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(NAMS 2012)

**New Orleans, Louisiana, USA
9-13 June 2012**

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North American Membrane Society
University of Toledo/Chemical Engineering Department
2801 W. Bancroft Street- MS 305
Toledo, Ohio 43606-3390

Phone: 419-530-3649
Fax: 419-530-8086

names@eng.utoledo.edu

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**(0) Sunday, Jun 10, 5:30 PM
Opening Reception**

*InterContinental New Orleans,
Steamboat Natchez*

Isabel C. Escobar, Chair

The University of Toledo, Toledo,
OH

**(1) Monday, Jun 11, 8:00 AM
NAMS 2012 Monday Keynote -
Charles Page**

*InterContinental New Orleans, La
Salle A*

Isabel C. Escobar, Chair

The University of Toledo, Toledo,
OH

Jamie A. Hestekin, Co-Chair

University of Arkansas, Fayetteville,
AR

Stephen M. Ritchie, Co-Chair

University of Alabama,
Tuscaloosa, AL

**NAMS 2012 Monday Keynote -
Charles Page**

8:00 AM, Paper 1a24

*Charles Page**

*Air Products and Chemicals Inc.,
Saint Louis, MO*

**(2) Monday, Jun 11, 9:30 AM
Advances in RO and NF**

*InterContinental New Orleans,
Acadian I/II*

James E. McGrath, Chair

Virginia Polytechnic Institute and
State University, Blacksburg, VA

Michelle Chapman, Co-Chair

Bureau of Reclamation, Denver,
CO

**Organic Solvent Nanofiltration
Thin Film Composite (TFC)
Membranes by Interfacial
Polymerization**

9:30 AM, Paper 2a25

Maria Fernanda Jimenez

Solomon, Yogesh Bhole, Andrew
G. Livingston*

*Imperial College London, London,
United Kingdom*

**Enhanced RO Performance of
Polyamide Bi-Layer Membranes
Prepared by Sequential
Interfacial Polymerization**

10:00 AM, Paper 2b.....28

Young-hye Na (1), Jacquana Diep
(1), Radwan Al-rasheed (2),
Geoffrey M. Geise (3), Benny
Freeman (3), Ankit Vora (1), Majed
Nassar (2), Geraud Dubois (1)
(1) IBM Almaden Research Center,
San Jose, CA*

*(2) King Abdulaziz City for Science
and Technology, Riyadh, Saudi
Arabia*

*(3) The University of Texas at
Austin*

**High-Fux Reverse Osmosis
Membranes Incorporated with
Hydrophilic Additives for
Brackish Water Desalination**

10:30 AM, Paper 2c29

*Lin Zhao**

*The Ohio State University,
Columbus, OH*

**Structural Control and Chemical
Functionalization of Dual-Layer
Nanofiltration Hollow Fiber
Membranes for Efficient Waste
Water Treatment**

11:00 AM, Paper 2d31

Shi Peng Sun, Sui Yung Chan, Tai
Shung Chung
National University of Singapore,
Singapore, Singapore*

**Advances In RO System
Operation & Real-Time Control**

11:30 AM, Paper 2e34

*Larry Gao**

UCLA, Los Angeles, CA

**Pulsed-Power Electromagnetic
Field Effects On Crystallization
During Desalination**

12:00 PM, Paper 2f35

Xiaoyun Lu (1), Jeff Harvey (1),
Hengyi Ju (1), Todd Murray (1),
Katie Guerra (2), John Pellegrino
(1)*

*(1) University of Colorado at
Boulder, Boulder, CO*

*(2) Bureau of Reclamation, Denver,
CO*

**(3) Monday, Jun 11, 9:30 AM
Gas Separations I**

*InterContinental New Orleans,
Pelican I/II*

William Koros, Co-Chair

Georgia Institute of Technology,
Atlanta, GA

Maria R. Coleman, Co-Chair
the University of Toledo, OH,
Toledo, OH

**Composite Hollow Fiber
Membrane Using PVC-g-
Poem/PEI for SO₂ Separation**

9:30 AM, Paper 3a36

HyungKeun Lee (1), KeeHong
Kim (1), SeongUk Hong (2),
JongHak Kim (3)*

*(1) Korea Institute of Energy
Research, Daejeon, South Korea
(2) Hanbat National University,
Daejeon, South Korea*

*(3) Yonsei University, Seoul, South
Korea*

**Physical Aging and CO₂
Exposure Effects for Thin Films
of Amorphous Teflon**

10:00 AM, Paper 3b37

Rajkiran Tiwari (1), Haiqing Lin
(2), Donald Paul (1)*

*(1) The University of Texas at
Austin, Austin, TX*

*(2) Membrane Technology and
Research, Inc., Menlo Park, CA*

**Effects of Thermally Saccharide
Units On the Gas Separation
Performance of Highly
Permeable Polyimide
Membranes**

10:30 AM, Paper 3c38

Mei Ling Chua, You Chang Xiao,
Tai-Shung Chung
National University of Singapore,
Singapore, Singapore*

**Amine-Functionalized MIL-53
Metal-Organic Framework In
Polyimide Mixed Matrix
Membranes for CO₂/CH₄
Separation**

11:00 AM, Paper 3d39

Xiao Yuan Chen (1), Vinh-Thang
Hoang (1), Denis Rodrigue (1),
Serge Kaliaguine (2)*

*(1) University Laval, Quebec city,
QC, Canada*

*(2) Department of Chemical
Engineering, Laval University,
Quebec, Canada*

* Denotes Speaker

**Bio-Metal Organic Framework-1
Membranes for CO₂/CH₄
Separation**

11:30 AM, Paper 3e.....40

Moises A. Carreon, Joseph

*Bohrman**

*University of Louisville, Louisville,
KY*

**ZIF-8/Polybenzimidazole Mixed-
Matrix Membranes for Gas
Separations**

12:00 PM, Paper 3f41

Grace D. Kalaw (1), Edson V.*

Perez (2), Kenneth J. Balkus Jr.

(1), Inga H. Musselman (1), John

P. Ferraris (1)

*(1) University of Texas at Dallas,
Richardson, TX*

*(2) The University of Texas at
Dallas, Richardson, TX*

**(4) Monday, Jun 11, 9:30 AM
Membranes for Biofuel
Applications**

*InterContinental New Orleans,
Poydras*

Stephen M. Ritchie, Chair

*University of Alabama,
Tuscaloosa, AL*

Jamie A. Hestekin, Co-Chair

*University of Arkansas,
Fayetteville, AR*

**Purification of Biogas to Natural
Gas Quality by Supported Liquid
Membrane**

9:30 AM, Paper 4a42

Pavel Izák (1), Magda Karaszova*

(1), Martin Lisal (2)

*(1) Institute of Chemical Process
Fundamentals Academy of Sciences
of the Czech Republic, Prague 6,
Czech Republic*

*(2) Academy of Sciences of the
Czech Republic, Prague, Czech
Republic*

**Biomass Detoxification by
Membrane Extraction**

10:00 AM, Paper 4b44

Robert Dong (1), David Grzenia

(2), Matt J. Kipper (2), S. Ranil

Wickramasinghe (1)*

(1) University of Arkansas,

Fayetteville, AR

(2) Colorado State University, Fort

Collins, CO

**Pebax/POSS Molecular-Level
Mixed Matrix Membranes for
Pervaporation Recovery of
Ethanol From Aqueous Solutions**

10:30 AM, Paper 4c46

Ngoc Lieu Le, Yan Wang, Tai-
Shung Chung*

*National University of Singapore,
Singapore, Singapore*

**Fouling Phenomena During
Membrane Filtration of
Microalgae**

11:00 AM, Paper 4d47

Melissa Rickman, John*

Pellegrino, Robert H. Davis

*University of Colorado, Boulder,
CO*

**CO₂ Transfer Through Hollow
Fiber Membranes**

11:30 AM, Paper 4e48

Pavlo Kostetskyy (1), Robert P.*

Hesketh (2), Kauser Jahan (1),

Tariq Ahmed (3), Shamia Hoque

(1)

*(1) Rowan University, Glassboro,
NJ*

*(2) Rowan Univeristy, Glassboro,
NJ*

*(3) New Jersey Department of
Health and Senior Services,
Sicklerville, NJ*

**Pervaporation of Ethanol From
Dilute Aqueous Solutions
Through Silicalite-
1/Polydimethylsiloxane
Nanocomposite Membranes**

12:00 PM, Paper 4f49

Amit Yadav, Mary Laura Lind,*

Jerry Y.S. Lin

*Arizona State University, Tempe,
AZ*

**(5) Monday, Jun 11, 9:30 AM
Membrane Surface Modifications
InterContinental New Orleans, La
Salle C**

**S. Ranil Wickramasinghe, Co-
Chair**

University of Arkansas

Scott M. Husson, Co-Chair

Clemson University, Clemson, SC

**Fouling Resistance and Ease of
Cleaning Post Biofouling of**

**Atmospheric Pressure Plasma
Induced, Surface
Nanostructured, Reverse
Osmosis Membranes**

9:30 AM, Paper 5a.....50

Kari J. Varin, Nancy Lin, Yoram*

Cohen

University of California, Los

Angeles, Los Angeles, CA

**Composite Polymer-Inorganic
Nanoparticles As Regenerable
Coatings for Fouling Control On
Reverse Osmosis Membranes**

10:00 AM, Paper 5b51

Megan A. Smith, David A. Ladner*

Clemson University, Anderson, SC

**Novel Strategies for Modifying
UF Membranes with Anti-
Fouling Polymers**

10:30 AM, Paper 5c53

Ankit Vora (1), Young-hye Na (1),*

Radwan Al-rasheed (2), Majed

Nassar (2), Jacquana Diep (1),

Benny D. Freeman (3), Daniel J.

Miller (4)

*(1) IBM Almaden Research Center,
San Jose, CA*

*(2) King Abdulaziz City for Science
and Technology, Riyadh, Saudi
Arabia*

*(3) The University of Texas at
Austin, Austin, TX*

*(4) University of Texas at Austin,
Austin, TX*

**Magnetically-Responsive
Membranes for Water
Treatment**

11:00 AM, Paper 5d54

Qian Yang (1), Xianghong Qian*

(1), S. Ranil Wickramasinghe (2)

(1) University of Arkansas,

Fayetteville, AR

(2) University of Arkansas

**A Highly Electrically Conductive
Polymer – Multiwalled Carbon
Nanotube Nanocomposite
Membrane**

11:30 AM, Paper 5e55

Charles-François de Lannoy (1),*

David Jassby (2), Demi Davis (1),

Mark R. Wiesner (1)

(1) Duke University, Durham, NC

*(2) CEINT - Center for the
Environmental Implications of
Nanotechnology, Durham, NC*

* Denotes Speaker

Sulfonation Modification of Polybenzimidazole Membranes for Pervaporation Dehydration of Acetic Acid

12:00 PM, Paper 5f57

*Yan Wang** (1), *Mike Gruender* (2), *Tai-Shung Chung* (1)
(1) National University of Singapore, Singapore, Singapore
(2) PBI Performance Products, Inc., , Charlotte, NC

(6) Monday, Jun 11, 9:30 AM Membrane Transport I InterContinental New Orleans, La Salle B

Jennifer Wilcox, Chair

Stanford University, Stanford, CA
John Pellegrino, Co-Chair
University of Colorado, Boulder, CO

A New Structure-Performance Model to Understand and Improve Neutral Solute Removal by RO/NF Membranes

9:30 AM, Paper 6a58

*Jinwen Wang** (1), *Eric M.V. Hoek* (2)
(1) UCLA, Los Angeles, CA
(2) University of California, Los Angeles, Los Angeles, CA

Effect of Convective Hindrance Factor On Predictions of the Rejection of Rod Shaped Particles From Porous Membranes

10:00 AM, Paper 6b59

*Basavaraju Nagendra Agasanapura**, *Ruth E. Baltus*
Clarkson University, Potsdam, NY

Beyond Sieverts' Law: A Comprehensive Model of Permeation In Palladium Membranes

10:30 AM, Paper 6c60

Nicholas Deveau, *Ed Ma*, *Ravindra Datta**
Worcester Polytechnic Institute, Worcester, MA

Transport Properties of Oxygen and Water Vapor In Biaxial Orientated Poly(L-lactic acid) Membranes

11:00 AM, Paper 6d61

Jing-Yuan Lin (1), *Chin-Hung Lan* (1), *Guang-Way Jang* (2), *Yi-Ming Sun** (1)
(1) Yuan Ze University, Chung-Li, Taiwan
(2) Material and Chemical Research Laboratories, ITRI, Hsin-Chu, Taiwan

Theoretical and Experimental Investigations of N2-Selective Membranes

11:30 AM, Paper 6e62

*Jennifer Wilcox**, *Ekin Ozdogan*, *Panithita Rochana*
Stanford University, Stanford, CA

Membrane Drying of Ionic Liquid

12:00 PM, Paper 6f63

*Xi Du**, *Glenn Lipscomb*
University of Toledo, Toledo, OH

(7) Monday, Jun 11, 2:00 PM Biofouling and Monitoring InterContinental New Orleans, Acadian I/II

Cyndee L. Gruden, Chair

University of Toledo, Toledo, OH
Hans Vrouwenvelder, Co-Chair
KAUST, Thuwal, Saudi Arabia

Reduced Biofouling On UF Membranes Grafted with Copolymers Possessing Oppositely Charged Groups

