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Interlaboratory comparison to evaluate the methodology for determination of the media filtration efficiency against nanoparticles

Original

Interlaboratory comparison to evaluate the methodology for determination of the media filtration efficiency against nanoparticles / Sachinidou, P.; Chen, S.C.; Pui, D.Y.H.; Tronville, P.; Mosimann, T.; Eriksson, M.; Wang, J.. - ELETTRONICO. - (2016), pp. 129-129. ((Intervento presentato al convegno WFC 12 - 12th World Filtration Congress tenutosi a Taipei nel 11-15 April 2016.

Availability:

This version is available at: 11583/2675980 since: 2017-07-07T10:06:19Z

Publisher:

WCF 12

Published

DOI:

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World Filtration Congress

Tuesday, April 12, 2016

Plenary Lecture 1

09:40-10:40 / Room: 101
Chair: Richard Wakemang

PL

Economical Solutions for Customtailored Separation of Particles from Liquids

Dr. Harald Anlauf, Karlsruhe Institute of Technology, Germany

Plenary Lecture 2

11:00-12:00 / Room: 101
Chair: Duu-Jong Lee

PL

Virus Filtration – Role of Membrane Morphology and Chemistry on Virus Capture

Prof. Andrew Zydney, The Pennsylvania State University, USA

Lunch Plenary

12:00-12:30 / Room: VIP, 4F
Chair: Christopher Wallace

PL

The Important Purpose of the Global Filtration & Separation Industry

President Klaas De Waal, International Media Group, Inc., USA

Keynote Lecture

14:00-15:30 / Room: 201B
Chair: Tung-Wen Cheng

K1&K2

Electromembrane Processes: Novel Ideas for Advanced Separations

Prof. Bart Van der Bruggen, KU Leuven, Belgium

Compressibility of Filter Cake in Membrane Filtration

Prof. Eiji Iritani, Nagoya University, Japan

Keynote Lecture

14:00-15:30 / Room: 201C
Chair: Da-Ming Wang

K3&K4

Smart Membranes for Molecular-Recognizable Separations

Prof. Liang-Yin Chu, Sichuan University, China

Innovative Physical Treatments to Enhance Biosolid / Liquid and Solute Separations

Prof. Eugène Vorobieff, Université de Technologie de Compiègne, France

Water Treatment and Desalination I

14:00-15:30 / Room: 201D
Chair: Nobuyuki Katagiri

M1

Advanced Oxidation of Membrane Concentrate with Pulsed Corona Discharge

Kimmo Arola*, Mari Kallioinen, Mika Mänttari, Lappeenranta University of Technology; Henry Hatakka, Wapulec Oy, Finland

Monitoring Membrane Integrity for Drinking Water Production: An Innovative Membrane Based Device

Corinne Cabassud*, Lucas Juven, INSA Toulouse; Nouhad Abidine, ABC Membranes, France

Granular Activated Carbon (GAC) Filter as a Pretreatment in Seawater Desalination Routes: From the Choice of the Gac to On-Site Testing of Filtration Performances

Mathias Monnot*, Stéphanie Laborie, Corinne Cabassud, LISBP-INSA Toulouse, France

Desalination of Flue Gas Denitrification Wastewater

Chuanfang Yang*, Haigang Li, Institute of Process Engineering, CAS, China

Filtration Analysis I: Apparatus, Process & Design

14:00-15:30 / Room: 201E
Chair: Yasuhiro Mukai

L1

Development of a New Sustainable Filtering Media for Wine and Beer Clarification and Sterilisation

Marie Blackford*, Remy Ghidossi, Martine Mietton-Peuchot, Vine and Wine Science Institute (ISVV), France

Four Different Filtration Operation Modes in One Filtration System

Alois Wimmer*, Stefan Schoepf, Stefan Strasser, Lenzing Technik GmbH, Austria

Centrifuge and Hydrocyclone I

14:00-15:30 / Room: 201F
Chair: Naoto Ohmura

L3

Laboratory Test Methods and Calculations for Separation Efficiency Prediction of Decanter Centrifuges

Marc Böhlmann*, Siebtechnik GmbH, Germany

The Laminar Flow Centrifugal Separator : A New Device for Clarifying and the Production of a Compact Solide

David Chezaud*, Etienne Bortolin, FlowerSEP; Jean-Pierre Feraud, Denis Ode, CEA Marcoule; Killian Mandrick, Alternative Energies and Atomic Energy Commission; Tojonirina Randriamanantena, CEA - Nuclear Energy Division, France

Centrifugal Classification in the Submicron and Nanometer Range

Manuel Konrath*, Hermann Nirschl, Karlsruhe Institute of Technology (KIT), Germany

Analysis of Centrifugal Settling of Strongly Flocculated Suspensions

Samuel Skinner*, Anthony Stickland, Lee White, Shane Usher, Peter Scales, The University of Melbourne; Daniel Lester, RMIT University, Australia

Air Filters-HEPA I

14:00-15:30 / Room: 202
Chair: Shih-Cheng Hu

G1

Experimental Characterization of Airflow within a Clean HEPA Filter Pleat

Youssef Alilou*, Soleiman Bourrous, Philippe Nérison, Thomas Gelain, IRSN; Dominique Thomas, Nathalie Bardin-Monnier, LRGP, France

Nanofibers for Air Filtration: Delivery, Durability, and Downstream Processing

Josh Manasco*, Elmarco Ltd., Japan

Pressure Drop Modelling of Nanostructured Deposit under the Influence of Moisture

Quentin Ribeyre*, Augustin Charvet, Cécile Vaillières, Dominique Thomas, Laboratoire Réactions et Génie des Procédés, France

A Multifunctional Multi-Walled Carbon Nanotubes /Ceramic Membrane Composite Filter for Air Purification

Zhaoxiang Zhong*, Yang Zhao, Zhong Yao, Nanjing Tech University, China

Filter and Gas Adsorptions

14:00-15:30 / Room: 203
Chair: Angus Shiu

G3

Performances of Mesoporous Adsorbents in Removal of Gaseous Polycyclic Aromatic Hydrocarbons

Ziyi Li*, Yingshu Liu, Xiong Yang, Yi Xing, Quan Yang, University of Science and Technology, China; Chuenjinn Tsai, National Chiao Tung University, Taiwan; Ralph Yang, University of Michigan University of Science and Technology, USA

Validation of a Breakthrough Theoretical Model on Adsorptive Chemical Filter for Toluene Removal Used in the Make-Up Air Unit (MAU) of a Cleanroom

Angus Shiu*, Shih-Cheng Hu, National Taipei University of Technology, Taiwan

Adsorbent Hollow Fiber for Industrial Dried Air Application

Chun-Ming Chang*, Yun-Hsin Wang, Cheng-Fu Hsu, Chin-Chih Tai, Industrial Technology Research Institute, Taiwan

Polysulfone-Ionic Liquid Based Membranes for CO₂/N₂ Separation with Tunable Isoporous Surface Features

Soon-Chien Lu*, Ivo Vankelecom, University of Leuven, Belgium; Asim Khan, COMSATS Institute of Information Technology, Pakistan

Advanced Filter Media Technologies

16:00-17:30 / Room: 201B
Chair: Christine Sun

S1

Durability of Nylon Spunbond Media in Glycol Contaminated Engine Oil

James Walker*, Erin Carter, Albert Ortega, Cerex Advanced Fabrics, Inc., USA

PAO Compatible ePTFE Technology HEPA Filters for Clean Room Pharmaceutical Applications

Rahul Bharadwaj*, Nathaniel Nance, Micheal Osborne, AAF International, USA

Metal Fibers and Porous Membranes Developed by Bekaert, the Obvious Choice for High Demanding Applications in Filtration

De Baerdemaeker*, Aurélie Goux, Verschaeve Frank, Rik Dewitte, Davy Goossens, Jeremie NV Bekaert SA, Belgium

Sustainable Development of Organic Solvent-Free Nanofiber Filter Media Production

Christine Sun*, Filtration Technologies International, Inc., USA

Membranes for Bioseparations

16:00-17:30 / Room: 201C
Chair: Andrew Zydney

S2

Purification of DNA for Gene Therapy and Vaccines using Membrane Ultrafiltration

Prof. Andrew Zydney, The Pennsylvania State University, USA

Purification and Differentiation of Human Adipose-Derived Stem Cells through Polymeric Membranes by Filtration Method

Akon Higuchi*, National Central University, Taiwan; Abdullah Alarfaj, A., Murugan Munusamy, A., King Saud University; S. Suresh Kumar, Universiti Putra Malaysia, Malaysia

Betaine Based Materials for Controlling Protein and Cell Attachment

Chia-Chi Ho*, Ross Andrews, Carlos Co, University of Cincinnati, USA

Surface Engineering for Developing New Membrane Adsorbers

Ranil Wickramasinghe*, Zizhao Liu, Xianghong Qian, University of Arkansas, USA

Water Treatment and Desalination II

16:00-17:30 / Room: 201D
Chair: Teh-Ming Liang

M2

Novel Forward Osmosis Process to Effectively Remove Heavy Metal Ions

Yue Cui*, Qingchun Ge, Xiang-Yang Liu, Tai-Shung Chung, National University of Singapore, Singapore

Decolorization Properties of Dye Wastewater by Enzymatic Membrane Reactor Using Cultural Supernatant of White-Rot Fungus

Nobuyuki Katagiri*, Mitsunobu Takatsu, Eiji Iritani, Nagoya University, Japan

Mitigation of Membrane Biofouling and Energy Saving in Mbr for Wastewater Treatment by Farnesol of a Fungal Signal Molecule

Ki-Baek Lee*, Seon-ki Lee, Sang-Hyun Lee, Chung-Hak Lee, Yea-Won Kim, Jung-Kee Lee, Seoul National University, Korea

Development and Application of Novel Photo-Catalytic Fibres for Reclaimed Water Treatment

Chun-Chi Lee*, Chin-Chih Tai, Industrial Technology Research Institute; Chun-Cheng Fan, National Cheng Kung University, Taiwan

Filtration Analysis II: Filter Testing

16:00-17:30 / Room: 201E
Chair: Krishna Gupta

L2

Filterability Pressure Test, an Innovating Lab Scale Device for Industrial Needs

Jean-Pierre Feraud*, Damien Bourcier, Laurent Salemi, Tojonirina Randriamanentena, Commissariat à l'énergie atomique; Denis Ode; David Chezaud, Etienne Bortolin, FlowerSep, France

New Work Item Relative to Particulate Fuel Filter Efficiency Test as Per ISO 19514

