



WFC9 Proceedings Table of Contents

PLENARY LECTURERS

Membrane Separations for Process Intensification and Sustainable Growth, Enrico Drioli, Gianluca Di Profio¹, Enrica Fontananova¹, Research Institute on Membrane Technology, ITM-CNR, c/o University of Calabria - Via P. Bucci Cubo 17/C, I-87030 Arcavacata di Rende (CS), Italy

The Future of the National Nanotechnology Initiative, M.C. Roco, NSF Chair, US National Science and Technology Council's subcommittee on Nanoscale Science, Engineering and Technology (NSET)

Recent Development of Granular Filtration, Chi Tien, Department of Chemical Engineering and Materials Science Syracuse University, Syracuse, NY 13244

TECHNICAL SESSIONS

SESSION 121

GAS FILTER TESTING

The Investigation of the Effects of Size Distributions of Particles Produced by Different Generators on Measured Efficiency of Filter Media, R. Vijayakumar, Tim McDiarmid, Air Techniques International, USA

Relative Humidity Effect on the Filter Loading Characteristics, Edger Chay, Da-Ren Chen, Washington University in Saint Louis, USA

Optical Measurement of PM-Relevant Emissions, Joachim Binnig, Joerg Meyer, University Gerhard Kasper, University Karlsruhe, GERMANY

SESSION 122

LIQUID-LIQUID SEPARATIONS

Microfiltration of Oil from Water on Slotted Pore Filters, R.G. Holdich, S.R. Kosvintsev, G. Mason, I.W. Cumming, Loughborough University, UNITED KINGDOM

Some Experience in Treating Produced Water On and Off Shore with New Generation of Induced Gas Flotation Units - Case Histories, James Chen, Shaya Movafaghian, Petreco International Inc., USA

Study on a New Type of Coalescer in Oily Water Treatment, Yawen Lu, BCB Filtration Technology Co. Ltd., CHINA

SESSION 123

IMAGING TECHNIQUES

Investigation of the Surface Treatment and the Dust Clogging Behaviour of Cleanable Needle Felts by Image Analysis, Wilhelm Hoeflinger, Gerd Mausnitz, Wolfgang Koschutnig, Vienna

University of Technology, AUSTRIA

MRI Quantitation of Filtration and Separation for Clinical Medicine and Industry, Laurie Hall, Frank Heese, Julio Acosta-Cabronero, Philip Robson, University of Cambridge School of Medicine, UNITED KINGDOM

Fibrous Filters: Non-Invasive Determination of Local 3D Fiber Structure by MRI, Martin J. Lehmann, Edme H. Hardy, Jorg Meyer, Gerhard Kasper, University Karlsruhe, GERMANY

SESSION 124

CFD SIMULATION 1

Loading Fibrous Filters: CFD Simulation of Pressure Drop and Collection Efficiency Based on CLSM Visualization of Loaded Single Fibers, Stefan Schollmeier, Martin J. Lehmann, Jorg Meyer, Gerhard Kasper, University Karlsruhe, GERMANY

Numerical Simulation of the Filtration and Regeneration in Diesel Particulate Traps, Timo Deuschle, Uwe Janoske, Manfred Piesche, University of Stuttgart, GERMANY

Finite Element Modelling of Flow of Non-Newtonian Fluids in Pleated Cartridge Filters, N. S. Hanspal, W. R. Ruziwa, V. Nassehi, R.J. Wakeman, Loughborough University, UNITED KINGDOM

SESSION 125

FILTRATION APPLICATIONS 1

Evaluation of Different Primary Filtering Media in Rotary Vacuum Drum Filters for Sugar-cane Mud, Walter Luiz Polonio, Walter Luiz Polonio, Eliete Maria Goncalves, Paulo Cezar Razuk, UNESP, BRAZIL

Dependence of Saccharomyces Cerevisiae Filtration Through Membrane on Yeast Concentration, M. Mota, J.A. Teixeira, A. Yelshin, University of Minho, PORTUGAL

Turbo Magnetic Oil Filter-Activator "Uragan-M", Alexandr Karabach, Ivan Dun, DK Techno Ltd., RUSSIA

SESSION 126

ADVANCES IN FILTER MEDIA 1

Multi-Component Fiber Technology for Filtration & Other Applications, John F. Hagewood, Hills, nc., USA

Control of Fiber Orientation in Non-Woven Media by Electric Field, A.R. Patel, G.G. Chase, University of Akron, USA

Modeling of Particulate Loading for Cartridge Liquid Filtration, K. Benmachou, P. Schmitz, M. Meireles, UMR CNRS/UPS, FRANCE

SESSION 131

INDOOR AIR

The Role of Filtration Efficiency in the Cleanliness of HVAC Systems - Phase III, H. E. Barney Burroughs, Building Wellness Consultancy, Inc., USA

Air Filter Performance Certification – An Assessment of the Truth, Robert Burkhead, Blue Heaven Enterprises, USA

Influence of Operating Conditions and Media Type on the Emissions of Surface Filters, Joachim Binnig, Joerg Meyer, Gerhard Kasper, University Karlsruhe, GERMANY

Laboratory Performance Comparison of Indoor Air Cleaners, Tsung-Shi Lin, Ro-Ting Lin, Chih-Chieh Chen, Yu-Mei Kuo, NTU, TAIWAN, R.O.C.

SESSION 132

TOPICS IN REVERSE OSMOSIS

Control of Residual Aluminium from Conventional Treatment to Improve Reverse Osmosis Performance, Christopher J. Gabelich, Fredrick W. Geringer, Metropolitan Water District of Southern California, USA; Kenneth Ishida, Orange County Water District, USA; Ray Evangelista, Minhaal Kalyan, California State Polytechnic University, USA

Testing of Drinking Water Treatment Co-Polymers for Compatibility with Polyamide Reverse Osmosis Membranes, Christopher J. Gabelich, Metropolitan Water District of Southern California, USA; Kenneth P. Ishida, Richard Bold, Orange County Water District, USA

Numerical Simulation of the Effects of Spacers on Concentration Polarization in Spiral Wound Reverse Osmosis Modules, Shengwei Ma, Lianfa Song, Say Leong Ong, Wun Jern Ng, National University of Singapore, SINGAPORE

Nanofiltration Meets New Challenges, Marianne Nyström, Jukka Tanninen, Samantha Platt, Lappeenranta University of Technology, FINLAND

SESSION 133

TOMOGRAPHY MEASUREMENT TECHNIQUES

Monitoring a Production-Scale Pressure Filter Using Electrical Tomography, T.A. York, D.R. Stephenson, J.L. Davidson, L. Ruffino, R. Mann, UMIST, UNITED KINGDOM; B.D. Grieve, Syngneta Ltd., UNITED KINGDOM

Non-Woven Characterisation Using X-Ray Synchrotron Radiation Micro-tomography, Xavier Thibault, Peter Cloetens, European Synchrotron Radiation Facility, FRANCE; Jean-Francois Blotch, Ecole Francais de Papeterie et des Industries Graphiques, FRANCE; Francoise Peyrin, Centre de recherche et d'Application en traitement de l'image et du signal, FRANCE

Description of Floc Structure and its Impact on Cake Filtration and Sedimentation, Goetz Bickert, J.Y.H. Liao, R. Amal, G. Bushell, UNSW, AUSTRALIA

Paper Structure Characterisation Using Xray Microtomography, J.-F. Bloch, Ecole Francais de Papeterie et des Industries Graphiques, FRANCE

SESSION 134

CFD SIMULATION 2

Modelling of Coagulation Processes in Disk Stack Centrifuges by Using the Method of Population Balances, M. Breitling, S. Schutz, M. Piesche, University of Stuttgart, GERMANY

Clogging of Fibrous Filters: CFD Simualtion of Particulate Build-Up on Single Fiber Arrangements, Martin J. Lehmann, Gerhard Kasper, University Karlsruhe, GERMANY

Modelling of Flow and Particulate Collection in Complex Filtration Devices: Porous Media

