

FILTECH

November 12–14, 2024

Cologne – Germany

The Filtration Event

www.Filtech.de

**Platform
for your
success**

**Conference
Programme
Short Courses &
Trade Show**

**Koelnmesse
Cologne
Germany**

Surface Filters

Vacuum & Pressure Filtration

Separation Enhancement by Electrical Means

200+ Papers
580+ Exhibitors

Product Recovery

Cyclones

The Conference



Benefit from top level knowledge and...

... know-how transfer

The Filtration industry provides innovative solutions for current and future challenges. This dynamic industry is of further growing importance and turning into a key industry worldwide. At the FILTECH 2024 Show the latest innovations will be on display and will provide visitors an exclusive overview and insights into state-of-the-art science and technologies - no matter what sector they are in. The innovative power in the field of filtration and separation is strong. Particularly in air filtration, fine dust values and gases that affect the climate, germs that are harmful to our health, and other impacts are leading to ever new developments. But also for solids separation and solid-liquid separation there are always new developments with the striving for maximum efficiency, higher quality and sustainable solutions.

More than 200 Technical Papers

The programme gives a representative cross-section of the different procedures and applications of separation technology all across the industry, from the preparation of mineral raw materials, chemistry, environmental technology and water purification down to pharmaceutical and biotechnology. Solutions for ongoing problems are represented in the programme. For example the latest research and development of highly efficient respiratory masks, air cleaning and air monitoring technologies. Presentations also focus on the detection of micro pollutants, antibiotic-resistant bacteria/ germs, micro plastics in water and their removal technologies. Also presented are new developments in battery manufacturing and recycling. New approaches to face these and many other challenges are given at FILTECH 2024 Conference.

Membrane Design

Filter Media

Computational Fluid and Particle Dynamics

Separation of Nanoparticles

Emission Control

Particle Separation at High Temperatures

Granular and Fibrous Filter Media

Solid-Liquid-Separation

Slurry Pretreatment

Extraction

Bag Filters

Air Quality Regulations

Electrostatic Precipitators

Steam Pressure Filtration

Wet Scrubbers

Centrifugal Filtration

Hydrocyclones

Conference Topics

Depth Filtration

Reverse Osmosis and Dialysis

Crossflow

Testing

Coagulation & Flocculation

Woven & Nonwoven Filter Media

Process Simulation

Particle Characterization

Biofilters

Nanofluidics

Magnetic Filtration

Granular Bed Depth Filters

Operation and Control of Filtration & Separation Equipment

Solid-Gas Separation

Mist and Droplet Separation

Micro Filtration

Selective Separation

Combined Processes

Fundamentals

Membrane Processes

Flotation & Adsorption

Separation Test Methods and Instruments

Press Filtration

Ultrafiltration

Computer Aided Design

New Equipment and Processes

Gravity and Centrifugal Sedimentation

Surfactants & Filter Aids

Pervaporation

The International Exhibition...

... Platform for your success

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 purchasing, selling, designing or researching filtration & separation equipment and services. **FILTECH** is the global platform to present and find solutions for all filtration tasks and to generate international business. At **FILTECH 2024** trade visitors will find targeted solutions for their Filtration & Separation tasks whatever market they are in.

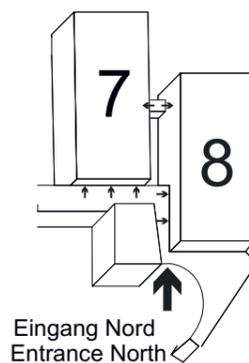
Exhibit at FILTECH 2024

The FILTECH 2024 Show will offer Exhibitors a unique possibility to generate new business. The Show will feature 580+ Exhibitors and will again be the international platform and solution provider for all industries covering every market segment. To present your state-of-the-art technologies to future customers and prospects ... you can **choose and reserve your space easily online** in a few steps. Visit www.filtech.de

Do you need any help with your space selection?
Please contact Mr. Jens Chittka at jens@filtech.de or phone +49 (0)2132 935760.

Your FILTECH 2024 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), Company logo, pictures, 18 keywords in the multilingual product index and 10 keywords in the market index.
- + **Free publication** of Exhibitor news/press releases at the **FILTECH** website including pictures.
- + **Free Promotion Codes** to invite clients/potential customers
- + **Free Company branded Stickers**
- + **Free Company branded Exhibitor Badges**



Register as a Trade Visitor

Opening Hours Exhibition

November 12–13, 2024 9am - 6pm
November 14, 2024 9am - 5pm

Venue: Koelnmesse

Halls 7 + 8, Entrance North
Messeplatz 1
50679 Cologne, Germany

Registration Fees

	Pre-Registration until 12.10.2024	Registration from 13.10.2024
1-Day Visitor Ticket	€ 20,-	€ 40,-
2-Day Visitor Ticket	€ 25,-	€ 45,-
3-Day Visitor Ticket	€ 30,-	€ 50,-
Fees already incl. German VAT		

Your **FILTECH 2024** 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 October 12, 2024.

Plan your visit

The tool for Trade Visitors

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

You can also contact exhibitors of your interest prior to the Show via their company profiles at the **FILTECH 2024** Website to arrange meetings at the show or ask for additional product information.

www.Filtech.de → [exhibition/exhibitor-list/](#)
www.Filtech.de → [exhibition/hall-plans/](#)

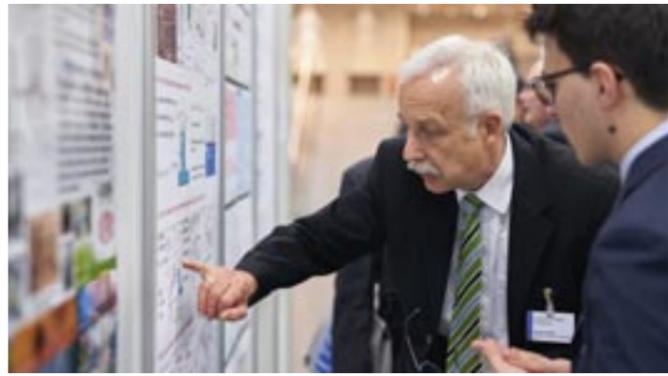


+++ Ticket Sales will be handled exclusively online +++



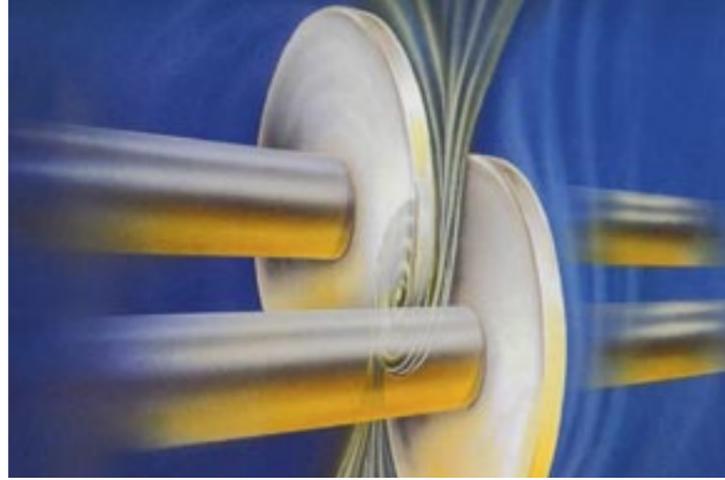
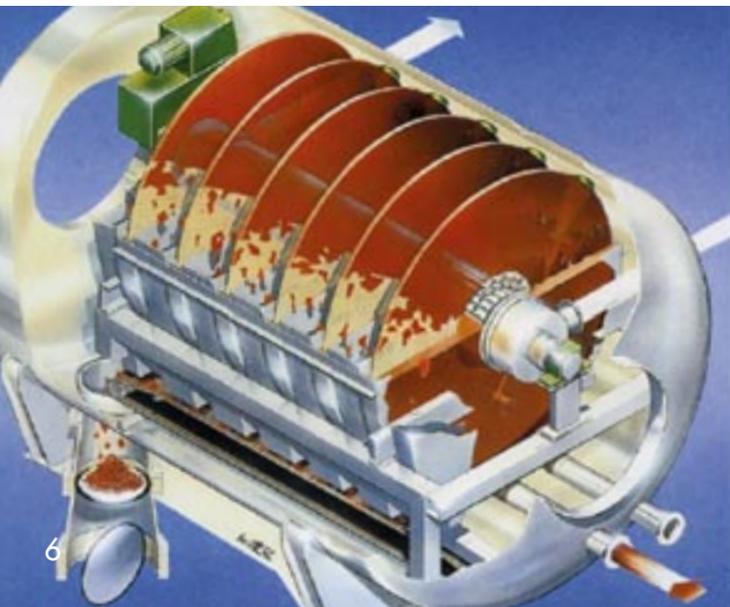
Short Course I Solid/Liquid Separation