Nicolas Petillon*, IFTS (Institut de la Filtration et des Techniques Séparatives), France

Filter Pore Size by Glass Bead Challenge Testing: Precision Measurement of the Geometric Pore Size

Graham Rideal*, Keith Brocklehurst, Andrew Hassall, Abi Stewart, Whitehouse Scientific, United Kingdom

Micro- and Ultra-Filtration of PSL and AU Nanoparticles through Nuclepore Filters: Experiments and Models

Sheng-Chieh Chen*, Handol Lee, Min Tang, David Pui, South China University of Technology; University of Minnesota, USA

Centrifuge and Hydrocyclone II: Hydrocyclone and CFD - Simulation

16:00-17:30 / Room: 201F
Chair: Gernot Krammer

L4

Solid-Liquid Separation Properties in Centrifugal Sedimentation of Bidisperse Colloidal Suspension

Da-Qi, Cao*, Beijing University of Civil Engineering and Architecture, China

Design the New Type of Hydrocyclone and Compare with the Separation Efficiency from Simulation and Experiment

Chien-Wen Chiu*, Kuo-Jen Hwang, Shih-Ping Chou, Tamkang University, Taiwan

Improving Continuous Solid-Liquid Separation Processes in Decanter Centrifuges by Means of Computational Fluid Dynamics

Marco Gleiss*, Hermann Nirschl, Karlsruhe Institute of Technology (KIT), Germany

Improved Decanter Operation by Reduced Particle Fragmentation

Gernot Krammer*, Johann Grossalber, Andritz AG; Xiaolong He, Andritz (China) LTD; Markus Kuhn, Michael Reichnbach, Stefan Weis, Andre Siebelitz, Andritz Separation GmbH, Austria

Study on Orthogonal Experiments of Separation Performance Inside Multi-Product Hydrocyclone

Yuekan Zhang*, Peikun Liu, Xinghua Yang, Linjing Xiao, Shandong University of Science and Technology, China

Air Filters-HEPA II

16:00-17:30 / Room: 202
Chair: Ta-Chih Hsiao

G2

Fine to Nano Size Filament Strength Improvement for Filtration Application

Kyung-Ju Choi*, Clean and Science Co. Ltd, USA

Impact of Media Discharge on PM2.5 Particle Retention

Andre Boni*, Gloria Geng, Hollingsworth&Vose (Suzhou) Co., Ltd., China

Experimental Study of Electrospun Polyacrylonitrile Ultrafinefibers in Nanoparticle Filtration

Chieh-Wen Chen*, Ta-Chih Hsiao, National Central University; Chun-Te Lin, Feng Chia University; Yao-Chuan Lee, Tunghnan University, Taiwan

Structural Characterization of a High Performance Air Filtration Composite Media at Local and Global Scales

Felicie Theron*, Elisabeth Lys, Laurence Le Coq, Ecole des Mines de Nantes, France

The Preparation and Research of Nano TiO2-Quartz Fiber Functional Air Filtration Material

Sun Jun*, State Key Laboratory of NBC Protection for Civilian; Quanfu Men, Chuanqi Ren, Hao Han, Xiaoqiang Gao, Jian Kang, Sulin Han, Xicheng Shi Research Institute of Chemical Defense, China

Surface Filtration

16:00-17:30 / Room: 203
Chair: Qisheng Ou

G4

High-Gradient Permanent Magnetic Filtration for Airborne Particles

Mengdawn Cheng*, Gerard Ludtka, Oak Ridge National Laboratory, USA

Effect of Relative Humidity on Particle Loading and Filter Holding Capacity

Qisheng Ou*, Allan Ouyang, David Y.H. Pui, University of Minnesota, USA

On the Influence of an Added Fraction of Hygroscopic Salt Particles on the Operating Behaviour of Surface Filters for Dust Separation by Moisture-Induced Deliquescence and Efflorescence

Qian Zhang*, University of Wuppertal, Germany

Wednesday, April 13, 2016

Plenary Lecture 3

08:00-09:00 / Room: 101
Chair: Chung Hak Lee

PL

State of the Art and Advances in Perm-Porometry

Prof. Roger Ben Aim, Institut de la Filtration et des Techniques Séparatives (IFTS), France

Keynote Lecture

09:10-10:40 / Room: 201B
Chair: William Krantz

K5&K6

The Possible Role of Membrane Technology in a Thirsty World

Dr. Thomas A. Peters, Independent Consultant for Membrane Technology and Environmental Engineering, Germany

Historical Development of QQ-MBR for Wastewater Treatment

Prof. Chung-Hak Lee, Seoul National University, Korea

World Filtration Congress

Centrifugal Separation

09:10-10:40 / Room: 201C

Chair: Wallace Woon-Fong Leung

S5

Centrifugal Separation in Biopharmaceutical Production

Wallace Woon-Fong Leung*, The Hong Kong Polytechnic University, Hongkong

In Situ Visualization of Separation Phenomena at Real Time under Gravity or Accelerated Centrifugal Fields

Dietmar Lerche*, LUM GmbH, Germany

Centrifugal Separation of Flocculated Sludges in Wastewater Treatment

Wallace Woon-Fong Leung*, The Hong Kong Polytechnic University, Hongkong

Comparison of Different Methods in Separation of Microalgae

Samuel CL Lo*, Sirius PK Tse, Joseph KF Yung, Wing-Tak Wong, Hong Kong Polytechnic University, Hongkong

Fouling and Scaling I: Water Treatment and Desalination

09:10-10:40 / Room: 201D

Chair: Dun-Yen Kang

M3

Anti-Scale Effects of Dissolved Organic Carbon on Gypsum Scaling During Reverse Osmosis Desalination

Jan Benecke*, Mathias Ernst, Hamburg University of Technology, Germany

A Novel Technology for the Prevention of Scale Formation in Extreme Water Conditions

Jie Lu*, Imerys FP&A, USA

Fouling Reduction by Membrane Bioreactor Used as a Pretreatment in Desalination

Saravanamuthu Vigneswaran*, Sanghyun Jeong, Gayathri Naidu, University Technology of Sydney, Australia

Anti-Fouling Reverse Osmosis Membrane

Jing Wang*, Zhi Wang, Jing Wang, Junhui Wu, Jixiao Wang, Shichang Wang, Tianjin University, China

Bio-Separation Applications I: MF & UF

09:10-10:40 / Room: 201F

Chair: Rui Xie

M8

TRIS (Hydroxymethyl) Aminomethane Affinity Nanofiber Membrane for Adsorption of Lysozyme

Yu-Kaung Chang*, Kai-Jie Lin, Shwu-Jer Chiu, Ming Chi University of Technology, Taiwan

Combining Microfiltration with Co-Crystallization to Purify Bio-Ethanol after Fermentation

Chen-Hsi Chien*, Kuo-Jen Hwang, Tamkang University, Taiwan

In Situ 3D Analyze of Cake Formation on Microsieves Using Confocal Laser Scanning Microscopy

Philippe Schmitz*, Ines Ben Hassan, Christine Lafforgue, University of Toulouse, France

Novel Microfluidic Device for Real-Time Observation of Membrane Fouling during Separation in Biomedical Applications

Dmytro Shisarenko*, Christel Causserand, Pierre Aimar, Patrice Bacchin, University of Toulouse, France

Cake Filtration I: Cake Compressibility and Filterability

09:10-10:40 / Room: 202

Chair: Eiji Iritani

L5

A Study of the Theory and Practice of Filtration of Difficult to Be Filtered Material

Wen-Ping Li*, Agrilectric Research Company, Li-Hong Du, Fang Wu, Shanghai Research Institute of Chemical Industry; Qi-Xin Zhu, Tianjin University, China

Local Filtration Properties of Kraft Lignin: Influence of Lignin Properties

Julie Durruty*, Tuve Mattsson, Hans Theliander, Chalmers University of Technology, Sweden

Computational Filterability and Dewatering Determination based on Shape and Size Distribution of Solids Suspensions

Jean-Pierre Féraud*, Damien Bourcier, Denis Ode, Commissariat à l'énergie atomique ; François Puel, Université Paris Saclay; Didier Colson, Université Lyon 1, France

On the Local Filtration Properties of Microcrystalline Cellulose

Jonas Wetterling*, Tuve Mattsson, Hans Theliander, Chalmers University of Technology, Sweden

Industrial Gas Cleaning I

09:10-10:40 / Room: 203

Chair: Harald Balzer

G5

Metal Filter Material Development for Hot Gas Filtration and Separation Applications

Harald Balzer*, Enrico Mählig, Astrid Wierhake, GKN Sinter Metal Filters, Germany

The Use of High Temperature Filtration to Prevent the Deposit of Heavy Metals in Fly Ash in Municipal Sewage Sludge Incineration

Colin Beattie, Clean Air Technology Ltd, United Kingdom

Influence of a Venturi on the Spread of a Compressed Air Jet within a Bag Filter

Alain Ginetet*, Lionel Boiteux, François Bessac, CETIAT, France

Special Filtration Effect of Dust from Wood Firing with Nonwoven Fiber Materials

Ralf W. Heidenreich*, Ralf Herzog, Madeleine Berger, Institute of Air Handling and Refrigeration; Lars Kießig, Bristol T&G International GmbH, Germany

HEPA / ULPA μ -Glass Filtration Media VS. ePTFE Membranes

Ethan Xiao*, Gloria Geng, Hollingsworth & Vose (Suzhou) Co., Ltd., China

Membrane and Water

11:00-12:30 / Room: 201B

Chair: Rong Wang

S3

Recent Developments in the Energy-Efficient Reverse Osmosis (EERO) Process

William Krantz*, University of Colorado, USA; Tzzy Chong, Siew-Leng Loo, Nanyang Technological University, Singapore

Fouling Monitoring by Optical Coherence Tomography (OCT) for Membrane Processes

Tzzy Haur Chong*, Weiyei Li, Xin Liu, Nanyang Technological University, Singapore

Recent Developments in Osmotic Membranes for Water and Energy Applications

Rong Wang*, Tony Fane, Nanyang Technological University, Singapore

Morphology Evolution of Inorganic Hollow Fiber Membranes Prepared by Phase Inversion and Sintering Techniques

Shaomin Liu*, Curtin University, Australia

Warm / High-Temperature Filtration Technology

11:00-12:30 / Room: 201C

Chair: Su-Shan Hsiau

S6

Trends and Challenges in Gas Cleaning

Gernot Krammer*, Johannes Steininger, Graz, University of Technology, Austria

The Study of Filtration Efficiency in Moving Granular Bed Filter with Two-Stage Mode