Scale Change Approach, L. Oxarango, P. Schmitz, M. Quintard, Institut de Mécanique des Fluides de Toulouse, FRANCE

Analytical, Numerical and Experimental Investigation of Initial Retention Efficiencies in Fibrous Oil Filter Media, Harald Banzhaf, Manfred Piesche, University of Stuttgart, GERMANY; Gunnar-Marcel Klein, Michael Durst, Mann+Hummel GmbH, GERMANY

SESSION 135

CAKE FILTRATION APPLICATIONS

Pressure Filtration of Crystallized Sulfathiazole: The Influence of Cooling Policy Used in Batch Cooling Crystallization, Antti Häkkinen, Kati Pöllänen, Marjatta Louhi-Kultanen, Lars Nyström, Lappeenranta, University of Technology, FINLAND

Improvement Potential and Feasibility of the Continuous Steam Pressure Filtration – An Analysis of Industrial Experiences, Reinhard Bott, Thomas Langeloh, BOKELA GmbH, GERMANY

Effect of Dissolved Polysaccharides on Permeability of Mud-Cake Produced During Drilling Operation, J. A. Sorrentino, M. L. Alonso, S. Valentino, L. Lezama, N. Perez, A. Meza, Universidad Central de Venezuela, VENEZUELA

The Development of Enclosed Automatic Vacuum/Pressure Filter, Lihong Do, Bohu Deng, Shanghai Research Institute of Chemical Industry, CHINA

SESSION 136

ADVANCES IN FILTER MEDIA 2

The Next Generation of Filtration Technology, Dave Paulson, Joe Szczepanski, Bill Laidlaw, GE Infrastructure Water Technologies, USA

Practical Aspects of Filtration with Fine Polymeric Fibers, Jonathan George, Tiziana Cravero, Roberto Forna, Ahlstrom Turin, SpA, ITALY

Sophisticated Spunlacing Process For Advanced Filtration, Rick Pearce, Ping Hao, Polymer Group, Inc., USA

Blood Separation is Key in Detecting AIDS and Heart Attacks, Frank Cousart, Jack Ramsay, Larry Simon, Ahlstrom, USA

POSTER SESSION 141

MISCELLANEOUS TOPICS IN FILTRATION

Recent Advances in Filter Efficiency Test Methods for Electret Filters and Electronic Air Cleaners, James T. Hanley, M. Kathleen Owen, Deborah L. Franke, David S. Ensor, RTI International, USA; Leslie E. Sparks, U.S. Environmental Protection Agency, USA

Hybrid Type Particulate Collector Combining a Fabric Filtration and Centrifugal Dust Removal Technology, Sang-Do Kim, Jae-Ek Son, Korea Young-Ok Park, Yong Kang, Chungnam National University, KOREA

Measurement for the Determination of the Emissivity of Cutting Fluids as a Primary Measure to the Risk Avoidance in Metal Processing Companies, Bernhard Neumann, Gerd Mauschwitz, Wilhelm Hoeflinger, Vienna University of Technology, AUSTRIA

Inorganic Membranes Made of Sintered Clay for a Fermentation-Crossflow Microfiltration Coupling Process, K. Ouazzani, J. Bentama, High school of Technology, MOROCCO; A.M. Ayadi, National School Engineers of Sfax, TUNISIA

Theoretical Study of the Electrokinetic Behaviors Through Asymmetric Membrane Pores and Cake-Membrane in Series, Ching-Jung Chuang, Hui-Ju Hsu, Yi-Chen Chiang, Chung Yuan University, TAIWAN, R.O.C.

Study on the Performance and Pore Distribution of Functional Eocomposite Filtration Sheet with Hybrid Fibres. Guangjian Wang, Yajie Guo, Huaibei Coal Normal College, CHINA; Deku Shang, Linna Hu, Zhenhua Guo, Hebei University of Technology, CHINA

The Synergy of Media Structure and Charge Distribution in an Commercial HVAC Filtration Media, David Myers, B. Dean Arnold, Kimberly-Clark Corporation, USA; Joachim Hillenbrand, Gerhard M. Sessler, Technical University of Darmstadt, GERMANY

Raw Gas Conditioning for Improving Particle Separation, Eberhard Schmidt, University of Wuppertal, GERMANY

Filtration Process and Germicidal Effect in Filters with an External Electric Field, T.J. Ptak, Rex Coppom, StrionAir, Inc., USA

Advances in Fractional Efficiency Measurement, T.J. Ptak, StrionAir, Inc., USA

A Study on the Development of the Nano Filter for the Removal of Submicron Particles in Air Filtration, Gil-Tae Kim, Jin-Hyouk Shin, Jun-Seok Lee, Chang-Mo Sung, University of Massachusetts, USA; Jae-Keun Lee, Pusan, National University, SOUTH KOREA

A Study on the Removal Characteristics of Fine Dust Particles using Metal Fiber Filters, Gil-Tea Kim, University of Massachusetts, USA; Dong-Soo Lee, Seung-Kon Kim, Jae-Keun Lee, Young-Chull Ahn, Pusan National University, KOREA

POSTER SESSION 142 LIQUID-LIQUID SEPARATIONS

Filtration-Coalescence of a Metalworking Fluid Using Glass Fiber Beds, José Manuel Benito, Guillermo Ríos, Eva Fernández, Carmen Pazos, José Coca, University of Oviedo, SPAIN

A Novel Coalescing Separator for Oily Water Treatment, Wei Jiang, Tianzhu Industrial Development Zone, CHINA

Research and Development of Hydrophilic/Hydrophobic Composite Membrane for Oil-Water Separation, Shu Wang, Liang-Yin Chu, Wen-Mei Chen, Yan Li, Guang-Jin Wang, Sichuan University, CHINA

Treatment of Oily Wastewaters by Deep Bed Filtration Using Peat as Filter Media, Pelayo Suárez, Ángel Cambiella, Eva Fernández, José Manuel Benito, Carmen Pazos, José Coca, University of Oviedo, SPAIN

Removal of Oil From the Condensation Water Using a Coalescer System, Yawen Lu, BCB Filtration Technology, CHINA

Comparisons of Different Measuring Methods for the Oil Content in the Water, Yawen Lu, BCB Filtration Technology, CHINA

Overview of the Membrane Application in the Oil-Field Return Water Treatment, Yawen Lu, BCB Filtration Technology, CHINA

Oil-Water Separator System, S. Bou-Hamad, Kuwait Institute for Scientific Research, KUWAIT

A New Method to Evaluate Water Separation Efficiency of Automotive Fuel Filters, C. Peuchot, Marie-Line Zanota, Institute of Filtration and Techniques of Separation, FRANCE

High Capacity/Compact Filter/Separator for Fuel Treatment, Alok Goel, Consulting Engineer, USA; Naveen Upadhyaya, OMTEC Inc., USA; Surendra Gupta, E & M Engineering Services & Products Inc., USA

POSTER SESSION 143 MEMBRANE APPLICATIONS

Nano Silica Removal from IC Wastewater by Pre-Coagulation and Microfiltration Process, Chihpin Huang, Wanhao Jiang, Chiahsin Chen, NCTU, TAIWAN, R.O.C.

Development of the Embedded Membrane Concept, Nick R. Mann, R. Scott Herbst, Tammy L. Trowbridge, Idaho National Engineering and Environmental Laboratory, USA; Vadim Kochergin, Amalgamated Research Inc., USA

Application of Submerged Non-woven Fabric Membrane Bioreactor to Treat the Wastewater from Food Industry, Min-Chao Chang, Wen-Yuang Tzou, Wang-Kuan Chang, CESH/ITRI, TAIWAN, R.O.C., Yen-Jung Hu, KNH Enterprise Co., Ltd., TAIWAN, R.O.C.

