of accommodation for visitors to AACHEMA 2015 is made by Tourismus+Congress GmbH Frankfurt am Main. Visitors are **not charged a processing fee**. Tourismus+Congress GmbH Frankfurt am Main acts only as an intermediary. The contract is made between the visitor and the accommodation provider (e.g. hotel, guest-house, etc.). The usual business terms governing accommodation facilities apply. The guest is liable for payment of hotel or private accommodation not occupied or not cancelled with due notice. Please book accommodation online at www.frankfurt-tourismus.de.

For inquiries, please contact

Tourismus+Congress GmbH
Frankfurt am Main
Kaiserstraße 56
60329 Frankfurt am Main
GERMANY

Tel.: +49 69 21230808
Fax: +49 69 21240512
E-mail: info@infofrankfurt.de

Office during AACHEMA:

Torhaus, Service Center, Level 3

Opening hours:

	Torhaus, Level 3
14 June:	14:00 – 18:00 h
15 June:	8:00 – 18:00 h
16–18 June:	9:00 – 18:00 h
19 June:	10:00 – 14:00 h

Frankfurt Hauptbahnhof (central station),
entrance hall, Tourist Information

Opening hours:

Monday–Friday:	8:00 – 21:00 h
Saturday + Sunday:	9:00 – 18:00 h

Changes/Cancellations

Please notify Tourismus+Congress GmbH Frankfurt am Main immediately of any changes to your booking, mentioning your reservation number. A cancellation fee may be charged for changes or cancellations made without due notice.

Service Facilities

A hall plan and a plan indicating the service facilities will be available to all visitors at the entrances.

Postal and Shipping Services

Post Shop – DHL Trade Fairs & Events GmbH
Messegelände, Torhaus, Level 3
60327 Frankfurt am Main
Germany

Collection and delivery service, DHL Paket,
DHL Express, DHL Brief (parcels, letters, express)

Opening hours:

12–14 June:	9:00 – 17:00 h
15–18 June:	8:30 – 18:00 h
19 June:	8:30 – 16:00 h

Tel.: +49 69 976714-124

Fax: +49 69 976714-130

E-mail: express-service.fairs@dhl.com

Banks

ReiseBank AG, Hall 4.1 Foyer

Opening hours:

15–18 June:	9:00 – 17:00 h
19 June:	9:00 – 16:00 h

Cash Points

- » City Entrance, Level 0
- » Hall 4.1, Foyer
- » Torhaus Entrance, “S” train station “Messe”
- » Torhaus, Service Center, Level 3
(next to Postal and Shipping Services)
- » Galleria Entrance, Hall 9.T
- » Portalhaus Entrance, Hall 11

Interpreter Services

BBK-Gesellschaft für moderne Sprachen

Tel.: +49 7274 702770

Fax: +49 7274 702780

Lufthansa

Lufthansa check-in and baggage service
in the City Entrance, Level 0

Tel.: +49 69 86 799 799

Opening hours:

16–18 June:	8:00 – 17:00 h
19 June:	8:00 – 16:00 h

Shopping Facilities

City Entrance: Messe-Shop, and in the Service
Center of Torhaus, Level 3

Welcome Service – Frankfurt Information

In City Entrance, Level 1, provides exhibitors and
visitors with, among other things,

- » information on places of interests and events
in Frankfurt and the surrounding area
- » details on using public transport services in
the Rhine-Main area (RMV)

Opening hours:

15–18 June:	9:00 – 18:00 h
19 June:	9:00 – 16:00 h

Meeting Point: Galleria

Catalogue Distribution

- » City Entrance, Hall 1.1 Arkade
- » CMF
- » Hall 3 Entrance East
- » Hall 4.1 Foyer
- » Torhaus Entrance
- » Galleria Entrance
- » Portalhaus Entrance

Obtaining a VISA

Foreign visitors requiring a visa to enter Germany
can request a personal invitation by Internet at
www.achema.de → Visitor Service. Under no
circumstances can DECHEMA take over travel or
accommodation costs.

E-mail: visa@achema.de

Transport Links

See AICHEMA 2015 Plan on page 34.

By car:

The multi-storey car park and the car parks in the Rebstock area are easily accessible from the motorway (day ticket multi-storey/Rebstock car park: € 15.00/€ 11.00). During AICHEMA, a free shuttle bus service will operate every 5-10 minutes between these car parks and the exhibition grounds of Messe Frankfurt (Galleria, Portalhaus Hall 11 and Hall 3 entrances).