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 was till March 2020 Academic Director at the Karlsruhe Institute of Technology (KIT), Institute of Mechanical Process Engineering and Mechanics and has amassed more than 40 years of experience in the field of solid liquid separation technology. He earned his academic degrees as Chemical Engineer 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 more than 190 technical papers, books etc. and is internationally active in giving consultations and lectures.



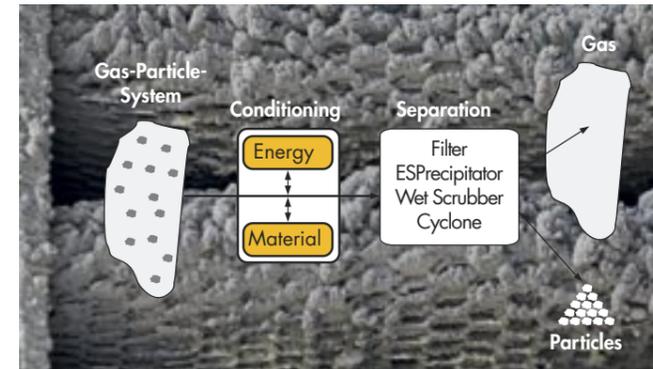
Topics:

- 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, Demoisturing 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 Air Cleaning and Dust Separation

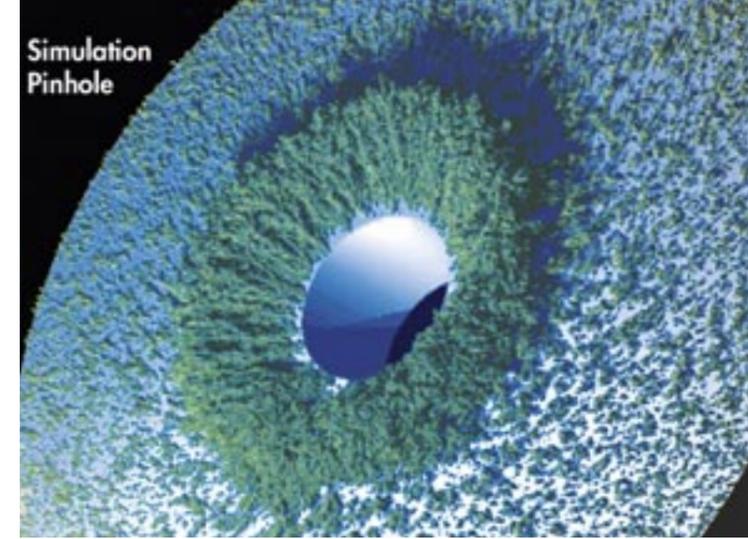
This 1-day "Fine Dust Separation" Short Course is of interest to engineers, technicians, scientists, managers, and other personnel involved in gas-solid separation in the process and other industries. They will find the course informative, regardless of whether they design, purchase, research, or use 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.



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

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.



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	13.00 h	Lunch
9.00 h	Introduction Particulate Matter (PM _x); Dust Separation; Air Cleaning; Overview of the course	14.00 h	Wet Scrubbers Mode of operation, basic designs, design calculations, application, droplet separation
9.15 h	Evaluation of Dust Collection Equipment Particle size characterisation, concentration measurement, overall and fractional collection efficiency	14.45 h	Electrical Precipitators Mode of operation, basic designs, design calculations, application, operating characteristics
10.00 h	Centrifugal Collectors (Cyclones) Mode of operation, basic designs, application, collection efficiency, pressure drop	15.30 h	Coffee Break
10.45 h	Coffee Break	15.45 h	Selection of Dust Collection Equipment Comparison of the different techniques, strength and weaknesses, fields of application, selection procedure
11.00 h	Fibrous Filters (Deep-Bed Filters) Mode of operation, basic designs, application, collection efficiency, pressure drop	16.30 h	Raw Gas Conditioning Additional techniques for enhancing dust separation equipment (Electrical and acoustic enhancement, additive dosing, precoating,...).
11.45 h	Fabric Filters (Surface Filters) Mode of operation, basic designs, application, operating characteristics, design calculations	17.15 h	Discussion An open-floor question and answer session.
12.30 h	Questions and answers An open-floor question and answer session		



Plenary and Keynote Lectures

presented by leading experts

Scientific Committee

Prof. Mônica Lopes Aguiar - São Carlos - Brazil
Prof. Sergiy Antonyuk - Kaiserslautern - Germany
Dr. Harald Banzhaf - Ludwigsburg - Germany
Dr. Wu Chen - Freeport - USA
Prof. Liang-Yin Chu - Sichuan - China
Prof. Ching-Jung Chuang - Taoyuan - Chinese Taipei
Prof. Kyung-Ju Choi - Seoul - Korea
Prof. Achim Dittler - Karlsruhe - Germany
Prof. Dr. Kunihiro Fukui - Hiroshima - Japan
Dr. Pascal Ginisty - Foulayronnes - France
Prof. Antti Häkkinen - Lappeenranta - Finland
Prof. Eiji Iritani - Nagoya - Japan
Prof. Chikao Kanaoka - Tsubata - Japan
Prof. Gerhard Kasper - Karlsruhe - Germany
Dr. Karsten Keller - Milford - USA
Prof. Teemu Kinnarinen - Lappeenranta - Finland
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Prof. Eugène Vorobiev - Compiègne - France
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 The Committee list lists countries and regions

Scientific Committee Chairmen

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



Plenary Lecture

Regulation and intensification of mass-transfer and separation processes with micro-/nano-structured functional materials

Prof. Dr. Liang-Yin Chu,

Membrane Science & Functional Materials Group –
 Sichuan University / China

Mass transfer and separation processes are important processes in many industrial fields such as chemical engineering, biomedicine and so on. The regulation and intensification of mass transfer and separation processes play a key role in the transformation of traditional technology and the development of new technology. By introducing the response behaviors of smart materials, it is possible to achieve the environmental regulation and intensification of mass transfer and separation processes, and it is one of the frontiers and hotspots in the interdisciplinary researches of chemical engineering and materials, chemistry, medicine and so on. How to construct novel mass-transfer and separation systems to break through the diffusion theory and enhance the membrane separation processes is still challenging in this field. By designing molecular-level structures and micro-/nano-structures, [1-5] we constructed responsive controlled release systems and smart membrane systems with smart materials, and pioneered the development of novel efficient smart membrane separation systems, responsive self-regulatory controlled release drug carriers with novel modes with the assistance of responsive smart materials. Thus, the difficult problems of molecular desorption in affinity membrane separations and the limited mass transfer momentum in carrier systems have been successfully solved, and the regulation and intensification of mass transfer and separation processes have been achieved. The results provide novel strategies for the regulation and intensification of mass transfer and separation processes for various applications. This presentation will introduce the recent development of stimuli-responsive smart functional membranes, including the design strategies and the fabrication ...