2:00 PM, Paper 7a64

Eyal Kaufman (1), *Sophia Belfer* (2), *Roni Kasher* (3), *Viatcheslav Freger* (4), *Moshe Herzberg** (1)
(1) Ben Gurion University of the Negev, Midreshet Ben Gurion, Israel
(2) Zuckerberg Institute for Water Research, Ben-Gurion University of the Negev, Sde Boker, Israel
(3) Ben-Gurion University of the Negev, Sede Boqer Campus, Israel
(4) Technion - Israel Institute of Technology, Haifa, Israel

Influence of Feed Water, Substrate Concentration and Permeate Flux On Biofilm Resistance

2:30 PM, Paper 7b.....66

*Claudia Dreszer** (1), *Hans Vrouwenvelder* (2), *Astrid H. Paulitsch-Fuchs* (3), *Arie Zwijnenburg* (3), *Joop C. Kruithof* (3), *Hans-Curt Flemming* (4)
(1) Wetsus, centre of excellence for sustainable water technology, Leeuwarden, Netherlands
(2) KAUST, Thuwal, Saudi Arabia
(3) Wetsus, centre of excellence for sustainable water technology
(4) University Duisburg-Essen, Biofilm Centre

Relations Between Biofilm Viscoelasticity and Biofouling Extent of Reverse Osmosis Membranes: Case Study of Cellulose In the EPS Matrix

3:00 PM, Paper 7c68

*Yael Shabtai** (1), *Karen L. Visick* (2), *Moshe Herzberg* (3)
(1) Ben Gurion University, Midreshet Ben Gurion, Israel
(2) Loyola University, Chicago, IL
(3) Ben Gurion University , Midreshet Ben Gurion, Israel

Quantitative Measurement and Visualization of Biological Activity In Membrane Systems

3:30 PM, Paper 7d69

*J.S. Vrouwenvelder** (1), *E.I. Prest* (2), *M. Kuhl* (3), *M.C.M. van Loosdrecht* (2), *M. Staal* (3)
(1) KAUST, Thuwal, Saudi Arabia
(2) Delft University of Technology, Delft, Netherlands
(3) University of Copenhagen, Helsingør, Denmark

RO Membrane Mineral Scaling In the Presence of a Biofilm

4:00 PM, Paper 7e70

*John Thompson**
University of California, Los Angeles, Los Angeles, CA

Molecular Modeling of Bacterial Alginate Adsorption to RO Membranes Under Crossflow (Shear) Conditions

4:30 PM, Paper 7f72

*Harry Ridgway**
King Abdullah University of Science and Technology, Jeddah, Saudi Arabia

(8) Monday, Jun 11, 2:00 PM

* Denotes Speaker

Fuel Cells and Batteries

InterContinental New Orleans, La Salle C

Shelley D. Minteer, Co-Chair

Saint Louis University, St. Louis, MO

Peter Pintauro, Co-Chair

Vanderbilt University, Nashville, TN

Membrane Properties Control DMFC Performance and Efficiency: A Case of the Tail Wagging the Dog

2:00 PM, Paper 8a73

Neal S. Rosenthal, Saurabh A.

Vilekar, Ravindra Datta*

Worcester Polytechnic Institute, Worcester, MA

Preparation and Proton Conductivity of Fuel Cell Membranes Based On Polymer-Modified Silica Colloidal Crystals

2:30 PM, Paper 8b74

Ilya Zharov*

University of Utah, Salt Lake City, UT

Ionene Membranes for Alkaline Fuel Cells

3:00 PM, Paper 8c75

Ryszard Wycisk* (1), Kyung Min Lee (2), Morton H. Litt (3), Peter

N. Pintauro (1)

(1) Vanderbilt University,

Nashville, TN

(2) Air Force Research Lab, Dayton, OH

(3) Case Western Reserve University, Cleveland, OH

Ion Exchange Composite Membranes for Non-Aqueous Redox Flow Batteries

3:30 PM, Paper 8d76

Myung-Jin Lee* (1), Junyoung

Mun (2), Joung-Won Park (2),

Duk-Jin Oh (2), Doo-Yeon Lee (2), Seok-Gwang Doo (2)

(1) Samsung Advanced Institute of Technology, Yongin-si, Gyeonggi-do, South Korea

(2) Samsung Advanced Institute of Technology

Novel Properties of Hydrophobically Modified Nafion

4:00 PM, Paper 8e77

Shelley D. Minteer*

University of Utah, Salt Lake City, UT

Mobile On Board Membrane Reformer for Fuel Cell Process

4:30 PM, Paper 8f78

Johannes Völler-Blumenroth*,

Thomas Melin, Matthias Wessling

RWTH Aachen University, 52056 Aachen, Germany

(9) Monday, Jun 11, 2:00 PM Inorganic Membranes

InterContinental New Orleans, Pelican I/II

Henk Verweij, Chair

The Ohio State University, Columbus, OH

Ed Ma, Co-Chair

Worcester Polytechnic Institute, Worcester, MA

Development of Dense Cermet Membranes for Hydrogen Separation

2:00 PM, Paper 9a80

U (Balu) Balachandran*, Tae Lee,

C. Y. Park, S.E. Dorris

Argonne National Laboratory, Argonne, IL

Selective Molecular Sieving Through Porous Graphene

2:30 PM, Paper 9b81

Steven P. Koenig*, Luda Wang,

John Pellegrino, J. Scott Bunch

University of Colorado, Boulder, CO

Engineering Carbon Molecular Sieve Hollow Fiber Membranes for Olefin/Paraffin Separation

3:00 PM, Paper 9c82

Liren Xu*, Meha Rungta, William J. Koros

Georgia Institute of Technology, Atlanta, GA

SiC Nanoporous Membranes: Experimental Results and Detailed Molecular Simulations of Their Preparation and Structure

3:30 PM, Paper 9d83

Saber Naserifar (1), Wangxue

Deng (1), Lianchi Lie (2), Hamed

Barghi (1), William Goodard III

(2), Muhammad Sahimi (1),

Theodore Tsotsis* (1)

(1) University of Southern

California, Los Angeles, CA

(2) California Institute of Technology, Pasadena, CA

Hydrogen Production From Syngas Containing H₂S with PSS Supported Pd-Membranes

4:00 PM, Paper 9e85

Alexander S. Augustine*, Reyyan

Koc, Nikolas Kazantzis, Yi Hua Ma

Worcester Polytechnic Institute,

Worcester, MA

Dual Phase Nano-Composite Pt-Cgo Tubular Membranes for O₂ Separation

4:30 PM, Paper 9f86

Xiling Tang*, Henk Verweij

The Ohio State University,

Columbus, OH

(10) Monday, Jun 11, 2:00 PM Membrane Reactors and Bioreactors

InterContinental New Orleans, Poydras

Theo Tstosis, Chair

University of Southern California

Jamie A. Hestekin, Co-Chair

University of Arkansas,

Fayetteville, AR

On-Board COX Free H₂ Generation by for Portable Device Applications Using a Catalytic Hollow Fibre Membrane Micro Reactor

2:00 PM, Paper 10a87

F.R. García-García*, M.A.

Rahman, S. Kamonpan, K. Li

Imperial College London, London

SW7 2AZ, UK, United Kingdom

A Multi-Functional Membrane-Based System for the Destruction of Chemical Warfare Agents

2:30 PM, Paper 10b.....91

Yousef Motamedhashemi (1), Majid

Monji (1), Doug Parsley (2), Paul

K. T. Liu (2), Nitin Nair (1), Fokion

Egolfopoulos (1), Theodore

* Denotes Speaker

Tsotsis (1)*
(1) University of Southern California, Los Angeles, CA
(2) Media and Process Technology, Inc., Pittsburgh, PA

Scale-up of a Pervaporation Membrane Assisted Transesterification Reactor for the Butyl Acetoacetate Production

3:00 PM, Paper 10c93
Fan Zhang (1), Mary E. Rezac (1), Praveen Kosaraju (2), Stuart Nemser (2)*
(1) Kansas State University, Manhattan, KS
(2) Compact Membrane Systems, Inc, Wilmington, DE

Novel Biofilm-MBR Concept with Zero Energy Consumption for Air Scouring and Permeate Production

3:30 PM, Paper 10d94
Igor Ivanovic (1), TorOve Leiknes (2)*
(1) Norwegian University of Science and Technology (NTNU), Trondheim, Norway
(2) NTNU, Trondheim, Norway

Reduction of Colloidal Particles In Intensive Rearing of Cod Larvae (Gadus morhua) In Recirculating Aquaculture System (RAS) Applying a Membrane Bioreactor (MBR)

4:00 PM, Paper 10e96
Astrid Buran Holan, Per-Arvid Wold, Kari Attramadal, TorOve Leiknes*
NTNU, Trondheim, Norway

Assessment of Biofouling Behavior and Properties In Activated Sludge Vs. Biofilm MBR Using Confocal Laser Scanning Microscopy (CLSM)

4:30 PM, Paper 10f98
TorOve Leiknes, Cheng Sun*
NTNU, Trondheim, Norway

(11) Monday, Jun 11, 6:00 PM Poster Session
InterContinental New Orleans, La Salle A/B

Jeffrey McCutcheon, Chair

University of Connecticut, Storrs, CT
Mary Laura Lind, Co-Chair
 Arizona State University, Tempe, AZ
Nancy K. Lape, Co-Chair
 Harvey Mudd College, Claremont, CA

Thin-Film Composite Polyamide Membranes for Forward Osmosis Processes in the Various pH Conditions of Feed Solution

Paper 11a.....255
DooRi Kim (1), Jong Hwa Lee (2)*
(1) Woongjin Cematic Co.,Ltd, Gyeonggi-do, South Korea
(2) Woongjin Cematic Co, Suwon, South Korea

Poly(ether-block-amide)/Polyethylene Glycol Blended Membranes for Sour Gas Separation

Paper 11b.....287
Kee Hong Kim (1), Hyung Keun Lee (1), Eun-Hye Cho (2), Kwang Bae Kim (2), Ji Won Rhim (2)*
(1) Korea Institute of Energy Research, Daejeon, South Korea
(2) Hannam University, Daejeon, South Korea

Particle Size Control of Metal-Organic Frameworks by Cryogenic Grinding for Producing Mixed Matrix Membranes

Paper 11c.....321
*Kuang Zhang**
Georgia Institute of Technology, Atlanta, GA

Polyetheramine-Polyhedral Oligomeric Silsesquioxane Organic-Inorganic Hybrid Membranes for CO₂/H₂ and CO₂/N₂ Separation

Paper 11d.....358
Mei Ling Chua (1), Lu Shao (2), Bee-Ting Low (3), You Chang Xiao (1), Tai-Shung Chung (1)*
(1) National University of Singapore, Singapore, Singapore
(2) Harbin Institute of Technology, Harbin, China
(3) Membrane Technology and

Research, Inc (MTR), Menlo Park, CA

Membrane Drying of Ionic Liquid

Paper 11e.....383
Xi Du, Glenn Lipscomb*
University of Toledo, Toledo, OH

Static Mixing Spacers for Spiral Wound Modules

Paper 11f.....384
Jiuqing Liu (1), Ashkan Iranshahi (2), Glenn Lipscomb (2)*
(1) Central South University, Changsha, China
(2) University of Toledo, Toledo, OH

Thin Film Composite Membranes for Forward Osmosis

Paper 11g.....385
Liwei Huang, Ngoc Bui, Jeffrey R. McCutcheon*
University of Connecticut, Storrs, CT

Location of Biological Foulants within a Wet Membrane Structure

Paper 11h.....386
Milagro Marroquin (1), S. Ranil Wickramasinghe (2), Scott M. Husson (1)*
(1) Clemson University, Clemson, SC
(2) University of Arkansas

Fabrication and Characterization of Novel Metal Organic Framework Stabilized Immiscible Polymer Blend

Membranes for Gas Separation
 Paper 11i.....387
*Nimanka Panapitiya**
The University of Texas at Dallas, Richardson, TX

Preparation and Gas Transport Behavior of Polysulfone/MCM-48 Silica Mixed Matrix Membranes

Paper 11j.....388
Griselda Castruita (1), H. Iván Meléndez-Ortiz (2), Alfonso Mercado (2), Luis Alfonso García-Cerda (2), Yibrán A. Perera-Mercado (2)*
(1) Centro de Investigación en

* Denotes Speaker

*Química Aplicada, Saltillo,
Coahuila, Mexico
(2) Centro de Investigación en
Química Aplicada*

**Pervaporation of n-
Butanol/Water and Iso-
Butanol/Water Solutions Using a
PDMS Hollow-Fiber Membrane
Module**

Paper 11k.....389
Peiyuan Li, Patrick Montoya
MedArray, Inc., Ann Arbor, MI*

**Ceramic-Carbonate Dual-Phase
Membrane for High
Temperature Carbon Dioxide
Separation From Nitrogen**

Paper 11l.....392
Tyler T. Norton
Arizona State University, Tempe,
AZ*

**Characterization of Thin Film
Composite Reverse Osmosis
Membranes Using Porosimetry
and X-Ray Computed
Tomography**

Paper 11m.....393
Seetha Soundara Manickam,
Jeffrey R. McCutcheon
University of Connecticut, Storrs,
CT*

**Determination of the Cause of
Mechanical Failure of
Polypropylene Hollow Fibers**

Paper 11n.....394
Xiaoyun Lu (1), Parag Shah (2),
John Pellegrino (3)
(1) University of Colorado at
Boulder, Boulder, CO
(2) university of colorado at
boulder, boulder, CO
(3) University of Colorado,
Boulder, CO*

**Desalination of Brine and
Produced Water by Direct
Contact Membrane Distillation
At Lower As Well As Higher
Temperatures and Pressures**

Paper 11o.....395
Dhananjay Singh, Kamalesh K.
Sirkar
New Jersey Institute of Technology,
Newark, NJ*

