# INGA H. MUSSELMAN, Ph.D.
## Vice President for Academic Affairs and Provost

**The University of Texas at Dallas**
Office of the Provost
800 W. Campbell Road, AD23
Richardson, TX 75080-3021

February 19, 2018
+1-972-883-2271
imusselm@utdallas.edu

### EDUCATION

Bachelor of Arts, Chemistry, Gettysburg College, Gettysburg, PA, June 1982
Doctor of Philosophy, Chemistry, University of North Carolina at Chapel Hill, Chapel Hill, NC, May 1988

### ADMINISTRATIVE APPOINTMENTS

| | |
|---|---|
| 2017 – present | Vice President for Academic Affairs and Provost<br>The University of Texas at Dallas, Richardson, TX<br>[December 1, 2017 – present] |
| 2017 | Interim Provost<br>The University of Texas at Dallas, Richardson, TX<br>[January 1, 2017 – November 30, 2017] |
| 2015 – 2016 | Acting Provost<br>The University of Texas at Dallas, Richardson, TX<br>[July 1, 2015 – July 14, 2016] |
| 2014 – 2017 | Senior Vice Provost<br>The University of Texas at Dallas, Richardson, TX<br>[September 1, 2014 – November 30, 2017] |
| 2008 – 2014 | Associate Provost (Faculty Affairs)<br>The University of Texas at Dallas, Richardson, TX<br>[September 1, 2008 – August 31, 2014 |
| 2003 – 2008 | Associate Head, Department of Chemistry<br>The University of Texas at Dallas, Richardson, TX<br>[October 2003 - October 2006] |

### ACADEMIC APPOINTMENTS

| | |
|---|---|
| 2008 – present | Professor, Department of Chemistry<br>The University of Texas at Dallas, Richardson, TX |
| 1998 – 2008 | Associate Professor with tenure, Department of Chemistry<br>The University of Texas at Dallas, Richardson, TX |
| 1992 – 1998 | Assistant Professor, Department of Chemistry<br>The University of Texas at Dallas, Richardson, TX |
| 1991 – 1992 | Visiting Lecturer, Department of Chemistry<br>University of North Carolina at Chapel Hill, Chapel Hill, NC |
| 1988 – 1991 | Postdoctoral Research Associate, Department of Materials Science & Engineering and Precision Engineering Center<br>North Carolina State University, Raleigh, NC |

## OTHER EMPLOYMENT

1983 – 1988 Research Chemist, Center for Analytical Chemistry
National Institute of Standards and Technology, Gaithersburg, MD

1984 – 1988 Graduate Research Assistant, Department of Chemistry
University of North Carolina at Chapel Hill, Chapel Hill, NC

1982 – 1984 Graduate Teaching Assistant, Department of Chemistry
University of North Carolina at Chapel Hill, Chapel Hill, NC

## EXTERNAL LEADERSHIP

2017 American Council on Education (ACE), Regional Women's Leadership Forum, Dallas, TX
Presenter: "Changing Your Orientation: From Mid-Level to Senior-Level Thinking," April 13

1992 – present Microanalysis Society (MAS)
Executive Council:
President, 2004 – 2005; President-Elect, 2003 – 2004; Past-President, 2005 – 2006
Secretary, 2001 – 2003, 1995 – 1997
Director, 1997 – 2000
Conference Program Co-Chair, Microscopy & Microanalysis (Long Beach, CA), 2001
Conference Symposium Co-Chair, Microscopy & Microanalysis, 2014, 2002, 2001, 1999, 1996, 1994
Education Committee, Chair, 2009 – present
Organized "MAS Meal with a Mentor" for students and MAS member mentors at Microscopy & Microanalysis conferences, 2011 – present
Over six years, 396 students and 76 mentors have participated.
National Tour Speaker, 1996 – 1997
Long-Range Planning Committee, 1993 – 1995
MicroNews Editor, 1992 – 1995

## UNIVERSITY SERVICE (The University of Texas at Dallas, 1992 – 2017)

***University***

*Reaffirmation of Accreditation (Southern Association of Colleges and Schools Commission on Colleges)*

2018 SACSCOC Reaffirmation: Leadership Team

2007 SACSCOC Reaffirmation: Steering Committee, Undergraduate Education Committee (Co-chair)

*Search Committees*

| | |
|---|---|
| 2017 | Chair, Search Committee, Director of Edith O'Donnell Institute of Art History |
| 2016 – 2017 | Chair, Search Committee, Vice President for Information Technology |
| 2015 | Chair, Search Committee, Dean of Graduate Studies |
| 2014 | Search Committee, Vice President for Information Resources |
| 2012 | Search Committee, Assistant Director of Athletics/Senior Woman Administrator |
| 2011 | Search Committee, Dean of Natural Sciences and Mathematics (also 2005 – 2006, 2003 – 2004) |

*Academic Senate and Senate Committees*

| | |
|---|---|
| 2006 – 2008 | Committee on Faculty Mentoring (also 2004 – 2005) |
| 2003 – 2004 | Committee on Effective Teaching |
| 1999 – 2001 | Chair, Committee for the Support of Women and Minorities |
| 1998 – 2000 | Academic Senate |
| 1998 – 1999 | Committee on Educational Policy |
| 1993 – 1996 | Safety Committee |
| 1993 – 1995 | Parking and Security Committee |

*Building Construction and Renovation*

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|---|---|
| 2015 – present | Project Advocate, Engineering Building 302-905 |
| 2007 – 2010 | Science Learning Center, Chemistry's Representative to Programming Committee |
| 2006 – 2007 | Berkner Hall Renovation, Liaison to UT Dallas Facilities Management |

*Faculty Review*

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|---|---|
| 2002 | *ad hoc* committee for mid-probationary review, Geosciences |
| 2001 | Chair, *ad hoc* committee for tenure review, Chemistry |
| 2001 | *ad hoc* committee for mid-probationary review, Chemistry |
| 2000 | *ad hoc* committee for tenure review, Molecular and Cell Biology |
| 1999 | *ad hoc* committee for mid-probationary review, Chemistry |

*Other*

Graduate Dean's representative for Ph.D. defenses in Engineering and Computer Science (2014, 2013), Behavioral and Brain Sciences (2012), Economic, Political, and Policy Sciences (2010), and Human Development (2002)

2010 – 2015 UT Dallas Athletic Advisory Board

2010 Institute for Innovation and Entrepreneurship Showcase on Nanomedicine, Program Organizer

***School of Natural Sciences and Mathematics***

2012 Conflict of Interest Oversight Committee for Chemistry Graduate Student

2003 – 2006 School Council, Natural Sciences and Mathematics

2000, 1997, 1993 Health Professions Advisory Committee

***Department of Chemistry***

2013 – present Graduate Curriculum Committee

2013 – 2015 Search Committee, Department Head of Chemistry

2006 – 2008 Graduate Student Recruiting Committee

1999, 1995 Search Committee, Assistant Professor of Chemistry

1996 – 1997 Chair, Task Force to Purchase Instrumentation for Chemistry Teaching Labs

## RESEARCH

***Summary of Patent Activity*** (details provided starting on Page 14)

| | |
|---|---|
| U.S. Patents | 5 |
| U.S. Patent Applications: | 1 |

***Summary of Research Publications*** (details provided starting on Page 14)

| | |
|---|---|
| Chapters in Edited Volumes: | 3 |
| Edited Conference Proceedings: | 1 |
| Peer Reviewed Journal Articles: | 57 |
| Refereed Conference Proceedings and Preprints: | 30 |

***Summary of Research Presentations*** (details provided starting on Page 23)
Conference Presentations: 240 presentations (1 plenary presentation; 40 invited presentations; 199 contributed presentations)

***Extramural Research Grants***

*Characterization of Polypeptide Films by Scanned Probe Microscopies*
Inga Holl Musselman (PI)
American Chemical Society Petroleum Research Fund -Type G
1993-1995, $20,000

*Tunable Composite Membranes for Gas Separation*
John Ferraris (PI), Ken Balkus (co-PI), Inga Holl Musselman (co-PI)
Department of Energy, Pittsburgh Energy Technology Center
September 1994 - August 1997, $198,765

*Chemical Microscopy: The Future of STM*
Inga Holl Musselman (PI)
Robert A. Welch Foundation
June 1996 - May 1999, $108,000

*Composite Membranes for Gas Separations*
Inga Holl Musselman (PI)
Mobil Technology Company, Mobil Strategic Research Center
August 1997 - August 2000, $47,966

*Composite Membranes for Gas Separations*
Inga Holl Musselman (PI)
Texas Higher Education Coordinating Board - Advanced Technology Program
January 1998 - August 2000, $142,321

*Contrast in STM Images of Molecular Adsorbates*
Inga Holl Musselman (PI)
Robert A. Welch Foundation
June 1999 - May 2002, $135,000

*Chemical Contrast in STM Images of Materials for Molecular Scale Sensors and Device Structures*
Inga Holl Musselman (PI)
Robert A. Welch Foundation
June 2002 – May 2005, $150,000

*Mixed Matrix Membranes for Gas Separation Using Nanoporous Metal Oxides and Metal Organic Frameworks*
Inga Holl Musselman (PI)
Texas Higher Education Coordinating Board - Advanced Technology Program
January 2004 - December 2005, $150,000

*Mixed-Matrix Membranes for $CO_2$ and $H_2$ Gas Separations Using Metal-Organic Frameworks and Mesoporous Hybrid Silicas*
Inga Holl Musselman (PI), Kenneth J. Balkus, Jr. (co-PI), John P. Ferraris (co-PI)
Department of Energy
September 2004 – August 2007, $200,000 with $25,000 matching

*Peptide-Coated Carbon Nanotubes: Toxicity and Targeted Cell Ablation*
Gregg R. Dieckmann (PI) UTD (with contributing investigators, R. K. Draper, I. Musselman and P. Pantano), J. Coleman (PI) Trinity College, A. B. Dalton (PI) University of Surrey
Human Frontiers for Science Program
June 2005 – May 2008, $1,050,000

*Novel Proton-Conducting Membrane with Well-Controlled Nano-Morphology for PEM Fuel Cells*
D. J. Yang (PI), I. H. Musselman (co-PI), Stanley Rodrigues (co-PI, Wright Patterson), Jong-Ho Lee (co-PI, KITECH)
UTD-SPRING Research & Technology Transfer Program
October 2006 – September 2008, $250,000

Carbon Nanotubes in Cancer [one project of a program project entitled *Interdisciplinary Studies on the Combat Readiness and Health Issues Faced by Military Personnel*, S. R. Goodman, (PI)]
R. K. Draper, G. R. Dieckmann, I. H. Musselman, P. Pantano
Department of Defense, U.S. Army Medical Research Acquisition Activity
July 2007 – June 2008, $210,000

*Targeted Delivery of Carbon Nanotubes to Cancer Cells*
R. K. Draper (PI), G. R. Dieckmann (co-PI), I. H. Musselman (co-PI), P. Pantano (co-PI), Ellen S. Vitetta (PI, UTSW)
U.S. Army TATRC
December 2007 – August 2009, $413,243