Membrane technology – New developments, challenges, markets and applications

Prof. Dr. Steffen Schütz, Stuttgart University IMVT & MANN+HUMMEL, Germany

During the last decades membrane technology has become a key technology in filtration and separation applications. The global water economics and mainly the global drinking water supply is based on efficient membrane processes to ensure clean water for consumption. Industrial separation processes in the food & beverage segment, in chemical processing and in all fields of biotechnology rely upon membrane technology as membrane processes treat value products and molecules with high care compared to other separation technologies. The global transformation to green energy resources requiring new energy supply and storage systems like fuel cells, electrolysis and new battery concepts depends on innovative membrane technology. This presentation will provide an overview about latest innovations and new applications in membrane technology and about future potentials for enhanced membrane products.



How filtration and separation impact global sustainability

Dr. Wu Chen, DOW, USA

Sustainability is a global effort to make our world better for ourselves and can sustain for future generations. The scope is so large and with tremendous challenges, so it needs to be a global effort and requires the participation of all industries. In this presentation, we will specifically look at the role of filtration and separation technologies in this global effort and how filtration and separation industry can contribute. Key sustainability efforts are in carbon reduction, renewable materials, circularity, water and more. For carbon capture and reduction, amine filtration, membrane separation, and sorbents adsorption play very important roles. In the production of renewable materials, key challenges are often in the solid/liquid separation. To achieve circularity, filtration and purification of recycled materials are also challenging. Global water shortage makes water a key sustainability focus, either raw water supply, wastewater treatment, or water reuse ...



Formation and separation of flocculated suspensions: Good practices and challenges for laboratories and industries

Dr.-Ing. Pascal Ginisty, IFTS – Institut de la Filtration et des Techniques Séparatives, France

Flocculation is a common operation for urban and industrial wastewaters and sludge treatment. Analysis and models are mainly devoted to elementary particles whereas the flocs, usually poorly known and little characterized, are the physical objects treated in separation devices. Operators of sewage treatment plants have to adapt daily the conditions to water/sludge variability but owing to a lack of knowledge on chemical conditioning mechanisms and flocs behavior, the adaptation remains usually crude and poorly mastered. A better knowledge of their generation, properties and behavior under constraints in separation processes is required for works design and performances optimization. The presentation will review existing practices to form and measure intrinsic and behavioral flocs properties with standardized methods or original techniques ...



From process to operation: Digital twins for filtration

Dr. rer. nat. Ralf Kirsch, Fraunhofer Institute for Industrial Mathematics ITWM, Germany

When speaking of a digital twin, we usually think of a computerized, virtual counterpart to a device or process in the real world, allowing us to study and predict its performance under varying (operating) conditions. In filtration, a classical application is the computer-aided optimization of the design of a filter medium or element to reduce time and cost spent on the building and testing of prototypes. The relevance of such a digital twin for the prediction of the filter lifetime can be seen by the many works devoted to the simulation of flow and filtration from the microscopic length scale of the nonwoven to the macroscopic scale of the element. In the context of the fourth industrial revolution (industry 4.0), digital twins interacting with the real filter device through data exchange (will) play an important role, because they offer very interesting possibilities such as predictive maintenance, automatization of optimal operation and many more.

Session Overview

Monday 11.11.2024 09:00-18:00h
 Short Course I · Solid/Liquid Separation
 Short Course II · Air Cleaning and Dust Separation

Tuesday, 12.11.2024

08:30	Registration – Welcome Coffee in the main lobby of the conference section from 8 am -10 pm			
10:15	Opening Session -			
10:45 12:00	PL Plenary Lecture – Prof. Dr. Liang-Yin Chu, Sichuan University / China Regulation and intensification of mass-transfer and separation processes with micro-/nano-structured functional materials			
Lunch 1st Floor				
	Room 1	Room 2	Room 3	Room 4
13:00 14:15	K1 Keynote Lecture I	L1 Challenges for Improving Sustainability of Filtration Processes	G1 Adsorption I	G2 Filter Test
Coffee Break				
14:45 16:00	K2 Keynote Lecture II	F1 Bio-based Polymers as Alternative for Fossil Based Polymers	G3 Adsorption II	G4 Measurement Techniques
Coffee Break				
16:45 18:00	L2 Particle and Solid Structure Characterization	L3 Numerical Simulation of Solid-Liquid-Separation Processes	F2 Adsorption of Substances on Filter Media	G5 Surface Filtration

Wednesday, 13.11.2024

	Room 1	Room 2	Room 3	Room 4
09:00 10:15	L4 Discontinuous Pressure and Press Filtration	F3 Trend Towards Sustainable Filtration Technologies	G6 Face Masks	M1 Water Treatment
Coffee Break				
	Room 1	Room 2	Room 3	
10:45 12:00	K3 Keynote Lecture III	F4 Sustainable Filter Elements and Media	G7 Indoor Air Quality	
Lunch 1st Floor				
13:00 14:15	K4 Keynote Lecture IV	L5 Continuous Vacuum Belt and Pressure Drum Filtration	F5 PFAS-Free Membranes	G8 Energy Efficient Air Filtration
Coffee Break				
	Room 1	Room 2	Room 3	Room 4
14:45 16:00	L6/M3 Short Oral	F6 Short Oral	G9 Short Oral	G10 Short Oral
16:00 16:45	All Poster Presentations in the Poster Section in front of Hall 7			
16:45 18:00	L7 Reliability of Lab Scale Filtration Tests	F7 Modelling and Testing of Filter Media Properties	G11 Mist and Droplets	M4 Membrane Fouling

Thursday, 14.11.2024

	Room 1	Room 2	Room 3	Room 4
09:00 10:15	L8 Fundamental Studies on Sedimentation and Filtration Phenomena	G12 Industrial Gas Cleaning	F8 Surface Functionalization of Filter Media	M5 Cross Flow and Back Filtration
Coffee Break				
10:45 12:00	L9 Modelling of Compressible Particle Layers	G13 Modelling and Simulation I	F9 Enhancement of Filter Media Performance	M6 Microfiltration
Lunch 1st Floor				
13:00 14:15	L10 Filtration of heterogeneously composed slurries	G14 Modelling and Simulation II	F10 Electro- and Melt-Spun Filter Media	M7 Ultrafiltration
Coffee Break				
14:45 16:00	L11 Multiple Contaminant Removal and Particle Fractionation	G15 Modelling and Simulation III	F11 Advanced Methods to create Porous Filter Structures	M8 Reverse Osmosis

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

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FILTECH 2024 · Conference Programme

Tuesday, November 12, 2024

O Opening Session 10:15 - 10:45

PL Plenary Lecture 10:45 - 12:00

Regulation and intensification of mass-transfer and separation processes with micro-/nano-structured functional materials, Prof. Liang-Yin Chu, Sichuan University, China

K1 Keynote Lecture 1 13:00 - 14:15 **room 1**

Membrane technology – New developments, challenges, markets and applications, Prof. Steffen Schütz*, Stuttgart University IMVT & MANN+HUMMEL, Germany

L1 Challenges for Improving Sustainability of Filtration Processes Chair: Pascal Ginisty 13:00 - 14:15 **room 2**

Filtration as a service as a way to make filtration more sustainable, M. Van Hooreweder*, HALLBAR, Belgium

Vortex technology: A biometric revolution in filtration technology, M. Knefel*, GKD Group, Germany

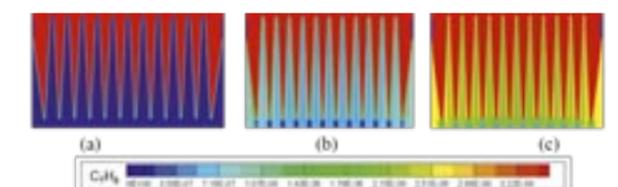
Dynamic sieve filtration of suspensions with high solids concentration, E. Ehrfeld*, K. Neumaier, BOKELA GmbH, Germany

G1 Adsorption I 13:00 - 14:15 **room 3**
Session Chair: Hans-Joachim Schmid

Simulation of adsorption-based processes to remove contaminants, A. Weber, P. Eichheimer, A. Wiegmann*, Math2Market GmbH, Germany

See it. Control it. Defining the environment before deploying a filtration solution, J.M. Lobert*, Entegris Inc., USA

Models need validation: Filter tests as a foundation for a computational model predicting AMC filter performance, A. Chakraborty*, F. Belanger, P. Cate, R. Srivastava, J. M. Lobert; Entegris, Inc.



