

Conference Program & Show Info

FILTECH

March 13 – 15, 2018
Cologne – Germany

The Filtration Event
www.Filtech.de

Koelnmesse · Cologne · Germany



FILTECH

March 13 – 15, 2018
Cologne – Germany

The Filtration Event
www.Filtech.de

Join the largest
Filtration Event
worldwide



The Conference

Register to benefit from
top level knowledge and...

... know-how transfer

With the **FILTECH** taking place from 13.-15. March 2018 the City of Cologne in Germany will turn into the place to be for all those involved with filtration and separation and adjacent sectors. **FILTECH 2018** Conference will feature once again the latest advances and techniques in liquid/solid and gas/particle separation (dust, gas & air filtration) in 3 days of in depth exposure. Technology and know-how transfer is a main target.

More than 180 Lectures from 30 Countries

An exciting programme gives a representative cross-section of the different procedures and appliances of separation technology as well as across the industry about the applications, from the preparation of mineral raw materials, the chemistry, environmental technology and water purification down to the pharmacy and biotechnology. The latest results from basic research, innovative equipment-based solutions and procedures will also be presented.

The Filtration Event

FILTECH is the largest and most important special interest event worldwide devoted entirely to Filtration and Separation technology in all industries. The event is a must for all those concerned with researching, purchasing, selling, designing or improving Filtration and Separation equipment and services.

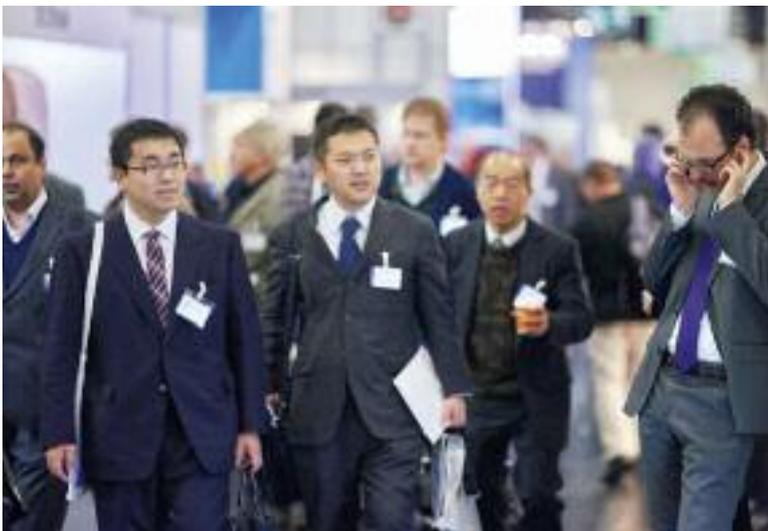
380
Exhibitors

The International Exhibition...

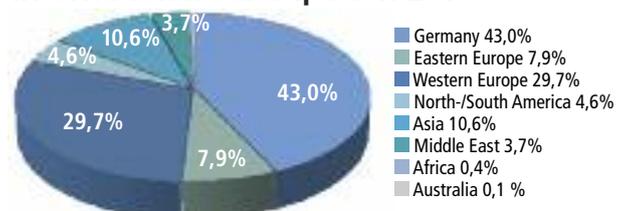
... Platform for your success

FILTECH 2018
+12%
Exhibitors

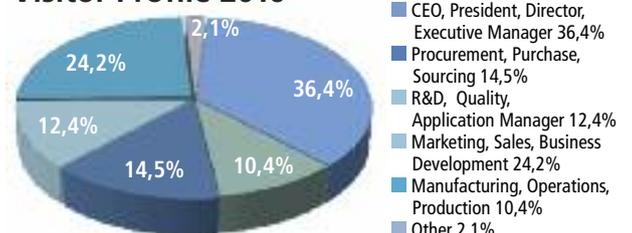
FILTECH is the globally acknowledged platform and solution provider for all industries covering every market segment. This exhibition is a must for all those concerned with designing, purchasing, selling or researching filtration and separation equipment and services. In 2016 more than 35% of all foreign guests came from overseas – in total 76 nations were represented offering exhibitors a unique possibility to generate new business. At **FILTECH 2018** trade visitors will find targeted solutions for their Filtration & Separation tasks whatever market they are in.



International Participation 2016



Visitor Profile 2016



Become an Exhibitor

Your Participation includes:

Free Print Communication Package, incl. free entry in the exhibition catalogue incl. address, contact details, 4c company logo, company/product description and 18 keywords in the product index listing.

Free Online Communication Package, incl. free entry at **FILTECH** website incl. company description (german & english), 4c company logo, pictures, 18 keywords in the product index and 10 keywords in the market index.

Free publication of Exhibitor news/press releases at the **FILTECH** website including pictures.

Get-Together Reception - 13 March 2018, 6 pm

Free Promotion Codes to invite clients/customers

Free Company branded Stickers

Free Conference Registration (for companies presenting a paper only)

Free Company branded Exhibitor Badges



**Pre-Register until
March 2, 2018
and save money**

Register as a Trade Visitor

Opening Hours Exhibition

March 13– 14, 2018

9:00 am - 6:00 pm

March 15, 2018

9:00 am - 5:00 pm

Venue: Koelnmesse

Hall 11.1, East Entrance
Deutz-Mülheimer-Str. 35
50679 Cologne
Germany

Your **FILTECH 2018** Visitor Registration includes:

Free copy of the exhibition catalogue & hall plan as well as a free public transport ticket for visitors who pre-register by March 2, 2018.

Registration Fees	Pre-Registration until 02.03.2018	Registration from 03.03.2018
1-Day Visitor Ticket	€ 20.00	€ 40.00
2-Day Visitor Ticket	€ 25.00	€ 45.00
3-Day Visitor Ticket	€ 30.00	€ 50.00

Fees already incl. 19% German VAT

+++ Pre-register for fast track entrance to the exhibition +++

Plan your visit

The tool for Trade Visitors

Make your visit easy and effective by using your **FILTECH planning tool**.

You can easily plan your visit online, check the exhibitors and their hall positions, mark them and print it out for your planning.

www.Filtech.de → exhibition/visitor-floor-plan



Short Course I

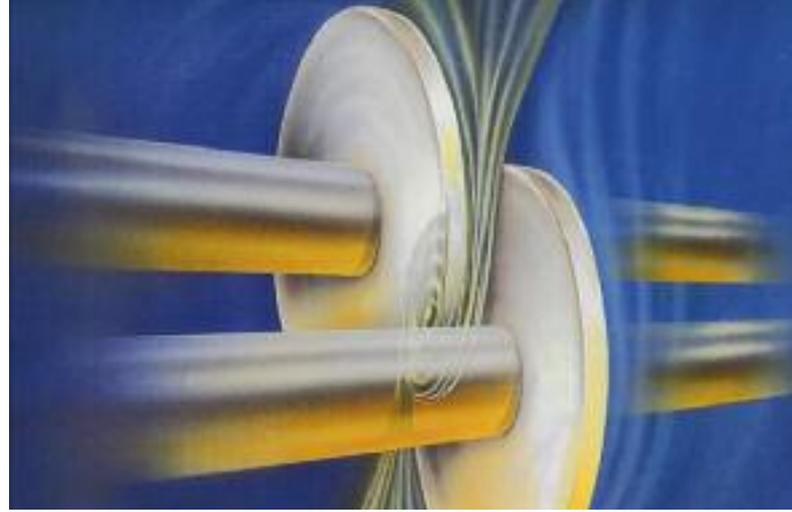
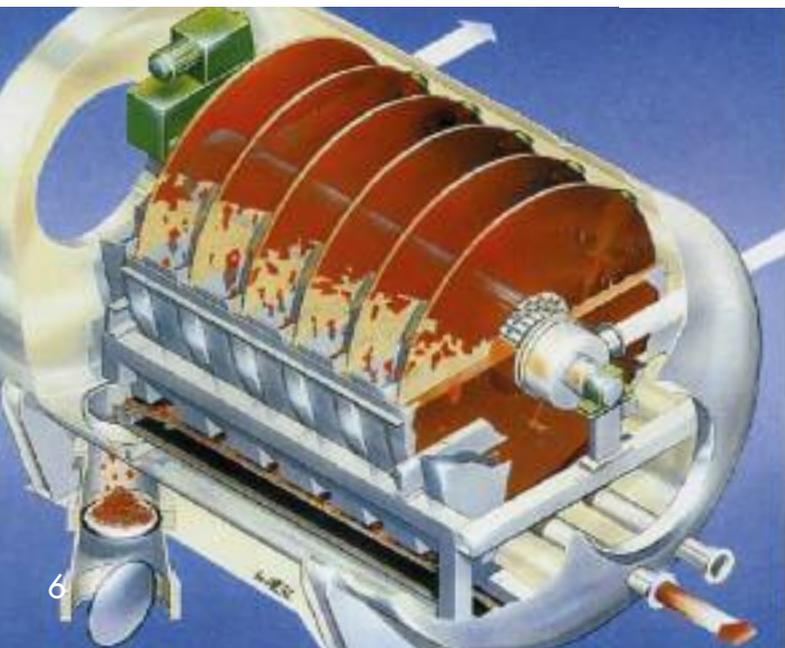
Solid/Liquid Separation

This 1-day Course "Solid/Liquid Separation" is of interest to engineers, scientists, managers and other technical personnel involved in solid-liquid separation in the process and other industries. They will find the course informative, regardless of whether they design, purchase, research or use filtration and separation equipment. Plant engineers, technicians and operators should find the course materials directly applicable, and graduate research students will value the expert introduction to the technologies. It is a comprehensive review of the processes involved in the separation of solids from liquids, which will emphasise practical aspects and present appropriate theoretical information as necessary.