Schedule:

14 June: 8:00 – 22:00 h to Tor Süd (South Gate)
 15 – 18 June: 7:45 – 23:00 h
 19 June: 7:45 – 2:00 h
 (last departure, direction Rebstock)

Low-Emission Zone in Frankfurt am Main

Since 1 January 2012 only vehicles bearing the **green sticker** may enter the low-emission zone, which was introduced in 2008. For vehicles registered in or outside Germany, the required 'environmental badge', indicating the relevant emissions group, can be obtained at www.umwelt-plakette.de.

For vehicles **without an 'environmental badge'** access to the exhibition grounds is only possible via Tor West (West Gate) and Tor Nord (North Gate). These gates can be reached via the A648 motorway (coming from the A5) taking the "Rebstock" exit or via the Katharinenkreisel (roundabout).

The Rebstock multi-storey car park can also be reached via the "Rebstock" exit.

By rail:

Frankfurt Hauptbahnhof (central railway station) is easy to reach by train. Information can be obtained at all Deutsche Bahn (DB) ticket offices, at your travel agency or on the Internet at <http://www.bahn.de>.

Please note Deutsche Bahn AG's **Event Ticket to AICHEMA 2015** from any DB station in Germany to Frankfurt am Main and back: from € 99.00. Details are given on page 64.

From Frankfurt Hauptbahnhof (central railway station) to Frankfurt Messe (exhibition grounds):

- » S-Bahn (surface rail) lines S3/S4/S5/S6, departing from the underground platform 104, to Frankfurt Messe (exhibition grounds)
- » Tram nos. 16 and 17 to Festhalle/Messe (exhibition grounds)
- » U-Bahn (underground) line U4 (direction Bockenheimer Warte) to Festhalle/Messe (exhibition grounds)
- » approx. 15 minutes' walk

By air:

There are direct flights daily to Frankfurt am Main from many airports worldwide. The quickest connections between the airport and the exhibition grounds (Messe Frankfurt) are:

- » S-Bahn (surface rail) lines S8 and S9 from Regionalbahnhof (regional train station) to Hauptbahnhof (central railway station) with the RMV TourTicket
- » Airport Express bus from Terminal 1 (Arrivals level, charter bus platform) via Terminal 2 (bus stop in exit E area) to the exhibition grounds (Galleria and Portalhaus Hall 11 entrances) and back. This link is a special service and is **not** included in the price of the RMV TourTicket. A single ticket costs € 7.50.

Schedule Airport → Exhibition grounds:

15–19 June:
 8:00 – 12:00 h every 10 minutes
 12:00 – 14:00 h every 15 minutes

Schedule Exhibition grounds → Airport:

15–19 June:
 14:00 – 19:00 h every 10 minutes



Foto: VGF

Fare Reductions

The **RMV TourTickets** are a special service provided by DECEMA and the public transport authority Rhein-Main-Verkehrsverbund (RMV) for exhibitors and visitors to AACHEMA 2015.

Two types of tickets are available:

Ticket A

Valid throughout the entire area covered by RMV (including the urban areas of Darmstadt/Erbach, Marburg/Fulda/Dillenburg, Limburg, Rüdeshheim/Wiesbaden/Mainz, Hanau). Price: € 42.20*.

Ticket B

Valid only in the Frankfurt city area, including the airport. Price: € 20.10*.

Both RMV TourTickets are valid for the period 14 to 19 June 2015 (= 6 days). RMV TourTickets can be purchased at the sales outlets mentioned below.

Please sign the reverse of the ticket upon receipt. RMV TourTickets are non-transferable. They entitle the holder to use the extensive RMV network (S-Bahn (surface rail), U-Bahn (underground), tram and bus*) with its coordinated timetables. The RMV will provide additional trains for AACHEMA 2015. RMV network plans can be obtained from all ticket sales outlets. Information can be found on the Internet at www.rmv.de.

* does not include the special 'Airport Express' bus

En route with green energy to AACHEMA 2015 with Deutsche Bahn's Event Ticket – from € 99.00

The energy used for your return journey with Deutsche Bahn's Event Ticket originates 100% from renewable sources!