G2 Filter Test 13:00 room 4
Session Chair: Achim Dittler 14:15

The classification of adsorptive HVAC filters according to ISO 10121-3 – Challenges and benefits, U. Sager*, E. Däuber, U. Schneiderwind, C. Asbach, Institute of Energy and Environmental Technology e.V. (IUTA); M. Wist, F. Schmidt, University Duisburg-Essen (UDE), Germany

Essential filter material test according IEC 60335-2-69 ANNEX AA using a gravimetric test method, D. Keßlau*; R. Heidenreich, E. Schmieder, Institute of Air Handling and Refrigeration (ILK), Germany

Ageing of fine fiber polypropylene melt blown in various conditions, C. Desquilles*, Alkegen, France

K2 Keynote Lecture 2 14:45 room 1
Session Chair: Hermann Nirschl 16:00

How filtration and separation impact global sustainability, Dr. Wu Chen*, Dow, USA

F1 Bio-based Polymers as Alternative for Fossil Based Polymers 14:45 room 2
Chair: Harald Anlauf 16:00

Exploring biopolymers as alternatives for fossil-based electret fibers in electrostatic filtration media, Y. Kiyak*, Gessner, USA

Biobased polymer alternatives for melt blown filtering materials, G. Masioné, D. Ciužas, E. Krugly, T. Prasauskas, D. Martuzevicius*, Kaunas University of Technology; M. Tichonovas, Bious Labs Tech, Lithuania

Layered electrospun nano/microfibrous filtering materials from biobased polymers, G. Masioné, D. Ciužas, E. Krugly, T. Prasauskas, D. Martuzevicius*, Kaunas University of Technology; M. Tichonovas, Bious Labs Tech, Lithuania

G3 Adsorption II 14:45 room 3
Session Chair: Paolo Tronville 16:00

Adsorptive filter media in cabin air filtration: Advancing filter design through modeling, J. Keyur*, S. Gulrez, K.R. Patchigolla Venkata, M. Silin, Hollingsworth & Vose, UK

Breakthrough sensor for adsorption filters, M. Lauer*, D. Kochale, A. Türke, Institute of Air Handling and Refrigeration (ILK), Germany

Solid-gas filtration: a critical component of strategies for improved air quality and public health, I. Merino*, A. Doche, E. Andreu, Bioconservacion S.A., Spain

G4 Measurement Techniques 14:45 room 4
Session Chair: Gerhard Kasper 16:00

Development and experimental measurements of a high flow rate respirable cyclone sampler, D. Misiulia*, F. Krull, S. Antonyuk, University of Kaiserslautern-Landau (RPTU); C. Möhlmann, German Social Accident Insurance (DGUV), Germany

Detection of fractional efficiency for flat sheet media according to ISO 12500-3, M. K. Schmidt*, Palas GmbH, Germany

Welding dust separation – New test method to meet actual relementation of heavy metals at workshop places, R. Heidenreich*, S. Herrmann, D. Keßlau; Institute of Air Handling and Refrigeration (ILK), Germany

L2 Particle and Solid Structure Characterization 16:45 room 1
Session Chair: Pascal Ginisty 18:00

Direct fluorescence detection of aquatic micro and nanoplastics using a targeting fluorochrome, R.I. Peinador*, Institut de la Filtration et des Techniques Séparatives (IFTS), France

Investigation of the permeability of ceramic foam filters by x-ray tomography, S. Daus*, U.A. Peuker, Technical University Bergakademie Freiberg, Germany

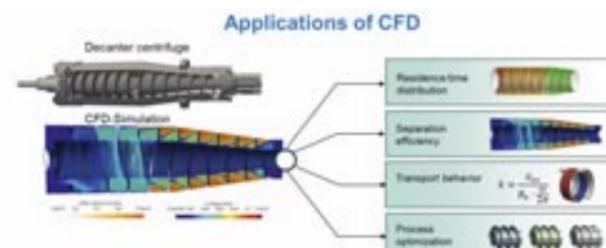
Beyond the lab: Pioneering simulation-based research with artificial filter cake structures through 3D x-ray tomography validation, E. Löwer*, P. Gräfensteiner, O. Furat, V. Schmidt, U.A. Peuker, Technical University Bergakademie Freiberg, Germany

L3 Numerical Simulation of Solid-Liquid Separation Processes 16:45 room 2
Chair: Ralf Kirsch 18:00

Multiscale simulation of polymer melt flow through wire mesh filters, P. Toktaliev*, R. Kirsch, M. Krier, D. Niedziela, D. Neusius, Fraunhofer Institute for Industrial Mathematics (ITWM), Germany

Numerical modeling of solid-liquid separation and cake formation processes: Increasing the computational efficiency, V. Puderbach*, A. Ataei, K. Schmidt, IT for Engineering (it4e) GmbH, Germany

CFD as a tool for optimization of solid bowl centrifuges: Achievements and future challenges, M. Gleiß*, H. Baust, Karlsruhe Institute of Technology (KIT), Germany



F2 Adsorption of Substances on Filter Media 16:45 room 3
Session Chair: Teemu Kinnarinen 18:00

Molecular filtration according to ISO 10121 and ISO 11155, S. Schütz*, P. Schumacher, D. Göhler, J. Landgraf, T. Eipper, S. Kost, R. Adam, Topas GmbH, Germany; K. Alderson, Topas Inc., USA

Bamboo based activated carbon-characters and applications, M. Shen*, Huaqing Activated Carbon; H. Mingyu, Ningbo Tianyi Activated Carbon Co. Ltd, China

Are you getting realistic fab performance data? Chemical filter performance is a function of challenge concentration, R. Srivastava*, F. Belanger, P. Cate, J. M. Lobert, Entegris, Inc. USA

G5 Surface Filtration 16:45 room 4
Session Chair: Gerhard Kasper 18:00

A simple method to determine the differential pressure of surface filters under low pressure conditions, V. Löschner*, J. Meyer, A. Dittler, Karlsruhe Institute of Technology (KIT), Germany

Assessment of high wear resistant FFP bag filter materials for Eskom application, A. Moganelwa*, I. Phiri, Eskom, South Africa

The potential of computational fluid dynamics (CFD) for efficient pulse-jet cleaning of fabric filters: Part 2 - characterization of a practical solution, G.V. Messa, D. Scaccabarozzi, C. Martina, Politecnico di Milano; C. Maggi*, L. Montanelli, CleanAir Europe S.r.l., Italy

Wednesday, November 13, 2024

L4 Discontinuous Pressure and Press Filtration 09:00 room 1
Session Chair: Ioannis Nicolaou 10:15

Optimal control of parallel pressure filtration systems, H. Aalto*, Take Control Oy, Finland

Optimizing filtration in filter presses through in situ measurement of cake water content, B. Fränkle*, A. Menzel, H. Aust, P. Ohorn, G. Börste; Lenser Filtration AG, Germany

Study of the effect of temperature and residence time in hidrothermal condition on the filterability of biological sludge through a filter press, D. Pirini*, D. Collini, B-PLAS Sbrl; F. Kaswalder, A. Grosso, N. M. Finocchiaro, Diemme Filtration Srl, Italy