Chia-Wei Chang*, Shu-San Hsiau, National Central University; Yan-Pin Chyou, Yi-Shun Chen, Atomic Energy Council, Taiwan

Performance Evaluation of Two Candle Filters at Different Temperatures

Ta-Chih Hsiao*, Shu-San Hsiau, Po-Kai Chang, Yen-Kai Chen, National Central University, Taiwan

Control of Dust Collection Efficiency by the Pressure Distribution Analysis Method in the Circulating Granular Bed Filter

Shu-Yii Wu* An-Sheng Lee, Feng Chia University; Jing-Cheng Bai*, National Chin-Yi University of Technology, Taiwan

Fouling and Scaling II: Waste Water Treatment

11:00-12:30 / Room: 201D

Chair: Saravanamuthu Vigneswaran

M4

Improved Fouling Reduction of Membrane by Incorporation with Electro-Coagulation in a Membrane Bioreactor

Lap-Cuong Hua*, Chihpin Huang, National Chiao Tung University, Taiwan

A Model to Describe Removal of Fouling During Relaxation

Mads Koustrup Jørgensen*, Thomas Vistisen Bugge, Barbara Harling Hede, Morten Lykkegaard Christensen, Aalborg University, Denmark

Change of the Hollow Fiber Microfiltration Characteristics under Various Filtration Pressure

Kenji Kawasaki*, Akira Matsuda, Ehime University, Japan

Ftir Mapping Adapted to Assess Coating and Fouling Distribution on Modified Membranes

Lucia Benavente*, Clemence Coetsier, Christel Causserand, Patrice Bacchin, Pierre Aimar, University of Toulouse, Fracne; Antoine Venault, Yung Chang, Chung Yuan Christian University, Taiwan

New Membranes I

11:00-12:30 / Room: 201E
Chair: *Huu Hao Ngo*

M6

Using Gravitational Filtration Process to Remove Perfluorooctane Sulfonate

Hao Guo*, Chuyang Tang, The University of Hong Kong, Hongkong

Effects of Fabrication Conditions on the Structures and Performances of Smart Membranes with in Situ Self-Assembled Nanogels as Gates

Feng Luo*, Rui Xie, Xiao-Jie Ju, Wei Wang, Zhuang Liu, Liang-Yin Chu, Sichuan University, China

Novel Adsorptive Hollow Fiber Membrane for Distillation Application

Tzu-Ying Chen*, Chieh-An Liang, Chin-Chih Tai, Industrial Technology Research Institute, Taiwan

Ethanol-Responsive PVDF Membranes with PNIPAM Nanogels as Functional Gates

Rui Xie*, Xiao-Lu Song, Xiao-Jie Ju, Wei Wang, Zhuang Liu, Liang-Yin Chu, Sichuan University, China

Surface Modification of Electrospun Nanofibrous Membranes for Boron Removal

Justin Chun-Te Lin*, Chin-Yi Wu, Feng Chia University; Ta-Chih Hsiao, National Central University, Taiwan

Bio-Separation Applications II

11:00-12:30 / Room: 201F
Chair: *Yu-Kaung Chang*

M9

Evaluating the Effect of Sugar Content in Pineapple Waste for Electricity Production Using Synthesized Phosphorylated Chitosan Membrane in Microbial Fuel Cell

Shima Holder*, Ching-Hwa Lee, Srinivasa Popuri, Devi Sembiring, Da-Yeh University, Taiwan

Amino-Functionalized Ceramic Capillary Membranes for Controlled Virus Retention

Stephen Kroll*, Julia Bartels, Marina Souza, Amelie Schaper, Kurosch Rezwan, University of Bremen, Germany

Membrane Processes in the Separation and Utilisation of Wood Biomass in the Context of the Pulp and Paper Industry

Frank Lipnizki*, Alfa Laval Nakskov; Ann-Sofi Jönsson, Lund University Business Manager, Denmark

Performance of Anaerobic Membrane Bioreactor (AnMBR) With Powdered Activated Carbon (PAC) in Biogas Production and Flux Enhancement

Choon Aun Ng*, Meng Khai Low, Kong Hoong Lem, Ming Feng Tay, E-Chuan Tan, Sze Pin Tan, Mohammed J. K. Bashir, University Tunku Abdul Rahman, Malaysia; Chii-Dong Ho, Tamkang University, Taiwan

Validation and Application of the Personnel Factor for the garment used in Cleanrooms

Angus Shiue*, Shih-Cheng Hu, Tian-Yi Wang, National Taipei University of Technology, Taiwan

Cake Filtration II: Cake Washing and Backflushing

11:00-12:30 / Room: 202
Chair: *Bhaskar Narayan Thorat*

L6

Rewetting Curve - The Equilibrium State of the Filter Cake Washing with Immiscible Fluids

Sophie Kühne*, Markus Burisch, Urs Peuker, Markus TU Bergakademie Freiberg, Germany

Fundamentals and Recent Developments in Filter Cake Washing

Sabine Heinisch*, Markus Burisch, Urs Peuker, Markus TU Bergakademie Freiberg, Germany

Local Properties of Bauxite Residue Filter Cakes during Cake Washing

Teemu Kinnarinen*, Hans Theliander, Antti Häkkinen, Tuve Mattsson, Lappeenranta University of Technology, Finland

HiBar Steam Pressure Filtration of an Organic Acid

Martin Schiessl, Reinhard Bott, Bokela GmbH, Germany

Industrial Gas Cleaning II

11:00-12:30 / Room: 203
Chair: *Wu Chen*

G6

Treatment of Blast Furnaces Dust by Means of a Wet Granular Bed Filter

Guillemette Thieffry*, Augustin Charvet, Nathalie Bardin-Monnier, Dominique Thomas, Laboratoire Réactions et Génie des Procédés, France

Improvement of Granular Bed Filtration Performances

Loic Wingert*, Denis Bémer, INRS; Stéphanie Pacault, Augustin Charvet, Nathalie Bardin-Monnier, Dominique Thomas, LRGP / UL, France

Influence of Operating Conditions on Bag Filter Performances for Incineration Fumes Treatment

Laurence Le Coq*, Rachid Boudhan, Aurelie Joubert Ecole des Mines de Nantes; Kamal Gueraoui, Faculté des Sciences de Rabat, France

Characterization of Dust Particles Volume and Weight Mean Diameters Emitted through Needle Felt Media during the Pulse Jet Filtration Process

Awadhesh Kumae Choudhary*, Dr. B R Ambedkar National Institute Of Technology, Jalandhar (NITJ), India

Development of Hydrophobic Membranes for Innovative Membranes Unit Operations

16:00-17:30 / Room: 201B
Chair: *Enrico Drioli*

S4

Design and Fabrication of Tailored Membranes for New Emerging Membrane Application

Enrico Drioli*, Institute on Membrane Technology (ITM-CNR), Italy

Development of Hydrophilic Membranes for Challenging Separation Applications

Frank Lipnizki*, Haofei Guo, Business Manager, Denmark

Performance of a Magnetic Responsive Biocatalytic Membrane Reactor

Pierre Aimar, Laboratoire de Génie Chimique, Université de Toulouse, CNRS, INPT, UPS, Toulouse, France

ZIF-ZIF Hybrid Membranes for Hydrogen Purification

Dun-Yen Kang*, Yang Lo, National Taiwan University, Taiwan

The Method of Preparing Multi-Channel and Spiral Hollow Fiber Membrane

Chin-Chih Tai*, Yun-Hsin Wang, Industrial Technology Research Institute, Taiwan

New Designs for the Separation Efficiency Improvement

16:00-17:30 / Room: 201C
Chair: *Hsiu-Po Kuo*

S7

Application of Novel Cyclone With Sintered Metal Cone to Classification and Filtration

Kunihiro Fukui*, Tomonori Fukasawa, Hideto Yoshida, Hiroshima University, Japan

Kinetic Study of Steam Hydration Reaction of CFB Boiler Separated Ashes

Hsiu-Po Kuo*, Yi-Ning Yang, Chang Gung University, Taiwan; An-Ni Huang, Hiroshima University, Japan

Developments in Industrial Gas Filtration Using Sintered Metal Technology

Kenneth Rubow*, Billy Huang, Mott Corporation, USA

Fouling and Scaling III

16:00-17:30 / Room: 201D
Chair: *Philippe Schmitz*

M5

Biofouling Control by Quorum Quenching Bacteria Entrapping Media in Membrane Bioreactor

Seon Ki Lee*, Sang Hyun Lee, Hyeokpil Kwon, Chung Hak Lee, Seoul National University, Korea

Investigation of the Formation and Cohesive Strength of Cake Fouling Layers during Cross-Flow Microfiltration Using Fluid Dynamic Gauging

Tuve Mattsson*, Chalmers University of Technology, Sweden; William J. T. Lewis, Y.M. John Chew, Michael R. Bird, University of Bath, England

On-Site Testing of a Community-Scale Seawater RO Pilot Plant: Lessons Learnt to Prevent Biofouling

Mathias Monnot*, Christine Lafforgue, Stéphanie Laborie, Corinne Cabassud, LISBP-INSA Toulouse, France; Hòa Thi Khánh Nguyễn, University of Science and Technology of Hanoi, Vietnam



World Filtration Congress

New Membranes II

16:00-17:30 / Room: 201E
Chair: Justin Chun-Te Lin

M7

Hydrophobic Mesoporous Silica Aerogel Modified Ceramic Hollow Fiber Membranes as a Potential Membrane Contactor for the CO₂ Capture Application

Chien-Hua Chen*, Kuo-Lun Tung, National Taiwan University; Yi-Feng Lin, Chung Yuan Christian University, Taiwan

The Preparation and Characterizations of the Low-Cost Ceramic Support Layers for Microfiltrations

Jang-Hoon Ha*, Jongman Lee, In-Hyuck Song, Korea Institute of Materials Science, Korea

Ultra-High Molecule Weight Polyethylene Filtration Materials

Xinwei Wang*, Xun Xu, Yumei Zhang, Shanghai Research Institute of Chemical Industry, China

Cake Filtration III

16:00-17:30 / Room: 202
Chair: Anthony Stickland

L7

Precoat Filtration Technique Using Microbubbles

Hiroshi Yagishita*, Shuichiro Oguri, Koichi Yagishita, Kiyohisa Kondo, Sanshin Mfg. Co., Ltd., Japan

Application of Autohydrogenotrophic Bacteria in a Self-Forming Dynamic Membrane Bioreactor for Nitrate Containing Wastewater Treatment