Improving the Bentonite Microfiltration Performance by Applying Pulsatile Flow, Wanxin Wang, Chris D. Bertram, Dianne E. Wiley, UNSW, AUSTRALIA

Extraction of Amino Acids From Aqueous Solution by Micellar Ultrafiltration, Daniel Domínguez, María Olga Ruiz, José Manuel Benito, José Luis Cabezas, Isabel Escudero, University of Bugros, SPAIN

Characterization of Candle Filter Elements in Coal Gasification Operation, Ruth Ann Martin, Xiaofeng Guan, Ben Gardner, Jack D. Spain, Southern Research Institute, USA

Extraction of Zn(II) by Supported Liquid Membrane Containing D₂EHPA, M.T. Draa, S. Bey, M. Benamor, Ecole Polytechnique Montreal Canada, CANADA

Composite membrane with 1.2µm pore size for microfiltration (sandwich membrane EP 0355 400), Christoph Maurer, Sefar Inc., Switzerland

POSTER SESSION 144 FILTRATION MODELING

Unconventionally Modeling Analysis for Permeate Flux of Ultrafiltration in Hollow-Fiber Modules, H.M. Yeh, Tamkang University, TAIWAN, R.O.C.

Research of Mathematics Model on Collection Efficiency of Fibrous Filters, Hai-ming Fu, Henggen Shen, Donghua University, CHINA

Optimization of the Solid-Liquid Separation on Filtering Hydrocyclones, M.A.S. Barrozo, E.B. Arruda, L.G.M. Vieira, M.C. Alves, J.J.R. Damasceno, Federal University of Uberlândia - Brazil, BRAZIL

Mathematical Modelling of Nonlinear Hydrodynamics in Filtration Process, L.P. Kholpanov, Institute of Chemical-Physic Problems of RAS, RUSSIA; R. I. Ibjatov, F.G. Akhmadiev, R.R. Fazilzyanov, KSABA, RUSSIA

A Mathematical Model for the Process of Ultra-Thin Electro-Kinetic Filtration, L.P. Kholpanov, E.E. Zaporozhec, Yu.P. Kvurt, Russian Academy of Sciences, RUSSIA; P. Vlasak, Czech Academy of Sciences, CZECH REPUBLIC

Artificial Neural Networks Model for Precoat Layers Build-Up Under Crossflow Condition, Xiao-Zhong Li, Sichuan University, CHINA; Harald Hess, Wilhelm Hoeflinger, Vienna University of Technology, AUSTRIA

Fluid Flow Through Compressible Gel Particles Bed: A Steady-State Condition, Kuo-Lun Tung, Che-Cha Hu, Chung Yuan University, TAIWAN, R.O.C.; Yu-Li Lin, Tiffany C. Shih, Wei-Ming Lu, National Taiwan University, TAIWAN, R.O.C.

Numerical Simulation of Extended Surface Rigid Cell Filters, Paolo Tronville, Polytechnic of Turin (DENER), ITALY

Theoretical and Practical Study of Intelligence Compound Filtration, Wei Tan, Qixin ZHU, Yuntao WU, Tianjin University, CHINA

Modeling of Multi-Stage Loop-Flow Flotation Column, Fan Shi, Shiao-Hung Chiang, University of Pittsburgh, USA; Ralph W. Lai, U.S. DOE/NETL, USA

POSTER SESSION 145 TOPICS IN LIQUID FILTRATION

Study of the Performance of Demco Filtering Hydrocyclone, E.A. Barbosa, L.G.M. Vieira, M.C. Alves, R.M. Rodruigués, J.J.R. Damasceno, M.A.S. Barrozo, Federal University of Uberlandia, BRAZIL

Design and Performance Evaluation of Electropositively Charged Filters for Removing Fine Particles in Liquid, J-H Shin, G-T Kim, J.S. Lee, C-M Sung, University of Massachusetts, USA; S.R. Cha, S.G. Park, J-K Lee, Pusan National University, SOUTH KOREA

Flow Field and Separation Performance of Modified Hydrocyclones, Liang-Yin Chu, Yang Zhao, Wei Yu, Xian-Tao Zhou, Guang-Jin Wang, Wen-Mei Chen, Sichuan University, CHINA; Yang Zhao, Zhejiang University, CHINA

Analysis of Boric Acid in Aquatic Environments by Concentration Method using Adsorption Column, Atsuyuki Fujimoto, Osaka Prefecture University, JAPAN; Toyoaki Aoki, Biwako Seikei Sport College, JAPAN

Methods of Validating Filtration Materials by Using Polymer Microspheres, Jeffery D. Silva, Stanley D. Duke, Duke Scientific Corporation, USA

Study of New Filter Granular Recyclable Media in Wine Filtration, Caroline Boittelle, Martine Mietton-Peuchot, Vladan Milisic, Université Victor Segalen Bordeaux II, FRANCE

Optimising Precoat Usage on a Rotary Drum Vacuum Filter, Andrew Walker, Filtration Services Ltd., UNITED KINGDOM

The Role of Primary Particle Size in the Kinetics of Aggregated System Separation, Lech Gmachowski, Institute of Physical Chemistry, POLAND

Comparison of Nanofiltration with Flocculation-Microfiltration-Photocatalysis Hybrid System in Dissolved Organic Matter Removal, H.K. Shon, S. Vigneswaran, H.H. Ngo, University of Technology,

AUSTRALIA; J.H. Kim, Chonnam National University, KOREA; N.E. Park, Kwangju Institute of Science and Technology, KOREA

Filter Media for Heavy-Duty Filter Presses - A Novel Solution to an Old Problem, Christoph Maurer, SWITZERLAND

The BP Neural Network Model of Hydrocyclones for Oil-Water Separation, Zhaohui Shu, Huazhong University of Science and Technology, CHINA; Wenmei Chen, Liangyin Chu, Sichuan University, CHINA

Predicting the Grade Efficiency of Hydrocyclones for Oil-water Separation with Monte Carlo Simulation, Zhaohui Shu, Wenmei Chen, Liangyin Chu, Jian Li, Huazhong University of Science and Technology, CHINA

Laser Granulometer and It's Application in Hydrocyclones for Oil-Water Separation, Zhaohui Shu, Wenmei Chen, Liangyin Chu, Huazhong University of Science and Technology, CHINA

POSTER SESSION 146

APPLICATIONS IN LIQUID-PARTICLE SEPARATIONS

Apply of the New High Efficiency Fiber bunches Filtering Tank, Haining Liu, Yongjun Xue, Northeast Institute of Electric Power Engineering, CHINA

The Performance and Industrial Application of Self-Cleaning Reservoir, Yongqiang Xu, BCB Filter Tech, USA

Effect of Recycling the Filter Backwash on Pulsator Clarifier's Behaviour - A Case Study, P.N. Ravindra, Bangalore Water Supply and Sewerage Board, INDIA

Electrofiltration of Kaolin Suspension with Sedimentation, O. Larue, E. Vorobiev, Université de Technologie de Compiègne, FRANCE

The Impact of "Particle Size" on Filtration and Separation, Terry Redman, P. Barrett, J. Ward, Lasentec, USA

Shortening the Drying Time By a New Drying Method for Mass Deacidified Newspapers and Books, R. Edl, W. Hoeflinger, Vienna University of Technology, AUSTRIA; W. Ruhm, Austrian National Library, AUSTRIA

Measuring Local Concentrations in Slurries Flowing in Horizontal Channels, Yu. P. Kvurt, Z. Chara, P. Vlasak, L.P. Kholpanov, Russian Academy of Sciences, RUSSIA

Development of TiO₂-Kaolin Functionally Graded Materials Produced by a Vacuum Filtration and Compression for Nox Reduction, Yoshihisa Uchida, Akira Nakajo, Hideyuki Suzuki, Shuntaro Higa, Yoshiyuki Uchida, Niichi Hayashi, Aichi Institute of Technology, JAPAN

Characterization of the Sedimentation and Consolidation Behaviour of Concentrated Dispersions by Analytical Centrifugation, D. Lerche, T. Sobisch, L.U.M. GmbH, GERMANY

What is the Optimum Surface Active Agent Concentration in the Filtration of Clay Minerals?, Birgül Benli-Gönül, Özgül Özcan, Istanbul Technical University, TURKEY