F3 Trend Towards Sustainable Filtration Technologies 09:00 room 2
Session Chair: Rostand Tayong 10:15

Carbon footprint reduction strategies for the filtration industry, M. Van Hooreweder*, HALLBAR, Belgium

Fast and reliable product carbon footprint evaluation by implementing a data driven and automated methodology, A. Kilian*, J. Ziegler, L. Spelter, MANN+HUMMEL GmbH, Germany

Application of renewable materials for more sustainable filter elements, L. Spelter*, S. Grebhardt, MANN+HUMMEL GmbH; U. Herkommer, ZELU CHEMIE GmbH; Germany

G6 Face Masks 09:00 room 3
Session Chair: Jennifer Niessner 10:15

Next generation FFP 2 Part I: Optimization of melt-blown and hydrocharging processes, W. Arne*, S. Antonov, D. Hietel, Fraunhofer Institute for Industrial Mathematics (ITWM); A. Rösner, Reifenhäuser Reicofil GmbH, Germany

Next generation FFP 2 part II: Material characterization, design and assessment of performance, R. Kirsch*, C. Mercier, K. Schladitz, M. Godehardt, Fraunhofer Institute for Industrial Mathematics (ITWM); E. Dahrman, M. Tagliani, IMSTec GmbH, Germany

Quality concept for biobased medical face masks, H. Salmela*, I. Ehder-Gahm, K. Heinson, P. Heikkilä, T. Salmi, S. Salo, VTT Technical Research Centre of Finland Ltd., Finland

M1 Water Treatment 09:00 room 4
Session Chair: Pierre-Yves Pontalier 10:15

Assessment of circle-sequence reverse osmosis in high-recovery operation for brackish water reuse, Y. Lee*, W. Kang, W. Lee, J.H. Lee, M.J. Park, SK Ecoplant, South Korea; J. Kim, Wenzhou-Kean University, China

Evaluating different pre-treatment options for produced water treatment using integrated FO-MD system, M.S. Nawaz*, N. Ghaffour, S. Soukane, King Abdullah University (KAUST); V. Gudideni, Ali-Alqhtani, Saudi Aramco, Saudi Arabia

Dynamic optimization of a dual-membrane-based UF-RO water treatment plant powered by PV-T panels with integrated co-use of heat and electricity, Q. Burgi*, E. Ndiaye, S. Dehez, B. Delahaye, L. Escobar, TotalEnergies; S. Serra, J-M. Reneaume, S. Sochard, Université de Pau et des Pays de l'Adour (UPPA), France

K3 Keynote Lecture 3 10:45 room 1
Session Chair: Wu Chen 12:00

Formation and separation of flocculated suspensions: Good practices and challenges for laboratories and industries, Dr. Pascal Ginisty, IFTS – Institut de la Filtration et des Techniques Séparatives, France

F4 Sustainable Filter Elements and Media 10:45 room 2
Session Chair: Lars Spelter 12:00

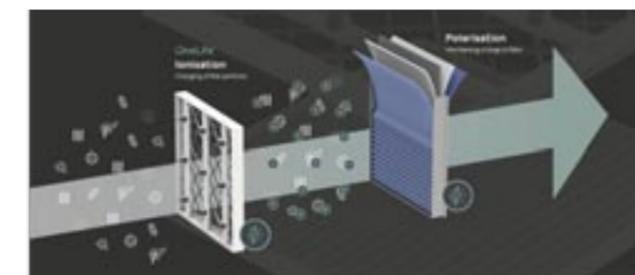
Leading the way to a more sustainable future for filtration through innovative solutions, S. Pigeot-Rémy*, C. Prost, Ahlstrom Specialties, France; T. Quatrano, Ahlstrom Italia SpA, Italy

LENZING™ Lyocell enhanced fibrillation fibres provide a sustainable competitive advantage for high-efficiency filter media design, N.W. M. Edwards, M. Gallo, Lenzing Fibers Grimsby Ltd, UK

Europe as trendsetter in corporate sustainability: The role of CSRD, CSDDD, filtration technologies and innovation, P. Wijs, CleverSustainability, Germany

G7 Indoor Air Quality 10:45 room 3
Session Chair: Matthias Waldenmaier 12:00

Long-term stability of air-particle ionization with ZeroOzone ion-booster technology, R. Heinze*, Onelife GmbH / getAir GmbH, Germany



AeroSolfd – Developing filtration solutions for improving air quality at metro stations, K. Kedwell*, J. Zalaria, MANN+HUMMEL GmbH; S. Agathokleous, T. Moreno, IDAEDA CSIC; C. Asbach, Institute of Energy and Environmental Technology e.V. (IUTA), Germany; C.M. Casado, CARTIF, Spain

Exploring the effectiveness of different air cleaner technologies in removing air pollutants with focusing on energy saving and cost - **An overview**, S. Ghaffari Jabbari*, H. Kofoed Nielsen, T. Sandnes Vehus, University of Agder (UiA), Norway

K4 Keynote Lecture 4 13:00 room 1
Session Chair: Sergiy Antonyuk 14:15

From process to operation: Digital twins for filtration, Dr. Ralf Kirsch, Fraunhofer Institute for Industrial Mathematics ITWM, Germany

L5 Continuous Vacuum Belt and Pressure Drum Filtration 13:00 room 2
Session Chair: Gernot Krammer 14:15

Vibration compaction of compressible filter cakes – Achievements from the recent years, H. Nirschl*, T. Yildiz, Karlsruhe Institute of Technology (KIT), Germany

Development of an autonomous process for the selective extraction and filtration of metal ions from mining waste, V. Bächle*, M. Gleiß, Karlsruhe Institute of Technology (KIT); A. Voigt, K. Sundmacher, Otto-von-Guericke-University Magdeburg; N. Bajcinca, S. Hiremath, University of Kaiserslautern-Landau (RPTU), Germany

HiBar drum filters – The answer to new filtration challenges in the battery minerals and rare earth processing, J. Hahn*, BOKELA GmbH, Germany



F5 PFAS-Free Membranes 13:00 room 3
Session Chair: Kyung-Ju Choi 14:15

PFAS-free venting membrane from polyphenylsulfone, T. Batt*, A. Rasmussen, A. Schoch, M. Loepfe, C. Kellenberger, Novamem AG, Switzerland

SVHC and PFAS-free membrane for membrane bioreactors, M. Loepfe*, A. Rasmussen, T. Batt, C. Kellenberger, Novamem AG, Switzerland

Engineered PFAS-free solutions towards high-efficient coalescence filtration, M. Wittmar*, H. Yousefi Jolandan, C. Asbach, Institute of Energy and Environmental Technology e.V. (IUTA); L. Tsarkova, B. Gerbert, J. S. Guttmann, Deutsches Textilforschungszentrum Nord-West gGmbH (DTNW), Germany

G8 Energy Efficient Air Filtration 13:00 room 4
Session Chair: Matthias Waldenmaier 14:15

Investigation of ventilation concepts for the elimination of potentially infectious aerosol particles in relation to energy efficiency, S. Berger*, L. Springsklee, J. Niessner, Heilbronn University of Applied Sciences, Germany

Economic impact of silver-graphene oxide treated MERV-A 9-A filters, D. Sridhar*, R. Shacklock, C. van der Kuur, Zentek Ltd., Canada

Energy savings in HVAC systems with waved 3D composites, S. Daus*, Hollingsworth & Vose GmbH, Germany; A. M. Endalew, Hollingsworth & Vose, UK & Vose, UK

L6/M3 Short Oral + Poster Presentation 14:45 room 1
Session Chair: Ioannis Nicolaou 16:45

Modelling of filtration properties of representative standards of tailings based on quantitative phase analysis, M. Carpenito*, G. Cruciani, University of Ferrara; A. Grosso, F. Kaswalder, Aqseptence Group Srl, Italy