Course Presenter

Dr.-Ing. Harald Anlauf is Academic Director at the Karlsruhe Institute of Technology (KIT), Institute of Mechanical Process Engineering and Mechanics and since 35 years active in the field of solid liquid separation technology. His academic degrees as Chemical Engineer he earned 1980 and 1985 at Karlsruhe University. 1999-2006 he was Chairman of the VDI-GVC working party „Mechanical Liquid Separation“, since 2000 Co-Chairman of the FILTECH Congress Scientific Committee. 2004-2008 he was Chairman of INDEFI and President of the 10th World Filtration Congress 2008 in Leipzig, Germany. He published 170 technical papers, books etc. and is internationally active in giving consultations and lectures.



Topics:

Characterisation of Particles and Particle Separation

Density Separation - Static Thickeners and Solid Bowl Centrifuges

Depth, Cross Flow and Cake Filters

Filter Media

Suspension Pretreatment to Enhance Separation Properties

Alternative Separation Solutions & Apparatus Combinations

Selection Criteria for Separation Equipment

8.30 h Welcome Coffee

9.00 h **Introduction and Overview**

Systematic survey of separation processes, apparatus examples and separation strategies

10.00 h **Particle Characterization**

Characterization of single particles, particle collectives and particle separation.

10.45 h Coffee Break

11.00 h **Density Separation – Static Thickeners and Solid Bowl Centrifuges**

Separation mechanisms, equipment, mode of operation, application.

12.00 h **Depth and Cross Flow Filtration**

Separation mechanisms, equipment, mode of operation, application

12.45 h Lunch

13.45 h **Cake Filtration – Formation, Washing, Deliquoring**

Separation mechanisms, consequences for practical use.

14.45 h Coffee Break

15.00 h **Cake Filters**

Equipment, mode of operation, application

16.00 h **Filter Media**

Overview and fields of application, influence of media properties on separation results.

16.30 h **Suspension Pretreatment to Enhance Separation Properties**

Additional techniques for enhancing solid-liquid separation processes, physiochemical influences on slurry stability, flocculation

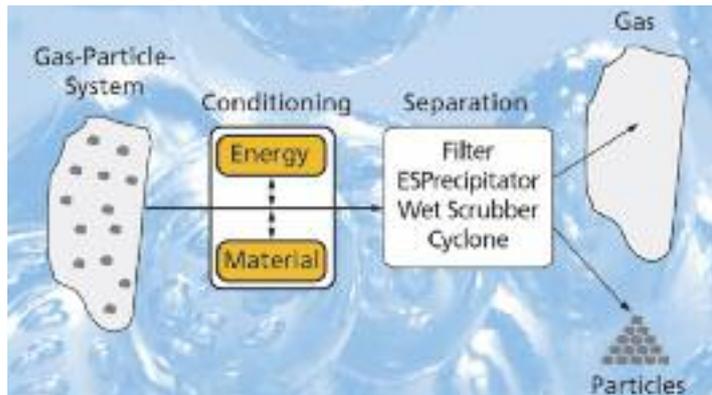
17.00 h **Apparatus Combinations, Alternative Solutions and Apparatus Selection Criteria**

Strategies for process optimization & selection of suitable separation techniques.

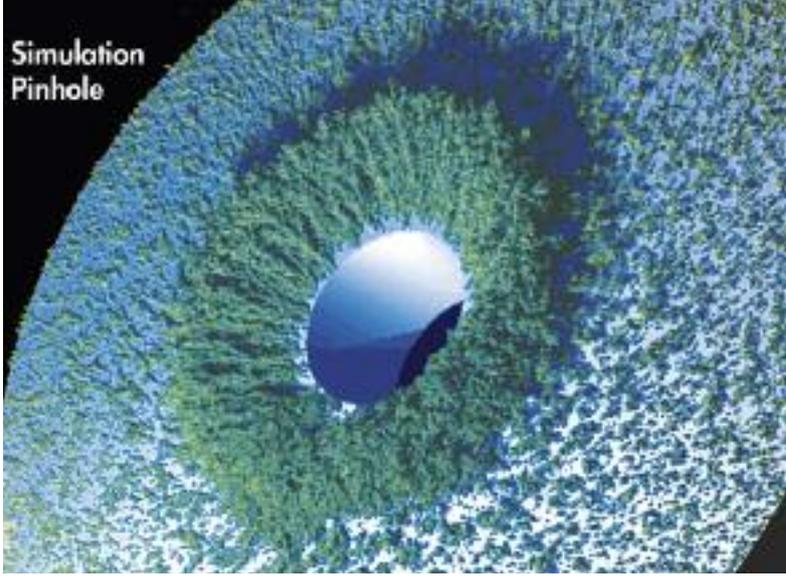
Short Course II

Fine Dust Separation

This 1-day "Fine Dust Separation" Short Course is of interest to engineers, technicians, scientists, managers, and other personnel involved in gas-solid separation in the process and other industries. They will find the course informative, regardless of whether they design, purchase, research, or use dust separation equipment for product recovery, emission control, air cleaning or process gas cleaning. It is a comprehensive review of the processes involved in the separation of solid or liquid particles from gases, which will emphasise practical aspects and present appropriate theoretical information as necessary.



Simulation
Pinhole



Topics:

Evaluation & Selection of Dust Collection Equipment

Wet Scrubbers

Centrifugal Collectors / Cyclones

Electrical Precipitators

Fibrous Filters / Deep Bed Filters

Raw Gas Characterisation and Conditioning

Fabric Filters / Surface Filters

8.30 h Welcome Coffee

9.00 h Introduction

Particulate Matter (PM_x); Dust Separation; Air Cleaning; Overview of the course

9.15 h Evaluation of Dust Collection Equipment

Particle size characterisation, concentration measurement, overall and fractional collection efficiency

10.00 h Centrifugal Collectors (Cyclones)

Mode of operation, basic designs, application, collection efficiency, pressure drop

10.45 h Coffee Break

11.00 h Fibrous Filters (Deep-Bed Filters)

Mode of operation, basic designs, application, collection efficiency, pressure drop

11.45 h Fabric Filters (Surface Filters)

Mode of operation, basic designs, application, operating characteristics, design calculations

12.30 h Questions and answers

An open-floor question and answer session

13.00 h Lunch

14.00 h Wet Scrubbers

Mode of operation, basic designs, design calculations, application, droplet separation

14.45 h Electrical Precipitators

Mode of operation, basic designs, design calculations, application, operating characteristics

15.30 h Coffee Break

15.45 h Selection of Dust Collection Equipment

Comparison of the different techniques, strength and weaknesses, fields of application, selection procedure

16.30 h Raw Gas Conditioning

Additional techniques for enhancing dust separation equipment (Electrical and acoustic enhancement, additive dosing, precoating,...).

17.15 h Discussion

An open-floor question and answer session.

Course Presenter

Prof. Dr.-Ing. habil. Eberhard Schmidt is Full Professor for Safety Engineering/Environmental Protection at Wuppertal University. His academic degrees he earned 1991 and 1998 at Karlsruhe University. From 1993 to 1994 he was affiliated with the Joint Research Centre in Ispra/Italy. In the years 1998 and 1999 he was with Degussa company in the department of process engineering / particle technology. He is Co-Chairman of the FILTECH Conference and was Scientific Secretary of 10th World Filtration Congress. He has published more than 100 technical papers, books, patents, etc. and consulted and lectured throughout the world.



Plenary and Keynote Lectures...

... presented by leading experts

FILTECH 2018 Conference features close to 200 technical papers, a Plenary Lecture and 3 Keynote Lectures presented by leading experts. Delegates profit from high-level knowledge transfer and learn about future trends and perspectives!

K1

Keynote Lecture 1
Tuesday, March 13, 2018 13:00 - 14:15 h



Filter media market, technologies and trends

Dr. Christine Sun
American Filtration Society Chair
USA

Filter media technology has become a core to today's advanced filtration technologies, including nonwoven, membrane, ceramic, metal, activated carbon, nanofiber and other porous materials. In this talk, we will review the global filter media markets and their applications in various air and liquid filtration. The technologies, emerging challenges and trends for future developments will also be discussed.

K2

Keynote Lecture 2
Tuesday, March 13, 2018 14:45 - 16:00 h



Cake forming filtration of suspensions - from the theory based analysis of test data to the reliable performance prediction of filters and filter centrifuges

Prof. Dr. Ioannis Nicolaou
NIKIFOS Ltd. / Cyprus

The operation of Filters and Filter Centrifuges (in the following both types called Filters) like Nutsche Filters, Filter Presses, Belt, Drum, Disc and Pan Filters, Candle and Pressure Leaf filters, Vertical Basket, Peeler and Inverting Filter Centrifuges involves cake forming filtration of suspension with the optional steps of cake deliquoring and cake washing.