SESSION 211

MEDIA FOR HIGH TEMPERATURE APPLICATIONS

Hot Gas Filtration Using Sintered Metal Fiber Media, Kenneth Rubow, Mott Corporation, USA; Inge Schildermans, Yves Struyve, Bekaert Fiber Tech., BELGIUM

High Temperature Nanofibers for Advanced Filtration Concepts, P. Katta, L. Khatri, R.D. Ramsier, G.G. Chase, University of Akron, USA

Comparisons Between Filtration Behavior and Thermo-Analytical Properties of Different Coal Ashes at High Temperature, Detlev Hoff, Gerhard Kasper, Universität Karlsruhe, GERMANY

Convection in a Trapezoidal Porous Medium Enclosure for High Temperature Applications, Ali Chamkha, The Public Authority for Applied Education and Training, KUWAIT; Khalil Khanafer, University of California, USA

SESSION 212

APPLICATIONS IN MEMBRANES

Purification of α -Lactalbumin and β -Lactoglobulin from Whey Protein Isolate Using Two-Stage Ultrafiltration Systems, Beelin Cheang, University of Delaware, USA; Andrew L. Zydney, Pennsylvania State University, USA

Composite Pd and Pd/alloy Porous Stainless Steel Membranes for Fuel Cell Applications Yi Hua Ma, Worcester Polytechnic Institute, USA; Ivan P. Mardilovich, Worcester Polytechnic Institute, USA; Erik E. Engwall, Worcester Polytechnic Institute, USA

Practical Examples Showing the Benefits of Ceramic Membranes for the Fruit Juice Industry, Peter Bolduan, Michael Latz, Atech Innovations GMBH, GERMANY

High Temperature Applications of Polymeric Membranes for UF and NF, Frank Lipnizki, Alfa Laval, DENMARK; Gun Trägårdh, Lund University, SWEDEN

An Experimental Research on Dealcoholization of Alcoholic Beverages by Pervaporation, Shujuan Tan, Zeyi Xiao, Zhibing Zhang, Lei Li, Fawen Wu, Zhihong Xu, Nanjing University, CHINA

SESSION 213

NOVEL METHODS IN WASTEWATER TREATMENT

Combined Technology Treatment for Difficult Wastewaters, Steve W. Rose, Oberlin Filter Co., USA; Roy Rieber, Traclana LLC, USA; Ernest Mayer, DuPont, USA

Innovative Deep Bed Filter for the Tertiary Treatment of Wastewater, Roger Ben Aim, INSA/LIPE, FRANCE; Ki Baek Hab, Nanoentech, KOREA; Hae Jin Woo, Jeong Hoon Im, Chang Won Kim, Moon Hyuan Hwang, University of Pusan, KOREA; Philippe Marteil, Veolia Water, FRANCE

Modular Platform for Laundry Wastewater Recycling Based on the MBR Concept, Chris Dotremont, Heleen De Wever, Inge Genné, Bart Molenberghs, Erwin Van Hoof, VITO, BELGIUM

Treatment of Agricultural Wastewater Using Ultrafiltration and Subsequent Reverse Osmosis, W. Reimann, Institute of Agricultural Engineering, GERMANY

Chromium (VI) Removal from Electroplating Wastewater Using Chemically Treated Zeolite, Sandhaya Babel, Tonni Augustiono Kurniawan, Thammasat University, THAILAND

SESSION 214

CAKE FILTRATION – FUNDAMENTALS

Determination of Local Filtration Properties, C. Johansson, H. Theliander, Chalmers University of Technology, SWEDEN; P. Sedin, Lulea University of Technology, SWEDEN

Basic Compressibility Parameters and Their Time/Temperature Dependency During the Deformation of Saturated Porous Materials Involving Multitude Compression and Drainage, Serge Rebouilliant, Dominique Leclerc, Laboratoire des Sciences Du Génie Chimique, FRANCE; Oswaldo Campanella, Purdue University, USA

Influence of Non-Aqueous Solvents on Cake Structure and Properties, Urs A. Peuker, TU Clausthal, GERMANY

Determinations of Cake Structure During Stepped and Variable Pressure Filtrations, E.S. Tarleton, Loughborough University, UNITED KINGDOM

Numerical Analysis of Cake Filtration, Chi Tien, Syracuse University, USA; Renbi Bai, National University of Singapore, SINGAPORE

SESSION 215

FIELD ENHANCED FILTRATIONS 1

Pressure Electrofiltration of Biopolymers in a New Developed Chamber Filter Plate, Ralph Hofmann, Clemens Posten, Universität of Karlsruhe, GERMANY

Aqueous Extraction and Separation of Linseed Press-Cake Components Enhanced by High Voltage Electrical Discharges, Cécile Gros, Jean-Louis Lanoisellé, Eugène Vorobiev, Université de Technologie de Compiègne, FRANCE

Stages of Constant Pressure and Constant Rate Solid-Liquid Expression Enhanced by Pulsed Electric Field, E. Vorobiev, N. Lebovka, I. Praporscic, V. Muravetchi, Université de Technologie de Compiègne, FRANCE

Pressure Electrofiltration as a Tool of Bioseparation - Process Simulation and Optimisation, Ralph Hofmann, Clemens Posten, Universität of Karlsruhe, GERMANY

Electrowashing Filter Cakes: Experiments and Modelling Concepts, R.J. Wakeman, E.S. Tarleton, Loughborough University, UNITED KINGDOM; M.A. Koenders, R. Kilchherr, Kingston University, UNITED KINGDOM

SESSION 216

SEDIMENTATION PROCESSES

Software For The Simulation Of Batch and Continuous Thickeners, Ronald Burgos, Fernando Concha, University of Concepcion, CHILE

Most Advanced Washing out of Suspended Particles – The Innovative Sedimentator, Reinhard Bott, Thomas Langeloh, Egon Ehrfeld, BOKELA GmbH, GERMANY

The Influence of the Physico-Chemical Conditions on the Sedimentation Behaviour of Fine Grained Particles, Marc Beiser, Stahl, Universität Karlsruhe, GERMANY

A New Approach to Denser Aggregates, Jirun Xu, Shiqiang Ding, Yuxin Zhang, Weijing Wang, Haiyan Xu, Zhengning Liu, Dalian University, CHINA

Centrifugal Classification of Drill Mud, Wallace Leung, AdvanTech, USA

SESSION 221

NEW MEDIA FOR GAS FILTRATION

Combined Filtration VOCs/Particles on Innovative Fibrous Filter Media, C. Lorimier, L. Le Coq, A. Subrenat, P. Le Cloirec, Ecole des Mines de Nantes, FRANCE

Loft Air Filtration Media by Newly Designed Meltblown Die, Kyung-Ju Choi, AAF International, USA

New Ceramic Filter Elements Combining the Latest Developments in Strength, and Fiber Systems to Set Enhanced Standards in Gas Cleaning Technology, Richard Allen, David Akerman, Gary Elliott, Madison Filter Ltd., UNITED KINGDOM

SESSION 222

MEMBRANE NANOFILTRATION

The Assessment of Materials for Cross Flow Nanofiltration of Organic/Organic Liquids and Developing Scale-up Options, C.R. Millington, Shell Global Solutions, UNITED KINGDOM; A. Nijmeijer, Shell Global Solutions, THE NETHERLANDS; J.P. Robinson, Loughborough E.S. Tarleton, Loughborough University, UNITED KINGDOM

Effect of Swelling in Non-Aqueous Nanofiltration with Polydimethylsiloxane (PDMS) Membranes, J.P. Robinson, E.S. Tarleton, Loughborough University, UNITED KINGDOM; C.R. Millington, Shell Global Solutions, UNITED KINGDOM; A. Nijmeijer, Shell Global Solutions International BV, THE NETHERLANDS

Introduction of Nanofiltration in a Production Process of Fermented Organic Acids, A. Bouchoux, H. Roux-de Balmann, Université Paul Sabatier, FRANCE; F. Lutin, Eurodia Industrie, FRANCE

SESSION 223

TOPICS IN WATER/WASTEWATER TREATMENT

Recent Developments on Double Filtration for Water Treatment, Luiz Di Bernardo, Angela Di Bernardo, Emilia Kiyomy Kuroda, Giovana Katie Wiecheteck, Bianca Dieile da Silva Benini, University of Sao Paulo, BRAZIL

Treating High-Turbidity Storm Water Using Full-Scale Flocculation Blanket Clarifiers, W. W. Lin, S. S. Sung, L. C. Chen, H. Y. Chung, Z. C. Wang, R. M. Wu, D.J Lee, National Taiwan University, TAIWAN, R.O.C.; Chihpin Huang, National Chiao Tung University, TAIWAN, R.O.C.; R. S. Juang, Yuan Ze University, TAIWAN, R.O.C.; X. F. Peng, Tsinghua University, CHINA; His-Lih Chang, Taiwan Water Supply Corporation, TAIWAN, R.O.C.