Developing filters for laundry machines to prevent microfiber release, G. Sakmar*, I. Yalcin Enis, H. Sezgin, M. Yildirim, Istanbul Technical University, Turkey

Filtration characterisation of leather-fibre wastewater, R. Boumda Tayong*, M. Mortazavi, University of Bedfordshire, UK

Correlations between the pore size and filtration efficiency of nonwoven filter media, M. Ängeslevä*, E. Pattyn, I. Struzynska-Piron, APTCO Technologies; A. Sobolewska, D. Dutczak, POROMETER, Belgium; L. Sharaf, IB-FT GmbH, Germany; C. Chowings, R. McLellan, Air Techniques International, UK

Effect of drain layer properties on droplets formation during the separation of dispersed oil from water using coalescing filters, A. Krasinski, M. Stor*, W. Piatek, Warsaw University of Technology, Poland

The Effect of Filtration Area on Filter Support Design, M. Saadatpour*, M. Rasooly, F. Khalili, Isfahan Science and Technology Town, Iran

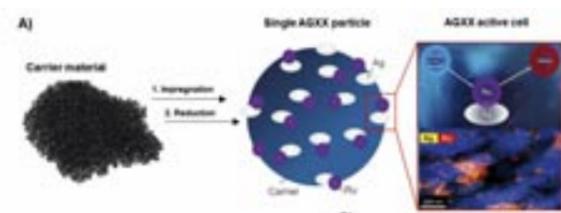
Development of a forward osmosis process using fine particles, K. Kitamura*, T. Mori, Hosei University, Japan

Development of a simulation model and constructional desalination pilot based on hybrid reverse forward osmosis, Z. Hadadian*, Khuzestan Water and Power Authority; A. Haghighi, S. Zahmatkesh, Shahid Chamran University of Ahvaz, Ahvaz, Iran

Modelling of the effect of current density and contact time in electro-coagulation on membrane fouling, I.-S. Chang*, K.-R. Kim, Hoseo University, South Korea

F6 Short Oral + Poster Presentation 14:45 room 2
Session Chair: Marco Gleiß 16:45

AGXX® – An innovative technology to prevent microbial contamination in filtration applications, T. Schwob*, M. Fritz, C. Ciemer, M. Danz, Heraeus Precious Metals, Germany



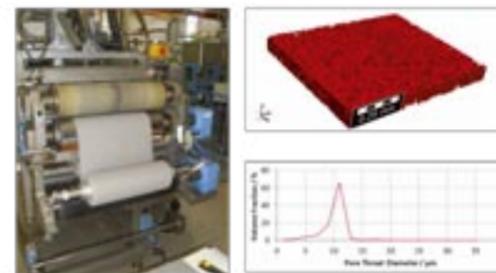
Porous metallic sinter paper: A new material for use in filtration and membrane support applications, O. Andersen*, C. Kostmann, R. Hauser, L. Heggemann, Fraunhofer Institute for Manufacturing Technology and Advanced Materials (IFAM); M. Rentzsch, S. Schramm et al., Papiertechnische Stiftung PTS, Germany

Additive screen printing - Game-changing technology for filtration and ultra-fine structures, L. Retta, Exentis Group, Switzerland

Air permeability discrepancy of non-woven synthetic fibre material, S. Baloyi*, Eskom Holdings SOC Ltd, South Africa

Performance optimisation of filter bag materials in Eskom's fabric filter plants, I. Phiri*, Eskom Holdings SOC Ltd, South Africa

Computer-aided determination of the perfect filter media, M. Fuhrmann*, M. Gleiß, H. Nirschl, Karlsruhe Institute of Technology (KIT); S. Rehm, M. Müller, Spörl KG, Germany



Adhesive-free immobilisation of active material within meltblown nonwovens for filtration applications, B. Häring*, ringbach GmbH, Germany

Invest in the future of nonwoven filter manufacturing with a comprehensive suite of innovative carded & needlepunched solutions by ANDRITZ, G. Julien*, Andritz Asselin-Thibeau SAS, France

Upcoming Air and Liquid Filtrations, K.-J. Choi*, Clean & Science Co., USA

G9 Short Oral + Poster Presentation 14:45 room 3
Session Chair: Gernot Krammer 16:45

Experimental methods for the investigations of internal and rear-side drainage behavior in oil mist filters, R. Mandic*, J. Meyer, A. Dittler, Karlsruhe Institute of Technology (KIT), Germany

Novel high-efficiency liquid aerosol separator, G. Dwars*, I.E. Golema, M. Dengler, C. Mehring, University of Stuttgart, Germany

Collection of condensed vapors from biomass slow pyrolysis processes, P. Tronville*, M.W. Riaz, V. Gentile, Politecnico di Torino; A. Facchin, C. Torri, Università di Bologna, Italy

Microscopic in-situ-investigation of the loading process in real filter media for a holistic view of the entire filtration process, J. Ciesielski*, Q. Zhang, University of Wuppertal, Germany

Prediction of particle dynamics before and after deposition on single filter fiber using CFD-DEM simulation, J. Wieremiejczuk*, C. Mehring, University of Stuttgart, Germany

CFD-DEM study of submicron particle deposition on nanofiber structure: Particle aggregation and bridging, S. Gangani*, C. Mehring, University of Stuttgart, Germany

Raw gas conditioning utilising the deliquescence and efflorescence properties of salt particles, D. Horst*, Q. Zhang, E. Schmidt, University of Wuppertal, Germany

Influence of pleating filter media on the operating behaviour in a pulse-jet-cleaned test-rig, J. P. Knisley*, J. Meyer, A. Dittler, Karlsruhe Institute of Technology (KIT), Germany

Comparative analysis of needle-felt and hydroentangled filter media: Efficiency and longevity in industrial air filtration, A. C. C. Vieira*, F.A. Lima, R. Satim, M.L. Aguiar, Federal University of São Carlos, Brazil

Optimization of a stairmand's cyclone separator for reduced energy consumption, J. Oranje, J. Janssen*; John Crane Indufil, Netherlands

Experimental study on carbon black layer break-up in a gas cleaning model filter channel during its regeneration, O. Desens*, J. Meyer, A. Dittler, Karlsruhe Institute of Technology (KIT), Germany

Transfer of field conditions to laboratory tests for HEPA filtration in smart cabin air filter systems for vehicles - Stationary tests under reproducible conditions, E. Hallbauer*, M. Hamele, MANN+HUMMEL Innenraumfilter GmbH & Co. KG; C. Krautner, T. Heiningner, T. Siegele, MANN+HUMMEL GmbH, Germany



G10 Short Oral + Poster Presentation 14:45 room 4
Session Chair: Hans-Joachim Schmid 16:45

Development of a plant-based filter for the exhaust air of parking garages, S. Schumacher*, U. Sager, B. Schunke, C. Asbach, Institute of Energy and Environmental Technology e.V. (IUTA); H. Schreiter, C. Schade, Niedersächsische Rasenkulturen NIRA GmbH, Germany

Smartgreen – accounting the ecosystem-performance of urban greenings, M. Kaul*, G. Reznik, E. Schmidt, University of Wuppertal, Germany

Investigations on cathode air filters used under realistic operating conditions, C. Haynl*, MANN+HUMMEL Innenraumfilter GmbH & Co. KG, Germany

Experimental analysis of a jet-based direct mixing process for solid state battery cathode production, J. Witte*, E. Schmidt, University of Wuppertal; V. Kolck, H. Kruggel-Emden, Technical University Berlin, Germany

Dust emission from bulk material handling – Comparison of experimental to model results, M. Weidemann*, E. Schmidt, University of Wuppertal, Germany

Adhesion force measurements between metal spheres and calcium carbonate powder, N. Woschny*, E. Schmidt, University of Wuppertal, Germany

Comparison of different classifier techniques for determining the mpps of high efficiency air filters, S. Payne*, J. Symonds, Cambustion Ltd. UK