K3

Keynote Lecture 3
Tuesday, March 13, 2018 16:45 - 18:00 h



Principle and its implement in designing filter media for liquid and gas filtration applications.

Prof. Dr. Kyung-Ju Choi
Clean & Science Co. Ltd. / Korea

Multi-layer composites with nano-sized filaments seem to be the recent trend throughout the filtration industry. The filters with multi-layered nonwoven material generally increase the dust holding capacity if designed properly. I will detail the basic methods to manufacture the multi-layer media in which the basic principles of fluid mechanics have been applied. These principles have been extended to design the filter media with...



Scientific Committee Chairmen

Dr. Harald Anlauf - Karlsruhe - Germany
 Prof. Eberhard Schmidt - Wuppertal - Germany

Scientific Committee

Prof. Mônica Lopes Aguiar - São Carlos - Brazil
 Dr. Harald Banzhaf - Ludwigsburg - Germany
 Prof. Ching-Jung Chuang - Taoyuan - Taiwan
 Prof. Kyung-Ju Choi - Seoul - Korea
 Prof. Dr. Kunihiro Fukui - Hiroshima - Japan
 Prof. Leon Gradon - Warsaw - Poland
 Prof. Antti Häkkinen - Lappeenranta - Finland
 Prof. Kuo-Jen Hwang - Taipei - Taiwan
 Prof. Eiji Iritani - Nagoya - Japan
 Prof. Chikao Kanaoka - Tsubata - Japan
 Prof. Gerhard Kasper - Karlsruhe - Germany
 Dr. Karsten Keller - St. Louis - USA
 Ir. Hermanes Kleizen - Hengelo - Netherlands
 Prof. Gernot Krammer - Graz - Austria
 Dr. Thomas Laminger - Vienna - Austria
 Dr. Martin Lehmann - Ludwigsburg - Germany
 Prof. Markus Lehner - Leoben - Austria
 Prof. Dietmar Lerche - Berlin - Germany
 Prof. Woon-Fong Wallace Leung - Hong Kong - P.R. China
 Prof. Richard Lydon - Haslingden - UK
 Dr. Hisao Makino - Yokosuka - Japan
 Prof. Gerd Mauschwitz - Vienna - Austria
 Prof. Arunangshu Mukhopadhyay - Jalandhar - India
 Prof. Ioannis Nicolaou - Cyprus
 Dr. Thomas Peters - Neuss - Germany
 Prof. Urs Peuker - Freiberg - Germany
 Dr. Graham Rideal - Waverton - UK
 Prof. Siegfried Ripperger - Kaiserslautern - Germany
 Prof. Sandra Mara Santana Rocha - Espirito Santo - Brazil
 Prof. Peter Scales - Parkville - Australia
 Dr. Christine Sun - Clarksville - USA
 Prof. Hans-Joachim Schmid - Paderborn - Germany
 Dr. Anthony Stickland - Melbourne - Australia
 Prof. Hans Theliander - Gothenburg - Sweden
 Prof. Dominique Thomas - Nancy - France
 Prof. Bhaskar N. Thorat - Mumbai - India
 Prof. Paolo Tronville - Torino - Italy
 Prof. Kuo-Lun Tung - Taipei - Taiwan
 Prof. Eugène Vorobiev - Compiègne - France
 Dr. Matthias Waldenmaier - Kaiserslautern - Germany

PL

Tuesday, March 13, 2018 10:45-12:00 h
 Plenary Lecture



**Pore size characterization of a porous media:
 A true need but do we know what we are measuring?**

Prof. Dr. Roger Ben Aïm
 Scientific advisor IFTS / France

Characterizing the porous structure of a media by a "pore size" has always been a need for the industrials: the hydrogeologists for the qualification of the aquifers, the engineers of the oil industry for the reservoirs, the pharmacologists for the controlled release of drugs, the biologists for the bio membranes which characterize any living system (from cell membrane to the skin), the liquid and gas filtration industry experts (from sand filters to cartridge filters and membrane)...

Over the years, pushed by those different industries, methods have been developed by researchers and scientists trying to characterize a pore size of a porous media for a given application...

...learn more at **FILTECH 2018**



Session Overview

Tuesday, 13.03.2018

Monday 12.03.2018 09:00-18:00h

Short Course I - Solid/Liquid Separation

Short Course II - Fine Dust Separation

08:30	Registration			
10:15	Opening Session			
10:45 12:00	PL	Plenary Lecture – Prof. Dr. Roger Ben Aim, Scientific advisor IFTS / France Pore size characterization of a porous media: A true need but do we know what we are measuring?		
Lunch – Fair				
	Room 1A – 1st floor	Room 1B – 1st floor	Room 4A – 4th floor	Room 4B – 4th floor
13:00 14:15	K1 Keynote Lecture 1 Dr. Christine Sun	L1 Backwashing Filtration	G1 Mist and Droplet Separation I	F1 Filter Media - Quality Control and Pore Size Analysis I
Coffee Break – Fair				
14:45 16:00	K2 Keynote Lecture 2 Prof. Dr. Ioannis Nicolaou	L2 Decanter Centrifuges	G2 Mist and Droplet Separation II	F2 Filter Media - Quality Control and Pore Size Analysis II
Coffee Break – Fair				
16:45 18:00	K3 Keynote Lecture 3 Prof. Dr. Kyung-Ju Choi	L3 Cake Filtration - Modelling, Simulation, Characterization	G3 Adsorption	F3 Filter Media - Quality Control and Pore Size Analysis III
18:00	Get Together Reception			

Wednesday, 14.03.2018

	Room 1A – 1st floor	Room 1B – 1st floor	Room 4A – 4th floor	Room 4B – 4th floor	Room 2 – 2nd floor
09:00 10:15	L4 Cake Filtration - Particle Properties and Analysis	L5 Depth Filtration - Modelling and Design	G4 Electret Filter Media	G5 Filter Test Systems	M1 New Membranes I
Coffee Break – Fair					
10:45 12:00	L6 Cake Filtration - Two- and Multi-Component Slurries	L7 Depth Filtration - Applications	G6 Nanofibre Filter Media	G7 Filter Loading	M2 New Membranes II
Lunch – Fair					
13:00 14:15	L8 Continuous Vacuum and Pressure Filters	L9 Depth Filtration and Adsorption - Applications	G8 Filter Classification and Standardisation	G9 Surface Filtration	M3 Cross Flow Techniques
Coffee Break – Fair					
	Room 1A – 1st floor	Room 1B – 1st floor	Room 4A – 4th floor	Room 4B – 4th floor	
14:45 16:00	L10 Short Oral	G10 Short Oral	G11 Short Oral	M4 Short Oral	
16:00 16:45	Poster Presentation	Poster Presentation	Poster Presentation	Poster Presentation	
	Room 1A – 1st floor	Room 1B – 1st floor	Room 2 – 2nd floor	Room 4B – 4th floor	Room 2 – 2nd floor
16:45 18:00	F4 Filter Media - Numerical Methods for Optimized Media Design I	F5 Filter Media - Numerical Methods for Optimized Media Design II	L11 Discontinuous and Continuous Press Filters	G12 Modelling and Simulation	G13 Particles for Filter Testing

Thursday, 15.03.2018

	Room 1A – 1st floor	Room 1B – 1st floor	Room 4A – 4th floor	Room 4B – 4th floor
09:00 10:15	F6 Filter Media - Advanced Manufacturing Methods	L12 Novel Processes and New Separation Concepts	G14 Industrial Air and Gas Cleaning	M5 Ceramic Membrane Applications
Coffee Break – Fair				
10:45 12:00	F7 Filter Media - Novel Nanofiber Development I	L13 Process Optimization	G15 Hot Gas Cleaning	M6 Process and Waste Water Treatment I
Lunch – Fair				
13:00 14:15	F8 Filter Media - Novel Nanofiber Development II	L14 Slurry Pretreatment by Shearing, Classification, pH-shift	G16 Air Filtration	M7 Process and Waste Water Treatment II
Coffee Break – Fair				
14:45 16:00	F9 Filter Media - Novel Nanofiber and Wire Mesh Development	L15 Flotation and Hybrid Processes for Water Treatment	G17 HVAC-Systems	M8 Separation of Bio-Products

Programme is subject to amendments. Up-to-date Programme is available at www.Filtech.de

FILTECH 2018 · Conference Programme

Tuesday, March 13, 2018

08:30-10:15 h Registration

10:15 - 10:45 Opening Session

PL

Plenary Lecture

10:45 room
12:00 1A

Pore size characterization of a porous media: A true need but do we know what we are measuring?
Prof. Dr. Roger Ben Aim, Scientific advisor IFTS, France

K1

Keynote Lecture 1

13:00 room
14:15 1A

Filter Media Market, Technologies and Trends
Dr. Christine Sun, American Filtration Society Chair, USA