Wastewater Treatment System Using Solar Energy, W.O. Leung, Waste & Environmental Technologies Ltd., CHINA

SESSION 224

CAKE FILTRATION - FLOCCULATION

Filtration of Activated Sludge, Hande Yükseler, Ülkü Yetis, Ismail Tosun, Middle East Technical University, TURKEY

Development of Industrially Relevant Test Methods for Belt-Press Filtration, Sarah A. Miller, CSIRO Energy Technology, AUSTRALIA

Which Floc Properties Better Run a Membrane Filtration Operation?, Jean- Baptiste Madeline, Université Paul Sabatier, FRANCE; Bernard Cabane, Ecole Supérieure de Physique et Chimie, FRANCE; Martine Meireles, CNRS, FRANCE

SESSION 225

PAPER MAKING AND RHEOLOGY OF SUSPENSIONS

Analysis the Sheet Formation Kinetics on the Wet Part of Papermachines; Jean-Claude Roux, EFGP/INPG, FRANCE

Filtration Properties of Green Liquor Dregs, Irina Niinivaara, Marja Oja, Helsinki University of Technology, FINLAND

Characterization and Control of Rheological Properties of Fine Particulate Suspensions and its Application to Solid/Liquid Separation Processes, A. Erk, W. Stahl, Universität Karlsruhe, GERMANY

SESSION 226

MEDIA CHARACTERIZATION BY POROMETRY

Filter Cloth Blinding/Cake Release Assessment via Porometry Measurements, Ernest Mayer, Dupont, USA

Comparative Methods for the Pore Size Distribution of Woven and Metal Filter Media, R. Lydon, Madison Filter Group, UNITED KINGDOM; E. Mayer, DuPont, USA; G.R Rideal, Whitehouse Scientific Ltd., UNITED KINGDOM

Characterization of Nanofiber Filtration Media by Capillary Flow Porometry, Akshaya Jena, Krishna Gupta, Porous Materials, Inc, USA

SESSION 231

TOPICS IN GAS FILTRATION 1

Influence of Cleaning Parameters on Pulse-Jet Filter Bag Performances, X. Simon, D. Thomas, S. Callé, P. Contal, Chemical Engineering Sciences Laboratory, FRANCE; D. Bémer, R. Regnier, Institute National de Recherche et de Securite, FRANCE

High Efficiency Process - Automates HEPA Assembly, Fabio Okada, Erin Crowe, Patricia Rocheck, Liquid Control Corp, USA

The Study of Impinging Stream in Trapping Dust, Jianwei Zhang, Heping Zhang, Shenyang Institute of Chemical Technology, CHINA

The Influence of Pleat Geometry on the Pressure Drop in Deep-Pleated Cassette Filters, Thomas Caesar, Thomas Schroth, Freudenberg Vliesstoffe KG, GERMANY

SESSION 232

MEMBRANE ULTRAFILTRATION

Effects of Electrostatic Interactions on Small Molecule Clearance in Ultrafiltration, Jiahui Shao, Andrew Zydney, Pennsylvania State University, USA

Lignin Extraction from Kraft Black Liquor by Ultrafiltration, Ola Wallberg, Ann-Sofi Jonsson, Lund University, SWEDEN

Flux Enhancement in Membrane Bioreactors using Membrane Performance Enhancing (MPE) Polymers, Anders Hallsby, John Collins, Seong-Hoon Yoon, Deepak Musale, Shih- Perng Tsai, Suma Sundararajan, Philippe Cachia, Jian Feng Kong, Nalco Company, USA

Effect of Addition of Bovine Serum Albumin on Ultrafiltration of *Corynebacterium Glutamicum* Slurry, K. Ohmori, Ajinomoto Co., Inc., JAPAN; E. Iritani, Nagoya University, JAPAN

SESSION 233

BIOREACTORS AND BIOFILTERS IN WATER/WASTEWATER TREATMENT

Impact of Membrane Processes on the Characteristics of Bioreactors for Wastewater Treatment, S. Smith, B. Jefferson, T. Stephenson, S. Judd, Cranfield University, UNITED KINGDOM

Performance of an Immersed Membrane Bioreactor with Total Solids Retention, J.C. Orantes, C. Wisniewski, M. Héran, A. Grasmick, Université de Montpellier, FRANCE

Biofilters in Municipal Wastewater Treatment-Benchmarking from Operation Data and Experiences, M. Barjenbruch, H. Stähle, Universität Rostock, GERMANY

Influence of Process Parameters in a Sequenced Membrane Bioreactor to Prevent Membrane Fouling in Wastewater Treatment – Interest of an External Test, R. van Kaam, M.E. Hernandez Rojas, S. Schetrite, C. Albasi, Laboratoire de Génie Chimique, FRANCE; O. Lorain, Polymem, FRANCE

SESSION 234

DECANTER CENTRIFUGE TECHNOLOGY

Modeling Separation and Classification of Suspension in Continuous-Feed Centrifuge- Surface Moving Layer, Wallace Leung, AdvanTech, USA

Deliquoring of Bulk Material in Decanting Centrifuges, Mark Stiborsky, Werner Stahl, Universität Karlsruhe, GERMANY

Separation of very Fine Polymers in a Decanter Centrifuge, Karsten Keller, Thomas Friedmann, DuPont, USA

Development of Expression Type Decanter and its Application in Environment Protection, Yang Zhao, Leqin Wang, Zehjiang University, CHINA; Jian-ming Zhang, Chongqing Jiangbei Machinery Co., Ltd., CHINA

SESSION 235

FIELD ENHANCED FILTRATIONS 2

Magnetic Separation: From Minerals Towards Bioproducts, Karsten Keller, Thomas Friedmann, Christian Hoffmann, DuPont, USA

Vibration Assisted Deadend Filtration, R.J. Wakeman, Loughborough University, UNITED KINGDOM; M.A. Koenders, Kingston University, UNITED KINGDOM

Analysis of Constant Current Electro-Osmotic Dewatering, Masashi Iwata, Suzuka National College of Technology, JAPAN

Electrokinetic Remediation of Consolidated Bentonite Cake Contaminated with Zinc Ion, Nobuyuki Katagiri, Kazuhiko Hayashi, Eiji Iritani, Nagoya University, JAPAN

SESSION 236

ADVANCES IN FILTER MEDIA 3

New Functionalized Filtration Media for the Removal of Both Chemicals and Microorganisms: Photocatalytic Nonwoven, Christine Monnet, Joseph Dussaud, Ahlstrom Research and Services, FRANCE

Ionization Enhanced Channel Filter, John Zhang, 3M Filtration Products, USA

Performance Comparison of Electrostatically Charged Synthetic Filters and Fiberglass Filters: An Insitu Test, Thomas Carlsson, Scandfilter AB, SWEDEN

Separation of Liquid-Liquid Dispersions by Recycled Expanded Polystyrene, C. Shin, G.G. Chase, D.H. Reneker, University of Akron, USA

SESSION 311

MODELING IN GAS FILTRATION

Performance Predictions for Air Filters Made From Fibers With Non-Circular Cross- Sections, Peter C. Raynor, University of Minnesota, USA