Tran-Ngoc-Phu Nguyen*, Chihpin Huang, National Chiao Tung University, Taiwan

Optimisation of Filter Design and Operation for Wastewater Treatment Sludge

Anthony Stickland*, Samuel Skinner, Peter Scales, The University of Melbourne, Australia

The Influence of Filter Media on Sludge Cake Filtration and Electro-Dewatering Performances

Manel Beldi*, Nemeshwaree Behary, Anne Perwuelz, GEMTEX, France

A Review of Useful Parameters, Methods and Standards in Wastewater Sludge Treatment

Pascal Ginisty*, IFTS, France; Ludovico Spinosa, CEN TC 308, Italy

Industrial Gas Cleaning III

16:00-17:30 / Room: 203
Chair: Da-Ren Chen

G7

Experimental Study on the Effective Vortex Length of Cyclones

Hsiao-Yi Hung*, Chia-Wei Hsu, Sheng-Hsiu Huang, Chih-Chieh Chen, National Taiwan University, Taiwan

Effect of Magnesium Oxide Nanoparticle on Some Characteristics of Nonwoven Nanofiber Filter Media

Somayeh Farhang Dehghan*, Farideh Golbabaei, Tehran University of Medical Sciences, Iran

Design of Modular Vacuum Cleaned Dust Filter Using Filtration Specific Parameters

Thomas Laminger*, Gerd Mauschwitz, Wilhelm Hoeflinger, Vienna University of Technology, Austria

Development of Adsorbent Hollow Fiber for Air Pollution Control

Yun-Hsin Wang*, Chun-Ming Chang, Chin-Chih Tai, Industrial Technology Research Institute, Taiwan

Thursday, April 14, 2016

Plenary Lecture 4

08:00-09:00 / Room: 101
Chair: Wilhelm Höflinger

PL

Filtration Solutions to Mitigate PM_{2.5} Pollutants in Urban Air

Prof. David Y.H. Pui, The University of Minnesota, USA

Keynote Lecture

09:10-10:40 / Room: 201B
Chair: Christine Sun

K7&K8

New Electrostatic Precipitators for the Control of Fine Particles and Nanoparticles

Prof. Chuen-Jinn Tsai, National Chiao Tung University, Taiwan

PM_{2.5} Measurement and the Assessment for Dust Separators

Prof. Wilhelm Höflinger, Vienna University of Technology, Austria

Keynote Lecture

09:10-10:40 / Room: 201C
Chair: Liang-Yin Chu

K9&K10

Insight into Morphology Control of Porous Polymeric Membranes - Role of Rheology of Polymer Solution

Prof. Da-Ming Wang, National Taiwan University, Taiwan

Multifunctional Membranes for Future Separations

Dr. Ranil Wickramasinghe, University of Arkansas, USA

Water / Waste Water Treatment I: MD

M10

09:10-10:40 / Room: 201D
Chair: Meng-Shun Huang

Methylmethoxysilane Derived Hydrophobic Polymethylsilsesquioxane Aerogel Membranes for Membrane Distillation Applications

Chia-Chieh Ko*, Kuo-Lun Tung, Cheng-Han Chuang, Chien-Hua Chen, National Taiwan University, Taiwan

The Importance of Membrane Supporting Materials on Membrane Distillation Performance

Chia-Hua Ho*, Min-Chao Chang, Hsin Shao, Meng-Shun Huang, Tsui-Jung Yang, Ren-Yang Horng, Industrial Technology Research Institute, Taiwan

Effect of Membrane Structure on Membranes Performance during Membrane Distillation

Ranil Wickramasinghe*, Mohammadmahdi Malmali, University of Arkansas, USA

Membrane Distillation for Desalination and an Integrative Energetic Approach - State of Art

Corinne Cabassud*, INSA Toulouse, France

Ceramic Membrane and Applications

M12

09:10-10:40 / Room: 201E
Chair: Chin-Chih Tai

Application of Ceramic Hollow Fiber Membranes in the Treatment of Oil Contaminated Produced Water

Peter Czermak*, Steffen Kerker, Mehrdad Ebrahimi, Mittelhessen University of Applied Sciences; Steffen Schuetz, Frank Ehlen, Mann + Hummel GmbH, Germany

Highly Sophisticated Coating and Laminating Technologies for the Production of Filtration and Separation Membranes

Andrea Glawe*, KROENERT GmbH & Co KG, Germany

Pilot-Scale Set up of Tubular Membrane Filtration System to Separate Whey Proteins and Bacteriophages in Cheese Whey Processing

Meike Samtlebe*, Jörg Hinrichs, Zeynep Atamer, University of Hohenheim; Natalia Wagner, Erik Brinks, Horst Neve, Knut Heller, Max Rubner-Institut, Germany

Superhydrophobic Teflon Coating on Al₂O₃ Membrane for Desalination Applications

Chun-Yung Huang*, Hsien-Lung Chiu, Ying-Chih Liao, National Taiwan University, Taiwan

Microfiltration and Ultrafiltration I: Fouling and Scaling

M14

09:10-10:40 / Room: 201F
Chair: Chi-Wang Li

Fouling Analysis in Crossflow Ultrafiltration of Watermelon Juice

Chiranjit Bhattacharjee*, Vinod Saxena, Suman Dutta, Indian School of Mines, India

Accelerated Analysis of Filterability in a Photocentrifuge

Dietmar Lerche*, Titus Sobisch, LUM GmbH, Germany; Maksym Loginov, Eugene Vorobiev, TIMR, Compiegne University of Technology; Compiegne University of Technology, France

Novel Triangle-Shape Tri-Bore Ultrafiltration Hollow Fiber Membranes Prepared by Sulfonated Polyphenylenesulfone (PPSU) for Oily Wastewater Treatment

Lin Luo*, Gang Han, Tai-Shung Chung, National University of Singapore, Singapore; Martin Weber, Claudia Staudt, Christian Maletzko, BASF, Germany

Analysis of the Local Cake Properties in Rotating-Disk Microfiltration of Fine Particles

Su-En Wu*, Kuo-Jen Hwang, Yu-Ling Hsueh, Tamkang University, Taiwan

Clogging of Microchannels: The Panic, the Herding Instinct and the Sacrifice Scenario

Zenamarkos Sendekie*, Patrice Bacchin, Université Paul Sabatier, France

Depth Filtration

09:10-10:40 / Room: 202
Chair: Vincent Ederly

L8

Fine Filtration of Lube Oil in Bypass Mode – Field Relevance of Test Methods as Enabler for Technical Solutions

Thomas Gose*, Jobst Eisengräber-Pabst, Uwe Staudacher, Harald Banzhaf, MANN+HUMMEL GMBH, Germany

Depth Filtration in Liquid Media – A New Approach to Estimate the Filtration Efficiency based on the Calculated Impact and Measured Adhesion Probability

Urs Peuker*, Fabian Heuzeroth, Jörg Fritzsche, Institute of Mechanical Process Engineering and Mineral Processing; Eric Wertzner, Chair of Gas and Heat Technology; Miguel Mendes, Dimosthenis Trmis, Karlsruhe Institute of Technology; Subhashis Ray, Technische Universität Bergakademie Freiberg, Germany

Optimal Design of Depth Filters: A New Model-Based Method

Michael Kuhn*, Heiko Bräsen, Technische Universität München, Germany

Characterization of Non-Woven Fibrous Filterby 3D Filter Model

Kazuho Nakamura*, Kanji Matsumoto, Yokohama National University, Japan

Ultrafiltration of Small Semiconductor Nanoparticles by Tailored Surface Properties

Doris Seget*, Sebastian Süß, Wei Lin, Wolfgang Peukert, Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Germany; Sheng-Chieh Chen, David Pui, University of Minnesota, USA; Titus Sobisch, Dietmar Lerche, LUM GmbH, Germany

China Hydraulic Oil Filtration Market & Media Solution

Zhifeng Gu*, Yiqun Xiao, Zhiyong Li, Hollingsworth&Vose(Suzhou) Co., Ltd., China

Mechanism, Modelling and Simulation I

09:10-10:40 Room: 203
Chair: Nathalie Bardin-Monnier

G8

Numerical Study of Single Fibre Efficiency for Nanoparticles Filtration

Nathalie Bardin-Monnier*, Augustin Charvet, Dominique Thomas, Université de Lorraine, France

Molecular Simulation Study of the Structural Characteristics and Transport Behavior of Membranes from Triptycene-based Polymers of Intrinsic Microporosity (PIMs)

Yi-Rui Chen*, Liang-Hsun Chen, Kai-Shiun Chang, Tzu-Hao Chen, Kuo-Lun Tung, National Taiwan University, Taiwan

Influence of Fiber Media Heterogeneity on Filtration Efficiency

Selven Rungiah*, Jean-Christophe Appert-Collin, Dominique Thomas, LRGP (Laboratoire Réactions et Génie des Procédés); Philippe Vroman, ENSAIT-GEMTEX, France

Modelling and Simulation of Pressure Drop at Non-Homogeneous Filtration Conditions

Sascha Schiller*, Hans-Joachim Schmid, University of Paderborn, Particle Technology Group, Germany

Modeling Granular Beds Clogging by Nanoparticles

Loic Wingert*, Denis Bémer, INRS; Augustin Charvet, Nathalie Bardin-Monnier, Dominique Thomas, LRGP / UL, France

Filtration Solutions to Mitigate PM2.5 in Urban Air

11:00-12:30 / Room: 201B
Chair: David Y.H. Pui

S8

Advanced Photocatalysis Films: Fabrication Strategies, and Application for Air Pollution Control

Junji Cao*, Institute of Earth Environment of the Chinese Academy of Sciences (IEECAS), China

Performance Evaluation of Respirator Filter Media

Da-Ren Chen*, Qiang Wang, Laleh Golshahi, Virginia Commonwealth University, USA

PM2.5 Mitigation by Electret HVAC and Air Cleaner Filter Media

Sheng-Chieh Chen*, David Y.H. Pui, University of Minnesota, USA; Min Tang, South China University of Technology, China; De-Qiang Chang, Northeastern University, USA

Keynote Lecture

11:00-12:30 Room: 201C
Chair: Pierre Aimar

K11&K12

Challenges in Sustainable Membrane Operation of Desalination Plants

Prof. Huu Hao Ngo, University of Technology, Australia

Novel Biomimetic Membranes for Water Reuse and Seawater Desalination

Prof. Rong Wang, Singapore Membrane Technology Centre; School of Civil and Environmental Engineering; Nanyang Technological University (NTU), Singapore