L1

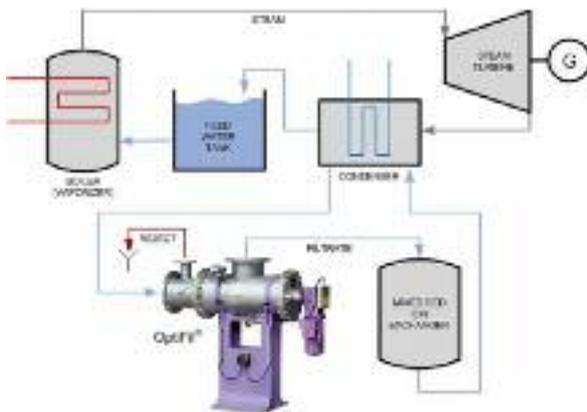
Backwashing Filtration

13:00 room
14:15 1B

Influence of filter cake thickness during backwash regeneration, P. Morsch*, H. Anlauf, H. Nirschl, Karlsruhe Institute of Technology (KIT), Germany

Optimized materials and processes for the separation of microplastic from the water cycle – OEMP, D. Venghaus*, P. Lau, M. Barjenbruch, et. al., Technical University of Berlin; A.-K. Barthel, M. Ricking, C. G. Bannick, Umweltbundesamt; J. Jählig, KompetenzZentrum Wasser Berlin; C. Goedecke, U. Braun, BAM, U. Grabbe, Mecana GmbH; M. Knefel, GKD AG, S. Reber, Invent, AG; T. Schmitt, BWB, Germany

Backwash filtration system for condensate polishing in power plant, S. Strasser*; L.-M. Ertl; J. Woegerer, Lenzing Technik GmbH, Austria



G1

Mist and Droplet Separation I

13:00 room
14:15 4A

Efficiency in mechanical fibrous filters loading with liquid aerosols, M. Dalemo*, Absolent AB, Sweden

Filter efficiency and liquid saturation in glass fiber media for oil mist filtration, T. Penner*, J. Meyer, G. Kasper, A. Dittler, Karlsruhe Institute of Technology, Germany

Better Drainage Technology (BDT) a new generation of coalescing media improves the performance parameters of eliminating liquid droplets from a gas stream, M. Neukirch*, P. Wijns, Hollingsworth & Vose, Germany

F1

Filter Media - Quality Control and Pore Size Analysis I

13:00 room
14:15 4B

Comparative liquid flow studies in filter media, M. Ängeslevä*, R. Salmimies, A. Häkkinen, Lappeenranta University of Technology, Finland; G. Rideal, Whitehouse Scientific Ltd, UK

Characterising the world's finest aperture size, square mesh filter, G. Rideal*, K. Brocklehurst, Whitehouse Scientific Ltd, UK

Measuring the maximum pore size of sand screens – choosing the most statistically robust parameter, G. Rideal*, K. Brocklehurst, Whitehouse Scientific Ltd, UK

K2

Keynote Lecture 2

14:45 room
16:00 1A

Cake forming filtration of suspensions – From the theory based analysis of test data to the reliable performance prediction of filters and filter centrifuges

Prof. Dr. Ioannis Nicolaou, NIKIFOS Ltd., Cyprus

L2

Decanter Centrifuges

14:45 room
16:00 1B

Inferring in-situ floc size, predicting solids recovery, and scaling-up using the Leung number in separating flocculated suspension in decanter centrifuges, W.W.-F. Leung*, The Hong Kong Polytechnic University, China

Reduction of particle fragmentation in decanter centrifuges by improved feed port design with "Gentle Feeder" - Results from industrial-scale plant, M. Reichenbach, S. Weis*, A. Siebelitz, ANDRITZ Separation GmbH, Germany; J. Grossalber, ANDRITZ AG, Austria

Dynamic simulation of compressible sediments in decanter centrifuges, M. Gleiß*, H. Nirschl, Karlsruhe Institute of Technology (KIT), Germany

G2

Mist and Droplet Separation II

14:45 room
16:00 4A

Droplet separation using woven wire mesh in cross-flow, S. Kaiser*, C. Rief, M. Piesche, University of Stuttgart, Germany

Experimental study of electrospun polyacrylonitrile nanofiber in gas-liquid coalescence filtration, F. Chen, Z. Ji, Q. Qi, Z. Liu, L. Miao*, China University of Petroleum, China

Comparison of aerogel modification methods of non-woven fabrics dedicated for air purification, Ł. Werner*, A. Jackiewicz-Zagórska, M. Niedziółka, M. Zuzga, B. Nowak, M. Bojarska, Warsaw University of Technology, Poland

F2

Filter Media - Quality Control and Pore Size Analysis II

14:45 room
16:00 4B

A critical analysis of capillary flow porometry with regard to its application to non-woven fibrous filter media, H.E. Kolb*, R. Schmitt, A. Dittler, G. Kasper, Karlsruhe Institute of Technology (KIT), Germany

Simulation-enhanced bubblepoint testing for woven wire meshes, D. Herper*, GKD – Gebr. Kufferath AG, Germany

Comparison of experimental approaches for the determination of the largest pore size (or first bubble point), I. Kienbaum, I. Struzynska-Piron, IB-FT GmbH, Germany; D. Pattyn, A. Odena*, POROMETER NV, Belgium

K3 Keynote Lecture 3

16:45 room
18:00 1A

Principle and its implement in designing filter media for liquid and gas filtration applications

Prof. Dr. Kyung-Ju Choi, Clean & Science Co. Ltd., Korea

L3 Cake Filtration – Modelling, Simulation, Characterization

16:45 room
18:00 1B

Conventional filtration theory and compressional rheology are interchangeable when using characterisation techniques correctly, E. Höfgen, A.D. Stickland*, University of Melbourne, Australia; S. Kühne, U.A. Peuker, Technical University Bergakademie Freiberg, Germany

Modeling and simulation of a pressure filtration process based on VDI guideline 2762, M. Azimian*, A. Wiegmann, Math2Market GmbH, Germany

Coupling of the Lattice-Boltzmann method and the discrete element method to model the separation of solid particles from liquids by porous media, K. Schmidt*, D. Hund, S. Antonyuk, University of Kaiserslautern; S. Ripperger, IT for Engineering GmbH, Germany

G3 Adsorption

16:45 room
18:00 4A

Capacity and energy efficiency of adsorptive filters for HVAC and compressed air, U. Sager*, E. Däuber, W. Mölter-Siemens, C. Asbach, Institut für Energie- und Umwelttechnik e.V. (IUTA), Germany

Home air purifier filter carbon evaluation - R&D project case study report, J. Hern, S. Basta*, Molecular Products Ltd, UK

SAAF™ Tech Tools: Decision science solutions for gas phase applications, J. Rajala*, AAF Flanders, USA

F3 Filter Media - Quality Control and Pore Size Analysis III

16:45 room
18:00 4B

Automatic fiber thickness and cloudiness analysis for non-woven filter media based on sem images, K. Schladitz*, M. Godehardt, A. Moghiseh, P. Easwaran, Fraunhofer-Institut für Techno- und Wirtschaftsmathematik ITWM, Germany

Automatic optical inspection systems (AOI) in filter production - Your chance for higher quality and cost saving, H. Oerley*, Dr. Schenk GmbH, Germany

Solution to the ISO 16890-4 – discharge of filter element, S. Kost*, R. Adam, S. List, TOPAS GmbH, Germany

Wednesday, March 14, 2018

L4 Cake Filtration – Particle Properties and Analysis

room
1A

Influence of the filtration on particle size and shape of crystalline material, L. Löbnitz*, H. Nirschl, Karlsruhe Institute of Technology (KIT), Germany

Analysis of mechanically labile protein crystals, B. Radel*, H. Nirschl, Karlsruhe Institute of Technology (KIT), Germany

Combined small angle X-ray scattering and transmission X-ray analysis, M. Meier*, J. Ungerer, M. Klinge, H. Nirschl, Karlsruhe Institute of Technology (KIT), Germany

L5 Depth Filtration Modelling and Design

09:00 room
10:15 1B

Evolution of a deep-bed filter porosity during loading, E. Sikorska, L. Gradon*, Warsaw University of Technology, Poland

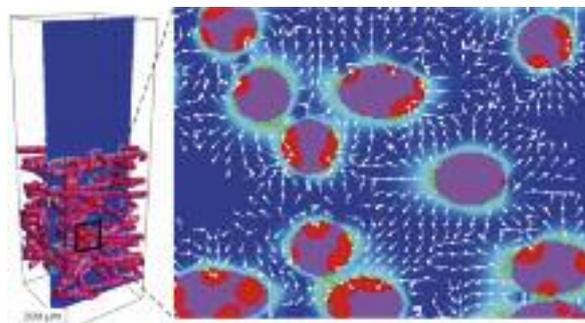
Build-up of internal cake in layered filtering media, R. Kirsch, S. Osterroth*, S. Rief, Fraunhofer Institut für Techno- und Wirtschaftsmathematik (ITWM), Germany

Design considerations in single and multi-layered woven wire mesh combinations in solid-liquid separation, F. Edelmeier*, F. Meyer, Haver & Boecker Wire Weaving Division, Germany

G4 Electret Filter Media

09:00 room
10:15 4A

3D simulation and experimental investigation of the coulomb effect in electret filters, K. Schmidt, IT for Engineering (it4e) GmbH; A. Hellmann, M. Kerner*, S. Antonyuk, University of Kaiserslautern; S. Schumacher, C. Asbach, Institut für Energie- und Umwelttechnik e.V. (IUTA), Germany