**Ester Crosslinkable Polyimide
Hollow Fibers for CO₂ Removal
From Natural Gas**

Paper 11p.....396
Canghai Ma, William J. Koros
Georgia Institute of Technology,
Atlanta, GA*

**Membrane Filtration to
Fractionate Microalgal
Suspensions**

Paper 11q
Melissa Rickman, John
Pellegrino, Robert H. Davis
University of Colorado, Boulder,
CO*

**NSF-REU Site: Engineering
Solutions for Clean Energy
Generation, Storage and
Consumption**

Paper 11r.....398
Jason E. Bara, C. Heath Turner
University of Alabama, Tuscaloosa,
AL*

**Advanced Membrane Material
for Membrane Bio-Reactor**

Paper 11s.....399
Hiroki Minehara, Kouichi Dan,
Yohito Ito, Hiroo Takabatake,
Masahiro Henmi
Toray Industries, Inc., Shiga, Japan*

**CO₂ Gas Transfer Through
Hollow Fiber Membranes**

Paper 11t.....400
Pavlo Kostetskyi (1), Robert P.
Hesketh (2), Tariq Ahmed (3),
Kausar Jahan (1), Shamia Hoque
(1), Yaggya K. Thapa (1), Nicholas
P. Binaco (1)
(1) Rowan University, Glassboro,
NJ
(2) Rowan Univeristy, Glassboro,
NJ
(3) New Jersey Department of
Health and Senior Services,
Sicklerville, NJ*

**Application of Modified
Correction-Factor Analysis to
Solvent Extraction In
Rectangular Membrane Modules
with External Recycle**

Paper 11u.....401
Ho-Ming Yeh
Tamkang University, Tamsui,
Taipei County, Taiwan*

**Developing High-Performance
Cation-Exchange Membranes for
Protein Capture by Graft
Polymerization**

Paper 11v.....402
Heather C. S. Chenette, Scott M.
Husson
Clemson University, Clemson, SC*

**Effects of Polyimide Chemical
Structure On Membrane's Gas
Separation Performance**

Paper 11w.....403
Wulin Qiu, Chien-chiang Chen,
Liren Xu, William J. Koros
Georgia Institute of Technology,
Atlanta, GA*

**Comparison of Chemical and
Electrochemical Coagulation
Pretreatment for Fouling Control
In Integrated Dual Membrane
Systems**

Paper 11x.....404
Mutiara Ayu Sari
University of Houston - Main
Campus, Houston, TX*

**Amine-Functionalized MIL-53
Metal-Organic Framework In
Polyimide Mixed Matrix
Membranes for CO₂/CH₄
Separation**

Paper 11y.....406
Xiao Yuan Chen (1), Vinh-Thang
Hoang (1), Denis Rodrigue (1),
Serge Kaliaguine (2)
(1) University Laval, Quebec city,
QC, Canada
(2) Department of Chemical
Engineering, Laval University,
Quebec, Canada*

**Thermally Rearranged
Polybenzoxazole Hollow Fiber
Membranes for CO₂ Capture**

Paper 11z.....407
Kyung Taek Woo, Jong Myoung
Lee, Seungju Kim, Young Moo Lee
Hanyang Univ., Seoul, South Korea*

**UV Induced Membrane Surface
Modification: Feasibility of CO₂
Capture and Catalytic
Nanoparticles Stabilization**

Paper 11aa256
Clélia Emin (1), Yingying GU*
(1), Isabelle Favier (1), Montserrat*

* Denotes Speaker

Gomez (1), Richard D. Noble (2),
Pierre Aimar (1), Jean-Christophe
Remigy (1), Jean-François Lahitte
(1)
(1) Université Paul Sabatier,
Toulouse, France
(2) University of Colorado,
Boulder, CO

**Linking Free Volume with CO₂
Solubility and Selectivity In Ionic
Liquids and Polymerized Ionic
Liquid Membranes**

Paper 11ab.....258
Matthew S. Shannon* (1), Jason E.
Bara (1), Michelle S. Hindman (1),
A. Christopher Irvin (1), Scott P.O.
Danielsen (2), Jason M. Tedstone
(2)
(1) University of Alabama,
Tuscaloosa, AL
(2) NSF-REU Site: Engineering
Solutions for Clean Energy
Generation, Storage, and
Consumption, Tuscaloosa, AL

**Asymmetric Mixed Matrix
Membranes Fabricated Using a
Spin Coating Technique**

Paper 11ac.....259
Sumudu Wijenayake* (1), Kenneth
J. Balkus Jr. (1), Inga Musselman
(1), John P. Ferraris (2)
(1) The University of Texas at
Dallas, Richardson, TX
(2) University of Texas at Dallas,
Richardson, TX

**Gas Transport Properties of
Poly(dimethylsiloxane)-Silica
Nanocomposite Membranes**

Paper 11ad.....260
Michael Loy*, Nancy K. Lape
Harvey Mudd College, Claremont,
CA

**Contaminant Resistant
Membrane for High-
Temperature Hydrogen
Purification**

Paper 11ae.....261
Andy Tsai (1), Siu-Yue Tam* (2),
Ying-Bing Jiang (1)
(1) University of New Mexico,
Albuquerque, NM
(2) T3 Scientific LLC, Blaine, MN

**Forward Osmosis Membranes
with Ionic Charged Support
Layers**

Paper 11af.....262
Young Hoon Cho*, Hee Dae Lee,
Ho Bum Park
Hanyang University, Seoul, South
Korea

**Preparation and
Characterization of Composite
Hollow Fiber Membrane Using
PEI and PEO Containing Block
Copolymers for SO₂ Separation**

Paper 11ag.....263
KeeHong Kim* (1), Chundong
Park (1), ChanHee Hyeong (1),
HangDae Jo (1), WonKil Choi (1),
JongHak Kim (2), Hyung Keun Lee
(1)
(1) Korea Institute of Energy
Research, Daejeon, South Korea
(2) Yonsei University, Seoul, South
Korea

**Mechanical and Transport
Properties of Nanofiber
Supported Thin Film Composite
Membranes for Forward and
Pressure Retarded Osmosis**

Paper 11ah.....265
Laura A. Hoover* (1), Jessica D.
Schiffman (2), Menachem
Elimelech (1)
(1) Yale University, New Haven,
CT
(2) University of Massachusetts
Amherst, Amherst, MA

**Preparation and Properties of
Sulfonated Poly(arylene ether
sulfone)/Modified
Phosphotungstic Acid Composite
Proton Exchange Membranes**

Paper 11ai.....266
Sang Yong Nam* (1), Deuk Ju Kim
(1), Hae Young Hwang (2), Seong
Yong Ha (3), Seung Moon Woo (1)
(1) Gyeongsang National
University, Jinju, South Korea
(2) Aekyung Petrochemical Co.
Ltd., Daejeon, South Korea
(3) Airrane, Daejeon, South Korea

**Energy Filtered TEM and
Helium Ion Microscopy As Tools
for Membrane Research**

Paper 11aj.....267

Jihua Chen* (1), Dale Hensley (1),
David C. Joy (2), Adam J.
Rondinone (1)
(1) Oak Ridge National
Laboratory, Oak Ridge, TN
(2) University of Tennessee,
Knoxville, Knoxville, TN

**Copper-Charged Antimicrobial
Membranes for Biofouling
Control**

Paper 11ak.....268
Sunitha Asapu* (1), Isabel C.
Escobar (2)
(1) University of Toledo, Toledo,
OH
(2) The University of Toledo,
Toledo, OH

**Stimuli Responsive
Ultrafiltration Membranes
Composed of N-
Isopropylacrylamide (NIPAAm)
and Cellulose Acetate**

Paper 11al.....269
Sneha Chede* (1), Geoffrey D.
Bothun (2), Isabel C. Escobar (1)
(1) The University of Toledo,
Toledo, OH
(2) University of Rhode Island,
Kingston, RI

**Scale-up of a Pervaporation
Membrane Reactor for the
Transesterification Production of
Butyl Acetoacetate**

Paper 11am.....270
Fan Zhang* (1), Mary E. Rezac
(1), Praveen Kosaraju (2), Stuart
Nemser (2)
(1) Kansas State University,
Manhattan, KS
(2) Compact Membrane Systems,
Inc, Wilmington, DE

Ceramic Nanowire Membranes

Paper 11an.....271
Anthony Allegrezza* (1), Jeff
Zhang (2)
(1) Congress State Consulting LLC,
MILFORD, MA
(2) Novariats Corp, Woburn, MA

**Influence of Prior Thermal
History and CO₂ Exposure On
Physical Aging In Thin
Matrimid® Films**

Paper 11ao.....272

* Denotes Speaker

Rajkiran Tiwari, Donald Paul
The University of Texas at Austin,
Austin, TX*

Room Temperature Ionic Liquid (RTIL) Membranes for Biomethane Dehumidification

Paper 11ap.....273
Ryan Amos, Paul Scovazzo
University of Mississippi,
University, MS*

Effect of 2D Nanosheets On Gas Separation Properties In Polymer Nanocomposite Membranes

Paper 11aq.....274
Hee Wook Yoon (1), Seon Mi Yoon (2), Jae Young Choi (2), Ho Bum Park (1)
(1) Hanyang University, Seoul, South Korea
(2) Samsung electronics, Suwon, South Korea*

Immobilization of Peg-Derived Antimicrobial Peptides Onto Reverse Osmosis Membranes to Reduce Biofilm Formation

Paper 11ar.....275
Nitzan Shtreimer Kandiyote (1), Moran Kopel (2), Ehud Banin (2), Roni Kasher (1)
(1) Zuckerberg Institute for Water Research, The Blaustein Institutes for Desert Research, Ben-Gurion University of the Negev, Sde-Boker, Israel
(2) The Institute for Nanotechnology & Advanced Materials, Bar-Ilan University, Ramat-Gan, Israel*

Preparation of Hollow Fiber Membrane In Forward Osmosis

Paper 11as.....277
Eun Joo Jeon (1), Doo Ri Kim (2), Jong Hwa Lee (3), Sung Dae Chi (3), Hee Seok Im (3)
(1) Woongjin chemical Co.,Ltd., Gyeonggi-do, South Korea
(2) Woongjin Cemical Co.,Ltd, Gyeonggi-do, South Korea
(3) Woongjin Cemical Co.,Ltd., Gyeonggi-do, South Korea*

Effect of Operational Mode (Constant Flux or Constant Transmembrane Pressure) and

Surface Modification On Oil/Water Emulsion Fouling Behavior of Polysulfone Ultrafiltration Membranes

Paper 11at.....278
Sirirat Kasemset, Daniel J. Miller, Benny D. Freeman, Mukul M. Sharma
The University of Texas at Austin, Austin, TX*

Perfluoropolymer Membrane Behaves Like a Zeolite Membrane In Dehydration of Aprotic Solvents

Paper 11au.....279
John Tang, Kamallesh K. Sirkar
New Jersey Institute of Technology, Newark, NJ*

Membrane Biofouling Mitigation by Electrical Impedance: Application of An Electrically Conducting Polymer Composite Membrane In a Novel Cross-Flow Cell to Demonstrate Biofouling Limitation

Paper 11av.....280
Charles-François de Lannoy (1), David Jassby (2), Katie Gloe (3), Mark R. Wiesner (1)
(1) Duke University, Durham, NC
(2) CEINT - Center for the Environmental Implications of Nanotechnology, Durham, NC
(3) Virginia Tech, Blacksburg, VA*

Engineering Carbon Molecular Sieve Hollow Fiber Membranes for Olefin/Paraffin Separation

Paper 11aw.....282
Liren Xu, Meha Rungta, William J. Koros
Georgia Institute of Technology, Atlanta, GA*

Forward Osmosis for Refugee Camps and Disaster Relief

Paper 11ax.....283
Ethan Butler, Kyle Horton, Andrew Silva, Jeffrey R. McCutcheon
University of Connecticut, Storrs, CT*

Gas Sorption Studies of ZIF-7 At High Pressures and Temperatures

Paper 11ay.....284

Inga H. Musselman, Edson V. Perez, Mishelle Kochumuttom, Yu Huang, Kenneth J. Balkus Jr., John P. Ferraris
The University of Texas at Dallas, Richardson, TX*

Electrospun Nanofibrous Ultrafiltration Membranes for Plasmid DNA Concentration and Purification

Paper 11az.....285
José Nunes (1), Catherine Nunes (1), Tiago Correia (1), Maria Teresa Pessoa de Amorim (2), Isabel Escobar (3), Ilidio J. Correia (1), João A. Queiroz (1), Antonio Morão (1)
(1) Universidade da Beira Interior, Covilhã, Portugal
(2) Universidade do Minho, Guimarães, Portugal
(3) University of Toledo, Toledo, OH*

Characterization of Thin Film Poly (vinyl alcohol) Hydrogels with Different Immobilized Ligand Groups

Paper 11ba.....288
Danny Nguyen, Audie Thompson, Dawn Harrison, Felecia Nave
Prairie View A&M University, Prairie View, TX*

Investigation of Biofoulant-Membrane Surface Interactions Through Advanced Surface-Sensitive Techniques

Paper 11bb.....289
Gabriela Diaconu, Thomas Schäfer
University of the Basque Country, San Sebastián, Spain*

Mixed-Matrix Membranes Based On Polymer/Ionic Liquid Composites

Paper 11bc.....291
Ana Corres Ortega (1), Cinzia Chiappe (2), Thomas Schäfer (1)
(1) University of the Basque Country, San Sebastián, Spain
(2) University of Pisa, Pisa, Italy*

Temperature Dependence of the Permeability Upper Bound Predicted From Transition State

* Denotes Speaker

Theory and Non-Equilibrium Lattice Fluid Theory

Paper 11bd.....293

Yuecun Lou* (1), Maria R.