Air and particle leakage through face seal by wearing different FFP2 masks, D. Stoll*, D. Misiulia, S. Antonyuk, University of Kaiserslautern-Landau (RPTU), Germany

Characterization of particulate matter collected from road traffic by front-end filters assembled in vehicles, L. Stein*, J. M. Duran Mantilla, E. Thébault, MANN+HUMMEL GmbH, D. R. Obando Nunez, U. Vogt, University of Stuttgart, Germany

L7 Reliability of Lab Scale Filtration Tests 16:45 room 18:00 1

Exploring the onset of cake filtration by inline surface position laser measurement, G. Krammer*, Graz University of Technology; R. Raberger, Andritz AG, Austria

Influences on the filtration properties – Combination of filter resistances and initial effects, N. Benz*, F. Krull, S. Antonyuk, University of Kaiserslautern-Landau (RPTU), Germany

Reliable determination of cake permeability, cake compressibility and filter medium resistance from laboratory filtration tests - Why an important and challenging task?, I. Nicolaou*, NIKIFOS Ltd, Cyprus

F7 Modelling and Testing of Filter Media Properties 16:45 room 18:00 2

Modeling the permeability of nonwoven fibrous media: A first step towards the development of a media design tool, E. Cabaset*, A. Charvet, N. Bardin-Monnier, D. Thomas; Lorraine University, France

Water permeability testing for porous materials, D. Herper*, GKD - Gebr. Kufferath AG, Germany

Fast computation of the mechanical properties of filter fabrics and application to flow-induced deformation, M. Krier*, R. Kirsch, C. Mercier, J. Orlik, S. Rief, Fraunhofer Institute for Industrial Mathematics (ITWM), Germany

G11 Mist and Droplets 16:45 room 18:00 3

On the effect of vibrations on the droplet-fiber interaction, A. Schwarzwälder*, J. Meyer, A. Dittler, Karlsruhe Institute of Technology (KIT), Germany

How does fibre diameter affect the efficiency and pressure drop of mechanical fibre filters loaded with liquid aerosols?, M. Dalemo*, Absolent AB, Sweden

Revolutionizing coalescing filters: Innovative methods for developing super longevity in industrial applications, Y.Y. Zhan, S.-C. Lee*, Coin Rokaki Enterprise, Chinese Taipei

M4 Membrane Fouling 16:45 room 18:00 4

Enhancing biofouling resistance through electron beam grafting of polymer membranes with hydrogels - Translating research results into practical applications, A. Schulze*, K. Fischer, J. Lohmann, I. Thomas, E. Vogelsberg, Leibniz Institute of Surface Engineering (IOM); E. Schmidt, T. H. Blaich, C. Belz, Busse GmbH, Germany

Efficient membrane fouling mitigation in self-cleaning piezoelectric PVDF-graphene loose nanofiltration membranes for sustainable textile wastewater treatment, H.F.M. Austria*, R.P. Sardome, O. Setiawan, T.H. Huang, J.Y. Lai, W.S. Hung, et al., National Taiwan University of Science and Technology, Chinese Taipei

Use of high-precision laser nephelometry for particulate monitoring and SDI parameter, B. Verdonk*, HACH, Netherlands; D. Slovacek, HACH, USA

Thursday, November 14, 2024

L8 Fundamental Studies on Sedimentation and Filtration Phenomena 09:00 room 10:15 1

Study on sedimentation acceleration phenomena by applying horizontal dc electric field to fine particle slurry, F. Koike*, K. Yabuki, K. Kitamura, T. Mori, Hosei University, Japan

Displacement meets dilution: A generalized dilution washing theory, H. Henn*, F. Sauer, B. Hoffner, Mannheim University of Applied Sciences, Germany

Influence of irregular filter cake geometry on mechanical dewatering in a gas differential pressure field, F. Sauer*, H. Henn, B. Hoffner, Mannheim University of Applied Sciences, Germany

G12 Industrial Gas Cleaning 09:00 room 10:15 2

Particle collection by wet scrubbers: in-situ study in a municipal waste incineration plant, A. Hoyos Velasquez*, A. Joubert, A. Bouhanguel, L. Le Coq, IMT Atlantique; M. Henry, S. Durécu, Sécché Environnement, France

Reducing energy costs in air filtration with the patented Kappa Waveline® bag filter, R. Mülleder, T. Witzler*, Kappa Filter Systems GmbH, Austria

SMF® - Hot gas filtration, potential for CO₂-reduction, S. Steigert*, K. Schrewe, HJS Emission Technology GmbH & Co. KG, Germany

F8 Surface Functionalization of Filter Media 09:00 room 10:15 3

Halogen-free plasma nanocoatings to functionalize gas and liquid filter media, F. Legein*, Europlasma NV, Belgium

Advancements in separation technology: Fabrication of sustainable eco-friendly superhydrophobic membranes, A. Zeniou*, E. Manouras, E. Gogolides, NCSR Demokritos, Greece

CO₂ Sorbents based on industrially activated carbons for direct air capture applications, J.-H. Boelte*, C. Einzinger, Donau Chemie AG, Austria; M. Mueller, Donau Carbon GmbH; U. Mock, P. Nolte, Corporate Research of Robert Bosch GmbH, Germany

M5 Cross Flow and Back Filtration 09:00 room 10:15 4

Next level optimization of your dynamic crossflow filter (DCF) performance with digital twins, M. Stahl*, J. Rauhut; Andritz Separation GmbH, Germany



Effect of back filtration infusion on solute removal performance in intermittent infusion hemodiafiltration, T. Kiguchi*, A. Tanuma, A.C. Yamashita, Hosei University, Japan

Flux recovery of wire mesh filter elements by self-cleaning in filtration of magnetite, E. Strand*, R. Salmimies, Sofi Filtration; T. Kinnarinen, Lappeenranta-Lahti University of Technology LUT, Finland

L9 Modelling of Compressible Particle Layers 10:45 room 12:00 1

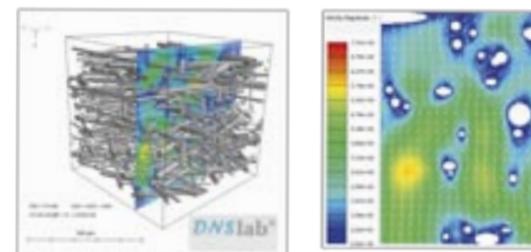
Modeling of cake compression behavior – Comparison of approaches, T. Buchwald*, U.A. Peuker, Technical University Bergakademie Freiberg, Germany

Experimental and numerical analysis of compressible sediment layer during centrifugation of elastic-plastic microparticles, A. Lier*, F. Krull, S. Antonyuk, University of Kaiserslautern-Landau (RPTU), Germany

Influence of the cake compressibility on the performance of filter centrifuges, I. Nicolaou*, NIKIFOS Ltd., Cyprus

G13 Modelling and Simulation I 10:45 room 12:00 2

Improved finite differences flow solver for 3D microscale filtration simulations with dnsLab®, K. Schmidt*, V. Puderbach, A. Ataei; IT for Engineering (it4e) GmbH, Germany



Modeling the entire filtration process from depth filtration to surface filtration with a multi-layer construction and offset for dust cake growth, Q. Zhang, University of Wuppertal, Germany

Dust holding capacity and filtration efficiency prediction in a 2W air filter assembly using CFD, S.D. Kukian*, G.G. Garkhedkar, S.M. Chakote, Varroc Polymers Ltd., India

F9 Enhancement of Filter Media Performance 10:45 room 12:00 3

Combining mechanical robustness, small pore sizes and high permeabilities in one filter medium, M. Müller*, Spörl KG, Germany

Proline - New gradient filter media for enhanced filtration performance, H. Yu*, S. Jaganathan, S. Jinka, M. Silin, M.L. Turner, J. Alarcon, et al., Hollingsworth & Vose, USA