Study on cyclic olefin copolymer (COC) for moisture resistance in the application of electrostatic filters, Y.-H. Chou*, D.-L. Yang, J.-T. Huang, N.-L. Liu, C.-H. Hou, K.-C. Wu, Y.-H. Hsu, National Taiwan University, Taiwan

Development of a tree-like flow channel for the application of air filtration system, D.-L. Yang*, Y.-H. Chou, S.-C. Lee., A.-B. Wang, Y.-H. Hsu, National Taiwan University, Taiwan

G5 Filter Test Systems

09:00 room
10:15 4B

The new ISO 16890 – challenges for the test system operator to achieve reliable test results, C. Wabnitz*, C. Peters, S. Große, Topas GmbH, Germany

Influence of temperature and humidity to filter efficiency and dust holding capacity, M. Schmidt*, Palas® GmbH, Germany

A new methodology for measuring filtration efficiency as a function of particle aerodynamic diameter using a monodisperse aerosol source, S. Payne*, M. Irwin, J. Symonds, Cambustion Ltd.; T. Johnson, University of Cambridge, UK

M1 New Membranes I

09:00 room
10:15 2

Potential of flat sheet PEEK membranes, produced by random hard templating process, M. Loepef*, C. Kellenberger, Novamem Ltd., Switzerland

Fabrication of membrane distillation for enhanced desalination, S.S. Ray, S.-S. Chen*, National Taipei University of Technology, Taiwan

Evaluation of polysulfone and polyethersulfone for pilot scale forward osmosis, M.H. Harif Fadzilaha, N. Jullok*, O.H. Lin, A.H. Ma'Radzi University Malaysia Perlis, Malaysia

Discover the Future of Filtration & Separation

L6 Cake Filtration – Two- and Multi-Component Slurries 10:45 room 1A 12:00

New standard VDI 2762, part 3: Filter cake desaturation by gas pressure - Procedure and hints for practical application, H. Anlauf*, Karlsruhe Institute of Technology (KIT), Germany

Separation behaviour of multi-component-suspensions (emulsion-slurries), S. Kühne*, E. Löwer, U.A. Peuker, Technical University Bergakademie Freiberg, Germany

Green extraction using microwave and centrifugal force: Extraction of natural products, A. Angoy*, M. Valat, Bordeaux University; P. Ginisty, IFTS, France

L7 Depth Filtration - Applications 10:45 room 1B 12:00

Fuel filter test bench for multi stage flat sheet testing close to field relevant conditions, M. Bublinski*, C. Dopazo, L. Spelter, U. Staudacher, MANN+HUMMEL GmbH, Germany

Multi stage diesel filtration for truck and industrial applications, L. Spelter*, C. Dopazo, M. Bublinski, J. Reying, MANN+HUMMEL GmbH, Germany

Synthetic oil filter media facing present challenges in mobility, B. Meister-Magsino, F. van Uffelen, N. Werchner, A. Kilian, A. Winkler*, H. Banzhaf, R. Bernewitz, MANN+HUMMEL GmbH, Germany

G6 Nanofibre Filter Media 10:45 room 4A 12:00

How regulatory changes drive innovation in pleatable filter media, O. Huss*, Hollingsworth & Vose, USA

Efficient electrospun nanofibers membranes for air filtration, A.C.C. Bortolassi*, A.E. Lista, V.G. Guerra, M.L. Aguiar, Federal University of São Carlos; Brazil; M. Bechelany, D. Cornu, P. Miele, University Montpellier, France

Skin layer in cyclic loading-cleaning of a nanofiber filter in filtering nano-aerosols, W.W.-F. Leung*, C.W.Y. Hau, The Hong Kong Polytechnic University, Hong Kong

G7 Filter Loading 10:45 room 4B 12:00

Experimental study of separation of polydisperse nano-scale aerosols in dust-loaded fibrous filter media, M. Schlager*, T. Laminger, G. Mauschitz, Vienna University of Technology, Austria

Compomesh – New high-performance metal filter medium through the coordinated combination of a depth filter medium with a woven wire cloth, M. Müller*, Spörl KG, Germany

Air filtration using hollow-fibre membranes for nanoparticle removal, P. Bulejko*, O. Krištof, T. Sverák, P. Kejik, J. Pospíšil, Brno University of Technology; M. Dohnal, ZENA Membranes s.r.o, Czech Republic

M2 New Membranes II 10:45 room 2 12:00

Omniphobic desalination membranes: Effective deposition of zinc oxide nanoparticles, L.-H. Chen, A. Huang, Y.-R. Chen, K.-L. Tung*, National Taiwan University, Taiwan

Thin film nanocomposite (TFN) membranes embedded with pristine or modified halloysite nanotubes (HNTs) for CO₂ separation, E. Chehrizi*, A. Sharif, M. Omidkhan, Tarbiat Modares University; M. Karimi, Amirkabir University of Technology, Tehran, Iran

Enhanced oilfield produced water treatment by hybrid graphene oxidized/ceramic photocatalytic membrane, Z. Sadeghian*, Research Institute of Petroleum Industry (RIPI); K. Sadeghian, Iran University of Science and Technology (IUST), Iran

L8 Continuous Vacuum and Pressure Filters 13:00 room 1A 14:15

Non-stop production with vacuum drum filters, U. Hoffner*, Bokela GmbH, Germany,

Production of antibiotics in the pharmaceutical industry - Continuous filtration enables efficient increase in antibiotics production, D. Steidl, T. Ochel*, BHS-Sonthofen GmbH, Germany

Fundamentals and concepts of steam pressure filtration processes, S. Esser*, U.A. Peuker, Technical University Bergakademie Freiberg, Germany

L9 Depth Filtration and Adsorption - Applications 13:00 room 1B 14:15

Energy optimized oil filtration for automatic transmissions, L. Petersen*, H. Brengelmann, G. Mathy, A. Heinen, Hengst SE, Germany

Principles of particle separation in ceramic deep foam filters based on a water model, D. Hoppach*, U.A. Peuker, Technical University Bergakademie Freiberg, Germany

Microstructured iron hydroxide containing agglomerates for arsenic removal from contaminated water - Results of experimental studies, A. Gerbeth*, B. Gemende, T. Riedel, T. Mehlhorn, N. Pausch, University of Applied Sciences Zwickau; M. Leiker, R. Heiduschke, B. Bäder, P.U.S. Produktions- und Umweltservice GmbH; P. Ay, C. Glaser, F. Logsch, Brandenburg University of Technology Cottbus-Senftenberg, Germany

G8 Filter Classification and Standardisation 13:00 room 4A 14:15

New energy classification of air filters, T. Stoffel*, DencoHappel FläktGroup, Germany

ISO 16890 and air filter media selection, C. Desquilles*, P. Blanckaert, Lydall Performance Materials SAS, France; D. Sullivan, G. Crosby, Lydall Performance Materials, USA

Air filter testing in a changing world, M. Stillwell*, A. Large, Particle Technology Ltd, UK

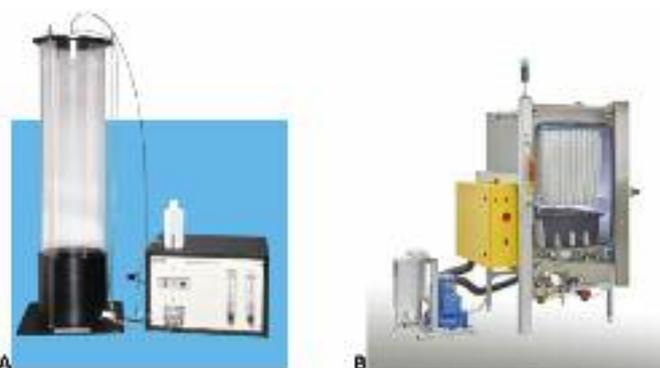


Figure 1: (A) Large particle (salt) aerosol generator from TSI, (B) IPA vapour discharge cabinet from TOPAS

G9 Surface Filtration

13:00 room
14:15 4B

PM2.5 quality factor for ranking different cleanable filter media, W. Hoeflinger*, T. Laminger, Technical University Vienna, Austria

Filtration performance of lab-scale pulse-jet bag filter, R. Boudhan*, A. Joubert, L. Le Coq, IMT Atlantique, France; K. Gueraoui, Faculté des Sciences de Rabat, Morocco

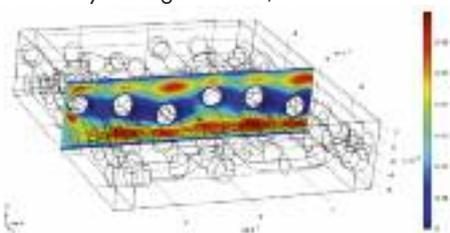
Baghouse filtration: A praxis-relevant media parameter to determine an emissions level of a pulse-jet cleanable filter, S. Sobich*, J. Meyer, G. Kasper, Karlsruhe Institute of Technology (KIT), Germany

M3 Cross Flow Techniques

13:00 room
14:15 2

Dynamic filtration of well-defined particles analyzed by Computational Fluid Dynamics, H.S. Marke*, U. Krühne, Technical University of Denmark; E.B. Hansen, Novo Nordisk A/S, Denmark

Computational fluid dynamics-aided scale-up of crossflow filtration from ultra scale-down membrane filtration unit, M.S. Hussain*, Y. Zhou, University College London, UK