Coleman (2), Glenn Lipscomb (1)

(1) University of Toledo, Toledo, OH

(2) the University of Toledo, OH, Toledo, OH

Reactive Nanoparticles Immobilized In Temperature-Responsive Hydrogel for Toxic Organics Degradation

Paper 11be.....294

Li Xiao*, Austin Isner, J. Zach Hilt,

Dibakar Bhattacharyya

University of Kentucky, Lexington, KY

Surface Modification of Thin Film Composite Membranes for Forward and Pressure Retarded Osmosis

Paper 11bf.....295

Jason T. Arena* (1), Kevin K.

Reimund (1), Seetha S. Manickam

(1), Bryan D. McCloskey (2),

Benny D. Freeman (3), Jeffrey R.

McCutcheon (1)

(1) University of Connecticut, Storrs, CT

(2) IBM Almaden Research

Laboratory, San Jose, CA

(3) The University of Texas at Austin, Austin, TX

Medium-Throughput Screening Method for Assessing Pervaporation Performance of Small Flat-Sheet Membrane Samples

Paper 11bg.....297

Leland M. Vane*

U.S. Environmental Protection

Agency, Cincinnati, OH

Performance of Fouling-Resistant Ultrafiltration (UF) Membranes Based On Self-Organizing Comb Copolymers

Paper 11bh.....298

Ayse Asatekin*, William Goodwin,

Steve Pearl

Clean Membranes, Inc.,

Tyngsboro, MA

Sorption and Transport of Water Vapor In Poly(3-

hydroxybutyrate-co-3-hydroxyvalerate) Membranes Via Various Isothermal Crystallization Conditions

Paper 11bi.....299

Shuo-Chi Liu, Chin-Hung Lan*,

Mei-Ling Cheng, Yi-Ming Sun

Yuan Ze University, Chung-Li, Taiwan

Hybrid Membranes for Light Gas Separation

Paper 11bj.....300

Ting Liu*

Texas A&M University, College Station, TX

Highly-Performed Nanofibers-Supported Thin-Film-Composite Membranes for Engineered Osmosis: Fabrication and Characterization

Paper 11bk.....301

Ngoc Bui*, Jeffrey R. McCutcheon

University of Connecticut, Storrs, CT

Physical Gels of a Room Temperature Ionic Liquid: Mechanical Properties and Their Implications for Membrane Gas Separation

Paper 11bl.....303

Victor A. Kusuma*, Rajinder P.

Singh, Cynthia F. Welch, Kathryn

A. Berchtold

Los Alamos National Laboratory,

Los Alamos, NM

Perfluorocyclobutyl Polymer Thin Film Plasticization by CO₂

Paper 11bm.....304

Jinxiang Zhou* (1), Adam T.

Haldeman (2), Earl H. Wagener

(2), Scott M. Husson (1)

(1) Clemson University, Clemson, SC

(2) Tetramer Technologies, LLC, Pendleton, SC

Fundamentals of Selective Ion Transport Through Multilayer Polyelectrolyte Films

Paper 11bn.....305

Chao Cheng* (1), Andriy

Yaroshchuk (2), Merlin L. Bruening

(1)

(1) Michigan State University, East Lansing, MI

(2) Polytechnic University of Catalonia, Barcelona, Spain

Novel Hydrophilic Cast Nylon 6,6 Microfiltration (MF) Membrane Supported Thin Film Composite (TFC) Membrane for Engineered Osmosis (EO)

Paper 11bo.....306

Liwei Huang* (1), Ngoc Bui (1),

Mark T. Meyering (2), Jeffrey R.

McCutcheon (1)

(1) University of Connecticut,

Storrs, CT

(2) 3M Purification INC., Meriden, CT

Alternative Method of Crosslinking Poly(vinyl alcohol) for Hydrophilic Pervaporation Membrane Formation: Free Radical Initiation with Potassium Persulfate

Paper 11bp.....307

Gui Lin*, Michael Abar,

Vasudevan Namboodiri, Richard

G. Meier, Leland M. Vane

U.S. Environmental Protection

Agency, Cincinnati, OH

Poly(ether-block-amide)/Polyethylene Glycol Blended Membranes for Sour Gas Separation

Paper 11bq.....308

Kee Hong Kim (1), Hyung Keun

Lee (1), Eun-Hye Cho (2), Kwang

Bae Kim (2), Seong Ihl Cheong (2),

Ji Won Rhim* (2)

(1) Korea Institute of Energy

Research, Daejeon, South Korea

(2) Hannam University, Daejeon, South Korea

Water Vapor Separation On N₂ Using PEO Containing Block Copolymers and Its Blends with Polyetherimide

Paper 11br.....310

KeeHong Kim*, Chundong Park,

ChanHee Hyeong, HangDae Jo,

WonKil Choi, Hyung Keun Lee

Korea Institute of Energy

Research, Daejeon, South Korea

Graded Hydrophilic Membranes Based On Cellulose Acetate and Their Solute Permeability

Paper 11bs.....311

* Denotes Speaker

Yuichi Hirata*
Shinshu University, Ueda, Japan

Effects of Sulfonated Polysulfone (SPSF) On Performance of Psf/Spsf Alloy Substrate and the Thin-Film-Composite NF and RO Membranes Thereof

Paper 11bt.....312
Yiqun Liu*, Guoyuan Pan
SINOPEC Beijing Research
Institute of Chemical Industry,
Beijing, China

Impact of Stacking Ultrafiltration Membranes with Different Molecular Weight Cut-Offs On the Selective Fractionation of Flaxseed Protein Hydrolysate by Electrodialysis with Ultrafiltration Membranes

Paper 11bu.....313
Alain Doyen (1), Chibuike Udenigwe (2), Patricia Mitchell (3), André Marette (3), Rotimi Aluko (4), Laurent Bazinet* (3)
(1) universit  laval, qu bec, QC, Canada
(2) U. guelph, Guelph, ON, Canada
(3) Universit  Laval, Qu bec, QC, Canada
(4) Univ Manitoba, Winnipeg, MB, Canada

Influence of Membranes Characteristics On Anthocyanins Enrichment of Cranberry Juice by Electrodialysis with Filtration Membrane

Paper 11bv.....314
 ric Husson (1), Monica Araya-Farias (2), Audrey Gagn  (3), Yves Desjardins (3), Laurent Bazinet* (3)
(1) Universit  de Picardie, Amiens, France
(2) universit  Laval, Qu bec, QC, Canada
(3) Universit  Laval, Qu bec, QC, Canada

Comparison of UF and Eduf Technologies for Isolation and Concentration of In Vitro Anti-Diabetic Soy Peptides

Paper 11bw.....315
Cyril Roblet*, Jean Amiot, Genevi ve Pilon, Charles Lavigne, Andr  Marette, Laurent Bazinet

Universit  Laval, Qu bec, QC, Canada

Characterization, Evaluation, and Fouling Analysis of Reverse Osmosis and Nano-Filtration Membranes for Sugar Concentration and Inhibitor

Separation Using Complex Lignocellulosic Biomass Hydrolysate within a Biorefinery
Paper 11bx.....316
Amitkumar Gautam*, Todd Menkhaus
South Dakota School of Mines and Technology, Rapid City, SD

Permselectivities of ZIF-8 in Different Polymer Matrices and in ZIF-8/Ultem  Mixed Matrix Hollow Fiber Membranes for Gas Separations

Paper 11by.....317
Ying Labreche* (1), JR Johnson (2), Ryan P. Lively (2), Joshua A Thompson (2), Daniel Erias (3), David S. Sholl (2), William J. Koros (2)
(1) Georgia Tech, Atlanta, GA
(2) Georgia Institute of Technology, Atlanta, GA
(3) Departamento de Engenharia de Materiais Universidade Federal de S o Carlos

High-Flux Reverse Osmosis Membranes for Brackish Water Desalination

Paper 11bz.....319
Lin Zhao*
The Ohio State University, Columbus, OH

Surface Characterization and Evaluation of Biofilm Growth On Reverse Osmosis Membranes Functionalized with Bio-Active Peptides

Paper 11ca.....322
Marina Yamit Lutskiy*, Shani Avneri, Roza Fainshtein, Sophia Belfer, Zeev Ronen, Roni Kasher
Zuckerberg Institute for Water Research, Ben-Gurion University of the Negev, Sde Boker, Israel

Effects of Low Pressure Air Plasma Activation On the Intrinsic Properties of PVDF

Hollow Fiber Membrane Which Enhances Its Surface Functionalization Properties

Paper 11cb.....324
Swee Hoe Chua*
Siemens Pte Ltd, Singapore, Singapore

Synthesis, Chemical Modifications and Characterizations of 6FDA-NDA/Daba Polyimide Membranes for Pervaporation Dehydration of Ethanol-Water Mixture

Paper 11cc.....326
Ngoc Lieu Le*, Yan Wang, Tai-Shung Chung
National University of Singapore, Singapore, Singapore

The Evolution of Physicochemical and Gas Transport Properties During Thermal Rearrangement of a Polyhydroxyamide (PHA) – the Effect of Conversion, Thermal History and Crosslinking

Paper 11cd.....327
Huan Wang*, Tai-Shung Chung
National University of Singapore, Singapore, Singapore

The Roles of Hydrophilic Nature and Sponge-Like Structure of Membrane Support Layers In the Development of Thin-Film Composite (TFC) Forward Osmosis (FO) Membranes

Paper 11ce.....328
Natalia Widjojo* (1), Tai-Shung Chung (2), Martin Weber (3), Christian Maletzko (4)
(1) BASF South East Asia Pte Ltf, Singapore, Singapore
(2) National University of Singapore, Singapore, Singapore
(3) BASF, Ludwigshafen, Germany
(4) BASF SE, Ludwigshafen, Germany

Fertiliser Drawn Forward Osmosis Desalination: Achieving Water Quality Requirements for Direct Fertigation by Integrating Nanofiltration

Paper 11cg.....329
Sherub Phuntsho*, Ko Kyong Shon, Soleymam Mamisaheby, Fezeh

* Denotes Speaker

Lotfi, Jung Eun Kim
University of Technology Sydney,
Sydney, Australia

**Positively Charged
Nanofiltration (NF) Membranes
Based On UV Grafting for
Effective Removal of Textile Dyes
From Wastewater**

Paper 11ch.....331
Peishan Zhong* (1), Tai-Shung
Chung (1), Martin Weber (2),
Christian Maletzko (2)
(1) National University of
Singapore, Singapore, Singapore
(2) BASF SE Germany,
Ludwigshafen, Germany

**Nanoporous Membranes Based
On Surface-Modified Silica
Colloidal Crystals**

Paper 11ci.....332
Ilya Zharov*
University of Utah, Salt Lake City,
UT

**Polymerisation of Beta
Cyclodextrin and Its
Characterisation by DSC, FTIR
and PxrD**

Paper 11cj.....333
Welcome T. Mhlango*
Mintek, Randburg, South Africa

**Preparation and
Characterization of Polyvinyl
Acetate/Titanium Dioxide Mixed
Matrix Membrane for Gas
Separation**

Paper 11ck.....334
Jamil Ahmad* (1), May-Britt Hagg
(2)
(1) N.T.N.U Trondheim Norway,
Trondheim, Norway
(2) NTNU, Trondheim, Norway

**Magnetically Responsive
Membranes for Water
Treatment**

Paper 11cl.....335
Heath Himstedt* (1), Xianghong
Qian (2), Mathias Ulbricht (3),
Qian Yang (2), S. Ranil
Wickramasinghe (4)
(1) Colorado State Univeristy, Fort
Collins, CO
(2) University of Arkansas,
Fayetteville, AR
(3) Universität Duisburg-Essen,

Essen, Germany
(4) University of Arkansas

**Fouling Control During Surface
Water Microfiltration by
Electrochemical Pretreatment**

Paper 11cm.....336
Neranga Gamage*, Shankar
Chellam
University of Houston, Houston, TX

**Nitrogen-Selective Membranes
for Carbon Capture Applications**

Paper 11co....338
Ekin Ozdogan*, Jennifer Wilcox
Stanford University, Stanford, CA

**Chlorine-Induced Degradation of
Polyamide Active Layers In
Reverse Osmosis and
Nanofiltration Membranes**

Paper 11cn.....340
Jun Young Chung*, Jung-Hyun
Lee, Kathryn L. Beers, Christopher
M. Stafford
National Institute of Standards and
Technology, Gaithersburg, MD

**CO2 Separation Using Room-
Temperature Ionic Liquids with
the Tetracyanoborate Anion**

Paper 11cp.....341
Shannon Mahurin*, Patrick
Hillesheim, Ravichandar Babarao,
De-en Jiang, Sheng Dai
Oak Ridge National Laboratory,
Oak Ridge, TN

**Pervaporation of Bioethanol
Using a PDMS/PEI Composite
Hollow Fiber Membrane**

Paper 11cq.....342
Hong-Joo Lee*, Eun-Jin Cho,
Hyeun-Jong Bae
Chonnam National University,
Gwangju, South Korea

**Membrane Filtration in RAS -
Effects On TANK Bacterial
Communities**

Paper 11cr.....343
Per-Arvid Wold* (1), Astrid Buran
Holan (1), Ingrid Overrein (2),
Dag Altin (3), Kari Attramadal (1),
Gunnvor øie (4), TorOve Leiknes
(1)
(1) NTNU, Trondheim, Norway
(2) Lipotek, Trondheim, Norway
(3) Bio Trix, Trondheim, Norway