*Novel Zeolitic Imidazolate Framework/Polymer Membranes for Hydrogen Separations in Coal Processing*
Inga H. Musselman (PI), Kenneth J. Balkus, Jr., (co-PI), John P. Ferraris (co-PI)
Department of Energy-National Energy Technology Laboratory
February 2009 – January 2013, $300,000 with $65,000 matching funds

*Predicting, Testing, and Neutralizing Nanoparticle Toxicity*
Steven O. Nielsen (PI), Gregg R. Dieckmann (co-PI), Rockford K. Draper (co-PI), Inga H. Musselman (co-PI), Paul Pantano (co-PI)
Semiconductor Research Corporation/SEMATECH Research Center
April 2009 – December 2010, $557,100

*Novel Metal-Organic Framework/Polymer Membranes for Facilitated Gas Transport*
John P. Ferraris (PI), Kenneth J. Balkus, Jr. (co-PI), Inga H. Musselman (co-PI)
National Science Foundation, Directorate for Engineering: Chemical, Bioengineering, Environmental, and Transport Systems (CBET)
September 2009 – August 2013, $299,999

*Integrated Water Gas Shift Reactors Utilizing Novel, Non-precious Metal Mixed-Matrix Membranes*
John P. Ferraris (PI), Kenneth J. Balkus, Jr., (co-PI), Inga H. Musselman (co-PI)
Department of Energy, Office of Fossil Energy, National Energy Technology Laboratory, October 2009 – September 2013, $999,992 with $250,000 matching funds

*REU Supplement - Novel Metal-Organic Framework/Polymer Membranes for Facilitated Gas Transport*
John P. Ferraris (PI), Kenneth J. Balkus, Jr. (co-PI), Inga H. Musselman (co-PI)
National Science Foundation, Directorate for Engineering: Chemical, Bioengineering, Environmental, and Transport Systems (CBET)
June 2010 – August 2013, $5,800

*Dispersion, Bioaccumulation, and Mechanisms of Nanoparticle Toxicity*
Steven Nielsen (PI), Gregg R. Dieckmann (co-PI), Rockford K. Draper (co-PI), Inga H. Musselman (co-PI), Paul Pantano (co-PI)
Semiconductor Research Corporation
January 2012 – December 2014, $351,000

*Novel Nanostructured Membranes for Gas Separations*
John P. Ferraris (PI), Inga H. Musselman (co-PI), Kenneth J. Balkus, Jr. (co-PI)
National Science Foundation, Directorate for Engineering: Chemical, Bioengineering, Environmental, and Transport Systems (CBET)
June 2014 – May 2017, $398,492

***Professional Affiliations***

| | |
|---|---|
| 1984 – present | Microanalysis Society, Member |
| 1986 – present | American Chemical Society, Member |
| 1996 – present | North American Membrane Society, Member |
| 1998 – present | Project Kaleidoscope F21 Member<br>Roundtable on Future of Undergraduate STEM Learning Environments, 2008<br>PKAL F21 Assemblies, 1998 – 2000 |

***Journals: Editorial Board and Manuscript Reviews***
Editorial Board, *Experimental Biology and Medicine*, 2006 – 2015

*ad hoc* reviewer for:

| | |
|---|---|
| *ACS Nano* | *Journal of Vacuum Science and Technology B* |
| *Electrochemical and Solid State Letters* | *Microbeam Analysis* |
| *Experimental Biology and Medicine* | *Microporous and Mesoporous Materials* |
| *Journal of the American Chemical Society* | *Microscopy and Microanalysis* |
| *Journal of Membrane Science* | |

***Federal Grant Agencies: Proposal Reviews***

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|---|---|
| National Science Foundation | *ad hoc* reviewer and panel member for grant proposals |
| Department of Energy – Basic Energy Sciences | *ad hoc* reviewer for grant proposals |
| Environmental Protection Agency | *ad hoc* reviewer and panel member for grant proposals |

## TEACHING AND MENTORING (The University of Texas at Dallas, 1992 – 2017)

***Graduate courses taught (22 classes, total of 354 students)***
CHEM 5355, Analytical Techniques I
CHEM 5455/MSEN 5455, Analytical Techniques I
CHEM 6459, Analytical Techniques I
CHEM 5355, Analytical Techniques II

***Undergraduate courses taught (22 classes, total of 1,080 students)***
CHEM 1311, General Chemistry I
CHEM 1111, General Chemistry I Lab
CHEM 1312, General Chemistry II
CHEM 3372, Instrumental Analysis
CHEM 3472, Instrumental Analysis

***Graduate student research supervision*** (details provided starting on Page 48)
Completed supervision of 7 Ph.D. and 24 M.S. students

***Undergraduate student research supervision***
Completed supervision of 17 B.S. students.

***High school summer research supervision***
Supervised 31 high school students: 7 Clark Summer Research Scholars (40 hours/week), 8 Welch Summer Scholars (40 hours/week), 6 Plano Independent School District Scholars (20 hours/week), 7 Alan G. MacDiarmid NanoTech Institute NanoExplorers (20-40 hours/week), and 3 students from Parish Episcopal School conducting their Senior Projects (each 20 hours total).

## COMMUNITY ENGAGEMENT

January 24, 2017
"It's a Beautiful Life," Grace Series Talk, The University of Texas at Dallas, Richardson, TX
Using the theme of beauty as one of life's motivators, Dr. Musselman provided an overview of her work as a scientist and administrator as well as her life outside of work as a parent and art and nature enthusiast. [Grace Series Talks are empowerment talks for graduate and undergraduate students in computer science and software engineering.]

April 23-24, 2012
Chemistry demonstrations for 73 5$^{th}$ grade science students at Parish Episcopal School, Dallas, TX
(with Professor John Sibert and the UT Dallas Chemistry Student Association)
Demonstrations involved cryogens and chemical reactions
Students participated in two interactive activities: 1) extraction of natural products and their use in acid/base chemistry, 2) polymer chemistry (preparation of slime)

1998 – 2006
Girl Scout Leader at Parish Episcopal School, Tejas Council, Service Unit 161, Troop 805

December 11, 1998
"Women in Chemistry: Scanning Tunneling Microscopy and Career Preparation," Lecture presentation to chemistry students at J. J. Pearce High School, Richardson, TX,

April 24, 1998
Science Fair Judge, Southwest Association of Episcopal Schools

"Scanning Tunneling Microscopy and Atomic Force Microscopy," lecture and lab demonstration:
20 students from the Fairhill School, Dallas, TX, April 3, 1998
80 students from Richardson High School, Richardson, TX, February 3, 1994
Local area secondary school science teachers, September 18, 1993

July 21, 1993
ACES 93 (Access to Careers in Engineering and Science), Texas Woman's University, Presentation to 50 young women from across the state of Texas, ages 16-18, about a career as an analytical chemist,

## PROFESSIONAL DEVELOPMENT

2015 State University of New York (SUNY) Executive Leadership Academy, New York, NY

2015 University of Texas System Women Leaders Sponsorship Workshop, Austin, TX

2013 Department Head Leadership Workshop, University of Texas System, Austin, TX

## AWARDS AND HONORS

2017 Distinguished Alumni Award, Gettysburg College, Gettysburg, PA

2015 Phi Kappa Phi, The University of Texas at Dallas, Richardson, TX

2003 Presidential Service Award, Microbeam Analysis Society

2001 Golden Key National Honor Society, Honorary Member, The University of Texas at Dallas, Richardson, TX

1990 Travel Exhibit Award for Best Poster, Electron Microscopy Society of America
Title of poster: "Correlative STM, FESEM, and TEM Studies of Fibrillar Structures in Liquid Crystalline Polymers"

1987 Student Travel Award, Microbeam Analysis Society

1985 Castaing Award for Best Student Paper, Microbeam Analysis Society
Title of paper: "The Use of Laser Microprobe Mass Analysis for Nickel Speciation in Individual Particles of Micrometer Size"

1985 Student Travel Award, Microbeam Analysis Society

1982 Departmental Honors in Chemistry, Gettysburg College

## PANELS

2017 UTD "Inaugural" Corporate Open House, The University of Texas at Dallas, May 31
*Moderator*: Inga Musselman, The University of Texas at Dallas
*Panelists*: Peter Balyta, Texas Instruments; Steve Zimmel, Ericsson; David Arreaga, Ares Materials; Camille Garcia, State Farm

2017 Women in Engineering Panel, Celebrating 30 Years, Erik Jonsson School of Engineering and Computer Science, The University of Texas at Dallas, April 27
*Moderator*: Inga Musselman, The University of Texas at Dallas
*Panelists*: Danielle Griffith, Texas Instruments; Amy Wheelus, AT&T; Betsy Wilson, Ericsson; Sharon Wood, University of Texas at Austin

2015 U.S. Patent and Trademark Office
Gender Gap Panel, The University of Texas at Dallas, November 10
*Moderator*: Michelle Lee, Undersecretary of Commerce and Director of U.S. Patent and Trademark Office
*Panelists*: Catherine Ashcraft, National Center for Women & Information Technology; Meg Boulware, Boulware & Valoir Law Firm; Evelyn Chen, Ericsson; Lisa Cook, Michigan State University; Jennifer Maynard, University of Texas at Austin; Inga Musselman, The University of Texas at Dallas

## PATENTS/PATENT APPLICATIONS

1. Inga H. Musselman, Phillip E. Russell
   Method of Fabricating Scanning Tunneling Microscope Tips
   U. S. Patent No. *5,085,746* (February 4, 1992)
   Licensed by Materials Analytical Services, Norcross, GA, July 19, 1990

2. Inga H. Musselman, Phillip E. Russell
   Scanning Tunneling Microscope Tips
   U. S. Patent No. *5,164,595* (November 17, 1992)
   Licensed by Materials Analytical Services, Norcross, GA, July 19, 1990

3. Ray Baughman, Alan B. Dalton, Gregg Dieckmann, Rockford K. Draper, Inga Holl Musselman
   Chemically Synthesized Biologic Material for Controlling Nanofibers
   U.S. Provisional Patent Application filed August 2003. Not converted to full patent application.