Water / Waste Water Treatment II: Graphene / Graphene Oxide

11:00-12:30 / Room: 201D
Chair: Shiao-Shing Chen

M11

Ultrathin Graphene Oxide Layer on the Composites Membrane for Water Separation

Febri Baskoro*, Shingjiang Lue, Chang Gung University, Taiwan

Graphene Oxide-Embedded Thin-Film Composite Reverse Osmosis Membrane with High Flux, Anti-Biofouling, and Chlorine Resistance

Hee-Ro Chae*, Jaewoo Lee, Chung-Hak Lee, Seoul National University; In-Chul Kim, Korea Research Institute of Chemical Technology; Pyung-Kyu Park, Yonsei University, Korea

Graphene Oxide Membranes with Strong Stability in Aqueous Solutions and Controllable Lamellar Spacing

Yue-Heng Xi, Jia-Qi Hu, Zhuang Liu*, Rui Xie, Xiao-Jie Ju, Wei Wang, Liang-Yin Chu, Sichuan University, China

Molecular-Level Mechanisms for Water and Solute Transport in Reverse Osmosis Membranes

Richard M Lueptow*, Meng Shen, Sinan Keten, Northwestern University, USA

Multi-Walled Carbon Nanotubes (MWCNTs) Membranes for Reverse Osmosis Application: A Simulation Study

Elena Tocci*, Carmen Rizzuto, Giovanni Pugliese, Enrico Drioli, Institute on Membrane Technology (ITM-CNR), Italy

Microfiltration and Ultrafiltration II: Water Treatment and Desalination

11:00-12:30 / Room: 201F
Chair: Hui-Hsin Tseng

M15

A Novel Filtration Model for Industrial – Scale Ultrafiltration Membrane Water Treatment Plant

Chun Ming Chew*, Mohamed Kheireddine Aroua, Mohd Azlan Hussain, University of Malaya, Malaysia

Microfiltration of Microalgae in the Presence of Rigid Particles

J.C. Liu*, M.T. Hung, National Taiwan University, Taiwan

Use of Cross-Flow Microfiltration to Remove Fine Particles and Improve Filtration Flux in Seawater Desalination Pretreatment

Ya-Lun Cai*, Kuo-Jen Hwang, Shu-Yu Wang, Tamkang University, Taiwan

Coalesce / Liquid - Liquid Separation

11:00-12:30 / Room: 202
Chair: Wenping Li

L9

Effects of Contaminants on the Water Separation Efficiency in Fuel Cleaning Systems

Richard Bernewitz*, Martin Veit, Jochen Reyinger, Harald Banzhaf, MANN+HUMMEL, Germany

New on Line Diesel Fuel Analysis Method (Application to Water Fuel Separation Efficiency Test as Per ISO 16332)

Nicolas Petillon*, IFTS, France

Coalescence Filtration of Liquid-Liquid Dispersions-New Insights and Perspectives

Chuanfang Yang*, Dan Hu, Xiaoyu Li, Lixia Cao, Yanxiang Li, Institute of Process Engineering, CAS, China

World Filtration Congress

Mechanism, Modelling and Simulation II

G9

11:00-12:30 / Room: 203
Chair: Thomas Laminger

Filter Media Simulation and Filter Process Simulation based on μ ct Scans and Sem Images

Liping Cheng*, Juergen Becker, Cornelia Kronsbein, Rolf Westerteiger, Andreas Wiegmann, Math2Market GmbH, Germany

Modeling the Pressure Drop Behavior of Cleanable Dust Filters during Pressure-Controlled Operation

Thomas Laminger*, Markus Stecher, Gerd Mauschwitz, Wilhelm Hoeflinger, Vienna University of Technology, Austria

Numerical and Experimental Investigations of the Influence of the Pleats Geometry on Fibrous Filter Performances

Felicie Theron*, Aurelie Joubert, Laurence Le Coq, GEPEA, Ecole des Mines de Nantes, France

Performance of Portable Air Cleaners - Measurement and Simulation

Thaddeus Ptak, Peter Vodak, AO SMITH, USA

Visualization Technology of the Particle Dendrite Deposition Phenomenon

Haiming Fu*, Zhuhui Zhu, Donghua University, China

Nanofiber Filter in Air Filtration and Purification

S9

16:00-17:30 / Room: 201B
Chair: Wallace Woon-Fong Leung

Cleaning of a Loaded Nanofibrous Filter

Wallace Woon-Fong Leung*, The Hong Kong Polytechnic University, Hongkong

Enhancement of Nanoparticle Removal for HVAC and Indoor Air Cleaner Filters by Adding Nanofibers

Sheng-Chieh Chen*, David Y.H. Pui, University of Minnesota, USA; Min Tang, South China University of Technology, China

Multilayer Nanofiber Filter

Michael Hsu*, Ping Chiang, Henry Feng, Hamstec Biotechnology; Hsin Ying Chou, Taiwan Textile Research Institute, Taiwan

Nano-Photocatalyst for Reducing Nox Emission

Wallace Woon-Fong Leung*, Carina Chun Pei, The Hong Kong Polytechnic University, Hongkong

Keynote Lecture

16:00-17:30 / Room: 201C
Chair: Sheng Fu Chiu

K13&K14

Advances in Membrane Fabrication, Characterization, and Process Technology at the Singapore Membrane Technology Center

Prof. William Krantz, University of Colorado, USA

Is Membrane Distillation a Sustainable Technology for Small Water Supply Schemes

Prof. Saravanamuthu Vigneswaran, University of Technology, Australia

Mechanism, Modelling and Simulation

M13

16:00-17:30 / Room: 201E
Chair: Peter Czermak

A Charged Nanopore Model for Nanofiltration

Tzyy-Leng Horng*, Feng Chia University; Yi-Hsiang Cheng, Industrial Technology Research Institute, Taiwan

A Macroscopic Model to Study the Effect of Packing Density on Filtration Performances in Hollow Fiber Microfiltration Module

Philippe Schmitz*, Omar Dounia, Doha Moutaabbid, Christine Lafforgue, University of Toulouse, France

Recovery of Catalysts with Dynamic Precoat Filtration

Martin Schiessl, BOKELA GmbH Germany

An Energy Map Model for Membrane Transfer

Patrice Bacchin*, Université Paul Sabatier, France

The Variation of the Membrane Fluxes in Different Operating Modes

Zhan Wang, Beijing University of Technology, China

Membranes for Resources Recovery

S10

16:00-17:30 / Room: 201F
Chair: Wang-Ho Choo

Membrane Catalytic Reactor for the Removal of 1, 4-Dioxane in Industrial Wastewater Effluents

Kwang-Ho Choo*, Kyungpook National University, Korea

Recovery of EDTA Draw Solution in Forward Osmosis Using Membrane Distillation Process

Shiao-Shing Chen*, National Taipei University of Technology, Taiwan

Energy and Fouling Control in Anaerobic Membrane Bioreactor

Jeonghwan Kim*, Inha University, Korea

Combining Chemical Reduction and Membrane Filtration for Copper-Containing Wastewater Treatment

Chi-Wang Li*, Yi-Hsuan Chou, Chien-Chun Chen, TamKang University, Taiwan; Kwang-Ho Choo, Kyungpook National University, Korea

Vibration, Hydrodynamics, Thermal & Hybrid-Process Enhanced Filtration

L10

16:00-17:30 / Room: 202
Chair: Daizo Takaoka

Suspensions Purification by Laponite Assisted Dispersion of Carbon Nanotubes

Pascal Ginisty*, David Lam, IFTS; Eugene Vorobiev, Maksym Loginov, UTC Compiègne, France

Vibration-Enhanced Compaction of Filter Cakes and Its Influence on Shrinkage Cracking

Harald Anlauf*, Sarah Illies, Hermann Nirschl, Karlsruhe Institute of Technology, Germany

A Study on Aeration Flow for Filtration – Optimum Channel Configuration for Bubble and Water Flow

Daizo Takaoka*, Akinori Nakata, Haruo Soeda, Koji Mori, Osaka Electro-Communication University, Japan

New Developments and Applications for Thermally Assisted Filtration by Coupling Centrifuge Drainage and Microwave Drying

Pascal Ginisty*, Xabier Apaolaza, Arthur Etienne, IFTS; Marc Valat, University of Bordeaux, France

Solid Liquid Separation for a Difficult-To-Separate Suspension

Steven Wang*, ETH, Switzerland

Laminar Flow in a RVF Dynamic Filtration Unit: From Global to Local Hydrodynamic Approach

Xiaomin Xie*, Nicolas Dietrich, Philippe Schmitz, Luc Fillaudeau, Université de Toulouse; INSA, UPS, INP, LISBP, France

Mist and Droplet Separation

G10

16:00-17:30 / Room: 203
Chair: Chuen-Jinn Tsai

Effect of Drainage Layers on Filter Performance of Fibrous Coalescing Filters

Cheng Chang*, Zhong-Li Ji, Fan-Yong Zeng, China University of Petroleum, China

Study of Inertial Separators for Sticky Particles at Turbulent Flow Regimes

Nils Schmeinck*, Manfred Piesche, IMVT University Stuttgart, Germany

Friday, April 15, 2016

Keynote Lecture

09:00-10:30 / Room: 201B
Chair: Rogern Ben Aim

K15&K16

Transfer of Deformable Bacteria through Membranes

Prof. Pierre Aimar, CNRS, France

Membrane Separation Technology in Chemical Engineering Processes

Prof. Chii-Dong Ho, Tamkang University, Taiwan

Keynote Lecture

09:00-10:30 / Room: 201C
Chair: Po-Hsiung Huang

K17&K18

Filtering Nano-Aerosols with Nanofibrous Filter under Low Peclet Number

Prof. Wallace Woon-Fong Leung, The Hong Kong Polytechnic University, Hong Kong

The Role of Fluid / Particle Separation in Today's Environmental Protection Efforts

Dr. Wu Chen, Dow Chemical Company, USA

Membrane Module Design

09:00-10:30 / Room: 201D
Chair: Takafumi Horie

M16

Electroless PD Membrane Deposition on Alumina-Modified Porous Stainless Steel Tube with Hydrazine Using a Room Temp Bath

Jun-Yi Wang*, Jin-Hua Huang, National Tsing Hua University; Yen-Hsun Chi, Guan-Ting Lin, Yu-Li Lin, Industrial Technology Research Institute, Taiwan

Relationship between Separation Performance and Fluid Dynamics in the Membrane Module with a Helical Baffle