(4) SINTEF Fisheries and
Aquaculture, Trondheim, Norway

**Effects of Surface Chemistry and
Membrane Biofouling On
Calcium Phosphate
Mineralization In Desalination of
Wastewater**

Paper 11cs.....346
Yara N. Dahdal (1), Zvi Steiner (1),
Hanna Rapaport (2), Yoram Oren
(1), Roni Kasher* (1)
(1) Ben-Gurion University of the
Negev, Sede Boqer Campus, Israel
(2) Ben-Gurion University of the
Negev, Beer-Sheva, Israel

**Measuring Charge Density In
Thin-Film Composite and Thin-
Film Nanocomposite Membranes**

Paper 11ct.....348
Lamar A. Perry, Orlando
Coronell*
University of North Carolina at
Chapel Hill, Chapel Hill, NC

**Understanding Membrane
Fouling Mechanisms (II):
Experimental Characterization
of Foulant-Membrane
Interactions**

Paper 11cu.....350
Yaolin Liu*
University of Maryland, College
park, MD

**Enzymatic Control of Alginate
Fouling of Ceramic Micro- and
Ultra-Filtration Membranes:
Effect of Solution Chemistry**

Paper 11cv.....351
Dong Chen*, Paul Szostak,
Michael Columbia
Indiana University-Purdue
University, Fort Wayne, IN

**Composition and Kinetics of
Graft-Polymerization Layer of
NF Polyamide Membranes with
Oppositely Charged Monomers**

Paper 11cw.....352
Gagik Ghazaryan*, Sophia Belfer,
Roni Kasher
Zuckerberg Institute for Water
Research, Ben-Gurion University
of the Negev, Sede Boqer, Israel

* Denotes Speaker

Modeling Pressure Retarded Osmosis Assisted Desalination System Performance

Paper 11cx.....355

Jeri Prante*, Amy Childress,
Andrea Achilli
University of Nevada, Reno, NV

Particle Size Control of Metal-Organic Frameworks by Cryogenic Grinding for Producing Mixed Matrix Membranes

Paper 11cy.....356

Kuang Zhang*
Georgia Institute of Technology,
Atlanta, GA

Permselectivities of ZIF-8 In Different Polymer Matrices and In ZIF-8/Ultem® Mixed Matrix Hollow Fiber Membranes for Gas Separations

Paper 11cz.....357

Ying Labreche*
Georgia Tech, Atlanta, GA

Impact of Concentrated Metallic Salts On Anion Exchange Membranes

Paper 11da.....359

Michael A. Kostowskyj*, Bryan K. Boggs, Sasha Gorer, Rebecca L. King, John H. Miller, Ryan J. Gilliam
Calera Corporation, Los Gatos, CA

Remediation of Cellulose Acetate-Based Hollow Fiber Gas Separation Membranes Contaminated by Nonvolatile Hydrocarbons

Paper 11db.....362

Charlie Ulloa*, Xianshe Feng
University of Waterloo, Waterloo, ON, Canada

Synthesis of Hybrid, Ordered Mesoporous Silica Membranes

Paper 11dc.....363

Silo L. Meoto*, Marc-Olivier Coppens
Rensselaer Polytechnic Institute,
Troy, NY

Molecular Dynamics Simulations of Thermoresponsive Poly (N-isopropylacrylamide) and Its Copolymer

Paper 11dd.....364

Hongbo Du (1), S. Ranil Wickramasinghe (2), Xianghong Qian* (1)
(1) University of Arkansas, Fayetteville, AR
(2) University of Arkansas

Carbon Dioxide Sorption and Plasticization of Thin Glassy Polymer Films Tracked by Gas Permeability and Optical Methods

Paper 11de.....365

Norman R. Horn, Donald R. Paul*
University of Texas at Austin,
Austin, TX

Supported Meso-Porous Ceria Membranes

Paper 11df.....366

Melissa C. Schillo (1), Matthew T. Snider (2), Hendrik Verweij* (2)
(1) 3M, St Paul, MN
(2) The Ohio State University, Columbus, OH

Preparation and Characterization of Novel Acetylated Cellulose Ether Membranes for Desalination Applications

Paper 11dg.....367

Jung Im Han* (1), Young Hoon Cho (2), Sung Soo Han (1), Ho Bum Park (2)
(1) Samsung Advanced Institute of Technology, Suwon, South Korea
(2) Hanyang University, Seoul, South Korea

Static Mixing Spacers for Spiral Wound Modules

Paper 11di.....368

Jiuqing Liu* (1), Ashkan Iranshahi (2), Glenn Lipscomb (2)
(1) Central South University, Changsha, China
(2) University of Toledo, Toledo, OH

Thin Film Composite Membranes for Forward Osmosis

Paper 11dj.....369

Liwei Huang*, Ngoc Bui, Jeffrey R. McCutcheon
University of Connecticut, Storrs, CT

Modeling Biofouling, Scaling and Combined Fouling In Reverse Osmosis Membrane Devices

Paper 11dk.....370

Andrea Radu* (1), J.S. Vrouwenvelder (2), M.C.M. van Loosdrecht (1), Cristian Picioreanu (1)
(1) Delft University of Technology, Delft, Netherlands
(2) KAUST, Thuwal, Saudi Arabia

Forward Osmosis for Refugee Camps and Disaster Relief

Paper 11dl.....373

Ethan Butler*, Kyle Horton, Andrew Silva, Jeffrey R. McCutcheon
University of Connecticut, Storrs, CT

A Multi-Dimensional Model for Scaling In Reverse Osmosis Devices

Paper 11dm.....374

Andrea Radu* (1), J.S. Vrouwenvelder (2), M.C.M. van Loosdrecht (1), Cristian Picioreanu (1)
(1) Delft University of Technology, Delft, Netherlands
(2) KAUST, Thuwal, Saudi Arabia

Effect of Membrane Pores Structure/Morphology On Pore Size Characterization

Paper 11dn.....377

Xuemei Liang*
Pall Life Science, Pensacola, FL

Functionalization of Polyaniline Membranes to Enhance Separation of Carbon Dioxide From Methane

Paper 11do.....378

Natalia V. Blinova*, Frantisek Svec
LBNL, Berkeley, CA

A Study On Fouling Resistant Swro Membranes

Paper 11dp.....379

Heekyung Lee* (1), Jongmin Lee (2), Sungpyo Hong (2), Jayoung Koo (2)
(1) Woongjin Chemical Co., Ltd., Gumi, South Korea
(2) Woongjin Chemical Co Ltd., Gumi, South Korea

* Denotes Speaker

Production of Dimethylfuran From Hydroxymethylfurfural, a Biomass Derived Product, Using a Copper-Ruthenium Catalyst Coated Membrane

Paper 11dq.....380

*John Stanford**

*Kansas State University,
Manhattan, KS*

Comparison of Membrane Pretreatment Options for SWRO Operation

Paper 11dr.....381

R.R. Ferlita, R.C. Eck, X. Wang, G. Kim, H. Roh

Doosan Hydro Technology, Tampa, FL

**(12) Tuesday, Jun 12, 8:00 AM
NAMS 2012 Tuesday Keynote - Inga Musselman**

InterContinental New Orleans, La Salle A

Isabel C. Escobar, Chair

The University of Toledo, Toledo, OH

Jamie A. Hestekin, Co-Chair

University of Arkansas, Fayetteville, AR

Stephen M. Ritchie, Co-Chair

*University of Alabama,
Tuscaloosa, AL*

NAMS 2012 Tuesday Keynote - Inga Musselman

8:00 AM, Paper 12a.....100

*Inga H. Musselman**

*The University of Texas at Dallas,
Richardson, TX*

**(13) Tuesday, Jun 12, 9:30 AM
Electro-Separation:
Electrodialysis (ED),
Electrodialysis Reversal (EDR),
Electrodialysis Metathesis (EDM), Electrodeionization (EDI)**

*InterContinental New Orleans,
Acadian I/II*

Ali Sharbat, Chair

New Mexico State University, Las Cruces, NM

Laurent Bazinet, Co-Chair

*Université Laval, Québec, QC,
Canada*

Use of Electrodialysis with Ultrafiltration Membrane for the Simultaneous Enzymatic Hydrolysis Production and Fractionation of Bioactive Peptides From Beta - Lactoglobulin

9:30 AM, Paper 13a.....101

Alain Doyen (1), éric Husson (2),

Laurent Bazinet (3)*

*(1) université laval, québec, QC,
Canada*

*(2) Université de Picardie, Amiens,
France*

*(3) Université Laval, Québec, QC,
Canada*

Reverse Electrodialysis for Sustainable Electricity Production by Coupling Thermal and Salinity Gradients

10:00 AM, Paper 13b.....102

Rahul Patil (1), Jiuqing Liu (2),*

Glenn Lipscomb (1)

(1) University of Toledo, Toledo, OH

*(2) Central South University,
Changsha, China*

Effect of Operating Conditions On Selectivity In Pilot Scale Electrodialysis Reversal Process

10:30 AM, Paper 13c.....103

Leila Karimi (1), Ali Sharbat (2),*

Neil E. Moe (3), Jim Loya (4),

Abbas Ghassemi (2)

(1) New Mexico State University, Institute for Energy and the Environment/WERC, Las Cruces, NM

(2) New Mexico State University, Las Cruces, NM

(3) GE Water & Process Technologies, Las Cruces, NM

(4) New Mexico State University, Institute for Energy and the Environment/WERC, Las Cruces

Electrophoretic and Electroosmotic Flow Through Carbon Nanotube Membranes As Chemical Pumps

11:00 AM, Paper 13d.....104

*Ji Wu (1), Bruce Jackson Hinds**

(2)

*(1) University of Kentucky,
Lexington KY, KY*

*(2) University of Kentucky,
Lexington, KY*

Organic Acid Separation Through Electrodialysis

11:30 AM, Paper 13e.....105

Alexander M. Lopez, Jamie A.*

Hestekin

*University of Arkansas,
Fayetteville, AR*

**(14) Tuesday, Jun 12, 9:30 AM
Gas Separations II**

*InterContinental New Orleans,
Pelican I/II*

Haiqing Lin, Chair

Membrane Technology and Research, Inc., Menlo Park, CA
Frederick F. Stewart, Co-Chair
Idaho National Laboratory, Idaho Falls, ID

An Industrial Separation Wish List

9:30 AM, Paper 14a.....106

Scott T. Matteucci (1), Alexia*

Finotello (2), John Pendergast (2),

Mark Brayden (3)

(1) The Dow Chemical Company, Midland, MI

(2) The Dow Chemical Company, Freeport, TX

(3) Dow Chemical Company, Plaquemine, LA

Long Term Stability of Composite Pd and Pd-Au Membranes In Actual Syngas Atmosphere

10:00 AM, Paper 14b.....107

Yi Hua Ma (1), Federico*

Guazzzone (2), Jacopo Catalano (3),

Ivan Mardilovich (3), Nikolas

Kazantzis (4)

(1) Worcester Polytechnique Institute, Worcester, MA

(2) Worcester Polytechnic Institute, Worcester, MA

(3) Worcester Polytechnic Institute

(4) WPI, Worcester, MA

GAS Separation Membranes Based On Thermally Rearranged (TR) Polymers: Structure-Property Studies

10:30 AM, Paper 14c.....108

Ruilan Guo (1), James E.*

McGrath (2), David F. Sanders*

* Denotes Speaker

(3), Zachary P. Smith (3), Benny D. Freeman (3)

(1) University of Notre Dame, Notre Dame, IN

(2) Virginia Tech, Blacksburg, VA

(3) The University of Texas at Austin, Austin, TX

PIM-1/ Matrimid Blend Membranes for Gas Separation

11:00 AM, Paper 14d.....110

Wai Fen Yong* (1), Fu Yun Li (1),

You Chang Xiao (1), Pei Li (1),

Kumari Pallathadka Pramoda (2),

Yen Wah Tong (1), Tai Shung

Chung (1)

(1) National University of

Singapore, Singapore, Singapore

(2) Institute of Materials Research

and Engineering, Singapore,

Singapore

Ester Crosslinkable Polyimide Hollow Fiber Membranes for CO₂ Removal From Natural Gas

11:30 AM, Paper 14e.....111

Canghai Ma*, William J. Koros

Georgia Institute of Technology,

Atlanta, GA

AFM-Based Aid for Characterizing High Performance Polymeric Membrane Materials

12:00 PM, Paper 14f.....112

Donald J. Stookey* (1), Khoren

Sahagian (2), John R. Klaehn (3),

Eric S. Peterson (3)

(1) Elah Strategies, Chesterfield, MO

(2) Anasys Instruments, Santa Barbara, CA

(3) Idaho National Laboratory, Idaho Falls, ID

(15) Tuesday, Jun 12, 9:30 AM Membrane Distillation

InterContinental New Orleans, Poydras

Kamalesh K. Sirkar, Chair

New Jersey Institute of Technology, Newark, NJ

Neal Chung, Co-Chair

National University of Singapore

Desalination by Airgap Membrane Distillation Using a

Two Hollow-Fiber-Set Membrane Module

9:30 AM, Paper 15a.....113

Dhananjay Singh*, Kamalesh K.