4. Gregg R. Dieckmann, Alfonso Ortiz-Acevedo, Ray H. Baughman, Alan B. Dalton, Rockford K. Draper, Inga H. Musselman,
   Diameter-Selective Reversible Closable Peptides
   U.S. Patent No. *8,198,403 B2* (June 12, 2012)

5. Dennis W. Smith, Jr., Daniel K. Dei, John P. Ferraris, Kenneth J. Balkus, Jr., Inga H. Musselman, Duck J. Yang, Grace Jones D. Kalaw, Babloo Sharma
   Sulfonated Perfluorocyclopentenyl Polymers and Uses Thereof
   U.S. Patent No. *20140162173 A1* (June 12, 2014)
   Patent No.: US 9,331,352 B2 (May 3, 2016)

6. John P. Ferraris, Nimanka Panapitiya, Sumudu Wijenayake, Inga H. Musselman, Chamaal Karunaweera, Kenneth J. Balkus, Jr.,
   Compatibilized Immiscible Polymer Blends and Molecular Sieve Membranes
   U.S. Patent No. *20160263534 A1* (September 15, 2016)

## CHAPTERS IN BOOKS AND EDITED PROCEEDINGS

1. R. W. Linton, I. H. Musselman, S. R. Bryan
   Laser and Ion Microprobe Mass Spectrometry - Applications to Human Tissues, CHAPTER
   *Microprobe Analysis in Medicine*, Peter Ingram, John D. Shelburne, Victor L. Roggli, Eds.,
   Hemisphere Publishing Corporation, New York (1989) 303-333

2. G. W. Bailey, R. L. Price, E. Voelkl, I. H. Musselman, Eds.
   Proceedings, Microscopy and Microanalysis 2001
   Springer-Verlag New York, Inc., 175 Fifth Avenue, Ney York, NY 10010, 1,296 pages, 2001

3. J. P. Ferraris, I. H. Musselman, K. J. Balkus, Jr.
   Mixed-Matrix Membranes Based on Metal-Organic Frameworks, CHAPTER
   *Advanced Materials for Membrane Preparation*, M.G. Buonomenna and G. Golemme, Eds.,
   Bentham Science Publishers, ISBN: 978-1-60805-308-7, 2011

4. Charles J. Holt, Juan P. Vizuet, Inga H. Musselman, Kenneth J. Balkus, Jr., John P. Ferraris
   Polymer Blend Membranes for Gas Separations, CHAPTER
   *Membranes for Gas Separations*, Moises A. Carreon, Ed.
   World Scientific, 300 pages, May 2017
   ISBN: 978-981-3207-70-7

## REFEREED PUBLICATIONS

***Archival Journals***

1. P. J. Sheridan, I. H. Musselman
"Characterization of Aircraft-Collected Particles Present in the Arctic Aerosol; Alaskan Arctic Spring 1983"
*Atmos. Environ.* **19** (1985) 2159-2166

2. I. H. Musselman, D. S. Simons, J. A. Small, R. W. Linton
"The Use of Single Particle Standards for LAMMA Calibration"
*J. Trace and Microprobe Techniques* **4** (1986) 197-213

3. Inga H. Musselman, Richard W. Linton, David S. Simons
"Cluster Ion Formation Under Laser Bombardment. Studies of Recombination Using Isotope Labeling"
*Anal. Chem.* **60** (1988) 110-114

4. J. E. Fulghum, G. E. McGuire, I. H. Musselman, R. J. Nemanich, J. M. White, D. R. Chopra, A. R. Chourasia
"Surface Characterization"
*Anal. Chem.* **61** (1989) 243R-269R

5. I. H. Musselman, P. A. Peterson, P. E. Russell
"Fabrication of Tips with Controlled Geometry for Scanning Tunnelling Microscopy"
*Precision Engineering* **12** (1990) 3-6

6. Inga Holl Musselman, Phillip E. Russell
"Platinum / Iridium Tips with Controlled Geometry for Scanning Tunneling Microscopy"
*J. Vac. Sci. Technol. A* **8(4)** (1990) 3558-3562

7. Susan G. MacKay, Mohammed Bakir, Inga H. Musselman, Thomas J. Meyer, Richard W. Linton
"X-ray Photoelectron Spectroscopy Sputter Depth Profile Analysis of Spatially Controlled Microstructures in Conductive Polymer Films"
*Anal. Chem.* **63** (1991) 60-65

8. M. A. Ray, G. E. McGuire, I. H. Musselman, R. J. Nemanich, D. R. Chopra
"Surface Characterization"
*Anal. Chem.* **63** (1991) 99R-118R

9. Chul-Un Ro, Inga H. Musselman, Richard W. Linton
"Molecular Speciation of Microparticles: Application of Pattern Recognition Techniques to Laser Microprobe Mass Spectrometric Data"
*Anal. Chim. Acta* **243** (1991) 139-147

10. I. H. Musselman, D. S. Simons, R. W. Linton
"Effects of Sample Geometry on Interelement Quantitation in Laser Microprobe Mass Spectrometry"
*Int. J. Mass Spectrom. Ion Proc.* **112** (1992) 19-43

11. L. C. Sawyer, R. T. Chen, M. G. Jamieson, I. H. Musselman, P. E. Russell
"Microfibrillar Structures in Liquid-Crystalline Polymers"
*J. Mat. Sci. Let.* **11** (1992) 69-72

12. K. H. Gray, S. Gould, R. M. Leasure, I. H. Musselman, J. J. Lee, T. J. Meyer, R. W. Linton
"Three-Dimensional Characterization of Conducting Polymer Arrays Using SIMS"
*J. Vac. Sci. Technol. A* **10(4)** (1992) 2679-2684

13. I. H. Musselman, K. H. Gray, R. M. Leasure, T. J. Meyer, R. W. Linton
"Scanning Probe Microscopy and Sputter Depth Profiling of Conductive Polymer Thin Films"
*Microbeam Analysis* **2** (1993) 297-310

14. L. C. Sawyer, R. T. Chen, M. G. Jamieson, I. H. Musselman, P. E. Russell
"The Fibrillar Hierarchy in Liquid Crystalline Polymers"
*J. Mat. Sci.* **28(1)** (1993) 225-238

15. I. H. Musselman, D. L. Smith, E. P. Enriquez, V. F. Guarisco, E. T. Samulski
"Effects of Substrate on Ultra-Thin Films of Poly(γ-Benzyl-L-Glutamate) by Scanning Probe Microscopy"
*J. Vac. Sci. Technol. A* **12(4)** (1994) 2523-2529

16. Terry A. Zupp, Julia E. Fulghum, H. K. M. Vithana, Inga H. Musselman, David J. Surman
"Quantification of XPS Images for Thickness Measurements"
*Microbeam Analysis* **4** (1995) 215-220

17. J. S. Roach, J. Honeyman, I. H. Musselman
"Controlled Bias Ramping for Scanning Tunneling Microscopy of Molecular Adsorbates"
*J. Vac. Sci. Technol. A* **14(3)** (1996) 1205-1207

18. H. S. Lee, S. Iyengar, I. H. Musselman
"Bias-Dependent STM Image Contrast Study of Phenyloctadecyl Ethers Physisorbed onto Highly Oriented Pyrolytic Graphite"
*Langmuir* **14** (1998) 7475-7483
**[This article was featured on the cover of the journal issue.]**

19. "Poly(3-dodecylthiophene) Membranes for Gas Separations"
I. H. Musselman, L. Li, L. Washmon, D. Varadarajan, S. J. Riley, M. Hmyene, J. P. Ferraris, K. J. Balkus, Jr.
*J. Membr. Sci.* **152(1)** (1999) 1-18

20. Brian D. Reid, F. Alberto Ruiz-Trevino, Inga H. Musselman, Kenneth J. Balkus, Jr., and John P. Ferraris
"Gas Permeability Properties of Polysulfone Membranes Containing the Mesoporous Molecular Sieve MCM-41"
*Chem. Mater.* **13(7)** (2001) 2366-2373

21. H. S. Lee, S. Iyengar, I. H. Musselman
"Identification of Halogen Atoms in STM Images of Substituted Phenyloctadecyl Ethers"
*Anal. Chem.* **73(22)** (2001) 5532-5538

22. Brian D. Reid, Von Howard M. Ebron, Inga H. Musselman, John P. Ferraris, Kenneth J. Balkus, Jr.
"Enhanced Gas selectivity in Thin Film Composite Membranes of Poly(3-(2-acetoxyethyl)thiophene)"
*J. Membr. Sci.* **195(2)** (2002) 181-192

23. G. R. Dieckmann, A. B. Dalton, P. A. Johnson, J. Razal, J. Chen, G. M. Giordano, E. Muñoz, I. H. Musselman, R. H. Baughman, R. K. Draper
"Controlled Assembly of Carbon Nanotubes by Designed Amphiphilic Peptide Helices"
*J. Am. Chem. Soc.* **125** (2003) 1770-1777

24. Vasiliki Zorbas, Alfonso Ortiz-Acevedo, Alan B. Dalton, Mario Miki Yoshida, Gregg R. Dieckmann, Rockford K. Draper, Ray H. Baughman, Miguel Jose-Yacaman, Inga H. Musselman "Preparation and Characterization of Individual Peptide-Wrapped Single-Walled Carbon Nanotubes"
*J. Am. Chem. Soc.* **126** (2004) 7222-7227

25. Alan B. Dalton, Alfonso Ortiz-Acevedo, Vasiliki Zorbas, William M. Sampson, Steve Collins, Joselito Razal, Mario Miki Yoshida, Ray H. Baughman, Rockford K. Draper, Inga H. Musselman, Miguel Jose-Yacaman, Gregg R. Dieckmann
"Hierarchical Self-Assembly of Peptide-Coated Carbon Nanotubes"
*Adv. Funct. Mater.* **14(12)** (2004) 1147-1151

26. Hui Xie, Alfonso Ortiz-Acevedo, Vasiliki Zorbas, Ray H. Baughman, Rockford K. Draper, Inga H. Musselman, Alan B. Dalton, Gregg R. Dieckmann
"Peptide Cross-Linking Modulated Stability and Assembly of Peptide-Wrapped Single-Walled Carbon Nanotubes"
*J. Matls. Chem.* **15** (2005) 1734-1741

27. Alfonso Ortiz-Acevedo, Hui Xie, Vasiliki Zorbas, William M. Sampson, Alan B. Dalton, Ray H. Baughman, Rockford K. Draper, Inga H. Musselman, Gregg R. Dieckmann
"Diameter-Selective Solubilization of Single-Walled Carbon Nanotubes by Reversible Cyclic Peptides"
*J. Am. Chem. Soc.* **127** (2005) 9512-9517

28. Marc in Het Panhuis, Srinivas Gowrisanker, Douglas J. Vanesko, Charles A. Mire, Huiping Jia, Hui Xie, Ray H. Baughman, Inga H. Musselman, Gregg R. Dieckmann, Rockford K. Draper
"Nanotube Network Transistors from Peptide-Wrapped Single-Walled Carbon Nanotubes"
*Small* **1** (2005) 820-823

29. Vasiliki Zorbas, Amy L. Smith, Alfonso Ortiz-Acevedo, Hui Xie, Alan B. Dalton, Gregg R. Dieckmann, Rockford K. Draper, Ray H. Baughman, Inga H. Musselman
"Importance of Aromatic Content for Peptide/Single-Walled Carbon Nanotube Interactions"
*J. Am. Chem. Soc.* **127** (2005) 12323-12328

30. Shook-Fong Chin, Ray H. Baughman, Alan B. Dalton, Gregg R. Dieckmann, Rockford K. Draper, Carole Mikoryak, Inga H. Musselman, Vasiliki Z. Poenitzsch, Paul Pantano
"Amphiphilic Helical Peptide Enhances the Uptake of Single-Walled Carbon Nanotubes by Living Cells"
*Exp. Biol. Med.* **232(9)** (2007) 1236-1244

31. Hadi N. Yehia, Rockford K. Draper, Carole Mikoryak, E. Kate Walker, Pooja Bajaj, Inga H. Musselman, Meredith C. Daigrepont, Gregg R. Dieckmann, Paul Pantano
"Single-Walled Carbon Nanotube Interactions with HeLa Cells"
*J. Nanobiotechnol.* **5:**8 (2007)