Characteristic Pressure Drop Patterns of Jet Pulsed Filters at Instable Operation, Andreas Kavouras, Gernot Krammer, Graz, University of Technology, AUSTRIA

Gas Cleaning Using a Fixed Bed Dust Collector, F. Diaz Reyes, A. Macias-Machin, Universidad de Las Palmas de Gran Canaria, SPAIN

Kinetics of Loading of Fibrous Prefilters and Strategy of Their Optimization, V.A Kirsch, I.B. STECHKINA, Institute of Physical Chemistry of Russian Academy of Sciences, RUSSIA

Physics of Aerosol Filtration, V.A Kirsch, Institute of Physical Chemistry of Russian Academy of Sciences, RUSSIA

SESSION 312

MEMBRANE FOULING 1

MBR Biomass Characteristics and Membrane Aeration: Their Influence on Membrane Fouling, Eve Germain, Tom Stephenson, Cranfield University, UNITED KINGDOM; Pete Pearce, Thames Water, UNITED KINGDOM

Fouling in Membrane Bioreactors, E. Reid, S. Judd, S. Churchouse, Cranfield University, UNITED KINGDOM

Chemical Cleaning of a Tubular Mineral Microfiltration Membrane Fouled With a Whey Protein Concentrate Suspension- Characterisation of Hydraulic and Chemical Cleanliness, P. Blanpain-Avet, J.F. Migdal, T. Bénézech, INRA/LGPTA, FRANCE

Interactions Between Sludge Composition and Filtration in Submerged Membrane Bioreactors for Municipal Wastewater Treatment, A. Massé, C. Cabassud, M. Spérandio, INSA/LIPE, FRANCE

Development of a Mechanistic Model for CaSO₄ Fouling in Nanofiltration, Che-Jen Lin, Saqib Shirazi, Pritesh Rao, Lamar University, USA

SESSION 313

MEMBRANES IN WATER/WASTEWATER TREATMENT 1

Ultrafiltration Technology for Potable, Process and Wastewater Treatment, Harry Futselaar, Stephan van Hoof, NORIT Process Technology B.V., NETHERLANDS; Rick Rosberg, X-Flow B.V., NETHERLANDS

Clarification of Water by Immersed Membrane System: Role of the Module Configuration and Operational Conditions on the Step Separation Intensification, P.Choksuchart Sridang, M. Heran, A. Grasmick, Université Montpellier II, FRANCE

Integrated System for Recovery of CaCO₃, NaCl and MgSO₄*7H₂O from Nanofiltration Retentate, Efreem Curcio, Enrico Driolo, Alesandra Criscuoli, Gianluca Di Profio, University of Calabria, ITALY

Anaerobic Bioreactor with Immersed Membrane-Performances and Membrane Fouling, M. Rodriguez, M. Mantilla, E. Giraldo, Universidad de los Andes, COLOMBIA; M. Spérandio, C. Cabassud, INSA/LIPE, FRANCE

Combining Ultrafiltration with Chelation for the Treatment of Wastewater, A.C. Jones, R. W. Lovitt, University of Wales Swansea, UNITED KINGDOM

SESSION 314

CAKE FILTRATION – AUXILIARIES

Test it Right for Thin-Cake Filtration, Barry A. Perlmutter, BHS -Filtration Inc., USA

Effective Hydraulic Resistance of the First Cake Layer at the Filter Surface: A Three Dimensional Solution, F. Noel, P. Schmitz, M. Prat, IMFT, FRANCE

Biosludge Dewatering Options and Testing Methods, Wu Chen, Frank Parma, Wilhelm Schabel, Dow Chemical, USA

Filtration on a Horizontal Filter Leaf With Sedimentation, E.W.Y. Tan, R.G. Holdich, R.J. Wakeman, Loughborough University, UNITED KINGDOM; G. Steele, AstraZeneca Charnwood, UNITED KINGDOM

Filtration of Soft Particle Slurries, Yu-Li Lin, National Taiwan University, TAIWAN, R.O.C.

SESSION 315

DELIQUORING, EXPRESSION, & DRYING 1

Multistage Filtration/Expression of Food Suspension with Highly Compressible Filter Cake, Jean-Louis Lanoisellé, Véronique Moïny, Eugène Vorobiev, Université de Technologie de Compiègne, FRANCE

Asphalt Emulsion Enhanced Dewatering of Fine Coal, Beibei Li, Daniel Tao, University of Kentucky, USA

Mechanical Dewatering of Residual Sludge Enhanced by a Local Thermal Supply, S. Couturier, M. Valat, J.R. Puiggali, LEPTENSAM, FRANCE; J. Vaxelaire, LGPP-ENSGTI, FRANCE

The Moving Bed Washing Process- An Alternative to Conventional Purification Steps, Bernhard Hoffner, Werner Stahl, Universität Karlsruhe, GERMANY

Purification Processes – A short Overview, Bernhard Hoffner, Benjamin Fuchs, Werner Stahl, Universität Karlsruhe, GERMANY; Jürgen Heuser, Aventis Pharma Deutschland GmbH, GERMANY

SESSION 316

FUNDAMENTALS IN DEPTH FILTRATION

Three-Dimensional, Multilayer Filtration Medium for Liquid and Gas Applications, Jonathan George, Andrea Grosso, Maura Roperto, Ahlstrom Turin, SpA, ITALY

Effect of Surface Interactions on Particle Deposition in Granular Media and its Quantification, Renbi Bai, National University of Singapore, SINGAPORE; Chi Tien, Syracuse University, USA

Direct Simulation of the Deep Bed Filtration Initial Stage, Hervé Duval, David Masson, Carlos Rivière, Jean-Bernard Guillot, École Centrale Paris, FRANCE; Philippe Schmitz, UMR/CNRS, FRANCE

Effect of Real Particles Packing with Large Size Ratio on Porosity and Tortuosity of Filter Bed, M. Mota, J.A. Teixeira, R. Dias, A. Yelshin, University of Minho, PORTUGAL

Deep Bed Filtration and Membrane Filtration: Similarities and Differences, Roger Ben Aim, LIPE/INSA, FRANCE; S. Vigneswaran, UTS, AUSTRALIA

SESSION 321

TOPICS IN GAS FILTRATION 2

Study of Particles Capture Mechanisms in Woven Activated Carbon Filters: Image Analysis, M. Bénesse, L. Le Coq, C. Sollicec, Ecole des Mines de Nantes, FRANCE

Image Analysis of Regeneration Behavior of the Ceramic Filter, Honghai Chen, Zhongli Ji, Haiqing Jiao, Mingxian Shi, University of Petroleum, CHINA

Simultaneous Removal Characteristics of SO₂ and Dust in Integrated Pollutant Control Systems, Young-Ok Park, Seok-Joo Park, Jeong-Hwan Lim, Soon-Kwan Jeong, Sang-Do Kim, Ho-Kyung Choi, Hyun-Seol Park, Jae-Ek Son, Korea Institute of Energy Research, KOREA

SESSION 322
MEMBRANE FOULING 2

Study of a Backwash Process with Air Shear in Inside-Out Hollow-Fibers in Dead-End Ultrafiltration for Drinking Water Production Plants, P.J. Remize, C. Guigui, C. Cabassud, LIPE INSA, FRANCE

Combined Ultrafiltration and Adsorption in a Biological Reactor for the Treatment of an Industrial Waste Water Containing Toxic Compounds, N. Lesage, M.H. Manero, M. Sperandio, C. Cabassud, LIPE, FRANCE

Phenomenological Approach to Quantify Combined Mechanisms During Microfiltration, A. Grenier, M. Meireles, P. Aimar, Université Paul Sabatier, FRANCE

SESSION 323
NEW MEMBRANES AND PROCESSES

Optimized Membrane Development Based on a Broad Range of Characterization Techniques, John A. Simonetti, Veronica Diaz- Fonseca, Ana Lozano, Irina Vinarov, PTI Advanced Filtration Inc., USA