Sirkar

New Jersey Institute of Technology,

Newark, NJ

Membrane Distillation: Hollow Fiber Module Design and CFD Modeling

10:00 AM, Paper 15b.....114

Xing Yang*

Nanyang Technological University

, Singapore, Singapore

Sustainable Operation of Membrane Distillation Under Supersaturation Conditions

10:30 AM, Paper 15c.....117

Kerri Hickenbottom*, Tzahi Cath

Colorado School of Mines, Golden,

CO

Effect of Preparation Variables On Morphology and Water Flux of PVDF Hollow Fiber for Membrane Distillation

11:00 AM, Paper 15d.....118

Lan Ying Jiang*, Zheng Wei Song

Central South University,

Changsha, China

Removal of Sulfur Compounds From Diesel/Crude Oil Using Extractive Membrane Contactor and Supported Liquid Ionic Membrane

11:30 AM, Paper 15e.....119

Garba Yahaya*, Feras Hamad,

Ahmed Bahamdan, Veera

Tammana, Esam Z. Hamad

Saudi Aramco, Dhahran, Saudi

Arabia

(16) Tuesday, Jun 12, 9:30 AM Membrane Formation I

InterContinental New Orleans, La Salle C

Thomas Schafer, Chair

University of the Basque Country, San Sebastián, Spain

Caleb V. Funk, Co-Chair

Dow Water & Process Solutions, Edina, MN

Role of Solvent In Pore Structure of Mixed Matrix Membranes

9:30 AM, Paper 16a.....120

Lauren F. Greenlee*

National Institute of Standards and Technology, Boulder, CO

Asymmetric Reverse Osmosis Sulfonated Poly(aryl ether) Sulfone Copolymer Membranes

10:00 AM, Paper 16b.....121

Derek Stevens* (1), William

Mickols (2)

(1) Dow, Edina, MN

(2) Conoco Phillips, Bartlesville,

Oklahoma

Functionally Crosslinked Dense Film and Asymmetric Hollow Fiber Membranes for Simultaneous H₂S and CO₂ Removal From Sour Gas

10:30 AM, Paper 16c.....122

Brian E. Kraftschik*, William J.

Koros

Georgia Institute of Technology, Atlanta, GA

Ultra-Thin Membrane Fabrication Technology Development for Gas Separation

11:00 AM, Paper 16d.....123

Rajinder P. Singh*, Victor A.

Kusuma, Kevin W. Dudeck,

Kathryn A. Berchtold

Los Alamos National Laboratory,

Los Alamos, NM

Exploration of Delamination In Dual Layer Hollow Fiber Membranes

11:30 AM, Paper 16e.....124

Laurentia Setiawan*

Nanyang Technological University,

Singapore, Singapore

Introduction of a New Dry Process Microporous Membrane Morphology

12:00 PM, Paper 16f.....126

Kristoffer Stokes*, Xiaomin Zhang

Celgard, LLC, Charlotte, NC

(17) Tuesday, Jun 12, 9:30 AM Membrane Transport II

InterContinental New Orleans, La Salle B

Jennifer Wilcox, Chair

Stanford University, Stanford, CA

John Pellegrino, Co-Chair

* Denotes Speaker

University of Colorado, Boulder,
CO

**A Molecular Marker Approach
for Characterization of RO
Membrane and Module Solute
Transport**

9:30 AM, Paper 17a.....127
Sirikarn Surawanvijit (1), John
Thompson (1), Anditya
Rahardianto (1), Val Frenkel (2),
Yoram Cohen (1)*
(1) University of California, Los
Angeles, Los Angeles, CA
(2) ARCADIS U.S. Inc., Emeryville,
CA

**Ion Association Effects In
Partitioning and Transport of
Salt In NF and RO**

10:00 AM, Paper 17b.....128
*Viatcheslav Freger**
Technion - Israel Institute of
Technology, Haifa, Israel

**Fundamentals of Selective Ion
Transport Through Multilayer
Polyelectrolyte Films**

10:30 AM, Paper 17c.....129
Chao Cheng (1), Andriy
Yaroshchuk (2), Merlin Bruening
(1)*
(1) Michigan State University, East
Lansing, MI
(2) Polytechnic University of
Catalonia, Barcelona, Spain

**Modeling Transport Through
Composite Membranes: Film
Morphology, Support Properties
and Their Impact On Flux,
Rejection and Fouling**

11:00 AM, Paper 17d.....130
Guy Z. Ramon (1), Eric M.V.
Hoek (2)*
(1) Princeton University,
Princeton, NJ
(2) University of California, Los
Angeles, Los Angeles, CA

**Temperature Dependence of the
Permeability Upper Bound
Predicted From Transition State
Theory and Non-Equilibrium
Lattice Fluid Theory**

11:30 AM, Paper 17e.....131
Yuecun Lou (1), Maria R.
Coleman (2), Glenn Lipscomb (1)*

(1) University of Toledo, Toledo,
OH
(2) the University of Toledo, OH,
Toledo, OH

**A New Solution for Flow In
Porous Tubes and Channels
Incorporating Darcy's Law**

12:00 PM, Paper 17f.....132
*Nils Tilton (1), Denis Martinand
(1), Eric Serre (2), Richard
Lueptow* (3)*
(1) Université Aix-Marseille,
Marseille, France
(2) CNRS, Marseille, France
(3) Northwestern University,
Evanston, IL

**(18) Tuesday, Jun 12, 2:00 PM
Membrane Formation II
InterContinental New Orleans, La
Salle C**

W. S. Winston Ho, Chair

The Ohio State University,
Columbus, OH

Maria Coleman, Co-Chair

The University of Toledo, Toledo,
OH

**Original Carbon-Free Electroless
Plating Bath for Sequential
Deposition of PdAg Composite
Membranes**

2:00 PM, Paper 18a.....133
Amanda E. Lewis, J. Douglas Way*
Colorado School of Mines, Golden,
CO

**Ultra-Thin Carbon Molecular
Sieve Membrane for
Propylene/Propane Separation**

2:30 PM, Paper 18b.....135
Xiaoli Ma (1), Xiaotong Wei (2),
Jay Kniep (2), Jerry Y.S. Lin (1)*
(1) Arizona State University,
Tempe, AZ
(2) Membrane Technology and
Research, Inc., Menlo Park, CA

**Mixed Matrix Materials with
Hierarchical Fillers As a
Conceptual Framework for the
Design of Multifunctional
Nanocomposite Membranes**

3:00 PM, Paper 18c.....136
Christopher A. Crock, Adam R.
Rogensues, Wenqian Shan,
Volodymyr V. Tarabara*

Michigan State University, East
Lansing, MI

**Development of Novel Composite
Dual-Layer Nanofiltration
Hollow Fiber Membranes for
Water Softening At Low
Operation Pressure**

3:30 PM, Paper 18d.....140
LEI SHI (1), Laurentia Setiawan
(2), Rong Wang (2), Anthony G.
Fane (2)*
(1) Nanyang Technological
University, Singapore, Singapore
(2) Nanyang Technological
University

**Enhanced Surface Charge of
Polyamide Thin Film
Nanocomposite Membrane**

4:00 PM, Paper 18e.....142
Hyeyoung Kong, You-Hwan Son,
Sungsoo Han*
Samsung Advanced Institute of
Technology, Yongin, South Korea

**Imidazole Quartet - I4 - Forming
Water and Proton Dipolar
Channels**

4:30 PM, Paper 18f.....143
Yves-Marie Legrand (1), Yann Le
Duc (1), Mathieu Michau (2),
Arnaud Gilles (1), Arie van der Lee
(1), Sophie Tingry (1), Mihai
Barboiu (1)*
(1) Institut Européen des
Membranes, Montpellier, France
(2) IFP, Lyon, France

**(19) Tuesday, Jun 12, 2:00 PM
Membranes for Bioseparations
InterContinental New Orleans,
Poydras**

Andrew Zydney, Chair

Pennsylvania State University,
University Park, PA

Stephen M. Ritchie, Co-Chair

University of Alabama,
Tuscaloosa, AL

**Electrospun Nanofiber
Membranes for Critical Removal
of Bacteria and Viruses**

2:00 PM, Paper 19a.....146
Gabriel Tkacik, Sal Giglia, Philip
Goddard, Onur Kas, Mikhail
Kozlov*
EMD Millipore, Bedford, MA

* Denotes Speaker

Optimizing Virus Filtration In Biotechnology Processes

2:30 PM, Paper 19b.....N/A

*Willem Kools**

*EMD Millipore corporation,
Billerica, MA*

Ultrafiltration of Highly Concentrated Monoclonal Antibody Solutions

3:00 PM, Paper 19c.....148

Elaheh Binabaji (1), Suma Rao (2), Andrew Zydney (1)
(1) The Pennsylvania State University, University Park, PA
(2) Amgen Inc., Thousand Oaks, CA*

Development and Characterization of High Performance Functionalized Membranes for Antibody Adsorption

3:30 PM, Paper 19d.....149

Jayraj Shethji, Stephen M. Ritchie
University of Alabama, Tuscaloosa, AL*

Developing High-Performance Cation-Exchange Membranes for Protein Capture by Graft Polymerization

4:00 PM, Paper 19e.....150

Heather C. S. Chenette, Scott M. Husson
Clemson University, Clemson, SC*

Potential of Fluorescence Spectroscopy and Principal Component Analysis for the Characterization of Antioxidant Capacity of Soy Protein Hydrolysate Fractionation by Sequential Membrane Ultrafiltration and Nanofiltration

4:30 PM, Paper 19f.....151

Sahan A. Ranamukhaarachchi, Ramila H. Peiris, Christine Moresoli
University of Waterloo, Waterloo, ON, Canada*

(20) Tuesday, Jun 12, 2:00 PM Pressure Retarded Osmosis and Forward Osmosis I

InterContinental New Orleans, Acadian I/II

Edward G. Beaudry, Chair

Hydration Technology Innovations, LLC, Albany, OR

Mary Laura Lind, Co-Chair

Arizona State University, Tempe, AZ

A Standard Methodology for Evaluating Membrane Performance In Engineered Osmosis

2:00 PM, Paper 20a.....152

Tzahi Cath (1), Menachem Elimelech (2), Jeffrey McCutcheon (3), Robert McGinnis (4), Andrea Achilli (5), Daniel Anastasio (3), Adam Brady (1), Amy Childress (6), Isaac Farr (7), Nathan Hancock (4), Jason Lampi (7), Long Nghiem (8), Ming Xie (9), Ngai Yin Yip (2)
(1) Colorado School of Mines, Golden, CO
(2) Yale University, New Haven, CT
(3) University of Connecticut, Storrs, CT
(4) Oasys Water, Boston, MA
(5) University of Nevada, Reno, NV
(6) University of Nevada, Reno, NV
(7) Hydration Technology Innovations, Albany, OR
(8) University of Wollongong, Wollongong, Australia
(9) Wollongong University, Wollongong, Australia*

PRO Power Generation with Natural Salinity Gradients: How Much Energy Is Available? and What Power Densities Can Be Achieved?

2:30 PM, Paper 20b.....154

Ngai Yin Yip (1), Alberto Tiraferri (1), William A. Phillip (2), Jessica D. Schiffman (3), Laura A. Hoover (1), Menachem Elimelech (1)
(1) Yale University, New Haven, CT
(2) University of Notre Dame, Notre Dame, IN
(3) University of Massachusetts Amherst, Amherst, MA*

Design and Performance of Thin Film Composite (TFC) Membrane for Forward Osmosis

(FO) and Pressure Retarded Osmosis (PRO) Applications

3:00 PM, Paper 20c.....156

Tilak Gullinkala, Isaac Farr, Upen Bharwada
Hydration Technology Innovations, Albany, OR*

Molecular Design of Membranes for Osmotic Power Generation

3:30 PM, Paper 20d.....157

Xue Li (1), Sui Zhang (2), Gang Han (3), Shi Peng Sun (1), Panu Sukitpaneenit (1), Tai Shung Chung (1)
(1) National University of Singapore, Singapore, Singapore
(2) National University of Singapore, Singapore, SC, Singapore
(3) National University of Singapore*

Hydrophilic Electrospun Nanofibrous Mat: An Effective Support for High Osmotic Flux Thin-Film-Composite Membrane

4:00 PM, Paper 20e.....159

Ngoc Bui, Jeffrey R. McCutcheon
University of Connecticut, Storrs, CT*

Polydopamine Modified Thin Film Composite Membranes for Forward and Pressure Retarded Osmosis.....161

4:30 PM, Paper 20f

Jason T. Arena (1), Seetha S. Manickam (1), Kevin K. Reimund (1), Bryan D. McCloskey (2), Benny D. Freeman (3), Jeffrey R. McCutcheon (1)
(1) University of Connecticut, Storrs, CT
(2) IBM Almaden Research Laboratory, San Jose, CA
(3) The University of Texas at Austin, Austin, TX*

(21) Tuesday, Jun 12, 2:00 PM UF and MF
InterContinental New Orleans, Pelican I/II

Uwe Beuscher, Chair

W.L. Gore & Associates

Tarun Poddar, Co-Chair

W. L. Gore, Elkton, MD

* Denotes Speaker

**Effect of Operational Mode
(Constant Flux or Constant
Transmembrane Pressure) and
Surface Modification On
Oil/Water Emulsion Fouling
Behavior of Polysulfone
Ultrafiltration Membranes**

2:00 PM, Paper 21a.....163

Sirirat Kasemset, Daniel J. Miller,
Benny D. Freeman, Mukul M.
Sharma
The University of Texas at Austin,
Austin, TX*

**Understanding and Improving
Self-Assembled Block Copolymer
Membranes with Aligned
Cylindrical Nanopores**

2:30 PM, Paper 21b.....164

MaryTheresa M. Pendergast (1),
Rachel Dorin (2), William A.
Phillip (3), Ulrich Weisner (2),
Eric M.V. Hoek (1)
(1) University of California, Los
Angeles, Los Angeles, CA
(2) Cornell University, Ithaca, NY
(3) University of Notre Dame,
Notre Dame, IN*