32. Vasiliki Z. Poenitzsch, David C. Winters, Hui Xie, Gregg R. Dieckmann, Alan B. Dalton, Inga H. Musselman
"Effect of Electron-Donating and Electron-Withdrawing Groups on Peptide/Single-Walled Carbon Nanotube Interactions"
*J. Am. Chem. Soc.* **129(47)** (2007) 14724-14732

33. Grace Jones D. Kalaw, Zhiwei Yang, Inga H. Musselman, Duck-Joo Yang, Kenneth J. Balkus, Jr., John P. Ferraris
"Novel Polysilsesquioxane Hybrid Membranes for Proton Exchange Membrane Fuel Cell (PEMFC) Applications
*Separ. Sci. Technol.* **43(16)** (2008) 3981-4008

34. Yanfeng Zhang, Kenneth J. Balkus, Jr., Inga H. Musselman, John P. Ferraris
"Mixed-Matrix Membranes Composed of Matrimid® and Mesoporous ZSM-5 Nanoparticles"
*J. Membr. Sci.* **325(1)** (2008) 28-39

35. Pavrita Chakravarty, Radu Marches, Neil S. Zimmerman, Austin D.-E. Swafford, Pooja Bajaj, Inga H. Musselman, Paul Pantano, Rockford K. Draper, Ellen S. Vitetta
"Thermal Ablation of Tumor Cells with Antibody-Functionalized Single-Walled Carbon Nanotubes"
*Proc. Nat. Acad. Sci. U.S.A.* **105(25)** (2008) 8697-8702

36. Yanfeng Zhang, Inga H. Musselman, John P. Ferraris, Kenneth J. Balkus, Jr.
"Gas Permeability Properties of Matrimid® Membranes Containing the Metal-Organic Framework Cu-BPY-HFS"
*J. Membr. Sci.* **313(1+2)** (2008) 170-181

37. Yanfeng Zhang, Inga H. Musselman, John P. Ferraris, Kenneth J. Balkus, Jr.
"Gas Permeability Properties of Mixed-Matrix Matrimid® Membranes Containing a Carbon Aerogel: A Material with Both Micropores and Mesopores"
*Ind. Eng. Chem. Res.* **47(8)** (2008) 2794-2802

38. Radu Marches, Pavitra Chakravarty, Inga H. Musselman, Pooja Bajaj, Robert N. Azad, Paul Pantano, Rockford K. Draper, Ellen S. Vitetta
"Specific Thermal Ablation of Tumor Cells Using Single-Walled Carbon Nanotubes Targeted by Covalently-Coupled Monoclonal Antibodies"
*Int. J. Cancer* **125(12)** (2009) 2970-2977

39. Abdelaziz Rahy, Pooja Bajaj, Inga H. Musselman, Soon Hyung Hong, Ya-Ping Sun, Duck J. Yang
"Coating of Carbon Nanotubes on Flexible Substrate and its Adhesion Study"
*Appl. Surf. Sci.* **255(15)** (2009) 7084-7089

40. Edson V. Perez, Kenneth J. Balkus, Jr., John P. Ferraris, Inga H. Musselman
"Mixed-Matrix Membranes Containing MOF-5 for Gas Separations"
*J. Membr. Sci.* **328(1+2)** (2009) 165-173
**Top 25 Hottest Articles, January – March, 2009**

41. Ma. Josephine C. Ordoñez, Kenneth J. Balkus, Jr., John P. Ferraris, Inga H. Musselman
"Molecular Sieving Realized with ZIF-8/Matrimid® Mixed-Matrix Membranes"
*J. Membr. Sci.* **361** (2010) 28-37
**Top 25 Hottest Articles, July – September, 2010**

42. Ruhung Wang, Carole Mikoryak, Synyoung Li, David Bushdiecker, Inga H. Musselman, Paul Pantano, Rockford K. Draper
"Cytotoxicity Screening of Single-Walled Carbon Nanotubes: Detection and Removal of Cytotoxic Contaminants from Carboxylated Carbon Nanotubes"
*Molecular Pharmaceutics* **8(4)** (2011) 1351-1361

43. A. Liyanage, J.P. Ferraris, I. H. Musselman, D.-J. Yang, T. E. Anderson, D. Y. Son, K.J. Balkus, Jr.
"Nafion-sulfonated Dendrimer Composite Membranes for Fuel Cell Applications"
*J. Membr. Sci.* **392-393** (2012) 175-180

44. D. R. Samarajeewa, G. R. Dieckmann, S. O. Nielsen, I. H. Musselman
"Modifying the Electronic Properties of Single-walled Carbon Nanotubes Using Designed Surfactant Peptides"
*Nanoscale* **4(15)** (2012) 4544-4554

45. Grace Jones D. Kalaw, Judy Anne N. Wahome, Yuanqin Zhu, Kenneth J. Balkus, Jr., Inga H. Musselman, Duck-Joo Yang, John P. Ferraris
"Perfluorocyclobutyl (PBCB)-Based Polymer Blends for Proton Exchange Membrane Fuel Cells (PEMFCs)"
*J. Membr. Sci.* **431** (2013) 86-95

46. Dinushi R. Samarajeewa, Gregg R. Dieckmann, Steven O. Nielsen, Inga H. Musselman
"Doping Single-Walled Carbon Nanotubes with Surfactant Peptides Containing Electron-Donor Substituents and Nitrogen Heterocycles"
*Carbon* **57** (2013) 88-98

47. Edson V. Perez, Kenneth J. Balkus, Jr., John P. Ferraris, Inga H. Musselman
"Instrument for Gas Permeation Measurements at High Pressure and High Temperature"
*Rev. Sci. Instrum.* **84(6)** (2013) 065107/1-065107/7

48. Sumudu N. Wijenayake, Nimanka P. Panapitiya, Saskia H. Versteeg, Cindy N. Nguyen, Shristi Goel, Kenneth J. Balkus, Jr., Inga H. Musselman, John P. Ferraris
"Surface Cross-Linking of ZIF-8/Polyimide Mixed Matrix Membranes (MMMs) for Gas Separation"
*Ind. Eng. Chem. Res.* **52(21)** (2013) 6991-7001

49. Nimanka P. Panapitiya, Sumudu N. Wijenayake, Yu Huang, David Bushdiecker, Do Nguyen, Chalita Ratanawanate, Grace J. Kalaw, Christopher J. Gilpin, Inga H. Musselman, Kenneth J. Balkus, Jr., John P. Ferraris
"Stabilization of Immiscible Polymer Blends Using Structure Directing Metal Organic Frameworks (MOFs)"
*Polymer* **55(8)** (2014) 2028-2034

50. Pooja Bajaj, Carole Mikoryak, Ruhung Wang, David K. Bushdiecker, Pauras Memon, Rockford K. Draper, Gregg R. Dieckmann, Paul Pantano, Inga H. Musselman
"A Carbon Nanotube-Based Raman-Imaging Immunoassay for Evaluating Tumor Targeting Ligands"
*Analyst* **139(12)** (2014) 3069-3076

51. Edson V. Perez, Kenneth J. Balkus, Jr., John P. Ferraris, Inga H. Musselman
"Metal-Organic Polyhedra 18 Mixed-Matrix Membranes for Gas Separation"
*J. Membr. Sci.* **463** (2014) 82-93

52. Josephine O. Hsieh, Kenneth J. Balkus, Jr., John P. Ferraris, Inga H. Musselman
"MIL-53 Frameworks in Mixed-Matrix Membranes"
*Micropor. Mesopor. Mat.* **196** (2014) 165-174

53. Sumudu N. Wijenayake, Nimanka P. Panapitiya, Cindy N. Nguyen, Yu Huang, Kenneth J. Balkus, Jr., John P. Ferraris
"Composite Membranes with a Highly Selective Polymer Skin for Hydrogen Separation"
*Sep. Purif. Technol.* **135** (2014) 190-198

54. Nimanka P. Panapitiya, Sumudu N. Wijenayake, Do D. Nguyen, Yu Huang, Inga H. Musselman, Kenneth J. Balkus, Jr., John P. Ferraris
"Gas Separation Membranes Derived from High-Performance Immiscible Polymer Blends Compatibilized with Small Molecules"
*ACS Appl. Mater. Interfaces* **7(33)** (2015) 18618-18627

55. Nimanka Panapitiya, Sumudu Wijenayake, Do Nguyen, Chamaal Karunaweera, Yu Huang, Kenneth Balkus Jr, Inga Musselman, John Ferraris
"Compatibilized Immiscible Polymer Blends for Gas Separations," REVIEW PAPER
*Materials* **9** (2016) 643; doi:10.3390/ma9080643

56. Edson V. Perez, Chamaal Karunaweera, Inga H. Musselman, Kenneth J. Balkus, Jr., John P. Ferraris
"Origins and Evolution of Inorganic-Based and MOF-Based Mixed-Matrix Membranes for Gas Separations," REVIEW PAPER
*Processes* **4(3)** (2016) 32; doi:10.3390/pr4030032

57. Edson V. Perez, Grace J. D. Kalaw, John P. Ferraris, Kenneth J. Balkus, Jr., Inga H. Musselman "Amine-Functionalized (Al) MIL-53/ VTEC™ Mixed-Matrix Membranes for $H_2/CO_2$ Mixture Separations at High Pressure and High Temperature"
*J. Membr. Sci.* **530** (2017) 201-212

***Refereed Conference Proceedings and Preprints***

1. I. H. Musselman, K. H. Kangasniemi, A. J. M. Lubag, J. K. Franceschetti, H. S. Lee, S. Iyengar "Functional Group Contrast in Scanning Tunneling Microscopy Images of Substituted Phenylethers"
*Microsc. Microanal.* **7(Suppl 2)** (2001) 850-851

2. A. J. M. Lubag, Jr., K. Kangasniemi, I. H. Musselman
"Synthesis and STM Imaging of Substituted Phenylalkyl Ethers: Towards Functional Group Discrimination"
*Microsc. Microanal.* **8(Suppl 2)** (2002) 766-767

3. L. Zheng, M. C. Biewer, I. H. Musselman
"STM Imaging of Photochromic Spiropyrans"
*Microsc. Microanal.* **9(Suppl 2)** (2003) 1234-1235

4. I. H. Musselman, A. B. Dalton, A. Ortiz-Acevedo, J. Razal, J. Chen, E. Muñoz, R. H. Baughman, R. K. Draper, G. R. Dieckmann
"Carbon Nanotubes Self-Assembled by Amphiphilic Peptide α-Helices"
*Microsc. Microanal.* **9(Suppl 2)** (2003) 326-327

5. Kenneth J. Balkus Jr., Kyle Cattanach, Inga H. Musselman, John P. Ferraris
"Selective Matrimid® Membranes Containing Mesoporous Molecular Sieves"
*Materials Research Society Symposium Proceedings* **752** (2003) 91-96

6. V. Zorbas, A. Ortiz-Acevedo, A. B. Dalton, G. R. Dieckmann, R. K. Draper, R. H. Baughman, I. H. Musselman
"AFM Measurements of Long, Isolated Single-Walled Carbon Nanotubes Wrapped with Peptide"
*Microsc. Microanal.* **10(Suppl 2)** (2004) 138-139