Adjusting the turbidity of nutraceuticals with the krauss-maffei dynamic crossflow filter, G. Grim*, ANDRITZ KMPT GmbH, Germany

L10 Short Oral + Poster Presentation

14:45 room
16:00 1A

F & S Technology

Comparison of filtration method and filtration accuracy in surface finishing industry, S. Oguri*, H. Yagishita, K. Yagishita, Sanshin Mfg.Co.,Ltd., Japan

Comparative study between basket and self-cleaning filters, E. Ricco Jr*, F. A. Cunha, B. G. Oliveira, Apexfil Trade and Industry Ltd.; L.F. Moura, M.L. Aguiar, Federal University of São Carlos, Brazil

Filter free flow-through treatment with acoustic separator, T. Kambayashi*, Hitachi, Ltd., Research & Development Group, Japan

F & S Related Analytical Techniques

Analysis of filter cake structures by using micro tomography, E. Löwer*, U.A. Peuker, Technical University Bergakademie Freiberg, Germany

High-coverage inline basis-weight measurement of nonwoven filtration media as a clean alternative to nuclear and X-ray gauging, N. Reynders*, Hammer-IMS nv, Belgium

High throughput analytical photocentrifugal ultrafiltration for characterization of suspensions and solutions filterability and membrane fouling, M. Loginov, G. Gésan-Guiziu, UMR STLO, INRA-Agrocampus Ovest; F. Samper, E. Vorobiev, Compiègne University of Technology, France; T. Sobisch, D. Lerche*, LUM GmbH, Germany

Micro & ultrafiltration membranes: pore size characterization by liquid-liquid porometry and bubble point tester, K. Gupta*, Porous Materials Inc., USA

Cake forming porometer – In-situ evaluation of filtration media, K. Gupta*, Porous Materials Inc., USA

Water Treatment and Sludge Handling

The capability of Jordanian natural zeolite in industrial waste water treatment, Y. Taamneh*, Jordan University of Science and Technology; R. Al Dwairi, Tafila Technical University, Jordan

Chitosan-hydroxy apatite nano hybrid filters for removal of nitrite from water samples, A. Bagheri Garmarudi*, M. Habibi, M. Khanmohammadi, Imam Khomeini International University, Iran

Integration of electro-crystallization and membrane for fluoride removal and recovery, V. Ya, Y.-C. Chen, C.-W. Li*, Tamkang University, Taiwan

Evaluation of meshed tube filtration as a novel SWRO pretreatment for the removal of marine dinoflagellate *Cochlodinium polykrikoides*, G. Cha, S. Choi, and S. Hong*, Korea University, Korea

Iron ore tailings dry stacking in Gogohar Sirjan, A. Khalesi*, A. A. Nezhadan, Turbinedar Co., Iran

G10 Short Oral + Poster Presentation

14:45 room
16:00 1B

Experimental investigation into structure and operating performance of surface filters, J. Schelp, Q. Zhang*, E. Schmidt, University of Wuppertal, Germany

Fibers and filters - How scanning electron microscope (SEM) is used for identification and qualitative assessment on natural fibers and textile filter media, C. Szerbakowski, K. Nebel, Reutlingen University, Germany; J. Zahn*, PHENOM WORLD, Netherlands

Development of the performance test method for the plug-in type pulse jet dust collector, K. Fukui*, S. Fujiwara, M. I. F. Rozy, T. Fukasawa, T. Ishigami, Hiroshima University; H. Kudou, Amano Corporation; C. Kanaoka, Kanazawa University, Japan

Deliquescence- and efflorescence-behaviour of hygroscopic salt particles in non-hygroscopic dust cakes, D. Horst*, Q. Zhang, E. Schmidt, University of Wuppertal, Germany

Analysis of formation of the dust cake of a hybrid electrostatic filtration system for particles, F. M. Oliveira*, M. L. Aguiar, Federal University of São Carlos; M. V. Rodrigues, Federal University of Alfenas, Brazil

Characterization and efficiency performance by standardization tests, A.E. Lista*, M. L. Aguiar, Federal University of São Carlos, Brazil

Qualification of a corona type aerosol neutralizer, B.A. Lima*, M.L. Aguiar, Federal University of São Carlos, Brazil; P.M. Tronville, Politecnico di Torino, Italy

Efficacy evaluation of a modified filter medium with titanium dioxide nanoparticles in the inhibition of real environment microorganisms, P.F. Rosa, A. Bernardo, M.L. Aguiar*, Federal University of São Carlos, Brazil

Achieving consistent penetration test results in respiratory filter and filter media testing, T. Johnson*, J. Johnson, A. Avenido, TSI Incorporated, USA; Juergen Spielvogel, TSI GmbH, Germany

Dust holding performance of pleated filter installed with pre-filter wrap, Z. Pan*, M. Tang, Z. Sun, Y. Liang, South-China University of Technology, China

Effect of air pressure on filtration performance of fibrous filter sheet, X. Yu, B. Xu*, Tongji University, China

Regime transition in mist filtration, V. Golkarfard*, A.J.C. King, S. Abishek, B.J. Mullins, Curtin University, Australia; G. Kasper, Karlsruhe Institute of Technology, W. Heikamp, BinNova GmbH & Co KG

G11 Short Oral + Poster Presentation 14:45 room 4A 16:00

Aspects of multi cyclone design at limited space, U. Muschelknautz*, MK Engineering, Germany

Numerical analysis of phase separation in curved Ranque-Hilsch vortex, P. H. Niknam*, University of Firenze - UNIFI, Italy; S. Farhangdoust, Florida International University, USA

Study of the influence of the filter media heterogeneity on filter performance, D. Hietel*, O. Iliev, D. Manvelyan, J. Mohring, A. Schmeißer, Fraunhofer Institute for Industrial Mathematics, Germany

Pore scale simulation for catalytic filter and comparison with upscaled model, R. Greiner, Technical University Darmstadt, B. van Setten, M. Votsmeier, Umicore AG & Co. KG, T. Prill, O. Iliev*, Fraunhofer Institute for Industrial Mathematics, Germany

Analysis of aerosol emissions from a rubber vulcanization process, G. Buffo, S. Barale, P. Tronville*, Politecnico di Torino, Italy

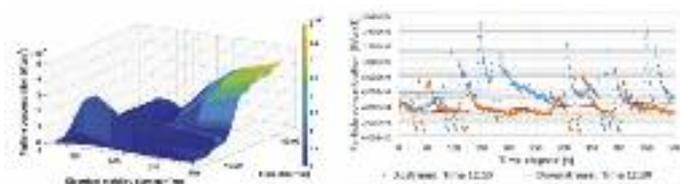


Fig. 1 - Particle concentration upstream of electrostatic filter vs. time - Diffusion 1:070

Fig. 2 - Particle concentrations across the cooler (625 mm) vs. time - Diffusion 1:100

Particle reduction by electrostatically charged water spray, M. Zillgitt*, E. Schmidt, University of Wuppertal, Germany

Filtration behavior of CNT - functionalized melt blown filter media, W. Mölter-Siemens, Institute for Energy and Environmental Technology (IUTA); L. Sinowzik, Saxon Textile Research Institute (STFI), Germany

Filtration efficiency and aging of electret filters, S. Schumacher*, R. Jasti, A.M. Todea, C. Asbach, Institut für Energie- und Umwelttechnik e.V. (IUTA); A. Hellmann, Technical University Kaiserslautern, Germany

SusFil: Sustainable Filtration - Multifunctional nonwoven layers to achieve efficient and sustainable filtration solutions allowing cost-effective processing of compressed air for industrial processes, L. Sinowzik*, Sächsisches Textilforschungsinstitut e.V.; W. Mölter-Siemens, Institute for Energy and Environmental Technology e.v. (IUTA), Germany

Combined separation of ultrafine dust particles and gaseous pollutants from biomass combustion processes, F. Prill, University Paderborn, Germany

Dust release functions to describe the particle emissions of bulk materials, N. Schwindt*, H. Kruggel-Emden, E. Schmidt, University of Wuppertal; D. Schulz, Technical University Berlin, Germany

Simulation to quantify the dustiness of powders, T. Londershausen, K. Vaupel*, E. Schmidt, University of Wuppertal, Germany

M4 Short Oral + Poster Presentation 14:45 room 4B 16:00

Desalting of small organic molecules using nanofiltration, P. Dyer*, T. Fenton, J. Grey, Callaghan Innovation, New Zealand

How cake enhanced concentration polarization can decrease the membrane resistance, M. Keller*, C. Melang, S. Panglisch, University Duisburg-Essen, Germany

Bioaugmentation of membrane bioreactor for denim textile wastewater treatment, O. Khelifi*, E. Koltsova, A. Nehrii, H. Ratnaweera, Norwegian University of Life Science, Norway; C. Palop Donat, Polytechnic University of Valencia (UPV), Spain

Performance analysis of plate-and-frame forward osmosis membrane elements and implications for scale-up design, S. Lee*, Y.C. Kim, Korea Institute of Machinery and Materials, Korea

A study on selective separation of the concentrated zinc chloride from hydrolysis sugar solution by nanofiltration, Y.-T. Kuo, T.-Y. Yang, H.-P. Wan, Industrial Technology Research Institute; C.-J. Chuang*, Chung Yuan University, Taiwan