Efficient workflow for optimal pressure drop of pleated filters, P. Eichheimer*, L. Cheng, A. Wiegmann, Math2Market GmbH, Germany

M6 Microfiltration 10:45 room 12:00 4

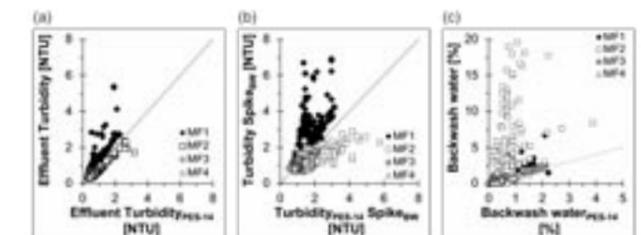
Mechanism of shear-enhanced microfiltration for bio-suspension separation, S.-E. Wu*, K.-Y. Lin, Chung Yuan, Christian University; T.-L. Wei, Tamkang University, Chinese Taipei

Wastewater recovery & reuse - A zero liquid discharge case study, P. Cartwright*, Cartwright Consulting Co., USA

A scientific approach for characterization of fouling mechanism in micellar casein concentrate production using ceramic microfiltration: Thermodynamic and kinetic concepts, S. Naghizadeh Raeisi*, A. Alghooneh, S.J. Razavi Zahedkolaei, Kalleh Dairy Company, Iran

L10 Filtration of heterogeneously composed slurries 13:00 room 14:15 1

Water and wastewater filtration with engineered pile cloth media: impact of microfiber variations and backing design, T. Fundneider*, R. Schäfer, U. Grabbe, Mecana AG., Switzerland



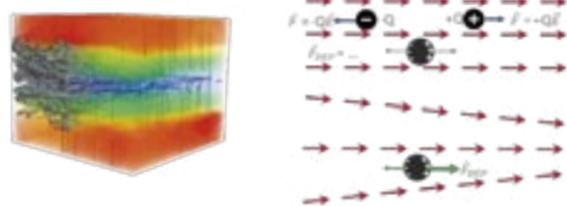
Development of a stormwater filter from construction and demolition waste: initial flow properties in deep bed filtration, S. Jayasekara, N. Bolourieh, T. Kinnarinen*, Lappeenranta-Lahti University of Technology LUT, Finland

Urbanfilter - Modular filtersystem to retend tire wear and other solids from road runoff, D. Venghaus*, J. W. Neupert, M. Barjenbruch, Technical University Berlin, Germany

G14 Modelling and Simulation II 13:00 room 14:15 2

Influence of material compression on the filter performance of electrostatic charged filter media, C. Mercier*, R. Kirsch, S. Osterroth, Fraunhofer Institute for Industrial Mathematics (ITWM); S. Antonyuk, University of Kaiserslautern (TUK), Germany

Modeling of charge distributions, dielectrophoresis and charge decay in electret filter media, L. Cheng*, A. Weber, P. Eichheimer, J. Becker, D. Michel, A. Wiegmann, Math2Market GmbH; S. Schumacher, T. van der Zwaag, T. Engelke, Institute of Energy and Environmental Technology e.V. (IUTA), Germany



CDF simulation for investigating the performance of filter separator in the inlet of city gate station under real operation conditions, M. Rasooly*, Isfahan University; M. Saadatpour, A. Hodoodi, IranFiltch, Iran

F10 Electro- and Melt-Spun Filter Media 13:00 room 3
14:15
Session Chair: Wilhelm Höflinger

Characterisation of sustainable membranes based on electrospun silk fibroin, A. Nicosia*, F. Ravegnani, CNR-ISAC; G. Sotgiu, R. Zamboni, L. Ottaviano, T. Posati, CNR-ISOF, Italy

Production of filter media using recycled polyethylene terephthalate (PET) and polystyrene (PS) by electrospinning technique: Evaluation of air nanoparticle filtration and permeability, F.A. Lima*, A.C.C. Vieira, P. A. M. Chagas, M.L. Aguiar, V.G. Guerra, Federal University of São Carlos, Brazil

Increasing the yield in melt spinning of recycled polymer, S. Vandendijk*, Bekaert NV, Belgium; L. Beek, RWTH Aachen University, Germany

M7 Ultrafiltration 13:00 room 4
14:15
Session Chair: Qian Zhang

Eco-design of membrane filtration through coupling life cycle assessment and process simulation, M. Hatoum*, J.F. Fabre, J. Albet, C. Vialle, C. Sablayrolles, P.Y. Pontalier, Toulouse INP - Institut National Polytechnique de Toulouse, INRAE, France

Performance study of a pilot ultrafiltration plant for the treatment of trapani saltwork's bittern, G. Scelfo*, A. Tamburini, A. Cipollina, Palermo University; F. Vicari, ResourSEAs Srl, Italy; P. Serrano, I. Oller, Plataforma Solar de Almería-CIEMAT, Spain

Solvent-targeted plastics/oily streams recycling using ceramic membranes: Life in plastic, not fantastic!, E. Pakkaner*, P. Vandezande, A. Buekenhoudt, VITO NV, Belgium

L11 Multiple Contaminant Removal and Particle Fractionation 14:45 room 1
16:00
Chair: Erik Löwer

Expansion of Disruptor®'s water filtration capabilities utilizing functionalized additives, T. Showers*, C. Lack, R. Rock, E. Nelson, Z. Winek, Ahlstrom, USA

Investigation on particle motion and fractionation in a crossflow with superimposed electrical field, S. Paas*, S. Antonyuk, Kaiserslautern-Landau (RPTU), Germany

A novel analysis method for hydrocyclone test data and reliable scale-up by using the CYCLONPLUS Software, I. Nicolaou*, NIKIFOS, Cyprus

G15 Modelling and Simulation III 14:45 room 2
16:00
Session Chair: Jörg Meyer

Two ways to optimize the microstructure of a filter for gas-particle systems using adjoint (related) methods, N. Jüngling*, J. Pospichl, J. Niessner, Heilbronn University of Applied Sciences, Germany

The new python interface for customized automated pre- and postprocessing of 3D microscale filtration simulations with DNSlab®, A. Ataei*, V. Puderbach, K. Schmidt, IT for Engineering (it4e) GmbH, Germany

Digital twin deployment for airborne molecular contaminants (AMC) filter life cycle prediction, A. Chakraborty, F. Belanger, R. Gipson, Entegris, Inc., USA

F11 Advanced Methods to create Porous Filter Structures 14:45 room 3
16:00
Session Chair: Harald Anlauf

ColdMetalFusion for porous metal AM filter applications, J. Reeh, C. Fischer, C. Staudigel*, Headmade Materials GmbH, Germany

New developments in woven wire filtration media 3D high performance filter cloth increase filtration flow, F. Edelmeier*, F. Meyer, Haver & Boecker OHG, Germany

ISO 21368:2022-03 – Adhesives Guidelines for the fabrication of adhesively bonded structures and reporting procedures suitable for the risk evaluation of such structures - How it effects application in filtration, F. Steegmanns*, Stockmeier Urethanes GmbH & Co.KG, Germany

M8 Reverse Osmosis 14:45 room 4
16:00
Session Chair: Quian Zhang

Water transportation in osmosis membrane at ultra high pressure, H. Guo*, L. Storm Pedersen, SaltPower ApS, Denmark

Investigating the dynamics of a hybrid closed-cycle reverse osmosis and adsorption process for PFAS removal, J.B. Roman*, A.J.B. Kemperman, W.G.J. van der Meer, J.A. Wood; University of Twente, Netherlands

Nanofiltration as an alternative barrier to reverse osmosis for the removal of dissolved contaminants in water reuse applications, M. Alhussaini*, King Abdulaziz City for Science and Technology, Saudi Arabia; A. Achilli, University of Arizona, USA



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