7. Hadi Yehia, Thomas J. Pisklak, John P. Ferraris, Kenneth J. Balkus, Jr., Inga H. Musselman "Methane Facilitated Transport Using Copper (II) Biphenyl Dicarboxylate-triethylenediamine Poly(3-acetoxyethylthiophene) Mixed Matrix Membranes"
*Polymer Preprints* **45(1)** (2004) 35-36

8. Vasiliki Zorbas, A. L. Smith, A. Ortiz-Acevedo, H. Xie, G. R. Dieckmann, R. K. Draper, R. H. Baughman, I. H. Musselman
"Importance of Aromatic Content for Peptide/Single-Walled Carbon Nanotube Interactions"
*Microsc. Microanal.* **11(Suppl 2)** (2005) 1410-1411

9. Vasiliki Zorbas Poenitzsch, Inga H. Musselman
"Atomic Force Microscopy Measurements of Peptide-Wrapped Single-Walled Carbon Nanotube Diameters"
*Microsc. Microanal.* **12(3)** (2006) 221-227

10. I. H. Musselman, V. Z. Poenitzsch, G. R. Dieckmann
"Scanning Tunneling Microscopy and Spectroscopy of Peptide-Wrapped Single-Walled Carbon Nanotubes"
*Microsc. Microanal.* **12(Suppl 2)** (2006)

11. Yangeng Zhang, Kenneth J. Balkus, Jr., Inga H. Musselman, John P. Ferraris
"Mixed Matrix Membranes Composed of Matrimid® and Carbon Aerogel and Carbon Aerogel+Zeolite Composite Nanoparticles"
*PMSE Preprints* **95** (2006) 812-814

12. Edson V. Perez, Kenneth J. Balkus, Jr., John P. Ferraris, Inga H. Musselman
"Mixed-Matrix Membranes for Gas Separation Using Metal-Organic Frameworks"
*PMSE Preprints* **95** (2006) 815-816

13. I. H. Musselman, V. Z. Poenitzsch, H. Xie, A. B. Dalton, G. R. Dieckmann
"Microscopic and Spectroscopic Study of Interactions Between Amphiphilic Peptides and Single-Walled Carbon Nanotubes"
*Microsc. Microanal.* **13(Suppl 2)** (2007) 1584-1585

14. Grace Jones D. Kalaw, Zhiwei Yang, Inga H. Musselman, Duck-Joo Yang, Kenneth J. Balkus, Jr., John P. Ferraris
"Novel Polysilsesquioxane Hybrid Membranes for Proton Exchange Membrane Fuel Cell (PEMFC) Applications"
*Preprints of Symposia – American Chemical Society, Division of Fuel Chemistry* **52(2)** (2007) 260-262

15. Annie Chacko, Inga H. Musselman, D. J. Yang, Kenneth J. Balkus, Jr., John P. Ferraris
"Novel Bronsted Acid-Base Complexes for Proton Exchange Membrane Fuel Cells"
*Preprints of Symposia – American Chemical Society, Division of Fuel Chemistry* **52(2)** (2007) 390-391

16. Grace Jones D. Kalaw, Inga H. Musselman, Duck-Joo Yang, Kenneth J. Balkus, Jr., John P. Ferraris
"Synthesis and Characterization of Perfluorocyclobutane (PFCB) Polymers Containing the Sulfonimide Acid Functionality for Applications in Proton Exchange Membranes"
*Preprints of Symposia - American Chemical Society, Division of Fuel Chemistry* **54(2)** (2009) 435-436

17. I. H. Musselman, E. V. Perez, M. J. C. Ordoñez, K. J. Balkus, Jr.; J. P. Ferraris
"Incorporation of Hybrid Crystalline Microporous Materials in Mixed-Matrix Membranes for Gas Separation"
*Microsc. Microanal.* **16(Suppl. 2**) (2010) 1668-1669

18. D. R. Samarajeewa, G. R. Dieckmann, I. H. Musselman
"Effect of Surfactant Peptides on Electronic Properties of Single-walled Carbon Nanotubes"
*Microsc. Microanal.* **16(Suppl. 2)** (2010) 454-455

19. I. H. Musselman, P. Bajaj, C. Mikoryak, R. H. Wang, D. K. Bushdiecker, II, P. Memon, G. R. Dieckmann, R. K. Draper, P. Pantano
"Microscopy, Fluorescence, and Confocal Raman Imaging of Biotinylated Single-walled Carbon Nanotubes Bound to Breast Tumor Cells"
*Microsc. Microanal.* **16(Suppl. 2**) (2010) 394-395

20. P. Bajaj, J. Nguyen, C. Gilpin, G.R. Dieckmann, C.C. Chiu, S.O. Nielsen, I. H. Musselman
"Transmission Electron Microscopy and Three-Dimensional Tomography of Peptide-Coated Single-Walled Carbon Nanotubes"
*Microsc. Microanal.* **17(Suppl. 2)** (2011) 1008-1009

21. C. Ratanatawanate, John P. Ferraris, Inga H. Musselman, Kenneth J. Balkus, Jr.
"ZIF-8 Asymmetric Mixed-Matrix Membranes for Gas Separation"
*Preprints of Symposia - American Chemical Society, Division of Fuel Chemistry*, **56(2)** (2011) 464-465

22. D. R. Samarajeewa, G. R. Dieckmann, S. O. Nielsen, I. H. Musselman
"Surfactant Peptide/SWNT Composites with Altered Electronic Properties"
*Microsc. Microanal.* **18(Suppl. S2)** (2012) 1546-1547

23. Dinushi R. Samarajeewa, Udayana Ranatunga, Blake Wilson, Ariane Lemieux, Gregg Dieckmann, Steve Nielsen, Inga Musselman
"Adsorption of Naphthalene and Pyrene Containing Surfactant Peptides onto Single- Walled Carbon Nanotubes: A Microscopy, Spectroscopy, and Theoretical Study"
*Microsc. Microanal.* **19(Suppl. S2)** (2013) 1560-1561

24. Nimanka P. Panapitiya, Inga H. Musselman, Kenneth J. Balkus, Jr., John P. Ferraris
"Stabilization of Immiscible Polymer Blends Using Structure Directing Metal Organic Frameworks (MOFs)
*Preprints of Symposia - American Chemical Society, Division of Energy & Fuels* **59(1)** (2014) 627

25. Sumudu N. Wijenayake, Inga H. Musselman, Kenneth J. Balkus, Jr., John P. Ferraris
"Fabrication of Asymmetric ZIF-8/Polyimide Mixed Matrix Membranes for Gas Separations"
*Preprints of Symposia - American Chemical Society, Division of Energy & Fuels* **59(1)** (2014) 641

26. Yu Huang, Edson V. Perez, Kenneth J. Balkus, Jr., John P. Ferraris, Inga H. Musselman
"Polymer-Coated Tubular Membrane Reactor for Water-Gas Shift Reaction and Gas Separation"
*Preprints of Symposia - American Chemical Society, Division of Energy & Fuels* **59(1)** (2014) 669

27. Edson V. Perez, Grace D. Kalaw, Kenneth J. Balkus, Jr., John P. Ferraris, Inga H. Musselman
"Effect of Functionalization of Metal Organic Framework (MOF) and Metal Organic Polyhedra (MOP) Materials in Polyimides for Gas Separations at High Pressure and High Temperature"
*Preprints of Symposia - American Chemical Society, Division of Energy & Fuels* **59(1)** (2014) 671-672

28. I. H. Musselman, N. P. Panapitiya, D. K. Bushdiecker II, M. P. Tomasek, C. K. Miller, C. J. Gilpin, K. J. Balkus, Jr., John P. Ferraris
"SEM, TEM, and AFM Analyses of Phase-Separated Polymer Blend Membranes for Gas Separations"
*Microsc. Microanal.* **20(Suppl. 3**) (2014) 2064-2065

29. Edson V. Perez, John P. Ferraris, Kenneth J. Balkus, Jr., Inga H. Musselman
"Carbon Dioxide Sorption in Metal Organic Polyhedras at High Pressure and High Temperature"
*Preprints of Symposia - American Chemical Society, Division of Energy & Fuels* **59(2)** (2014) 390-391

30. Edson V. Perez, Kenneth J. Balkus, Jr., John P. Ferraris, Inga H. Musselman
"Improvement of Gas Separation Properties of Polybenzimidazole Membranes for Gas Separations at High Pressure and High Temperature through Thermal Treatment"
*Preprints of Symposia - American Chemical Society, Division of Energy & Fuels* **61(2)** (2016) 208-209

## PLENARY SPEAKER

1. "Polymeric-based Membrane Microstructure: Past, Present, and Future"
   North American Membrane Society, NAMS 2012, New Orleans, LA, June 11, 2012

## INVITED PRESENTATIONS

1. "Cluster Formations in the Laser Microprobe Mass Analyzer"
   Staff Research Seminar, National Bureau of Standards, Gaithersburg, MD, November 7, 1986
2. "Effects of Sample Geometry on Interelement Quantitation in Laser Microprobe Mass Spectrometry"
   Microbeam Analysis Society 23rd Annual Conference, Milwaukee, WI, August 10, 1988
3. "Scanning Tunneling and Atomic Force Microscopies: Fundamentals and Applications"
   Department of Applied Sciences Seminar, University of North Carolina, Chapel Hill, NC, November 21, 1991
4. "Scanning Tunneling Microscopy and Atomic Force Microscopy of Polymers"
   Programs in Chemistry Seminar, University of Texas at Dallas, Richardson, TX, September 30, 1992
5. "Scanning Probe Microscopy of Polypeptide Thin Films"
   Department of Chemistry Seminar, Baylor University, Waco, TX, December 3, 1993
6. "Scanning Probe Microscopy of Polypeptide Thin Films"
   Department of Chemistry Seminar, Texas Christian University, Fort Worth, TX, February 22, 1994
7. "Scanning Probe Microscopy: Introduction and Application to Polypeptide Thin Films"
   Molecular and Cell Biology Seminar, University of Texas at Dallas, Richardson, TX, September 22, 1994
8. "Scanning Probe Microscopy of Polypeptide Thin Films"
   Department of Chemistry Seminar, University of North Texas, Denton, TX, November 11, 1994
9. "Industrial Applications of (Atomic Force) Microscopy: Gas Separation Membranes and Corrosion of Steel"
   United Technologies Research Center, East Hartford, CT, June 6, 1996
10. "Industrial Applications of (Atomic Force) Microscopy: Gas Separation Membranes and Corrosion of Steel"
    Solid State Physics Seminar, University of Texas at Dallas, Dallas, TX, July 30, 1996
11. "Scanning Probe Microscopy: Introduction and Industrial Applications"
    Joint Meeting of the Southern California Society for Microscopy and the Microbeam Analysis Society of Southern California, Pasadena, CA, November 20, 1996
12. "Scanning Probe Microscopy: Introduction and Industrial Applications"
    Department of Chemistry Seminar, Austin College, Sherman, TX, March 5, 1997
13. "Scanning Probe Microscopy: Theory, Instrumentation and Applications"
    Department of Chemistry Seminar, Southern Methodist University, Dallas, TX, September 10, 1997
14. "Atomic Force Microscopy and Related Techniques: Introduction, Instrumentation and Application to Polymeric Materials", Minnesota Microscopy Society, St. Paul, MN, November 20, 1997
15. "Atomic Force Microscopy and Related Techniques: Introduction, Instrumentation and Application to Polymeric Materials"
    3M Technical Forum, St. Paul, MN, November 21, 1997