**Coating Ultrafiltration
Membranes with Iron
Nanoparticles to Enhance
Operation During Periods of
Severe Algal Blooms**

3:00 PM, Paper 21c.....165

S Assiyeh Alizadeh Tabatabai (1),
Maria D. Kennedy (1), Jan C.
Schipper (1), Gary L. Amy (2)
(1) UNESCO-IHE, Delft,
Netherlands
(2) 4700 King Abdullah University
of Science and Technology,
Thuwal, Saudi Arabia*

**Location of Biological Foulants
within a Wet Membrane
Structure**

3:30 PM, Paper 21d.....167

Milagro Marroquin (1), S. Ranil
Wickramasinghe (2), Scott M.
Husson (1)
(1) Clemson University, Clemson,
SC
(2) University of Arkansas*

**Characterization of Polymeric
Nonwovens Using Porosimetry,
Porometry and X-Ray Computed
Tomography**

4:00 PM, Paper 21e.....168

Seetha Soundara Manickam,
Jeffrey R. McCutcheon
University of Connecticut, Storrs,
CT*

**Self-Adaptive Integrated
Ultrafiltration (UF)/Reverse
Osmosis (RO) Desalination
System**

4:30 PM, Paper 21f.....169

Han Gu (1), Larry Gao (1),
Anditya Rahardianto (1), Martin
Heijnen (2), Peter Berg (2), Josef
Wunram (2), Panagiotis D.
Christofides (1), Yoram Cohen (1)
(1) University of California, Los
Angeles, Los Angeles, CA
(2) inge GmbH, Greifenberg,
Germany*

**(0) Tuesday, Jun 12, 5:00 PM
NAMS Business Meeting**

*InterContinental New Orleans,
Poydras*

Keith Murphy, Co-Chair

*Air Products and Chemicals Inc.,
Saint Louis, MO*

**(0) Tuesday, Jun 12, 6:30 PM
NAMS Banquet**

*InterContinental New Orleans, La
Salle A/B*

Isabel C. Escobar, Chair

*The University of Toledo, Toledo,
OH*

**(22) Wednesday, Jun 13, 8:00
AM**

**NAMS 2012 Wednesday Keynote
- Andrew Livingston**
*InterContinental New Orleans, La
Salle A*

Isabel C. Escobar, Chair

*The University of Toledo, Toledo,
OH*

Jamie A. Hestekin, Co-Chair

*University of Arkansas, Fayetteville,
AR*

Stephen M. Ritchie, Co-Chair

*University of Alabama,
Tuscaloosa, AL*

**NAMS 2012 Wednesday Keynote
- Andrew Livingston**

8:00 AM, Paper 22a.....171

Andrew G. Livingston
Imperial College London, London,
United Kingdom*

**(23) Wednesday, Jun 13, 9:30
AM**

Fouling and Monitoring
*InterContinental New Orleans, La
Salle B*

Antonio Morao, Chair

*Universidade da Beira Interior,
Covilhã, Portugal*

Isabel C. Escobar, Co-Chair

University of Toledo, Toledo, OH

**Gold-Coated Oligoamide
Mimetic of Thin Film Composite
Nanofiltration Membrane
Synthesized Using Layer
Chemistry for Study of
Adsorption of Foulants and
Surfactants**

9:30 AM, Paper 23a.....173

Rajender Kumar (1), Roni Kasher
(2)*

*(1) Zuckerberg Institute for Water
Research, Jacob Blaustein*

*Institutes for Desert Research, Ben-
Gurion University of the Negev,
Sede Boqer, Israel*

*(2) Zuckerberg Institute for Water
Research, Ben-Gurion University
of the Negev, Sde Boker, Israel*

**Understanding Membrane
Fouling Mechanisms (I):
Molecular Simulations of
Foulant-Membrane Interactions**

10:00 AM, Paper 23b.....176

*Yuan Xiang**

*The George Washington
University, Washington DC, DC*

**Ultrasonic Control of Ceramic
Membrane Fouling Caused by
Synthetic and Surface Waters:
Effects of NOM, pH and Calcium**

10:30 AM, Paper 23c.....177

Dong Chen (1), Yuan Gao (2),
Linda K. Weavers (2), Harold W.
Walker (2)*

*(1) Indiana University-Purdue
University, Fort Wayne, IN*

*(2) The Ohio State University,
Columbus, OH*

**The Impact of Cake
Compressibility In Coagulation-**

* Denotes Speaker

Microfiltration of Natural Organic Matter (NOM)

11:00 AM, Paper 23d.....178

*Gema Sakti Raspati**, *Thomas Meyn*, *TorOve Leiknes*
Norwegian University of Science and Technology (NTNU),
Trondheim, Norway

Responsive Ultrafiltration Membranes Composed of N-Isopropylacrylamide (NIPAAm) and Cellulose Acetate

11:30 AM, Paper 23e.....180

*Sneha Chede** (1), *Geoff Bothun* (2), *Isabel C. Escobar* (1)
(1) *The University of Toledo*,
Toledo, OH
(2) *University of Rhode Island*,
Kingston, RI

Monitoring of Long-Term Irreversible Membrane Fouling of Pilot-Scale Drinking Water Ultrafiltration Systems Using Fluorescence Excitation-Emission Matrix Analysis

12:00 PM, Paper 23f.....181

*Ramila H. Peiris** (1), *Magdalena Jaklewicz* (2), *Hector M. Budman* (1), *Raymond Legge* (1), *Christine Moresoli* (1)
(1) *University of Waterloo*,
Waterloo, ON, Canada
(2) *GE Power & Water, Water & Process Technologies*, *Oakville, ON, Canada*

(24) Wednesday, Jun 13, 9:30 AM

Membrane-Based CO₂ Capture
InterContinental New Orleans, La Salle C

Jason E. Bara, Chair

University of Alabama,
Tuscaloosa, AL

Tim Merkel, Co-Chair

Membrane Technology and Research, Inc., *Menlo Park, CA*

Hybrid Membrane/Absorption Process for Post-Combustion CO₂ Capture

9:30 AM, Paper 24a.....182

*Shiguang Li** (1), *Dennis Rocha* (1), *S. James Zhou* (1), *Howard Meyer* (1), *Benjamin Bikson* (2), *Yong Ding* (2)

(1) *Gas Technology Institute, Des Plaines, IL*

(2) *PoroGen Corp., Woburn, MA*

CO₂ Capture by Sub-Ambient Membrane Operation

10:00 AM, Paper 24b.....184

*David Hasse** (1), *S. S. Kulkarni* (2), *Edgar S. Sanders* (3), *Elizabeth Corson* (4), *Jean-Pierre Tranier* (5)
(1) *Air Liquide, Newark, DE*
(2) *AL-DRTC, Newark, DE*
(3) *MEDAL - Air Liquide, Newport, DE*
(4) *Air Liquide*
(5) *Air Liquide, Champigny-sur-Marne, France*

CO₂ Capture From Power Plant Flue Gas by Polaris Membranes: Updates On Field Demonstrations

10:30 AM, Paper 24c.....185

*Xiaotong Wei**, *Karl D. Amo*, *Richard Baker*, *Jenny He*, *Jurgen Kaschemekat*, *Tim Merkel*, *Saurabh Pande*, *Lloyd S. White*
Membrane Technology and Research, Inc., *Menlo Park, CA*

Physically Gelled Ionic Liquids: Solid Membrane Materials with Liquidlike Gas Transport Properties, Innovative Membranes for Post-Combustion CO₂ Capture

11:00 AM, Paper 24d.....187

*Phuc Tien Nguyen**, *Bret A. Voss*, *Douglas L. Gin*, *Richard D. Noble*
University of Colorado, Boulder, CO

Poly(RTIL)-RTIL Composite Membrane for CO₂ Separation From the Flue Gas

11:30 AM, Paper 24e.....188

*Pei Li** (1), *D. R. Paul* (2), *Tai-Shung Chung* (3)
(1) *national university of singapore, singapore, Singapore*
(2) *The University of Texas at Austin, Austin, TX*
(3) *National University of Singapore, Singapore, Singapore*

Parametric Study of Transport Properties of Hollow Fiber Membranes Containing Ionic

Liquids for Pre-Combustion CO₂ Capture

12:00 PM, Paper 24f.....189

*Shan Wickramanayake** (1), *David Hopkinson* (2), *Christina Myers* (3), *David Luebke* (4)
(1) *US DOE /NETL/URS Energy and Construction*, *Pittsburgh, PA*
(2) *National Energy Technology Laboratory*, *Morgantown, WV*
(3) *National Energy Technology Laboratory*, *Pittsburgh, PA*
(4) *US DOE/NETL*, *Pittsburgh, PA*

(25) Wednesday, Jun 13, 9:30 AM

Membranes for Sustainability
InterContinental New Orleans, Pelican I/II

Sudhir Kulkarni, Chair

Air Liquide

Shiguang Li, Co-Chair

Gas Technology Institute, Des Plaines, IL

Howard S. Meyer, Co-Chair

Gas Technology Institute, Des Plaines, IL

Selective Electrospun Nanofibrous Membranes for Water Vapour Transport Applications

9:30 AM, Paper 25a.....190

*Ryan Huizing** (1), *Walter Merida* (2), *Frank Ko* (2)
(1) *Dpoint Technologies*,
Vancouver, BC, Canada
(2) *University of British Columbia*

Membrane Based Enthalpy Exchangers for Efficient Air Conditioning

10:00 AM, Paper 25b.....193

*Sebastian Koester**, *Thomas Melin*, *Matthias Wessling*
RWTH Aachen University, *52056 Aachen, Germany*

Room Temperature Ionic Liquid (RTIL) Membranes for Biomethane Dehumidification

10:30 AM, Paper 25c.....195

*Ryan Amos**, *Paul Scovazzo*
University of Mississippi,
University, MS

Perfluorocyclobutyl Polymer Thin Film Plasticization by CO₂

* Denotes Speaker

11:00 AM, Paper 25d.....196
Jinxiang Zhou (1), Adam T. Haldeman (2), Earl H. Wagener (2), Scott M. Husson (1)*
(1) *Clemson University, Clemson, SC*
(2) *Tetramer Technologies, LLC, Pendleton, SC*

A High-Flux Polyimide As a Contender for CO₂ Recovery From Flue Gas

11:30 AM, Paper 25e.....197
Ryan P. Lively, Michelle Dose, Liren Xu, JR Johnson, Ke Zhang, Justin Vaughn, Megan E Lydon, Joshua A Thompson, Jong Suk Lee, Lucy Liu, Zushou Hu, Matthew Realf, William J. Koros*
Georgia Institute of Technology, Atlanta, GA

Membranes for Oxygen Enrichment: Higher Permeance or Higher Selectivity?

12:00 PM, Paper 25f.....199
Haiqing Lin, Meijuan Zhou, Jennifer Ly, Jimmy Vu, Tim Merkel*
Membrane Technology and Research, Inc., Menlo Park, CA

(26) Wednesday, Jun 13, 9:30 AM
Pervaporation and Vapor Separation
InterContinental New Orleans, Poydras

Leland M. Vane, Chair
U.S. Environmental Protection Agency, Cincinnati, OH
Ivy Huang, Co-Chair
Membrane Technology and Research

A Low-Energy, Hybrid Distillation / Membrane Separation Process Design for Solvent Dehydration

9:30 AM, Paper 26a.....201
Ivy Huang (1), Richard Baker (2)*
(1) *Membrane Technology and Research, Menlo Park, CA*
(2) *Membrane Technology and Research, Inc., Menlo Park, CA*

Perfluorinated Membranes for Pharmaceutical Processing

10:00 AM, Paper 26b.....202

John Tang, Kamalesh K. Sirkar*
New Jersey Institute of Technology, Newark, NJ

Layer-by-Layer Self-Assembled Polyelectrolyte Membranes for Solvent Dehydration by Pervaporation

10:30 AM, Paper 26c.....203
Ying Zhang (1), Ji Won Rhim (2), Xianshe Feng (1)*
(1) *University of Waterloo, Waterloo, ON, Canada*
(2) *Hannam University, Daejeon, South Korea*

The Role of Operation Conditions In the Pervaporation Process — Pervaporation Dehydration of Ethylene Glycol Via PBI/PEI Hollow Fiber Membranes

11:00 AM, Paper 26d.....204
Yan Wang (1), Mike Gruender (2), Tai-Shung Chung (1)*
(1) *National University of Singapore, Singapore, Singapore*
(2) *PBI Performance Products, Inc., Charlotte, NC*

Integrated Distillation-Membrane Process for Acetone-Butanol-Ethanol (ABE) Recovery From Surrogate and Actual Fermentation Broth: Separation Energy Efficiency and Fate of Secondary Fermentation Products

11:30 AM, Paper 26e.....205
Leland M. Vane (1), Franklin R. Alvarez (2), Laura Rosenblum (3), Shekar Govindaswamy (4)*
(1) *U.S. Environmental Protection Agency, Cincinnati, OH*
(2) *U.S. EPA, Cincinnati, OH*
(3) *Shaw Environmental & Infrastructure, Inc., Cincinnati, OH*
(4) *Lakeshore Engineering Services, Inc., Cincinnati, OH*

The Potential of the HybSi Ceramic Membrane In Process Intensification

12:00 PM, Paper 26f.....206
*Frans M. Velterop**
Pervatech BV, Enter, Netherlands