Takafumi Horie*, Takaaki Akagi, Naoto Ohmura, Kobe University; Yushi Hirata, Osaka University, Japan

Application of an Intergrated Sponge Based Moving Bed-Osmbr Hybrid System for Municipal Wastewatr Reclamation and Reuse

Nguyen Cong Nguyen*, Shiao-Shing Chen, Hau Thi Nguyen, Huu Hao Ngo, National Taipei University of Technology, Taiwan; Wenshan Guo, Wen Hao Chan, Quang Le, University of Technology Sydney, Australia

Continuous Vacuum and Pressure Cake Filters

09:00-10:30 / Room: 201E
Chair: Harald Anlauf

L11

One-Step Processing of Athabasca Oil Sand on a Drum Filter System

Urs A. Peuker*, Elisabeth Tewes, Technische Universitaet Bergakademie Freiberg, Germany

Functional Filter Aid for Mercury Adsorption

Bo Wang*, Imerys, USA

High Performance Filter Aid with Low Soluble Metals

Bo Wang*, Imerys, USA

Filter Media

09:00-10:30 / Room: 201F
Chair: Rideal Graham

L12

Optimisation of Additive Manufactured Latticework to Deliver Increased Efficiency in Filtration Media

Neil Burns*, Darren Travis, Louise Geekie, Croft Additive Manufacturing Limited; Mark Burns, Croft Filters Ltd; Allan Rennie, Lancaster University, United Kingdom

The Dawn of Electroadsorptive Filtration: Beyond Mechanical and Membrane Filtration

Rodney Komlenic*, Ahlstrom Filtration LLC, USA

Selection of Filter Aid for Different Types of Filter Media

Wenping Li*, Carl Kiser, Quintin Richard, Agrilectric Research Company, USA; Zhihua Yu, Jiangsu Hualong Environmental Protection Technology Co, China

Evaluation of Classification Performance of Colloidal Particles through Nonwoven Nanofiber Cloth

Yasuhito Mukai*, Aya Takahashi, Nagoya University, Japan

Direct Measurement of Geometric Pore Sizes by Microscopy and Image Analysis

Graham Rideal*, Keith Brocklehurst, Andrew Hassall, Abi Stewart, Whitehouse Scientific, United Kingdom

Development of Barrier Systems against Fiber Shedding for Liquid Filter Applications by Means of Optical Particle Counting – Enabling Safe Use of Glass Fiber Media with Modern Fuel Injection Equipment

Lars Spelter*, Sebastian Neubauer, Jochen Reying, Florian Keller, MANN+HUMMEL GmbH, Germany

Air Filters-HVAC

09:00-10:30 / Room: 202
Chair: Peter Tsai

G11

Could Health Risks from High Indoor PM Values be Solved by HVAC Filters?

Thomas Carlsson*, Magnus Johnsson, Mann+Hummel Vokes air AB, Sweden

Methodology for the Evaluation of HVAC Combined Filter Performances Regarding Multipollutants

Kevin Morisseau*, Aurélie Joubert, Yves Andres, Laurence Le Coq, GEPEA UMR CNRS 6144, Ecole des Mines de Nantes, France

PM2.5 Loading Characteristics of Commercial Indoor Electret HVAC and Air Cleaner Filter Media

Min Tang*, Sheng-Chieh Chen, David Pui, De-Qiang Chang, University of Minnesota, USA; Jian Hu, Yun Liang, South China University of Technology, China

From Good to Best: New Cabin Filters for Cleaner Air

Jie Xu*, Rex Chen, MANN+HUMMEL Filter (Shanghai) Co., Ltd., China; Heining Thomas, Keerl David, MANN+HUMMEL Innenraumfilter GmbH & Co. KG, Germany

Hypothesis and Experimental Investigation of Filtration Degradation by Particle Loading on Charged and Uncharged Media

Peter Tsai*, The University of Tennessee, USA

Test Systems and Measurements

09:00-10:30 / Room: 203
Chair: Paolo Tronville

G12

Design of a User Serviceable Photometer

Tim Johnson*, Jason Johnson, Brian Osmondson, TSI Incorporated; Jürgen Spielvogel, TSI GmbH, Germany.

Interlaboratory Comparison to Evaluate the Methodology for Determination of the Media Filtration Efficiency against Nanoparticles

Paolo Tronville*, Politecnico di Torino, Italy; Panagiota Sachinidou, Jing Wang, ETH Zurich, Switzerland; Shawn Chen, David Pui, University of Minnesota, USA; Thomas Mosimann, Unifil AG, Switzerland; Mikael Eriksson, Camfil AB, Sweden

Preparation and Characterization of Tubular Carbon Molecular Sieving Membrane by Vacuum-Assisted Dip-Coating Method and Their Separation Properties

Hui-Hsin Tseng*, Chung Shan Medical University; Po-Yu Cheng, Ming-Yen Wey, National Chung Hsing University, Taiwan

The Influence of Dust Filtration Efficiency of Granular Bed Filter by Mass Flow Rate of Filter Media for Clean Coal Technology

Bo-Jun Wang*, Shu-San Hsiao, Jan-Ray Hsu, Chia-Jen Hsu, National Central University, Taiwan

Quality Control of HEPA/ULPA MPPs Test Rig

Bin Zhou*, Da Gong, Jianjie Cheng, Nanjing Tech University; Muxian Hui, Lei Zhao, Suxin (Suzhou) Cleanroom Equipment Factory, China

What Can be Learned from Flat Sheet Testing

Thaddeus Ptak, AO SMITH, USA

Plenary Lecture 5

11:00-12:00 / Room: 101
Chair: Chii-Dong Ho

PL

Integrated Membrane Systems for Minerals Recovery from the Sea

Prof. Enrico Drioli, Institute on Membrane Technology (ITM-CNR), Italy

Poster Session: Membranes Filtration

14:00-16:00, April 13

PM

PM-01

Wash-Up Effluent Treatment by Membrane Separation Process for Water-Based Flexo Inks Production Process

Fang-Ting Tao*, Winner Laser Technology Co., Ltd.; Kuo-Lun Tung, National Taiwan University, Taiwan

PM-02

Use of Methyltrimethoxysilane Precursors in the Sol-Gel Preparation of Hydrophobic Silica Aerogel Membranes for CO₂ Capture

Chia-Chieh Ko*, Kuo Lun Tung, National Taiwan University; Yi Feng Lin, Chung Yuan Christian University, Taiwan

PM-03

Preparation of Graphene Oxide-based Membranes for Solvent Resistance Nanofiltration

Jia-Ying Wu*, Tung, Kuo-Lun, National Taiwan University, Taiwan

PM-04

Permeate Flux Enhancement in the Countercurrent-Flow Air Gap Membrane Distillation with Inserting Carbon-Fiber Separators

Chii-Dong Ho*, Mei-Chih Huang, Tamkang University, Taiwan

PM-06

New Indices for Evaluating Membrane Fouling in Particulate Filtration

Daigo Sawada*, Nobuyuki Katagiri, Eiji Iritani, Nagoya University, Japan

PM-07

Surface-Modified Nanofiltration Membranes With Hydrophilic Characteristics for the Separation of Low-Molecular-Weight Solutes from Their Aqueous Ethanol Solutions

Chia-Yu Lin*, Yuan Ze University, Taiwan

PM-08

A Study on Scaling in Seawater Desalination with Direct Contact Membrane Distillation

Ching-Jung Chuang*, Yu-Ting Cheng, Chung Yuan University, Taiwan

PM-09

Electrospinning Preparation of Superhydrophobic Polydimethylsiloxane / Polystyrene Nanofibrous Membranes for Carbon Dioxide Capture

Chia-Yu Chang*, Yi-Feng Lin, Chung Yuan Christian University, Taiwan

PM-10

Effect of the Solids in the Excess Activated Sludge on the Hollow Fiber Microfiltration Characteristics

Kenji Kawasaki*, Akira Matsuda, Ehime University, Japan

PM-11

Cake Formation Accompanied by Particle Permeation in Microfiltration of Binary Dilute Mixtures of Particles with Different Sizes

Daigo Sawada*, Yoshihito Ishikawa, Nobuyuki Katagiri, Eiji Iritani, Nagoya University, Japan

PM-12

Effects of Solvent System on the Mechanical Properties of Polyethersulfone / Sulfonated Polyethersulfone Blend Microporous Membranes

Yi-Xuan Lin*, Shun-Fua Su, Chien-Chih Wang, Southern Taiwan University of Science and Technology, Taiwan

PM-13

Solid/Liquid Expression Behavior of Rapeseed during Continuous Pressing in Screw Press

Laurine Bogaert*, Houcine Mhemdi, Eugène Vorobiev, UTC/ESCOM, France

PM-14

Preparation of Microporous Nylon-66 Membranes Using Both Chitosan and Water Additives as Pore Formers

Yu-Chi Wang*, Liao-Ping Cheng, Trong-Ming Don, Tamkang University, Taiwan

PM-15

Development of Microfiltration Membrane and Module with Energy Saving and Low Fouling

Manjae Han*, Beom-Gyun Jo, Geung Sik Jeong, Toray Chemical Korea Inc., Korea

PM-16

Effect of Solvent on the Dipole Rotation of PVDF during Porous Membrane Formation by Precipitation in Alcohol Baths

Liang-Kuei Chang*, Hsu-Hsien Chang, Bright Sheland International Co., Ltd; Cheng-Dau Yang, Liao-Ping Cheng, Department of Chemical and Materials Engineering, Tamkang University, Taiwan

PM-17

Antifouling PVDF Membranes Incorporating Functional Co-Polymers Phema-Co-Pnippaam Prepared via Surface Modification

Guili Zhao*, Weining Chen, Nanyang Technological University, Singapore

PM-18

pH-Responsive Controlled Release Characteristics of Solutes with Different Molecular Weights Diffusing Across Membranes of Ca-Alginate / Protamine / Silica Hybrid Capsules

Fan He*, Xiao-Jie Ju, Rui Xie, Wei Wang, Zhuang Liu, Liang-Yin Chu, Sichuan University, China

PM-19

Explicit Expressions for the Minimum Efficiency and Most Penetrating Particle Size of Nuclepore Filters

Sheng-Chieh Chen*, David Pui, University of Minnesota, USA; Yaorui Hu, Jing Wang, ETH Zurich, Switzerland; Paolo Tronville, Polytechnic University of Turin, Italy

PM-20

Transport Modeling in the Separation of Monosaccharides from Oligomers by Nanofiltration