16. "Morphology of Poly(3-dodecylthiophene) Gas Separation Membranes"
    215th American Chemical Society National Meeting, Dallas, TX, March 29 - April 2, 1998

17. "Atomic Force Microscopy and Related Techniques: Introduction, Instrumentation and Application to Polymeric Materials"
    Microscopy and Microanalysis '98, Atlanta, GA, July 12 - 16, 1998

18. "Identification of Halogen Atoms in Scanning Tunneling Microscopy Images of Substituted Phenyloctadecyl Ethers"
    Microscopy and Microanalysis '99, Portland, OR, August 2 - 5, 1999

19. "Identification of Halogen Atoms in Scanning Tunneling Microscopy Images of Substituted Phenyloctadecyl Ethers"
    Department of Chemistry Seminar, Baylor University, Waco, TX, September 17, 1999

20. "Bias-dependent Contrast and Identification of Halogen Atoms in STM Images of Substituted Phenyloctadecyl Ethers"
    Department of Chemistry Seminar, University of North Texas, Denton, TX, April 7, 2000

21. "The D.Chem. Program in the Next Millenium: The Evolution of a Radical Departure from Typical PhD Training"
    American Chemical Society Biennial Conference on Chemical Education", University of Michigan, Ann Arbor, MI, July 31, 2000

22. "Scanning Tunneling Microscopy – Much More Than Beautiful Images: An Investigation of Image Contrast"
    Department of Chemistry Seminar, University of Texas at Dallas, Richardson, TX, November 28, 2001

23. "Scanning Tunneling Microscopy – Much More Than Beautiful Images: An Investigation of Image Contrast"
    Department of Chemistry Seminar, University of Texas at Arlington, Arlington, TX, March 7, 2002

24. "Isolation of Long, Individual Peptide-Wrapped Single-Walled Carbon Nanotubes"
    Department of Chemistry Seminar, Oklahoma State University, Stillwater, OK, December 2, 2004

25. "Scanning Probe Microscopy of Peptide-Wrapped Single-Walled Carbon Nanotubes"
    9th European Workshop on Modern Developments and Applications in Microbeam Analysis and 3rd Meeting of the International Union of Microbeam Analysis Societies, Convitto della Calza, Florence, Italy, May 22 – 26, 2005

26. "Analyzing Single-Walled Carbon Nanotubes with Atomic Force and Scanning Tunneling Microscopies"
    NIST/MAS Particle Workshop, National Institute of Standards and Technology, Gaithersburg, MD, April 24, 2006

27. "Mixed-Matrix Membranes for $CO_2$ and $H_2$ Separations Using Metal-Organic Frameworks and Mesoporous Hybrid Silicas"
    Inga H. Musselman, Kenneth J. Balkus, Jr., John P. Ferraris
    U.S. Department of Energy/National Energy Technology Laboratory UCR/HBCU Contractors Review Conference, Pittsburgh, PA, June 7, 2006

28. "Peptide-Functionalized Carbon Nanotubes: Optimization and Interactions with Mammalian Cells"
    G. R. Dieckmann, A. B. Dalton, J. N. Coleman, R. H. Baughman, R. K. Draper, I. H. Musselman, P. Pantano, Sixth Human Frontier Science Program Awardees Annual Meeting
    Paris, France, July 3-5, 2006

29. "Atomic Force Microscopy and Scanning Tunneling Microscopy Studies of Peptide-Coated Single-Walled Carbon Nanotubes"
nanoTX '06, Dallas, TX, September 28, 2006

30. "Research in the Bionanosciences Group at UTD: Biocompatibility and Intracellular Fate of Polypeptide-Coated Single-Walled Carbon Nanotubes"
UT Metroplex Days, Nanomedicine Symposium, University of Texas at Dallas, December 11, 2006

31. "Mixed-Matrix Membranes for $CO_2$ and $H_2$ Separations Using Metal-Organic Frameworks and Mesoporous Hybrid Silicas"
Edson V. Perez, Yanfeng Zhang, Ma. Josephine Ordonez, Kenneth J. Balkus, Jr., John P. Ferraris, Inga H. Musselman
U.S. Department of Energy/National Energy Technology Laboratory UCR/HBCU Contractors Review Conference, Pittsburgh, PA, June 5, 2007

32. "Controlling the Properties of Carbon Nanotubes Through Noncovalent Functionalization with Designed Peptide Systems"
Gregg R. Dieckmann, Eric J. Becraft, Ray H. Baughman, Alan B. Dalton, Rockford K. Draper, Inga H. Musselman, Paul Pantano
Materials Research Society, Spring 2007 Meeting, Session: Functionalization, Charge Transfer and Redox of Nanotubes and Nanowires
San Francisco, CA, April 10, 2007

33. "Microscopic and Spectroscopic Study of Interactions Between Amphiphilic Peptides and Single-Walled Carbon Nanotubes"
Department of Chemistry Seminar, Austin College, Sherman, TX, October 10, 2007

34. "Convergence of Nanotechnology and Medicine"
Institute for Innovation and Entrepreneurship (IIE) Showcase on Nanomedicine
The University of Texas at Dallas, Richardson, TX, January 22, 2010

35. "Novel Zeolitic Imidazolate Framework/Polymer Membranes for Hydrogen Separations in Coal Processing," DE-NT0007636
Inga H. Musselman, John P. Ferraris, Kenneth J. Balkus, Jr.
U.S. Department of Energy/National Energy Technology Laboratory UCR/HBCU Contractors Review Conference, Pittsburgh, PA, June 2-3, 2010

36. "Integrated Water Gas Shift Reactors Utilizing Novel, Non-Precious Metal Mixed-Matrix Membranes," DE-FE0001293
John P. Ferraris, Kenneth J. Balkus, Jr., Inga H. Musselman
FY11 Advanced Fuels Peer Review
U.S. Department of Energy, Office of Fossil Energy, National Energy Technology Laboratory, Morgantown, WV, October 18-22, 2010

37. "Novel Zeolitic Imidazolate Framework/Polymer Membranes for Hydrogen Separations in Coal Processing," DE-NT0007636
Inga H. Musselman, John P. Ferraris, Kenneth J. Balkus, Jr. (Talk)
U.S. Department of Energy/National Energy Technology Laboratory UCR/HBCU Contractors Review Conference
Pittsburgh, PA, June 7-8, 2011

38. "Novel Zeolitic Imidazolate Framework/Polymer Membranes for Hydrogen Separations in Coal Processing," DE-NT0007636
Inga H. Musselman, John P. Ferraris, Kenneth J. Balkus, Jr. (Talk)
U.S. Department of Energy/National Energy Technology Laboratory UCR/HBCU Contractors Review Conference
Pittsburgh, PA, May 30-31, 2012

40. "Polymeric-based Membrane Microstructure: Past, Present, and Future"
Department of Chemistry Seminar, University of North Texas, Denton, TX, September 27, 2013

## CONTRIBUTED ABSTRACTS, POSTERS AND/OR ORAL PRESENTATIONS

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4. J. T. Rickman, I. H. Musselman, J. O. Mullis, R. W. Linton
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22. Inga Holl Musselman
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23. I. H. Musselman, D. L. Smith, E. P. Enriquez, V. F. Guarisco, E. T. Samulski
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24. D. L. Smith, I. H. Musselman, E. P. Enriquez, V. F. Guarisco, E. T. Samulski
"Atomic Force Microscopy of Langmuir-Blodgett Films of Poly(γ-Benzyl-L-Glutamate)"
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25. D. L. Smith, I. H. Musselman, E. P. Enriquez, V. F. Guarisco, E. T. Samulski
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Dallas, TX, March 29 - April 2, 1998

34. B. D. Reid, I. H. Musselman
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35. I. H. Musselman, H. S. Lee, S. Iyengar
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"Composite Membranes for Gas Separations"
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39. Brian Reid, Jody Neef, Inga Musselman, John Ferraris, Kenneth Balkus, Jr.
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Richardson, TX, April 16, 1999

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42. Brian D. Reid, F. Alberto Ruiz-Trevino, Inga H. Musselman, Kenneth J. Balkus, Jr., John P. Ferraris
"Gas Permeability Properties of Polysulfone Membranes Containing the Mesoporous Molecular Sieve, MCM-41"
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43. Laura Lewis, Inga H. Musselman
"A Systematic Study of Monolayer Formation with Scanning Tunneling Microscopy"
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Denton, TX, April 15, 2000

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"Gas Permeability Properties of Polysulfone Membranes Containing the Mesoporous Molecular Sieve, MCM-41"
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Boulder, CO, May 23 - 27, 2000
*2nd Place in Student Competition, Gas Separations Division*

45. Brian Reid, Von Ebron, Inga Musselman, John Ferraris, Kenneth Balkus, Jr.
"Enhanced Selectivity in Thin Film Composite Membranes of Poly(3-(2-acetoxyethyl)thiophene"
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46. Inga H. Musselman, Sudha Madhugiri, Kenneth Balkus, Jr., John P. Ferraris
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47. Kyle Cattanach, Inga H. Musselman, Kenneth J. Balkus, Jr., John P. Ferraris
"Gas Permeability Properties of Matrimid® Membranes Containing the Mesoporous Molecular Sieve, MCM-41"
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Lexington, KY, May 15 - 20, 2001

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"Functional Group Contrast in STM Images of Substituted Phenylethers"
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"Functional Group Contrast in Scanning Tunneling Microscopy Images of Substituted Phenylethers"
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"Gas Permeability Properties of Matrimid® Membranes Containing the Mesoporous Molecular Sieve Amine DAM-1"
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51. K. Cattanach, I. H. Musselman, K. J. Balkus, Jr., John P. Ferraris
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Long Beach, CA, May 11 - 15, 2002
*3rd Place in Student Competition, Gas Separations Division*

52. A. J. M. Lubag, Jr., K. Kangasniemi, and I. H. Musselman
"Synthesis and STM Imaging of Substituted Phenylalkyl Ethers: Towards Functional Group Discrimination"
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Québec City, Quebec, Canada, August 5 - 8, 2002
*Received Castaing Award from Microbeam Analysis Society for Best Student Paper*

53. Gregg R. Dieckmann, A. Dalton, P. A. Johnson, J. Razel, J. Chen, G. M. Giordano, E. Muñoz, I. H. Musselman, R. H. Baughman, R. K. Draper
"Controlled Assembly of Carbon Nanotubes in Aqueous Solution with Designed Peptides"
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54. Gregg R. Dieckmann, Alfonso Ortiz-Acevedo, Alan B. Dalton, Joselito Razal, Jian Chen, Edgar Muñoz, Inga H. Musselman, Ray H. Baughman, Rockford K. Draper
"Controlled Assembly of Carbon Nanotubes in Aqueous Solution with Designed Peptides"
American Peptide Society 2003
Boston, MA, July 19-23, 2003

55. L. Zheng, M. C. Biewer, and I. H. Musselman
"STM Imaging of Photochromic Spiropyrans"
Microscopy and Microanalysis '03
San Antonio, TX, August 4 - 7, 2003