Affinity polymer membrane for a selective extraction and recovery process of Fructose and Glucose sugars, H. Mouadili, S. Majid*, O. Kamal, EL.H. ElAtmani, M. Hlaibi, University Hassan II, Morocco; K. Touaja, L. Lebrun, University of Rouen, France

Membrane technology for oriented processes related to the facilitated extraction and recovery of paracetamol compound, R. Louafy*, S. Tarhouchi, I. Mourtaq, I. Touarssi, M. Hlaibi, University Hassan II GeMEV, Maroc; L. Lebrun, University of Rouen, France

Preparation of PVC- NiFeCO₃- nano composite membranes for the pervaporation separation of toluene-heptane mixtures, L. Aouinti*, F.D.S. Boukiraa, University of Sciences and Technology Mohamed Boudiaf (USTO-MB), Algeria

Electrospun nanofibers as a potential for membrane distillation, M. Karimi*, H. Fattahi, A. Ebrahimi, N. Mahmoodi, M. Sharifi, Amirkabir University of Technology, Iran

Numerical simulation of the flow in a rotating-disk membrane module, T.G. Kang*, K.S. Moon, J.S. Kim, Korea Aerospace University; G.K. Park, S.U. Kim, BKT Co. Ltd., Korea

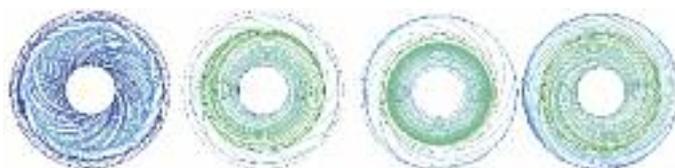


Fig. 2. Rotational flows at several cross-sections at z=9.0, 8, 7, and 6 mm.

Classification of finest particles using crossflow filtration, P. Lösch*, S. Antonyuk, University of Kaiserslautern, Germany

F4 Filter Media - Numerical Methods for Optimized Media Design I 16:45 room 1A 18:00

Simulation of spunbond and meltblown processes for filter media production, S. Gramsch*, Fraunhofer Institute for Industrial Mathematics, Germany

Optimization of filter media structures with GeoDict, C. Kühnle*, M. Azimian, A. Wiegman, Math2Market GmbH, Germany

Engineering an ultra-high flow weave - Latest achievements in woven wire mesh technology, M. Knefel*, GKD-Gebr. Kufferath AG, Germany

F5 Filter Media - Numerical Methods for Optimized Media Design II 16:45 room 1B 18:00

Macroscopic filter modelling based on computational fluid (CFD), U. Heck*, M. Becker, DHCAE Tools GmbH, Germany

A two-scale approach for the computation of flow through pleated filters based on real image data, M. Kabel, R. Kirsch*, S. Osterroth, S. Rief, Fraunhofer Institute for Industrial Mathematics (ITWM), Germany

Benefits of spunbond substrate uniformity in advanced filtration media, J.T. Walker*, A.E. Ortega, J. Forcucci, CEREX Advanced Fabrics, Inc., USA

L11 Discontinuous and Continuous Press Filters 16:45 room 4A 18:00

Filter press dewatering process: analysis of the physical-chemical features that affects the cake build-up, F. Kaswalder*, D. Collini, A. Grosso, N. Finocchiaro, Aqseptence Group s.r.l.; A. Paglianti, University of Bologna, Italy

Filtration 4.0, G. Börste*, P. Ohorn, A. Menzel, U. Hüsgen, LENSER Filtration GmbH, Germany

Heavy duty belt filter press in mining applications, G. Krammer*, R. Raberger, Graz University of Technology, Austria

G12 Modelling and Simulation 16:45 room 4B 18:00

Soot filtration modeling and simulation in diesel particulate filter, M. Azimian, J. Becker*, L. Cheng, A. Wiegmann, Math2Market GmbH, Germany

Particle capture efficiency model for dry gas seal and fuel gas filtration applications, E. Barega*, T. Van der Linde, J. Huizinga, John Crane Indufil, Netherlands

Development of an analytical model to account for local porosity variations and anisotropy effects on the permeability of fibrous media, F. Theron*, E. Lys, L. Le Coq, IMT Institut Mines Télécom Atlantique; France; S. Woudberg, Stellenbosch University, South Africa

G13 Particles for Filter Testing 16:45 room 2 18:00

Aerosol generation for the ISO 16890 filtration standard, S. Schütz*, M. Schmidt, Palas® GmbH, Germany

Filtration characteristics of a melt blown nanofiber composite air filter medium against DEHS and A2 fine dust mixture, Z. Sun*, Z. Pan, Y. Liang, J. Yang, South China University of Technology, China

The new "DMT test dust A2 fine quartz-free", D. Renschen, U. Gogilan*, DMT GmbH & Co. KG, Germany

Thursday, March 15, 2018

F6 Filter Media – Advanced Manufacturing Methods I 09:00 room 1A 10:15

Exploiting metal additive manufacturing to deliver Innovation in wedge wire filter media designs, N. Burns*, M. Burns, Croft Filters Limited; D. Travis, L. Geekie, Croft Additive Manufacturing Limited, UK

Additive printing of fiber mats based on melt electrospinning from polymer filaments, D. Buivydiene, E. Krugly, L. Kliučininkas, D. Martuzevicius*, Kaunas University of Technology, Lithuania

DIN 2304-1 - Adhesive bonding technology - Quality requirements for adhesive bonding processes - Part 1: Adhesive bonding process chain: How it effects application in filtration, F. Steegmanns*, Stockmeier Urethanes GmbH & Co. KG, Germany

L12 Novel Processes and New Separation Concepts 09:00 room 1B 10:15

Cleaning validation and efficiency evaluation of the high-gradient magnetic separator in pharmaceutical design, K. Wolz*, M. Franzreb, M. Ebeler, G. Grim, ANDRITZ KMPT GmbH, Germany

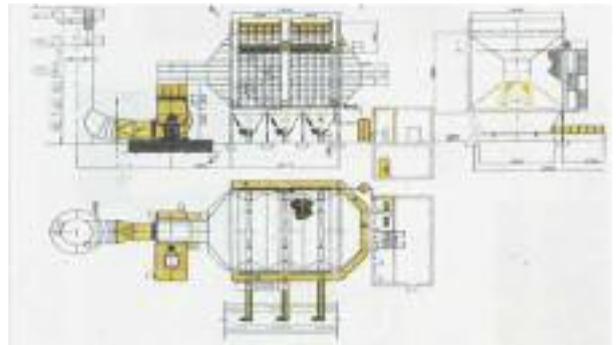
Novel centrifuge design enables low energy separation (Result of EU-Project PRODIAS), M.H. Kopf*, S. Szepessy, P. Thorwid, BASF SE, Germany

Separation and dewatering of biological microparticles from low concentrated suspensions by using the energy efficient thin film filtration, Z. Lam*, H. Nirschl, H. Anlauf; Karlsruhe Institute of Technology, Germany

G14 Industrial Air and Gas Cleaning 09:00 room 4A 10:15

Catalytic filtration technologies and their application in the process industry, P. Aresta*, P. Kristensen, FLSmidth Airtech A/S, Denmark

The conversion of low ratio fabric filter or the electrostatic precipitator on the pulse jet bag filter especially in the aspect of heavy metals removal, S. Szulc*, Bipromet SA, Poland



New standard for cement mill filters - existing as well as new filters, L. Gamborg*, FLSmidth A/S, Denmark

M5 Ceramic Membrane Applications 09:00 room 4B 10:15

Ceramic hollow fiber membranes for efficient water-in-diesel separation, C. Finger*, C. Sisamci, O. Schmidt, M. Ebrahimi, University of Applied Sciences Mittelhessen; A.A. Schmidt, DECKMA Hamburg GmbH; S. Schütz, MANN+HUMMEL GmbH; F. Ehlen, Kansas State University; P. Czermak, Justus-Liebig University of Giessen, Germany

Separation of chemically degraded lignosulfonates and desired products with ceramic membranes, S. Schönherr*, M. Ebrahimi, A.M. Steger, University of Applied Sciences Mittelhessen; P. Geigle, CMBlu Projekt AG; S. Demharter, Sappi Europe; S.Schütz, F. Ehlen, MANN+HUMMEL GMBH, Germany; Peter Czermak, Kansas State University, USA

Purification and fractionation of lignosulfonate in thin liquor by ceramic membranes, D. Humpert, M. Ebrahimi, A. Stroh, University of Applied Sciences Mittelhessen; P. Geigle, CMBlu Projekt AG; S. Demharter, Sappi Stockstadt GmbH; S. Schütz, F. Ehlen, MANN+HUMMEL GmbH, Germany; P. Czermak, Kansas State University, USA

F7 Filter Media – Novel Nanofiber Development I 10:45 room 1A 12:00

Development of P(VDF-TrFE) nanofilter for air filtration industry with base media and packing density, S.-C. Lee*, C.-K. Chang, Y.-H. Hsu, A.-B. Wang, J.-T. Huang, N.-L. Liu, National Taiwan University, Taiwan

The application of nanofiber in functional materials, W. Wang, H. Qi*, Nax Nano GmbH, Germany