Preparation of New Zeolite Membrane: Hydrothermal Synthesis and Characterization of Vanadium Silicate-1, Asalgisa Tavolaro, University of Calabria, ITALY

A Study on the Keratin Membrane, Xu Li, Ying Chen, Yuxin Wang, Qixin Zhu, Tianjin University, CHINA

SESSION 324
CAKE FILTRATION TOPICS

An Innovative Computer Programme for Calculation and Design of Filter Presses, Ioannis Nicolaou, F.O.S Filtration Software & Technology, GERMANY

Fouling and Cake Model for Immersed Membrane Bioreactor, M. Rodriguez, E. Giraldo, CIIA Citec Universidad de los Andes, COLOMBIA; M. Sperandio, C. Cabassud, LIPE, FRANCE

Prediction of Filter-Cake Properties From Particle Collective Characteristics, Jose Angel Sorrentino, Universidad Central de Venezuela, VENEZUELA; Harald Anlauf, Institut für Mechanische Verfahrenstechnik Karlsruhe, GERMANY

SESSION 325
DELIQUORING, EXPRESSION, & DRYING 2

Filter Media for Heavy-Duty Filter Presses – A Novel Solution to an Old Problem, Christoph Maurer, SWITZERLAND

Research of Spiral Dynamic Expression, Dewu Yang, Dongwei Ma, Yuanfeng Yang, Shenyang Institute of Chemical Technology, CHINA

Energy Balance of Expression and Filtration, Setuya Kuri, Kuri Chemical Engineers, Inc., JAPAN; Haruhiko Ohya, Yokohama National University, JAPAN

SESSION 326
FILTER AIDS

Recent Developments in Organic Precoat Filter Aids, Eberhard Gerdes, J. Rettenmaier & Sohne, GERMANY

Precoat Filtration of a Mineral Suspension Deflocculated by Dispersants to Preserve the Filtrate Quality and Liquefy the Filter Cake, Eugene Vorbiev, Thomas Mouroko-Mitoulou, Zied Soua, Université de Technologie de Compiègne, FRANCE

A New Biogenic Filter Aid for Fine Particle Filtration, Ernest Mayer, DuPont, USA; Roy Rieber, Traclana LLC, USA

SESSION 331
GAS-LIQUID COALESCENCE

Improved Coalescing Filter Design Utilizing a Multi-Component Media Approach, Steven Ziebold, Monsanto Enviro-Chem, USA

Modeling the Unsteady Coalescence Stage of Filtration, G. Vasudevan, B. Raber, S.I. Hariharan, G.G. Chase, University of Akron, USA

Spectral Dynamic Efficiency of Glass Microfiber Filters in Liquid Aerosol Filtration, T. Frising, D. Thomas, P. Contal, D. Leclerc, Chemical Engineering Sciences Laboratory/CNRS, FRANCE; D. Bémer, National Safety Research Institute, FRANCE

Filtration of Separation of Fine Particles and Vapour from Industrial Process Air, Martin Lindqvist, Scandfilter, SWEDEN

Simulation of Oil Saturation in Porous Media, W. Heikamp, Andreas Stephan, Filterwerk MANN+HUMMEL GmbH, GERMANY

SESSION 332
MEMBRANE FOULING 3

Prediction of Microfiltration Flux Decline Due to Electroviscous Retardation and Adsorption Using Pore Scale Stochastic Reconstruction Model, Fu Zhao, Heather Landis, Steven J. Skerlos, University of Michigan, USA

Intermittent Stress Induced by Aeration to Reduce Fouling in Hollow-Fibre Membrane Reactor, Laure Martinelli, Christelle Guigui, Alain Line, LIPE INSA, FRANCE

Prevention of Membrane Fouling by High Efficient Microfiltration Accompanied with Cyclic Backwashing, M.S Jami, E. Iritani, Nagoya University, JAPAN; T. Ohn, Aichi Science and Technology Foundation, JAPAN

Removal of Humic Substances (HSs) from Water by Electro-Microfiltration, Yu-Hsiang Weng, Kung-Cheh Li, National Taiwan University, TAIWAN, R.O.C.; Chin-Pao Huang, University of Delaware, USA

Study of Hollow-Fiber Membranes Aging Due to Chemical Cleanings, S. Rouaix, C. Causserand, P. Aimar, CNRS UMR, FRANCE

SESSION 333

MEMBRANES IN WATER/WASTEWATER TREATMENT 2

Characterization of Biomass Activity in a Membrane Bioreactor in Transient State, M. Espinosa-Bouchot, M. Spérandio, C. Cabassud, INSA/LIPE, FRANCE

Dichloroaniline Retention by Nanofiltration Process, C. Causserand, P. Aimar, C. Roques, E. Singlande, Université Paul Sabatier, FRANCE; J-P Cravedi, INRA, FRANCE

Membrane Super-Filtrating Concentrating Research of Revolving Flows, Dewu Yang, Yongji Liu, Shenyang Institute of Chemical Technology, CHINA

Removal of Iron and Manganese by UF in Combination with Prechlorination in Drinking Water Treatment, Kwang-Ho Choo, Daegu University, KOREA; Hae-Bum Lee, Sang-June Choi, Kyungpook National University, KOREA

Influence of Hydrophobicity, Charge and Flow Velocity on Retention and Flux in NF, Marianne Nyström, Lappeenranta University of Technology, FINLAND

SESSION 334

COAGULATION AND FLOCCULATION

Floc Breakage and Re-formation in Concentrated Suspensions, John Gregory, Linda Eklund, University College London, UNITED KINGDOM; Richard R Horsley, Curtin University of Technology, AUSTRALIA

Flocculation Related to Local Hydrodynamics in a Couete Flow, C. Coufort, D. Bouyer, A. Liné, LIPE INSA, FRANCE

Flocculation: Camp Number and Local Hydrodynamic Conditions, R. Ben Aim, LIPE, FRANCE; A. Khellil, University of Blidah, ALGERIA

A New Protocol for Measuring Sludge Network Strength and its Relation to Filterability, Mohammad Abu-Orf, Veolia Water/US Filter, USA; Banu Örmeci, Duke University, USA

Control of Industrial Wastewater Flocculation by Streaming Current Monitoring, Ernest Mayer, DuPont, USA; Roy S. Rieber, Traclana LLC, USA

SESSION 335

DELIQUORING, EXPRESSION, & DRYING 3

Sludge Dewatering with Contripress, Paul S. Scholtyssek, Jennifer Brown, Netzsch, Inc., USA; Ernest Mayer, DuPont, USA

A Development of Filter Press Dewatering System for Using the Heating Plate, Jung Eun Lee, Sumjin EST Company, KOREA

De-Saturation of Fine Coal: A Different Approach, Q.P. Campbell, M. Blenkinsop, M. le Roux, Northwest University, SOUTH AFRICA

Filtration and Consolidation Properties of Oilin- Water Emulsions, Eiji Iritani, Yasuhito Mukai, Nobuyuki Katagiri, Shin-Ichiro Matsumoto, Nagoya University, JAPAN

A Case Study of RVPF Filtration of Waste Sludge Using Organic Filter Aids, Larry Galberd, J. Rettenmaier USA LP, USA

SESSION 336

DEVELOPMENTS IN FILTER MEDIA

Methods of Polymer Removal, Sue L. Reynolds, Carolina Filters, Inc., USA

The Filter Medium - Crucial Interface between Apparatus and Suspension, Harald Anlauf, Universität Karlsruhe, GERMANY

An Asymmetric Sintered Metal Filter Element for Microfiltration, C. Kuang, F. Wang, Y. Wang, D. Li, H. Gu, Y. Fang, Advanced Technology & Materials Corporation, CHINA

The Filtration System with a Rigid-Tubular Media, Ichido Kawano, Shigehiko Matsunami, Tomiro Nozu, Hiroshi Abe, Koichi Yagishita, Sanshin Mfg Co., Ltd., JAPAN

Study of Analytical Centrifuge Equipped with Ultrafiltration Membrane or Filter Media for Bioseparation, Wallace Leung, AdvanTech, USA