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"Carbon Nanotubes Self-Assembled by Amphiphilic Peptide $\alpha$-Helices"
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57. Vasiliki Zorbas, Alfonso Ortiz-Acevedo, Gregg R. Dieckmann, Rockford K. Draper, Ray H. Baughman, Inga Holl Musselman
"Atomic Force Microscopy Analysis of Long, Individual Peptide-Wrapped Single-Walled Carbon Nanotubes"
Strategic Partnership for Research in Nanotechnology (SPRING), First Annual Conference
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58. Alfonso Ortiz-Acevedo, Vasiliki Zorbas, Alan B. Dalton, Ray H. Baughman, Rockford K. Draper, Inga H. Musselman, Gregg R. Dieckmann
"Effect of Aromatic Content on Peptide/Carbon Nanotube Composite Properties"
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59. Inga H. Musselman, Vasiliki Zorbas, Alfonso Ortiz, Alan B. Dalton, Ray H. Baughman, Gregg R. Dieckmann, Rockford K. Draper, Miguel Jose-Yacaman
"Isolation of Long, Individual Peptide-Wrapped Single-Walled Carbon Nanotubes"
227th ACS National Meeting
Anaheim, CA, March 28-April 1, 2004

60. Gregg R. Dieckmann, Alfonso Ortiz-Acevedo, Alan B. Dalton,Vasiliki Zorbas, Ray H. Baughman, Rockford K. Draper, Inga H. Musselman
"Noncovalent Functionalization of Carbon Nanotubes with Designed Amphiphilic Peptides"
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Anaheim, CA, March 28-April 1, 2004

61. Alfonso Ortiz-Acevedo, Alan B. Dalton, Vasiliki Zorbas, Ray H. Baughman, Rockford K. Draper, Inga H. Musselman, Gregg R. Dieckmann
"Use of Designed Amphiphilic Peptides for the Solubilization, Separation and Self-Assembly of Carbon Nanotubes"
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Anaheim, CA, March 28-April 1, 2004

62. Vasiliki Zorbas, Alfonso Ortiz, Alan B. Dalton, Ray H. Baughman, Gregg R. Dieckmann, Rockford K. Draper, Miguel Jose-Yacaman, Inga H. Musselman
"Atomic Force Microscopy Measurements of Long, Isolated, Single-Walled Carbon Nanotubes Wrapped With Peptide"
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63. Hadi Yehia, Thomas J. Pisklak, John P. Ferraris, Kenneth J. Balkus, Jr., Inga H. Musselman
"Methane Facilitated Transport Using Copper(II) Biphenyl Dicarboxylate-triethylenediamine/poly(3-acetoxyethylthiophene) Mixed Matrix Membranes"
227th ACS National Meeting
Anaheim, CA, March 28-April 1, 2004.

64. Hadi Yehia, Thomas J. Pisklak, John P. Ferraris, Kenneth J. Balkus, Jr., Inga Holl Musselman
"Methane Facilitated Transport Using Mixed-Matrix Membranes Containing Metal-Organic Frameworks"
14th Annual Conference of the North American Membrane Society (NAMS 2004)
Honolulu, HI, June 26 - 30, 2004

65. V. Zorbas, A. Ortiz-Acevedo, A. B. Dalton, G. R. Dieckmann, R. K. Draper, R. H. Baughman, I. H. Musselman
"AFM Measurements of Long, Isolated Single-Walled Carbon Nanotubes Wrapped with Peptide"
Microscopy and Microanalysis '04
Savannah, GA, August 1 – 5, 2004

66. Elfrida Ginting, Michael C. Biewer, Inga H. Musselman
"Synthesis and STM Imaging of CN-OTSP"
60th Southwest Regional Meeting of the American Chemical Society
Fort Worth, TX, September 29-October 4, 2004

67. Zhongsheng Deng, Leiliang Zheng, Michael C. Biewer, Inga H. Musselman
"STM Imaging of Photochromic Spiropyrans with Halogen Groups"
60th Southwest Regional Meeting of the American Chemical Society
Fort Worth, TX, September 29-October 4, 2004

68. Zhongsheng Deng, Winshun Lai, Inga H. Musselman
"STM Imaging of Halogenated Single-Walled Carbon Nanotubes"
60th Southwest Regional Meeting of the American Chemical Society
Fort Worth, TX, September 29-October 4, 2004

69. Tiffany Lin, Mikhail Kozlov, Alfonso Ortiz, Gregg Dieckmann, Inga Musselman, Rockford Draper
"Micro IR Study of Peptide-Nanotube Membranes"
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70. Carlos Barcena, Hadi N. Yehia, Kenneth J. Balkus, Jr., John P. Ferraris, Inga H. Musselman
"Methane Facilitated Transport Using Mixed-Matrix Membranes Containing Metal-Organic Frameworks"
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71. Lana Z. Alagha, Michael C. Biewer, Ray H. Baughman, Jaideep Lamba, William Sampson, Alan Dalton, Vasiliki Zorbas, Inga Musselman
"Cyclic Polyacetylenes: a New Route for the Synthesis of Carbon Nanotubes of One Type"
60th Southwest Regional Meeting of the American Chemical Society
Fort Worth, TX, September 29-October 4, 2004

72. Amy L. Smith, Vasiliki Zorbas, Alfonso Ortiz-Acevedo, Hui Xie, Gregg R. Dieckmann, Rockford K. Draper, Ray H. Baughman, Inga H. Musselman
"Atomic Force Microscopy Study of the Effects of Peptide Length in Dispersing Single-Walled Carbon Nanotubes"
60th Southwest Regional Meeting of the American Chemical Society
Fort Worth, TX, September 29-October 4, 2004

73. Vasiliki Zorbas, Alfonso Ortiz-Acevedo, Alan B. Dalton, Mario Miki Yoshida, Gregg R. Dieckmann, Rockford K. Draper, Ray H. Baughman, Miguel Jose Yacaman, Inga H. Musselman
"Atomic Force Microscopy of Single-Walled Carbon Nanotubes Wrapped with Amphiphilic Peptide Helices"
60th Southwest Regional Meeting of the American Chemical Society
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74. Vasiliki Zorbas, Alfonso Ortiz-Acevedo, Hui Xie, Alan B. Dalton, Gregg R. Dieckmann, Rockford K. Draper, Ray H. Baughman, Inga H. Musselman
"Optimization of Amphiphilic Peptides for Interactions with Single-Walled Carbon Nanotubes"
Strategic Partnership for Research in Nanotechnology (SPRING), Second Annual Conference
Richardson, TX, November 11-12, 2004

75. Amy L. Smith, Vasiliki Zorbas, Alfonso Ortiz-Acevedo, Alan B. Dalton, Gregg R. Dieckmann, Rockford K. Draper, Ray H. Baughman, Inga H. Musselman
"Atomic Force Microscopy Study of the Role of Peptide Length in Dispersing Single-Walled Carbon Nanotubes"
Strategic Partnership for Research in Nanotechnology (SPRING) Second Annual Conference
Richardson, TX, November 11-12, 2004

76. Zhongsheng Deng, Winshun Lai, Inga H. Musselman
"STM Imaging of Single-Walled Carbon Nanotubes With Halogen Groups"
Strategic Partnership for Research in Nanotechnology (SPRING), Second Annual Conference
Richardson, TX, November 11-12, 2004

77. Zhongsheng Deng, Leiliang Zheng, Michael C. Biewer, Inga H. Musselman
"STM Imaging of Photochromic Spiropyrans With Halogen Groups"
Strategic Partnership for Research in Nanotechnology (SPRING), Second Annual Conference
Richardson, TX, November 11-12, 2004

78. Carlos Barcena, Hadi Yehia, Thomas J. Pisklak, Kenneth J. Balkus, Jr., John P. Ferraris, Inga H. Musselman
"Methane Facilitated Transport Using Mixed-Matrix Membranes Containing Metal-Organic Frameworks"
Strategic Partnership for Research in Nanotechnology (SPRING), Second Annual Conference
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79. Shook-Fong Chin, Amy L. Smith, Ray H. Baughman, Gregg R. Dieckmann, Rockford K. Draper, Inga H. Musselman, Paul Pantano
"Monitoring Reactive Oxygen Species Dynamics from Human Epithelial-Like Cells Exposed to Single-Walled Carbon Nanotubes"
229th ACS National Meeting
San Diego, CA, March 13-17, 2005

80. Kenneth R. Balkus, Jr., Yanfeng Zhang, Inga H. Musselman, John P. Ferraris
"Novel Mixed-Matrix Membranes Based on Mesoporous Molecular Sieves and Hybrid Frameworks"
15th Annual Conference of the North American Membrane Society (NAMS 2005)
Providence, RI, June 11 - 15, 2005

81. Yanfeng Zhang, Kenneth J. Balkus, Jr., Inga H. Musselman, John P. Ferraris
"Gas Permeability Properties of Matrimid® Membranes Containing Material with Both Micropores and Mesopores"15th Annual Conference of the North American Membrane Society (NAMS 2005)
Providence, RI, June 11 - 15, 2005

82. V. Zorbas, A. L. Smith, A. Ortiz-Acevedo, H. Xie, G. R. Dieckmann, R. K. Draper, R. H. Baughman, I. H. Musselman
"Importance of Aromatic Content for Peptide/Single-Walled Carbon Nanotube Interactions"
Microscopy and Microanalysis '05
Honolulu, HI, July 31 – August 4, 2005

83. Hadi Yehia, Ray H. Baughman, Gregg R. Dieckmann, Rockford K. Draper, Inga H. Musselman, Paul Pantano
"Investigating the Oxidative Stress Response of HeLa Cells Exposed to SWCNTs"
231st ACS National Meeting
Atlanta, GA, March 2006

84. V. Z. Poenitzsch, G. R. Dieckmann, I. H. Musselman
"Scanning Tunneling Microscopy and Spectroscopy of Peptide-Wrapped Single-Walled Carbon Nanotubes"
DFW ACS Meeting-in-Miniature, Texas Woman's University
Denton, TX, April 29, 2006

85. Edson V. Perez, Kenneth J. Balkus, Jr., John P. Ferraris, Inga H. Musselman
"Mixed-Matrix Membranes for H2 Separation Using Metal-Organic Frameworks"
16th Annual Conference of the North American Membrane Society (NAMS 2006)
Chicago, IL, May 12-17, 2006

86. Yanfeng Zhang, Kenneth Balkus, Inga Musselman, John Ferraris
"Mixed Matrix Membranes Composed of Matrimid® and Carbon Aerogel-Zeolite Composite Nanoparticles"16th Annual Conference of the North American Membrane Society (NAMS 2006)
Chicago, IL, May 12-17, 2006

87. G. R. Dieckmann, A. B. Dalton, J. N. Coleman, R. H. Baughman, R. K. Draper, I. H. Musselman, P. Pantano
"Peptide-Functionalized Carbon Nanotubes: Optimization and Interactions with Mammalian Cells"
Sixth Human Frontier Science Program Awardees Annual Meeting
Paris, France, July 3-5, 2006