(27) Wednesday, Jun 13, 9:30 AM

Session in Memory of Bill Light
InterContinental New Orleans, Acadian I/II

Jamie A. Hestekin, Chair
University of Arkansas, Fayetteville, AR

Isabel C. Escobar, Chair
University of Toledo, Toledo, OH

Stephen M. Ritchie, Co-Chair
University of Alabama, Tuscaloosa, AL

In Remembrance of Bill Light

9:30 AM, Paper 27a.....208

*David LaMonica**
Sepro Membranes, Inc., Oceanside, CA

Polyelectrolyte Functionalized Membranes From NF Type Separations to Catalysis

10:00 AM, Paper 27b.....209
Dibakar Bhattacharyya, Li Xiao, Scott Lewis, Minghui Gui, Vasile Smuleac*
University of Kentucky, Lexington, KY

New Insights Into Transport Through Composite NF/RO Membranes

10:30 AM, Paper 27c.....N/A
*Eric Hoek**
University of California, Los Angeles, Los Angeles, CA

Evolution of Two Polymeric Nanofiltration Membranes Following Ion Beam Irradiation
11:00 AM, Paper 27d.....211
*Isabel C. Escobar**
The University of Toledo, Toledo, OH

Multifunctional MF and UF Membranes Via Cationic Polymerization of Substituted Styrenes

11:30 AM, Paper 27e.....212
Stephen M. Ritchie, Jayraj Shethji*
University of Alabama, Tuscaloosa, AL

(28) Wednesday, Jun 13, 2:00 PM
Gas Separations III
InterContinental New Orleans, Pelican I/II

Atsushi Morisato, Chair

* Denotes Speaker

Cameron-Cynara Membrane Systems
Surender Reddy Venna, Co-Chair
Georgia Institute of Technology, Atlanta, GA

6FDA-Based Polyimide Membranes with Different Chemical Structures for Gas Separation

2:00 PM, Paper 28a.....213
*Wulin Qiu**, Chien-chiang Chen, Liren Xu, William J. Koros
Georgia Institute of Technology, Atlanta, GA

Sorption and Transport Behavior of Small Gas Molecules In TR-Polymers

2:30 PM, Paper 28b.....214
*Seungju Kim**, Young Moo Lee
Hanyang University, Seoul, South Korea

Micro-Structural Optimization of Polybenzimidazole-Based Membranes for H₂/CO₂ Separation At Elevated Temperatures

3:00 PM, Paper 28c.....215
*Rajinder P. Singh** (1), Li Xin (2), Kevin W. Dudeck (1), Brian C. Benicewicz (2), Kathryn A. Berchtold (1)
(1) Los Alamos National Laboratory, Los Alamos, NM
(2) University of South Carolina, Columbia, SC

Maximizing Hydrocarbon Liquids Recovery While Producing High Purity CO₂: New Operation Strategy for Membrane Based CO₂ Removal Facilities

3:30 PM, Paper 28d.....216
*Jason Dietrich** (1), Ed Mahley (1), Rick Peters (2)
(1) Cameron, Antioch, CA
(2) Cameron, Houston, TX

Synthesis and Characterization of Crosslinked Polyimide Membranes for GAS Separation Applications

4:00 PM, Paper 28e.....217

*Ruilan Guo** (1), James E. McGrath* (2), Kyle Gaines (2), David F. Sanders (3), Zachary P. Smith (3), Benny D. Freeman (3)
(1) University of Notre Dame, Notre Dame, IN
(2) Virginia Tech, Blacksburg, VA
(3) The University of Texas at Austin, Austin, TX

Polymeric Membrane for Hydrogen Purification and the Effect of Carbon Monoxide On Its Gas Separation Performance

4:30 PM, Paper 28f.....219
*Hang Zheng Chen** (1), Tai Shung Chung (2)
(1) National University of Singapore, Singapore, Singapore
(2) National University of Singapore, Singapore, Singapore

(29) Wednesday, Jun 13, 2:00 PM Membranes for Water Treatment

InterContinental New Orleans, La Salle C

Yoram Cohen, Chair

University of California, Los Angeles, Los Angeles, CA

Ramesh Bhawe, Co-Chair

Oak Ridge National Laboratory, Oak Ridge, TN

Relating Contaminant Rejection by Thin-Film Composite Membranes to the Charge Density In Membrane Active Layers

2:00 PM, Paper 29a.....220
*Orlando Coronell** (1), Baoxia Mi (2), Benito J. Mariñas (3), David G. Cahill (3)
(1) University of North Carolina at Chapel Hill, Chapel Hill, NC
(2) University of Maryland, College Park, MD
(3) University of Illinois at Urbana-Champaign, Urbana, IL

Molecular Layer-by-Layer Assembly of Model Membranes for RO and NF Applications

2:30 PM, Paper 29b.....222
Peter M. Johnson (1), Edwin P. Chan (2), Christopher M. Stafford* (2)
(1) National Institute of Standards

and Technology (NIST), Gaithersburg, MD
(2) National Institute of Standards and Technology, Gaithersburg, MD

Ultra-Thin Pore-Spanning Biomimetic Membrane Embedded with Aquaporin Z In Forward Osmosis

3:00 PM, Paper 29c.....223
*Honglei Wang**, Tai-Shung Chung, Yen Wah Tong, Kandiah Jeyaseelan, Arunmozhiarasi Armugam, Zaichun Chen, Minghui Hong
National University of Singapore, Singapore, Singapore

Microcapillary Films As Reverse Osmosis Membrane Supports

3:30 PM, Paper 29d.....224
*Caleb V. Funk**, Mike Koreltz
Dow Water & Process Solutions, Edina, MN

Evaluation of A Green and Sustainable MULTI-Barrier WATER Treatment System for Removal of Enteric VIRUS IN Drinking WATER

4:00 PM, Paper 29e.....225
*Vasudevan Namboodiri** (1), Nur Muhammad (2), E. Radha Krishnan (3), Andrew Zeigler (4), Jesse Rodriguez (5), Craig Patterson (6)
(1) U.S. Environmental Protection Agency, Cincinnati, OH
(2) Shaw Environmental, Cincinnati, OH
(3) Shaw Environmental, Inc., Cincinnati, OH
(4) Waterline Technology, Mansfield, OH
(5) Aqua Treatment Service, Mechanicsburg, PA
(6) USEPA, Cincinnati, OH

Desalination of Brine and Produced Water by Direct Contact Membrane Distillation At Lower As Well As Higher Temperatures and Pressures

4:30 PM, Paper 29f.....226
*Dhananjay Singh**, Kamallesh K. Sirkar
New Jersey Institute of Technology, Newark, NJ

(30) Wednesday, Jun 13, 2:00 PM

* Denotes Speaker

Microorganism Interactions with Porous Membranes

InterContinental New Orleans, Poydras

Ruth E. Baltus, Chair

Clarkson University, Potsdam, NY
Shankar Chellam, Chair
University of Houston, Houston, TX

Effect of Iron Electrocoagulation Pretreatment On Virus Reduction During Surface Water Microfiltration

2:00 PM, Paper 30a.....227

Charan Tej Tanneru, Shankar Chellam*

University of Houston, Houston, TX

Polyelectrolyte Multilayers As Antiadhesive Sacrificial Membrane Films: A Novel Approach to Virus Concentration for Detection

2:30 PM, Paper 30b.....229

*Elodie V. Pasco, Irene Xagorarakis, Syed A. Hashsham, Merlin L. Bruening, Volodymyr V. Tarabara**
Michigan State University, East Lansing, MI

Studies On the Interactions of Biological and Natural Organic Matter On Polyelectrolyte and Silver Nanoparticle Modified Microfiltration Membranes

3:00 PM, Paper 30c.....232

Fatou Diagne (1), Ramamoorthy Malaisamy (1), Vic Boddie (1), R.David Holbrook (2), Broderick Eribo (1), Kimberly L. Jones (1)*
(1) Howard University, Washington, DC
(2) National Institute of Standards and Technology, Gaithersburg, MD

Effects of Particle Morphology On the Anti-Microbial and Anti-Adhesion Performances of Silver Embedded Polysulfone Membranes and Rate of Silver Leaching

3:30 PM, Paper 30d.....233

Meng Hu, Kai Zhong, Sheryl H. Ehrman, Baoxia Mi*
University of Maryland, College Park, MD

Interfacial Hydrodynamics – New Insight On the Drag Force Induced by Permeation Through a Membrane

4:00 PM, Paper 30e.....235

Guy Z. Ramon (1), Eric MV. Hoek (2), Herbert E. Huppert (3), Howard A. Stone (1)*
(1) Princeton University, Princeton, NJ
(2) University of California, Los Angeles, Los Angeles, CA
(3) Cambridge University, Cambridge, United Kingdom

Bacterial Deposition and Fouling During Dead-End Microfiltration

4:30 PM, Paper 30f.....236

Shankar Chellam (1), Appala Raju Badireddy (2), Nick Cogan (3)*
(1) University of Houston, Houston, TX
(2) Center for the Environmental Implications of NanoTechnology, Durham, NC
(3) Florida State, Tallahassee, FL

(31) Wednesday, Jun 13, 2:00 PM Pressure Retarded Osmosis and Forward Osmosis II

InterContinental New Orleans, Acadian I/II

Mary Laura Lind, Chair

Arizona State University, Tempe, AZ

Edward G. Beaudry, Co-Chair

Hydration Technology Innovations, LLC, Albany, OR

Novel Hydrophilic Cast Nylon 6,6 Microfiltration (MF) Membrane Supported Thin Film Composite (TFC) Membrane for Engineered Osmosis (EO)

2:00 PM, Paper 31a.....237

Liwei Huang (1), Ngoc Bui (1), Mark T. Meyering (2), Jeffrey R. McCutcheon (1)*
(1) University of Connecticut, Storrs, CT
(2) 3M Purification INC., Meriden, CT

Novel Osmotically Driven Membrane Processes for Treatment of Oil and Gas Exploration and Production Wastewater

2:30 PM, Paper 31b.....238

Tzahi Cath, Bryan Coday, Pei Xu*
Colorado School of Mines, Golden, CO

TFC Membrane with a Cellulose Support: Relating Performance and Swelling Upon Exposure to NaCl

3:00 PM, Paper 31c.....239

Inger Lise Alsosvik (1), Katherine Zodrow (2), Menachem Elimelech (2), May-Britt Hagg (1)*
(1) NTNU, Trondheim, Norway
(2) Yale University, New Haven, CT

Benefits of Organic Ionic Salts As Draw Solutions for Osmotic Membrane Bioreactors

3:30 PM, Paper 31d.....241

Katie Bowden (1), Andrea Achilli (2), Amy Childress (3)*
(1) University of Nevada Reno, Reno, NV
(2) University of Nevada, Reno, Reno, NV
(3) University of Nevada, Reno, NV

Novel Draw Solution of Polyelectrolytes In Forward Osmosis Processes

4:00 PM, Paper 31e.....242

Qingchun Ge (1), Jincal Su (1), Gary L. Amy (2), Tai-Shung Chung (1)*
(1) National University of Singapore, Singapore, Singapore
(2) 4700 King Abdullah University of Science and Technology, Thuwal, Saudi Arabia

A Novel Draw Solution for Forward Osmosis for Low Energy Desalination

4:30 PM, Paper 31f.....244

Morihito Ikeda, Kimiaki K. Miyamoto, Hiroshi Arakatsu, Hideaki Naruse*
FUJIFILM Corporation, Kanagawa-ken, Japan

(32) Wednesday, Jun 13, 2:00 PM Responsive Membranes and Biomembranes (Joint EMS-NAMS)

InterContinental New Orleans, La Salle B

Mihai Barboiu, Chair

* Denotes Speaker

Institut Européen des Membranes,
Montpellier, France
Dibakar Bhattacharyya, Co-Chair
University of Kentucky, Lexington,
KY

Dynameric Membranes for Gas Separation: Achieving the Molecular Limit of Constitutional Gaz-Dynamer Interactions

2:00 PM, Paper 32a.....245
Mihai Barboiu (1), Thomas Macron (2), Gihane Nasr (3)*
(1) Institut Européen des Membranes, Montpellier, France
(2) Institut Europeen des membranes, Montpellier, France
(3) Clarkson University, Potsdam, NY

Characterization of Responsive Membranes with Reversible Gating Function Based On DNA-Aptamers

2:30 PM, Paper 32b.....247
*Thomas Schäfer**
University of the Basque Country, San Sebastián, Spain

Electrostatic Gatekeeper Ion Rectification and Electrochemical Fouling Recovery of Carbon Nanotube Membranes

3:00 PM, Paper 32c.....249
Ji Wu (1), Xinghua Sun (1), Bruce Jackson Hinds (2)*
(1) University of Kentucky, Lexington KY, KY
(2) University of Kentucky, Lexington, KY

Bolaamphiphiles-Based Biomimetic Membranes for Water Purification

3:30 PM, Paper 32d.....250
Yair Kaufman (1), Sarina Grinberg (2), Charles Linder (2), Viatcheslav Freger (3)*
(1) Ben Gurion University, Sde Boker, Israel
(2) Ben Gurion University, Beer Sheva, Israel
(3) Technion - Israel Institute of Technology, Haifa, Israel

Reactive Nanoparticles Immobilized In Temperature-Responsive Hydrogel for Toxic Organics Degradation

4:00 PM, Paper 32e.....252
Li Xiao, Austin Isner, J. Zach Hilt, D.B. Bhattacharyya*
University of Kentucky, Lexington, KY

Magnetically Responsive Membrane with Attached Nanoheaters

4:30 PM, Paper 32f.....253
Qian Yang (1), Xianghong Qian (1), S. Ranil Wickramasinghe (2)*
(1) University of Arkansas, Fayetteville, AR
(2) University of Arkansas

* Denotes Speaker