SESSION 411

HYDRO AND GAS CYCLONES

The Use of Hydrocyclone Models in Practical Design, Wu Chen, Dow Chemical, USA

Study on the PVC Phenomena in a Cyclone Separator by PIV, Xiaolin Wu, Mingxian Shi, University of Petroleum, CHINA

Experimental Research on Cyclone Performances at High Temperatures, Jianyi Chen, Mingxian Shi, University of Petroleum, CHINA

Distribution of Oil Droplet Size and its Influence Factors in De-Oiling Hydrocyclone, Zhaohui Shu, Wenmei Chen, Liangyin Chu, Huazhong University of Science and Technology, CHINA

SESSION 412

INNOVATIONS IN MEMBRANES 1

Dynamics of Ultrafiltration Under Frequent Backflushing Condition, Gunnar Jonsson, Technical University of Denmark, DENMARK

New Method of Determination of Ion Permeability Coefficient Utilizing Membrane Potential, Ryosuke Takagi, Shukugawa Gakuin College, JAPAN; Arto Pihlajamäki, Marianne Nyström, Lappeenranta University of Technology, FINLAND

Relationship Between Gas Bubble Velocity and Permeate Flux in Gas-Sparging Ultrafiltration With Various Inclinations, Tung-Wen Cheng, Shin-Lung Lin, Tamkang University, TAIWAN, R.O.C.

Diffusion and Permeation Mechanism of Supercritical Fluids through Porous Membranes, Baoquan Zhang, Caiyun Chu, Lili Liu, Xiufeng Liu, Tianjin University, CHINA

SESSION 413

NEW DEVELOPMENTS IN FILTER EQUIPMENT 1

The Adaption of Design and Operating Parameters of Solid-Liquid Separation Equipment to the Changes of Product Specifications and Demands, Werner Stahl, Universität Karlsruhe, GERMANY

Concentrating Thin Suspensions of Fine Particles With a Continuous Flow Tubular Pressure Filter, Klaus J. Julkowsk, KJJ Filter Engineering, USA; Patrick A. Mueller, DrM AG, SWISS

Comparison of Cross Flow Filtration and Dynamic Shear Stress Filtration: An Analysis of Design Features And Performances, Reinhard Bott, Thomas Langeloh, BOKELA GmbH, GERMANY

Improving Densification of Coal Tailings Using Deep Cone Thickener, B.K. Parekh, University of Kentucky/CAER, USA; F. Baczek, Dorr-Olive Eimco, USA

SESSION 414

CENTRIFUGE FILTRATION 1

Protein Ultrafiltration in Rotating Disk Membrane, Wallace Leung, AdvanTech, USA

The Influence of the Precipitate/Crystal Properties on Centrifugal Separation, Thomas Friedmann, Karsten Keller, Sean Dalziel, DuPont, USA; Dora Lui, University of Queensland, USA

The Purification of a Porous System in the Centrifugal Field, Benjamin Fuchs, Werner Stahl, Universität of Karlsruhe, GERMANY; Urs Peuker, Universitat Clausthal, GERMANY

Use of Analytical Centrifugation for Evaluation of Solid-Liquid Separation in Decanter Centrifuges: Application for Selection of Flocculants for Sludge Dewatering, T. Sobisch, D. Lerche, L.U.M. GmbH, GERMANY

SESSION 415

MEDIA TESTING

The Effect of Engine Conditions on Wear Generation Rates in Diesel Lube Oil, Barry Verdegan, Bryan Steffen, Fleetguard Inc., USA; David Stehouwer, Stehouwer Testing Services Inc., USA

Characterization of Depth Filtration Media, Akshaya Jena, Krishna Gupta, Porous Materials, Inc, USA

Hydraulic Oil Filtration, H.H. Kleizen, Delft University of Technology, NETHERLANDS

The Application of Simplified Process Statistical Variance Techniques to Enhance the Detection of Filtration Integrity Loss, Michael Sadar, Hach Company, USA

SESSION 416

CROSS FLOW FILTRATION

Analysis of Crossflow Filtration Based on Particle Adhesion Model, Chi Tien, Syracuse University, USA

Effects of Operating Conditions on The Performance of Cross-Flow Microfiltration of Fine Particle/Protein Binary Suspension, Kuo-Jen Hwang, Fu-Yuan Chou, Tamkang University, TAIWAN, R.O.C.

SESSION 421

AUTOMOTIVE APPLICATIONS IN GAS FILTRATION

New Generation Direct Flow Engine Air Filters - Performance Analysis, Tadeusz Jaroszczyk, Stephen L. Fallon, Z. Gerald Liu, Kelly Schmitz, Fleetguard Inc., USA; Byron A. Pardue, Columbus Industries, Inc., USA

Air Induction Systems Using Long Life Reticulated Foam Media, Neville J. Bugli, Gregory S. Green, Visteon Corporation, USA

Numerical Investigation of the Flow Distribution and Separation Efficiency of a Disk Stack Centrifuge used as an Oil Mist Separator on Combustion Engines, A. Zink, M. Piesche, University of Stuttgart, GERMANY

SESSION 422

INNOVATIONS IN MEMBRANES 2

Comparison and Combination of Air Sparging and Backflushing on a Membrane Bioreactor, C. Psoch, S. Schiewer, University of Alaska Fairbanks, USA

COD Reduction in Nanofiltration of Dairy Process Water Using a Vibratory Dynamic Filtration System, Omar Akoum, Lu Hui Ding, Matthieu Frappart, Michel Y. Jaffrin, University of Compiègne, FRANCE

Rotating Reverse Osmosis for Wastewater Recovery, Cynthia Pederson, Yeomin Yoon, Richard Neal, Richard M. Lueptow, Northwestern University, USA; Sangho Lee, Korea Institute of Construction and Technology, KOREA

SESSION 423

NEW DEVELOPMENTS IN FILTER EQUIPMENT 2

Application of the "Hot Filterpress"/ Rollfit Process for Solvent Suspension(detailed process description), Urs A. Peuker, Institut für Chemische, GERMANY

Revival of Drum Filters: Most Modern Applications and Design Features, Reinhard Bott, Thomas Langeloh, BOKELA GmbH, GERMANY

Combined Mechanical Filtration and Thermal Dehydration with a Filter Press Lothar Kuffel, Klinkau GmbH & Co., GERMANY; Rolf F. Buhl, Eurofilter GmbH, GERMANY; Michael J. Ruyak, Klinkau America Inc., USA

SESSION 424

CENTRIFUGE FILTRATION 2

The CD Filter, J.W. Tichy, Filtration Technology, GERMANY

Flow Through Compressible Filter Cakes under Static and Dynamic Pressure Conditions, Christoph Lustenberger, Erich J. Windhab, ETH Zurich, SWITZERLAND

Lab Scale Batch Filtering Centrifuge, Greg Wood, DuPont Engineering, USA; Anthony S. Trasatti, DuPont Central Research & Development, USA

SESSION 425

NEW MEDIA AND NANOFILTERS

Metallic Filter Elements: Determining an Element's Suitability for Reuse After Cleaning, Robert A. Smith, Southern Metal Processing Co. Inc, USA

Nanofibers, Electrospinning, and Filtration, Darrell Reneker, University of Akron, USA

Effect of Grafting Yields on the Gating Characteristics of Thermo-Responsive Gating Membranes, Yan Li, Liang-Yin Chu, Jia-Hua Zhu, Hai-Dong Wang, Su-Lan Xia, Wen-Mei Chen, Sichuan University, CHINA

SESSION 426

EQUIPMENT SELECTION AND COMBINED OPERATIONS

New Computer Software for the Selection of Solid/Liquid Separation Equipment, E.S. Tarleton, R.J. Wakeman, Loughborough University, UNITED KINGDOM

Internet Based Equipment Selection, Modeling And Simulation, Richard Holdich, Loughborough University, UNITED KINGDOM

Improving the Product Properties of Crystalline Products by Modifying Crystallization and Solids Processing, Michael Bentz, Werner Stahl, Universität Karlsruhe, GERMAN