Bioinspired membranes from cellulose nanofibrils, M. Hakalahti*, E. Kontturi, T. Tammelin, VTT Technical Research Centre of Finland Ltd, Finland

L13 Process Optimization 10:45 room 1A 12:00

Model-based investigation of the effect of intermittent filtration units on buffer tank levels in a continuous process, F. D. Böhner*, J. Abildskov, J.K. Huusom, Technical University of Denmark; P. A. Santacoloma, CP Kelco ApS, Denmark

Discover the Future of Filtration & Separation

Computational optimization of body feed in filter-aid filtration using a mechanistic process model, M. Kuhn*, H. Briesen, Technical University of Munich, Germany

Intensification of Oily Waste Water Ozonation by Exposure to Vibration, E.M. Kraeva*, D. A. Kubasova, O. A. Ivanova, M. V. Ivanov, B.S. Ksenofontov, Bauman Moscow State Technical University, Russia

G15 Hot Gas Cleaning

10:45 room
12:00 4A

Simultaneous removal of soot and NOx from biomass fumes over functionalized sintered filter, A. Villot*, G. Tesquiere, L. Le Coq, IMT-Atlantique; A. Guyon, Sintertech SAS - PORAL; F. Tresse, Prodec Metal-STI Group, France

Pyrotex® KE for emissions control and increased energy efficiency, J. Lauer, R. Hammerschmidt*, F. Kenzle, BWF Envirotec, Germany

Investigations into the regeneration of rigid ceramic filter candles for hot gas filtration, J. Sitzmann*, J. Markgraf, Calida-Cleantech GmbH, Germany



M6 Process and Waste Water Treatment I

10:45 room
12:00 4B

Experiments and modeling of nanoparticle depth filtration under unfavorable conditions: the effect of filter structure, flow velocity and loading, D. Segets*, S. Süß, W. Peukert, Friedrich-Alexander-University Erlangen-Nürnberg, Germany; H. Lee, D. Y. H. Pui, University of Minnesota, Minneapolis, S.-C. Chen, Virginia Commonwealth University, USA

Amyloid hybrid membranes: removal of heavy metal contaminants from water and recover gold, S. Bolisetty*, BluAct Technologies GmbH; R. Mezzenga, ETH Zurich, Switzerland

Facilitated extraction and recovery of Methylene Blue and Blue P3R dye by affinity polymer membranes containing chitin as new extractive agent, Y. Chaouqi*, R. Ouchni, M. Hlaibi, Université Hassan II Casablanca; O. Cherkaoui, M. El Bouchti, ESITH Casablanca - REMTEX, Morocco; A. Jada, Institut de Sciences des Matériaux de Mulhouse, France

F8 Filter Media – Novel Nanofiber Development II

13:00 room
14:15 1A

Investigation of solvent and surfactant effect on the P(VDF-TrFE) fiber generations, C.-K. Chang*, S.-C. Lee, J.-T. Huang, N.-L. Liu, C.-H. Hou, C.-K. Lee, Y.-H. Hsu, National Taiwan University, Taiwan

Continuing Innovation in electrospinning: New electrode design for improved uniformity and flexibility, J. Manasco*, Elmarco, Inc., USA; RR. Krenek, I. Ponomarev, Elmarco, s.r.o., Czech Republic

Nanofibrillated cellulose for improved filter media, G. Minhas*, Performance BioFilaments, Inc, Canada

L14 Slurry Pretreatment by Shearing, Classification, pH-shift

13:00 room
14:15 1B

Mechanical stress as pretreatment for the separation of exopolysaccharides (eps) producing bacterial starter cultures, F. Häffele*, H. Nirschl, Karlsruhe Institute of Technology (KIT); S. Mende, D. Jaros, H. Rohm, Technical University Dresden, Germany

Effect of hydrocyclone classification on the filtration characteristics of green liquor dregs, M. Golmaei*, T. Kinnarinen, E. Jernström, A. Häkkinen, Lappeenranta University of Technology, Finland

The effect of pH on the local and average filtration properties of a bauxite residue slurry, T. Kinnarinen*, A. Häkkinen, Lappeenranta University of Technology, Finland; H. Theliander, T. Mattsson, Chalmers University of Technology, Sweden

G16 Air Filtration

13:00 room
14:15 4A

Coping reduced space with flexible filter element shapes for engine air filtration, D. Schmid*, T. Dirnberger, M. Röhrig, S. Epli, M. Lehmann MANN+HUMMEL GMBH, Germany

Trinitex® Advance by Ahlstrom-Munksjö - The highest protection of the gas turbine in all demanding environmental conditions, C. Vallet*, Ahlstrom-Munksjö, France; O. Soikkeli, J. Kaukopaasi, Ahlstrom-Munksjö, Finland

Difficulties concerning the test method for filter materials according DIN EN 60335-2-69 Annex AA, D. Keßlau*, R. Heidenreich, Institute of Air Handling and Refrigeration (ILK) Dresden, Germany

M7 Process and Waste Water Treatment II

13:00 room
14:15 4B

Removal of anthropogenic organic micropollutants by a hybrid membrane-adsorption process, S. Spitzer*, J. Haslinger, M. Koch, N. Kreuzinger, M. Harasek, Vienna University of Technology; M. Koch, M. Rupprich, MCI - The Entrepreneurial University, Vienna

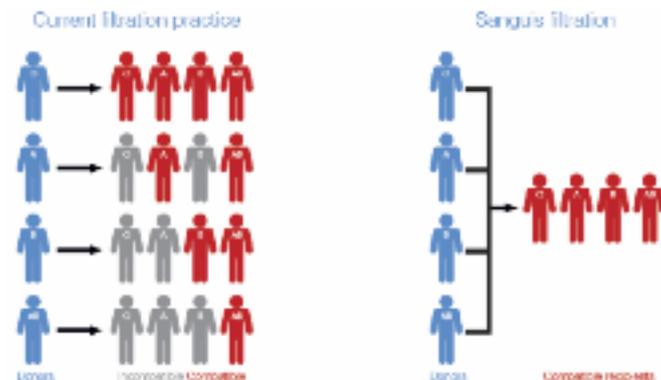
New key data on membrane wastewater treatment plant as result of innovative operation, K. Drensla*, A. Janot, Erftverband Bergheim, Germany

Improving resource efficiency of irrigation using reverse osmosis for desalination of brackish well water and salty sewage effluents, T. Peters*, Membrane Consulting, Germany

F9 Filter Media – Novel Nanofiber and Wire Mesh Development

14:45 room
16:00 1A

Engineering of Universal Plasma Filter for Blood Transfusion, M. Tipper*, H. Spurr, S. Russell, R. Ward, Nonwovens Innovation & Research Institute Ltd. (NIRI), UK



Three dimensional high performance filter cloth - New developments in woven wire filtration media, F. Edelmeier*, F. Meyer, Haver & Boecker Wire Weaving Division, Germany

Metal mesh filters as multi-functional flow elements with micropleats for confined installation spaces, N. Komorek*, N. Beckers, filtertechnik.Europe GmbH & Co. KG, Germany

L15 Flotation and Hybrid Processes for Water Treatment

14:45 room
16:00 1B

Microfluidic simulation of flotation processes by density functional hydrodynamics, O. Dinariev*, N. Evseev, Schlumberger Moscow Research, Russia

Gravity-driven chitosan-enhanced melamine sponge membrane for advanced wastewater treatment, H. Li*, The University of Hong Kong, China

A hybrid method for the removal of fluoride from water, M. Changmai*, M. Paswan, M.K. Purkait, Indian Institute of Technology Guwahati, India

G17 HVAC-Systems

14:45 room
16:00 4A

Determination of the fractional deposition efficiency of full scale HVAC and HEPA filters for nanoparticles ≥ 4 nm, C. Asbach*, W. Mölter-Siemens, A.M. Todea, T. Institut für Energie- und Umwelttechnik e. V. (IUTA); T. Schuldt, F. Schmidt, University Duisburg-Essen, Germany

Energy efficiency in HVAC filtration - Developing nonwoven filter media further, L. Summa*, Sandler AG, Germany

Does control of indoor CO₂ levels negatively impact IAQ?, C.O. Muller*, D. Bennett, Purafil, Inc., USA; R. McElligott, N. Glover, Future Decisions; P. Fish, Prisma Services Ltd., UK

M8 Separation of Bio-Products

14:45 room
16:00 4B

The relation of ultrafiltration membrane fouling caused by algae to algal growth phase, S. Laksono*, A. Kouchaki Shalmani, J. Jansen, S. Pnglisch, University of Duisburg-Essen, Germany

ted processes across affinity polymer membranes for the facilitated extraction and recovery of L- enantiomeric form of ascorbic acid, S. Tarhouchi*, R. Louafy, H. El Atmani, H. Mouadili, M. Hlaibi, University HASSAN II GeMEV, Morocco; L. Lebrun, University of Rouen (PBS), France

Membrane processes for facilitated extraction and recovery of Glycerol from biodiesel production through polymer inclusion membranes, H. Mouadili, S. Majid, H. El Atmani, O. Kamal, M. Hlaibi*, University HASSAN II GeMEV, Morocco; L. Lebrun, University of Rouen (PBS), France

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