Daniel Eicholtz*, Erik Gommeren, DuPont Engineering Research and Technology (DuET); Hannu Koivikko, Juho Järvinen, DuPont Nutrition & Health, USA

PM-21

Analysis of the 3D Pore Morphology of Membrane and Connectivity by X-Ray Microtomography

Tong Yang Hsu*, Cheng-Ying Chou, Kuo-Lun Tung, National Taiwan University; Tian-Tsai Wu, Chih-Yun Lin, Chung Yuan Christian University, Taiwan

PM-22

Numerical Simulation of Atmospheric Plasma Spray Coatings for Ceramic Membrane Preparation

Jheng-Han Tsai*, Jun-Hung Chou, Kuo-Lun Tung, National Taiwan University, Taiwan

PM-23

Simulation Study of a Hybrid Carbon Dioxide Adsorption and Stripping Membrane Contactor

Yun Tsz Chen*, Hsuan Chang, Chih Jou Chang, Tamkang University, Taiwan

PM-24

Preparation of Ceramic Hollow Fiber Membranes for CO₂ Capture

Kai-Wei Huang*, Yi-Feng Lin, Chung Yuan University, Taiwan

PM-25

Performance of PVDF Composite Membrane in Membrane Distillation

Tung-Wen Cheng*, Shin-En Chiu, Tamkang University, Taiwan

PM-26

Experimental and Simulation of a Novel Hydrocyclone – Tubular Membrane as Overflow Pipe

Tung-Yen Chen*, Chu-Chiao Wang, Rome-Ming Wu, Tamkang University, Taiwan

PM-27

Development of Hybrid System Combined with Coagulation Process and PAC Dynamic Membrane Filtration for Pretreatment of Seawater Desalination

Chiao-Wei Cheng*, Kuo-Jen Hwang, Tamkang University, Taiwan

PM-28

Polyamine Based Nanofiber Membrane for C-Phycocyanin Adsorption

Hung-Chieh Tsai*, Jia-Yi Chen, Yu-Kaung Chang, Ming Chi University of Technology, Taiwan

PM-29

Adsorption Characteristics of Lysozyme onto Dye Affinity Nanofiber Membrane

Yu-Han Ming Lee*, Chi-Lin Yang, Yu-Kaung Chang, Ming Chi University of Technology, Taiwan

PM-30**The Enhancement of C-Phycocyanin Purity by Chitosan Nanofiber Membrane**

Shi-Jie Jian*, Zih-Ming Ciou, Yu-Kaung Chang, Ming Chi University of Technology, Taiwan

PM-31**Design of High-Efficiency Hollow Fiber Arrangements to Enhance Filtration Performance**

Yi-Chun Lin*, Kuo-Jen Hwang, Su-En Wu, Tamkang University, Taiwan

PM-32**Preparation of ZIF-7 Crystals and Their Composite ZIF-7/CS Membranes for Pervaporation Separation of Water / Ethanol Mixtures**

Ting-Yu Liu*, Kai-Sheng Ji, Yi-Feng Lin, Chung Yuan University, Taiwan

PM-33**A Electrospinning Preparation of Superhydrophobic Polydimethylsiloxane / Polystyrene Nanofibrous Membranes for Carbon Dioxide Capture**

Wen-Wen Wang*, Chia-Yu Chang, Yi-Feng Lin, Chung Yuan Christian University, Taiwan

PM-34**Distillate Flux Enhancement in the Countercurrent-Flow Air Gap Membrane Distillation with Inserting Carbon-Fiber Separators**

Chii-Dong Ho*, Mei-Chih Huang, Li-Yang Jen, Tamkang University, Taiwan

PM-35**Study on the Effects of Hydrophobic SiO₂ Nanoparticles in PVDF-HFP Membranes by Electro-Spinning for Direct Contact Membrane Distillation**

Fa-Chun Hu*, Ren-Yang Horng, Meng-Shun Huang, Chia-Hua Ho, Yu-Yang Su, Industrial Technology Research Institute; Hung Chang Lin, National Taiwan University of Science and Technology, Taiwan

PM-36**Theoretical and Experimental Studies of CO₂ Absorption by the Amine Solvent System in Countercurrent-Flow Membrane Contactors**

Chii-Dong Ho*, Luke Chen, Li Chen, Jing-Wei Liou, Tamkang University, Taiwan

PM-37**Modeling of Countercurrent-Flow Direct Contact Membrane Distillation Modules with Inserting Carbon-Fiber Spacers**

Chii-Dong Ho*, Jing-Yuan Lai, Tamkang University, Taiwan

PM-38**Direct Observation of Fouling with Modified Membranes Integrated into Microfluidic Chips**

Lucia Benavente*, Clemence Coetsier, Christel Causserand, Patrice Bacchin, Pierre Aimar, France; Antoine Venault, Yung Chang, Chung Yuan Christian University, Taiwan

PM-39**Study on Removal of Heavy Metals by Modified Fe-Oxide Zeolite**

Chan-Gyu Park*, Korea Testing Laboratory, Korea

PM-40**Effect of Nitrate on the Degradation of DI(2-ETHYLHEXYL) Phthalate a by Electrolysis Using DSA-Ti Electrode**

Chan-Gyu Park*, Korea Testing Laboratory, Korea

PM-41**Dead-End Microfiltration Mechanism of Crosslinked Saccharomyces Cerevisiae Suspension**

Tai-Yu Pan*, Kuo-Lun Tung, Jia-Ying Wu, National Taiwan University; Iqbal Shalahuddin, Chung Yuan Christian University, Taiwan

PM-42**Preparation and Evaluation of Nanocarbon / Nanofiber Composite Membrane for Purification of Colored Effluent**

Yasuhito Mukai*, Eiji Amano, Tomoki Fujishima, Satoshi Hara, Nagoya University, Japan

PM-43**Molecular Modeling of Chitosan/Graphene Oxide Mixed Matrix Membrane: A Structural Characterization and Performance Investigation**

Tzu-Hao Chen*, Yi-Rui Chen, Ching-Wei Lee, Kai-Shiun Chang, Kuo-Lun Tung, National Taiwan University, Taiwan

PM-44**Water / Oil Separation Membranes Prepared with Electrospun Crosslinked Polybenzoxazine Nanofiber Mats**

Ching-Ting Liu*, Ying-Ling Liu, National Tsing Hua University, Taiwan

PM-46**Sustainable Ultrafiltration Membrane Water Treatment Systems for Developing Nations**

Chun Ming Chew*, Mohamed Kheireddine Aroua, Mohd Azlan Hussain, Malaysia

PM-47**Characterization and Evaluation of Pyrophyllite Ceramic Membrane for Water and Wastewater Treatment Applications**

Jeonghwan Kim*, Hoseok Jang, Deaun Kwon, Eunyong Park, Inha University; Sungjae Lee, AEC Corporation, Korea

PM-48**Wine Clarification with Rotating and Vibrating Filtration (RVF): From Wine – Membrane Interactions Up to Critical Frequency Identification**

Xiaomin Xie*, ISBP; Youssef El Rayess, Claire Albasl, Audrey Devatine, LGC; Yannick Manon, Philippe Schmitz, Nicolas Dietrich, Luc Fillaudeau, LISBP; Nicolas Jitariouk, RVF Filtration; Martine Mietton-Peuchot, ISVV, France

PM-51**BIS (Trimethoxysilyl)-Hexane-Derived Silica Aerogel Membranes: Preparation, Modification And Application of CO₂ Capture**

Yi-Feng Lin*, Jia-Wei Guo, Yong-Jie Lin, Chung Yuan University, Taiwan

PM-52**Antifouling Capability and PPCP Rejections of In-Situ Modified NF90**

Yi-Li Lin*, Jia-Zheng Tsai, Chong-Hsuan Hong, National Kaohsiung First University of Science and Technology, Taiwan

PM-53**Research on Filtration Performances of PTFE Membrane Filters**

Ning Mao*, Jing Xian Liu, De Qiang Chang, Li Yan Dai, Xi Sun, Northeastern University, China

PM-57**Prevention of Surfactant Wetting with Curdilan Hydrogel Layer for Direct Contact Membrane Distillation**

Po-Ju Lin*, Ming-Chien Yang, Yu-Ling Li, Jun-Hong Chen, Taiwan Textile Research Institute, Taiwan

PM-58**A Novel Metal Fiber Gasoline Particulate Filter (GPF) for Gasoline Engine Aftertreatment Application**

Qisheng Ou*, Matti Maricq, David Y. H. Pui, University of Minnesota, USA

PM-59**Simulation the Effects of Membrane Pore Radius and Effective Membrane Charge Density on the Electrolyte Rejection Performances of RO/NF Membranes Using the Fem Method**

Jing Miao*, Shunquan Chen, Guangzhou Institute of Advanced Technology, China; Kin-Ho Wee, Renbi Bai, National University of Singapore, Singapore; Rui Zhang, National Kaohsiung First University of Science & Technology, Taiwan

Poster Session: Gas Filtration**PG**

14:00-16:00, April 14

PG-01**Experimental Study on Particle Removal with Gas-Liquid Cross-Flow Array System**

Lingling Liu*, Wenyun Wei, Hui Yu, Jiahua Zhu, School of Chemical Engineering, Sichuan University, China; Thomas Laminger, Wilhelm Hoefflinger, Department of Mechanical Process Engineering and Clean Air Technology, Vienna University of Technology, Austria

PG-03**Evaluation of Functionalized Activated Carbon Fiber Fabrics for CO₂ Adsorption**

Yu-Chun Chiang*, Cheng-Yen Wu, Yu-Jen Chen, Department of Mechanical Engineering, Yuan Ze University, Taiwan

PG-04**Applying Micro-CT Technology in Mechanism Research of Liquid Aerosol Filtration**

Zhen Liu*, Zhongli Ji, Hui Ma, Xiaolin Wu, Beijing Key Laboratory of Process Fluid Filtration and Separation, China University of Petroleum, Beijing, China

PG-05**Performance Optimization and Matching of Two-Stage Filtration Unit for Natural Gas Purification**

Jian-Feng Shang, Zhong-Li Ji, Zhen Liu*, Feng-Ting Zhao, China university of Petroleum-Beijing, China

PG-07

A Discussion of the Relationship between the Dispersion Characteristics and Toxicity of Nanoparticles

Ding Han*, Chuen-Jinn Tsai, Chu-Yu Tien, Kuang-Yu Chang, Environmental Engineering, Taiwan

PG-10

Fabrication and Simulation of Nanofiber Depth Filters with Three-Dimensional Multi-Layer Structures