The fixed prices* from any **DB station** in Germany are

- » if booked for a specific train connection only:
2nd class € 99.00, 1st class € 159.00
- » if booked for use on any train (for more flexibility): 2nd class € 139.00, 1st class € 199.00

no matter which DB station you commence your journey from. This special offer entitles you to travel on all DB trains, including ICEs (InterCity Express).

The tickets are valid from 13 to 21 June 2015. This special offer can be booked from 15 March 2015 onwards by telephone to the hotline number +49 1806 311153**, quoting "ACHEMA" as the reference. Your telephone call for a binding booking will then be returned. Alternatively, book online at: www.bahn.de/Veranstaltungsticket. In either case, please have your credit card ready for payment.

Deutsche Bahn will be pleased to quote the ticket price for international connections, on request.

* Bookings must be made at least 3 days in advance. Special Offer good while supplies last. Subject to a payment card surcharge levied by Deutsche Bahn of max. 1% of the purchase price. Tickets can be exchanged or refunded until the day before their first day of validity. A rebooking/cancellation fee will apply. The terms and conditions for exchange and refund at the time of booking apply in accordance with the DB conditions of carriage for special offer fares ("Sparpreise"). From the first day of validity onwards refunds are no longer possible.

** You can call the hotline from Monday to Saturday from 7:00 h to 22:00 h Central European Time. Telephone charges are 20 cents per call from a German landline, max. 60 cents per call from German mobile networks.

Prices are subject to change without notice. Errors and omissions excepted.

Frankfurt Card 2014/2015

In cooperation with Tourismus+Congress GmbH Frankfurt am Main, we additionally offer the Frankfurt Card to AACHEMA 2015 visitors. This allows free travel with the RMV network in the Frankfurt city area including the airport, and a reduction of up to 50% for a number of facilities in Frankfurt. The Frankfurt Card is available as a day ticket for € 9.90 and as a 2-day ticket for € 14.50. There is also a one-day and a 2-day group ticket for groups of max. 5 persons (€ 20.00 / € 29.50).

RMV TourTickets and the Frankfurt Card can be purchased at the following sales outlets:

- » Frankfurt Hauptbahnhof (central station) at Tourist Information in the Arrivals Hall, and at the "Service and Information" counters on the exhibition grounds at
- » City Entrance
- » Congress Office in the CMF
- » Hall 3 Entrance
- » Torhaus Entrance
- » Galleria Entrance
- » Portalhaus Entrance



Contact addresses are available in the following countries:

ARGENTINA

Mr Fidel Regueira
Secontur Lufthansa City Center
C1008 AAE Buenos Aires
Tel.: +54 11 4321 1098
E-mail: feriasyexpo@seconturicc.tur.ar
www.seconturicc.tur.ar

BRAZIL

Mr Dietmar Sukop
Câmara Brasil-Alemanha
de Porto Alegre
90430-130 Porto Alegre – RS
Tel.: +55 51 3222 5766
E-mail: dietmar.sukop@ahkpoa.com.br
www.ahkpoa.com.br

Mr Célio Larrubia
TT Operadora Lufthansa
City Center
04702-000 São Paulo SP
Tel.: +55 11 5094 9494
E-mail: celio@lufthansacc.com.br
www.lufthansacc.com.br

CANADA

Ms Melanie Heinrich
Canadian German Chamber of
Industry and Commerce Inc.
Toronto, Ontario M5G 1V2
Tel.: +1 416 5987 076
E-mail: melanie.heinrich@germanchamber.ca
www.germanchamber.ca

CHINA

Mr Zhao Michael
CCPIT CHEM
100013 Beijing
Tel.: +86 10 6428 3093
E-mail: zhao-hj@sohu.com
www.ccpitchem.org.cn

Mr Yue Wang Xiong
Chemical Industry and
Engineering Society of China
100029 Beijing
Tel.: +86 10 6442 8823
E-mail: wangxy@ciesc.cn

EGYPT

Ms Inghy Mehany
The German-Arab Chamber of
Industry and Commerce (GACIC)
11511 Cairo
Tel.: +20 2 3338460
E-mail: fairs@ahk-mena.com
www.aegypten.ahk.de

FRANCE

Mr Thierry Dorysse
CWT Meetings & Events
69003 Lyon
Tel.: +33 1 7753 7592
E-mail: salons@carlsonwagonlit.fr
www.cwtmeetingsevents.fr