Yi-Rui Chen*, Tong-Yang Hsu, Kuo-Lun Tung, National Taiwan University, Taiwan; Ming-Chuan Hu, Huan-Sheng Chien, Taiwan Textile Research Institute, Taiwan

PG-11

Geomimetic Porous Ceramic Membranes for Hot Gas Filtration

Chien-Hua Chen*, Kuo-Lun Tung, National Taiwan University, Taiwan; Yi-Feng Lin, Chung Yuan Christian University, Taiwan

PG-12

Experimental and Simulation Studies of the Characteristic of Wave Plate Eliminators

Chien-Hua Chen, Kuo-Lun Tung, Minh-Hien Le*, National Taiwan University, Taiwan; Yi-Feng Lin, Chung Yuan Univ., Taiwan

PG-13

Fluoropolymer-Inorganic Hollow Fiber Membranes with ZIF-8 Synthesised in Greener Deep Eutectic Solvents for CO₂ Separation

Soon-Chien Lu*, Chien-Hua Chen, Tian-Shiun Huang, Kuo-Lun Tung, National Taiwan University, Taiwan

PG-16

Simulation of Fiber Arrangement and Orientation Impact on Pressure Drop

Hai-Ming Fu*, Donghua University, Shanghai, China; Yu Fu, Wescon Controls (Shanghai), Inc, China

PG-17

Collection Efficiency and Pressure Drop of Fibrous Filtration Materials on Dust Load

Hai-Ming Fu*, Donghua University, Shanghai, China; Yu Fu, Wescon Controls (Shanghai), Inc, China

PG-18

Morphology and Fractal Characteristic of Dust Cake

Hai-Ming Fu, Hui Zhu*, Donghua University, Shanghai, China

PG-19

Particle Deposition at the Surface of Fibrous Porous Materials

Hai-Ming Fu*, Hui Zhu*, Donghua University, Shanghai, China

PG-20

Fibrous Medium Pressure Drop Prediction and Virtual Fibrous Porous Medium Constructed

Hai-Ming Fu*, Donghua University, Shanghai, China; Fu Yu, Wescon Controls (Shanghai), Inc, China

PG-22

Experimental and Theoretical Study for Residential Electret HVAC Filter Using 3-500 Nm Nanoparticle

De-Qiang Chang, Filter Test Center, College of Resources and Civil Engineering, Northeastern University, China; Sheng-Chieh Chen, David Y. H. Pui, Particle Technology Laboratory, Mechanical Engineering, University of Minnesota, USA

PG-23

Experiment Study on New Filter with Sea-island Fiber

Xin Jiao Tian*, De Qiang Chang, Ning Mao, Xiu Li Lin, Xi Sun, Jing Xian Liu, Northeastern University, China

PG-24

Experiment Research on Fine Particle Filtration of New Spunlace Felt Filter Material

Jing Xian Liu*, Xin Jiao Tian, De Qiang Chang, Ning Mao, Xiu Li Lin, Xi Sun, Northeastern University, China

PG-25

Structure Optimization Design of Locomotive Air Filter Using Numerical Simulation

Xiuli Lin*, Yaping Cao, Jingxian Liu, Northeastern University, China

Poster Session: Liquid Filtration

PL

14:00-16:00, April 14

PL-01

Research on Heavy Metal Removal From Dredging Slurry Using Parabolic Hydrocyclone

Xinghua Yang*, Peikun Liu, Yuekan Zhang, Lanyue Jiang, College of Mechanical and Electronic Engineering, Shandong University of Science and Technology, Qingdao, China

PL-02

Salt Control of Chlor-Alkali Industry Sludge by Improving Filtration Operation

Jeng-Ywan Shih*, Ming Chi University of Technology, Taiwan

PL-03

Compression and Relaxation Properties of Filter Cake Formed in Cake Filtration

Genki Inagaki*, Nobuyuki Katagiri, Eiji Iritani, Nagoya University, Japan

PL-04

Effect of Cellular Destruction Under High Pressure on Constant-Rate Microfiltration Behaviors of Microbial Suspensions

Yuya Kuwajima*, Nobuyuki Katagiri, Eiji Iritani, Nagoya University, Japan

PL-05

Upward Dead-End Filtration of Solid/Liquid Mixture Containing Fine-Bubbles

Takanori Tanaka*, Hikaru Ubukata, Akihiko Yoshimoto, Masashi Iwata, Department of Chemical Engineering, Graduate School of Engineering, Osaka Prefecture University, Japan; Mohammed Jami, Saedi Department of Biotechnology Engineering, Faculty of Engineering, International Islamic University Malaysia, Malaysia

PL-06

A Preliminary Study on Internal Filtration Mechanism of Using Nonwoven Filter Medium

Hiroto Kadooka*, Department of Chemical Engineering, Graduate School of Engineering, Osaka Prefecture University and Azumi Filter Paper CO., LTD., Japan; Masaki Manabe, Takanori Tanaka, Masashi Iwata, Department of Chemical Engineering, Graduate School of Engineering, Osaka Prefecture University, Japan; Mohammed Saedi Jami, Department of Biotechnology Engineering, Faculty of Engineering, International Islamic University Malaysia, Malaysia

PL-07

The Effect of Operating Conditions on Turbidity Removal by Polymeric Flocculant

Takumi Miyajima*, Takanori Tanaka, Masashi Iwata, Department of Chemical Engineering, Faculty of Engineering, Osaka Prefecture University, Japan; Hiroto Kadooka, Azumi Filter Paper CO., LTD., Japan; Mohammed Saedi Jami, Department of Biotechnology Engineering, Faculty of Engineering, International Islamic University Malaysia, Malaysia

PL-08

Explanation of Non-Newtonian Fluid-Solid Mixture

Takayuki Shimo*, Takanori Tanaka, Masashi Iwata, Department of Chemical Engineering, Graduate School of Engi, Osaka Prefecture University, Japan; Mohammed Saedi Jami, Department of Biotechnology Engineering, Faculty of Engineer, International Islamic University Malaysia, Malaysia

PL-09

Optimization of Industrial Sludge Electro-Dewatering with Anode Flushing: Modelling and Experiments

Jessica Désabres*, Maksym Loginov, Eugène Vorobiev, Sorbonne Universités, Université de Technologie de Compiègne, EA 4297 TIMR, Centre de Recherche Royallieu, 60203, Compiègne, France; Benjamin Desmasures, Choquenot, 19 rue Charles Brunette, 02300, Chauny, France

PL-10

A New Liquid-Solid Filtration Technology for Efficient Filtration of Fine Particles Of Micron and Sub-Micron ——"Surface Layer Filtration"

Soong Zhili*, Soong Xianhong, Shanghai Hongli Purification Technology Co.,Ltd., China

PL-11

Precise Filtration of Powder Active Carbon and Carbonyl Powder Catalyst from Liquid

Soong Zhili*, Soong Xianhong, Shanghai Hongli Purification Technology Co.,Ltd., China

PL-12

Exploration of Five Fundamental Theories about "Constant Pressure Cake Filtration"

Xianhong Soong*, Zhili Soong, Shanghai Hongli Purification Technology Co.,Ltd., China

PL-13

Sub-Rigid Polymer Microporous Precise Filtration Technology

Xianhong Soong, Zhili Soong, Shanghai Hongli Purification Technology Co.,Ltd., China

PL-14

Evaluation of Microbial Cake Properties Based on Microfiltration Data

Yuya Kuwajima*, Hirotaka Kawahara, Nobuyuki Katagiri, Eiji Iritani, Nagoya University, Japan

PL-15

Nanocolloid Cake Properties Determined from Variable Pressure Filtration with Sudden Reduction in Filtration Area

Genki Inagaki*, Ryota Nakajima, Nobuyuki Katagiri, Eiji Iritani, Nagoya University, Japan

PL-16

An Overview on the Correlation Equations under Unfavorable Surface Interactions

You-Im Chang*, Wei-You Cheng, Keng-Yi Liao, Dept. of Chemical Engineering, Tunghai University, Taiwan

PL-19

Clogging of Filter Cloths during Filtration Cycles

Jia-Ming Lin, Yu-Cheng Liu, Tsuo-Feng Wang, Kuo-Lun Tung, National Taiwan University; Mei-Ling Wang, Chung Yuan Christian University, Taiwan

PL-21

Separation Efficiency of Particles Suspended in Polymer Solutions Using Hydrocyclone

Hung-Yuan Tsai, National Taiwan University; Kuo-Jen Hwang, Tzu-Chien Hung, Tamkang University, Taiwan

PL-22

Effect of Wall Thickness of Overflow Pipe on Particle Separation

Tung-Yen Chen*, Yung-Sheng Lai, Rome-Ming Wu, Tamkang University, Taiwan

PL-23

Fluid Flow through Compressible Soft Particle Beds

Yi-Rui Chen, Liang-Hsun Chen, Kuo-Lun Tung, National Taiwan University; Yu-Shen Lin, Chung Yuan Christian University; Yu-Ling Li, Taiwan Textile Research Institute, Taiwan

PL-24

Simulation of a Small Solar Storage Tank and Its Operation Strategy

Chen-Yi Tsai*, Cheng-Yang Hsu, Rome-Ming Wu, Tamkang University, Taiwan

PL-25

3D, 3 Phases Simulation of Four Hydrocyclones

Chia-Cheng Lin*, Chu-Chiao Wang, Rome-Ming Wu, Tamkang University, Taiwan

PL-26

A Study on Production of Sugar from Waste Rice Straw

Shima Holder, Ching-Hwa Lee, Ching-Hua Liao, Da-Yeh University; Shing-Shyong Fang, Environmental Protection Bureau of Nantou County, Taiwan; Srinivasa Popuri, The University of West Indies (Cave Hill Campus), Barbados

PL-27

Development of a Dynamic Process Model for Separation Processes within Decanter Centrifuges

Marco Gleiss*, Hermann Nirschl, Karlsruhe Institute for Technology, Germany

PL-28

Analyzing The Relation of Charge and Salt Rejection Rate of Nanofibrous-Based Filtration Membrane

Jen-You Chu*, Feng-Sheng Kao, Ling-Na Tsai, Wei-Cheng Tsai, Rui-Xuan Dong, Shu-Hui Cheng, Industrial Technology Research Institute, Taiwan

PL-29

Slow-sand Filter with Biological Treatment for Seawater Desalination - Comparison of Filter Media Performance

Saravanamuthu Vigneswaran, Jaya Kandasamy, University of Technology Sydney, Australia; Jing-Song Chang, Chia Nan University of Pharmacy and Science