INDIA

Mr Om Prakash
Inorbit Tours Pvt Ltd.
Mumbai 400 025
Tel.: +91 22 2422 9281
E-mail: omprakash@inorbittours.com
www.inorbittours.in

Ms Laju Jariwala
Orbit Corporate & Leisure
Travels (I) Pvt. Ltd.
Mumbai, Maharashtra 400 015
Tel.: +91 22 2410 2801
E-mail: laju@orbit-star.com
www.orbit-star.com

INDONESIA

Ms Theresia
TRADEX Travel
14240 Jakarta Utara
Tel.: +62 21 4584 1651 52
E-mail: tradex@cbn.net.id
www.tradextravel.com

ISRAEL

Mr Schami Biener
Ophir Tours Ltd.
67010 Tel Aviv
Tel.: +972 3 5269 583
E-mail: schami_b@ophirtours.co.il
www.ophirtours.co.il

JAPAN

Mr Naoya Kodama
Ryowa Diamond
Air Service Co. Ltd.
Tokyo 101-0062
Tel.: +81 3 5295 2891
E-mail: n-kodama@ryowa-dia.co.jp
www.ryowa-dia.co.jp

MALAYSIA

Ms Michelle Lim
Malaysian-German Chamber
of Commerce & Industry
50450 Kuala Lumpur
Tel.: +60 3 9235 1800
E-mail: michelle.lim@malaysia.ahk.de
www.malaysia.ahk.de

NEW ZEALAND

Ms Monique Surges
New Zealand German
Business Association Inc.
1140 Auckland
Tel.: +64 9 304 0120
E-mail: tradefairs@germantrade.co.nz
www.germantrade.co.nz

NORWAY

Mr Harry Sællmann
Mercur Reiser AS
4688 Kristiansand
Tel.: +47 905 906321
E-mail: hs@mercur-reiser.no
www.mercur-reiser.no

SAUDI ARABIA

Mr A. Al-Dalali
German-Saudi Arabian Liaison
Office for Economic Affairs
(AHK Saudi Arabia)
11575 Riyadh
Tel.: +966 11 4050201
E-mail: al-dalali@ahk-arabia.com
www.saudiarabien.ahk.de

SOUTH KOREA

Ms Hwa Sook Song
INTERMESSE Co. Ltd.
Seoul 135-729
Tel.: +82 2 6000 1096
E-mail: songhwasook@hanmail.net
www.intermesse.co.kr

TAIWAN

Mr Joseph Lee
Meridien D.M. Corp
Taipei 105
Tel.: +886 2 2773 0760
E-mail: meridien@ms12.hinet.net
www.gogotaipei.com.tw

THAILAND

Ms Sunee Srirungkitsawad
G.M. Exhibition Tour Co. Ltd.
Bangkok 10500
Tel.: +66 2 2675 9704
E-mail: sue@gmxtour.com
www.gmxtour.com

TURKEY

Ms Hülya İscan
BORA TUR Turizm
34130 İstanbul
Tel.: +90 212 6380 000
E-mail: boratur@boratur.com
www.boratur.com

Ms Melek Tugru Hekimoglu
TSN TRAVEL –
TSN Turizm ve Ticaret Ltd. Sti.
34740 Suadiye, Kadiköy
Tel.: +90 216 403 1818
E-mail: melek.tugru@tsntravel.com
www.tsntravel.com.tr

UNITED ARAB EMIRATES

Mr Oliver Parche
The German Industry
and Commerce Office (GIC)
Dubai
Tel.: +971 4 397 8683
E-mail: oliver.parche@ahkuae.com

VENEZUELA

Ms Ana Chenche
Cámara de Comercio e Industria
Venezolano-Alemana
1060 A Caracas
Tel.: +58 212 2773851
E-mail: ana.chenche@cavenal.org
www.cavenal.org

Travel agents and contact addresses in other countries are available on the Internet at www.achema.de →Visitor Service → Travel Information.

Frankfurt am Main · 15 – 19 June 2015

ACHEMA 2015

- World Forum and Leading Show for the Process Industries
- 3,800 Exhibitors from 50 Countries
- 170,000 Attendees from 100 Countries

Be informed.
Be inspired.
Be there.

www.achema.de