88. Inga H. Musselman, Vasiliki Z. Poenitzsch, Gregg R. Dieckmann
"Scanning Tunneling Microscopy and Spectroscopy of Peptide-Wrapped Single-Walled Carbon Nanotubes"Microscopy and Microanalysis 2006
Chicago, IL, August 2, 2006

89. Edson V. Perez, Kenneth J. Balkus, Jr., John P. Ferraris, Inga H. Musselman
"Mixed-Matrix Membranes for Gas Separation Using Metal-Organic Frameworks"
232nd ACS National Meeting
San Francisco, CA, September 10-14, 2006

90. Yangfeng Zhang, Kenneth J. Balkus, Jr., Inga H. Musselman, John P. Ferraris
"Mixed Matrix Membranes Composed of Matrimid® and Carbon Aerogel and Carbon Aerogel+Zeolite Composite Nanoparticles"
232nd ACS National Meeting
San Francisco, CA, September 10-14, 2006

91. Vasiliki Z. Poenitzsch, Hui Xie, Gregg Dieckmann, Inga Musselman
"Scanning Tunneling Microscopy and Spectroscopy of Peptide-Wrapped Single-Walled Carbon Nanotubes"
62nd Southwest Regional Meeting of the American Chemical Society
Houston, TX, October 19-22, 2006

92. Ann Chacko, Inga Holl Musselman, Duck J. Yang, Kenneth J. Balkus, Jr., John P. Ferraris
"Novel Acid-Doped Membranes for High Temperature PEM Fuel Cells"
62nd Southwest Regional Meeting of the American Chemical Society
Houston, TX, October 19-22, 2006

93. Grace Jones D. Kalaw, Zhiwei Yang, Inga H. Musselman, Duck J. Yang, Kenneth J. Balkus, Jr., John P. Ferraris
"Novel Inorganic/Organic Hybrid Membranes for Proton Exchange Membrane (PEM) Fuel Cells"
62nd Southwest Regional Meeting of the American Chemical Society
Houston, TX, October 19-22, 2006

94. Yanfeng Zhang, Kenneth J. Balkus, Jr., Inga H. Musselman, John P. Ferraris
"Mixed Matrix Membranes Composed of Matrimid® and Single-walled Carbon Nanotubes"
62nd Southwest Regional Meeting of the American Chemical Society
Houston, TX, October 19-22, 2006

95. Edson V. Perez, Kenneth J. Balkus, Jr., John P. Ferraris, Inga H. Musselman
"Mixed-Matrix Membranes for Gas Separation Using Metal-Organic Frameworks"
62nd Southwest Regional Meeting of the American Chemical Society
Houston, TX, October 19-22, 2006

96. V. Z. Poenitzsch, H. Xie, A. B. Dalton, G. R. Dieckmann, I. H. Musselman
"Microscopic and Spectroscopic Study of Interactions Between Amphiphilic Peptides and Single-Walled Carbon Nanotubes"
Materials Research Society, Spring 2007 Meeting
San Francisco, CA, April 10, 2007

97. A. Chacko, J. Ferraris, K. Balkus, I. Musselman, D. Yang
"Novel Polymeric Bronsted Acid-Base Complexes for Proton Exchange Membrane (PEM) Fuel Cells"
17th Annual Conference of the North American Membrane Society (NAMS 2007)
Orlando, FL, May 13-16, 2007

98. G. Kalaw, J. Ferraris, D. Yang, I. Musselman, K. Balkus
"Novel Polysilsesquioxane Hybrid Membranes for Proton Exchange Membrane Fuel Cell (PEMFC) Applications"
17th Annual Conference of the North American Membrane Society (NAMS 2007)
Orlando, FL, May 13-16, 2007

99. Y. Zhang, K. Balkus, I. Musselman, J. Ferraris
"Gas Permeability Properties of Matrimid® Membranes Containing the Metal-Organic Frameworks"
17th Annual Conference of the North American Membrane Society (NAMS 2007)
Orlando, FL, May 13-16, 2007

100. M. Ordonez, I. Musselman, K. Balkus, J. Ferraris
"Mixed-Matrix Membranes for $CO_2$ and $H_2$ Gas Separations"
17th Annual Conference of the North American Membrane Society (NAMS 2007)
Orlando, FL, May 13-16, 2007

101. E. Perez, J. Ferraris, K. Balkus, I. Musselman
"Mixed-Matrix Membranes for Gas Separations Using Metal-Organic Frameworks"
17th Annual Conference of the North American Membrane Society (NAMS 2007)
Orlando, FL, May 13-16, 2007

102. I. H. Musselman, V. Z. Poenitzsch, H. Xie, A. B. Dalton, G. R. Dieckmann
"Microscopic and Spectroscopic Study of Interactions Between Amphiphilic Peptides and Single-Walled Carbon Nanotubes"
Microscopy and Microanalysis 2007
Fort Lauderdale, FL, August 7, 2007

103. E. J. Becraft, W. J. Kaberle, Jr., I. H. Musselman, G. R. Dieckmann
"Reversible Cyclic Peptides for Use as a Diameter Selective Single-Walled Carbon Nanotube Dispersal Agent"
2007 Texas-Korea Nanotech Workshop – The University of Texas at Dallas
Richardson, TX, August 7, 2007

104. Annie Chacko, John P. Ferraris, Kenneth J. Balkus, Jr., Inga H. Musselman
"Novel Bronsted Acid-Base Complexes for PEM Fuel Cells"
234th American Chemical Society National Meeting
Boston, MA, August 19-23, 2007

105. Grace Jones D. Kalaw, John P. Ferraris, Inga H. Musselman, Kenneth J. Balkus, Jr., Duck-Joo Yang
"Novel Polysilsesquioxane Hybrid Membranes for Proton Exchange Membrane Fuel Cell (PEMFC) Applications"
234th American Chemical Society National Meeting
Boston, MA, August 19-23, 2007

106. Inga H. Musselman, Edson V. Perez, Ma. Josephine C. Ordonez, Yanfeng Zhang, Kenneth J. Balkus, Jr., John P. Ferraris
"Mixed-Matrix Membranes for Gas Separations Using Metal-Organic Frameworks"
235th American Chemical Society National Meeting
New Orleans, LA, April 6-10, 2008

107. Ma. Josephine C. Ordonez, Kenneth J. Balkus, Jr., John P. Ferraris, Inga H. Musselman
"Mixed-Matrix Membranes Containing Metal-Organic Frameworks for $CO_2$ and $H_2$ Gas Separations"
235th American Chemical Society National Meeting
New Orleans, LA, April 6-10, 2008

108. Grace Jones D. Kalaw, Inga H. Musselman, Duck-Joo Yang, Kenneth J. Balkus, Jr., John P. Ferraris
"Novel Materials for Proton Exchange Membranes for Fuel Cells"
235th American Chemical Society National Meeting
New Orleans, LA, April 6-10, 2008

109. P. Bajaj, K. Artyushkova, I. Musselman
"Correlative Microscopic and Spectroscopic Characterization of Carboxylated Single-Walled Carbon Nanotubes"
Microscopy and Microanalysis 2008
Albuquerque, NM, August 3-7, 2008

110. Gregg Dieckmann, Rockford K. Draper, Inga H. Musselman, Steven O. Nielsen, Paul Pantano
"Biomolecular Functionalization of Carbon Nanotubes Using Closeable Cyclic Peptides and Other Designed Peptide Systems"
Southwest Regional Meeting of the American Chemical Society
Little Rock, AR, October 1-4, 2008

111. Grace Jones D. Kalaw, John P. Ferraris, Inga H. Musselman, Kenneth J. Balkus, Jr., Duck-Joo Yang
"Perfluorocyclobutyl Block Copolymers for Proton Exchange Membrane Fuel Cells (PEMFCs)"
Southwest Regional Meeting of the American Chemical Society
Little Rock, AR, October 1-4, 2008

112. Pooja Bajaj, David K. Bushdiecker, Pauras Memon, Carole Mikoryak, Ru-hung Wang, Gregg Dieckmann, Rockford K. Draper, Paul Pantano, Inga H. Musselman
"Covalent Biotin Tethering of Single-Walled Carbon Nanotubes for Directed Thermal Ablation of Breast Tumor Cells"
2009 American Chemical Society Dallas/Fort Worth Section Meeting-in-Miniature
Denton, TX, May 2, 2009

113. Ma. Josephine C. Ordoñez, Kenneth J. Balkus, Jr., John P. Ferraris, Inga H. Musselman
"ZIF-8/Matrimid® Mixed-Matrix Membranes"
2009 American Chemical Society Dallas/Fort Worth Section Meeting-in-Miniature
Denton, TX, May 2, 2009

114. Ma. Josephine C. Ordoñez, Kenneth J. Balkus, Jr., John P. Ferraris, Inga H. Musselman
"ZIF-8/Matrimid® Mixed-Matrix Membranes"
19th Annual Conference of the North American Membrane Society (NAMS 2009)
Charleston, SC, June 20-24, 2009

115. Edson V. Perez, John P. Ferraris, Kenneth J. Balkus, Jr., Inga H. Musselman
"Mixed-Matrix Membranes for Gas Separations Using Metal-Organic Frameworks"
19th Annual Conference of the North American Membrane Society (NAMS 2009)
Charleston, SC, June 20-24, 2009

116. Yuanqin Zhu, Grace Kalaw, Judy Wahome, Inga Musselman, Kenneth Balkus, Duck Joo Yang, John Ferraris
"Intrinsically Proton-Conducting Comb-Like Polymers Containing Perfluorocyclobutyl and 1H,1,2,3-Triazole Units"
19th Annual Conference of the North American Membrane Society (NAMS 2009)
Charleston, SC, June 20-24, 2009

117. Grace Kalaw, Inga Musselman, Kenneth J. Balkus, Jr., Duck-Joo Yang, John Ferraris
"Synthesis and Characterization of Perfluorocyclobutane (PFCB) Polymers for Proton Exchange Membranes (PEM) in Fuel Cells"
19th Annual Conference of the North American Membrane Society (NAMS 2009)
Charleston, SC, June 20-24, 2009

118. Ma. Josephine C. Ordoñez, Kenneth J. Balkus, Jr., John P. Ferraris, Inga H. Musselman
"ZIF-8/Matrimid® Mixed-Matrix Membranes"
238th American Chemical Society National Meeting
Washington, DC, August 16-20, 2009

119. Edson V. Perez, Kenneth J. Balkus, Jr., John P. Ferraris, Inga H. Musselman
"Mixed-Matrix Membranes for Gas Separations Using Metal-Organic Frameworks"
238th American Chemical Society National Meeting
Washington, DC, August 16-20, 2009

120. Yuanqin Zhu, Grace Jones Daba Kalaw, Judy Wahome, Inga H. Musselman, Kenneth J. Balkus, Jr., John P. Ferraris
"Synthesis and Characterization of Comb-Shaped Perfluorocyclobutyl Aromatic Polyethers with Phosphonated Side Chain"
238th American Chemical Society National Meeting
Washington, DC, August 16-20, 2009

121. Grace Jones Daba Kalaw, Inga H. Musselman, Duck-Joo Yang, Kenneth J. Balkus, Jr., John P. Ferraris
"Synthesis and Characterization of Perfluorocyclobutane Polymers Containing Sulfonimide Acid Functionality for Proton Exchange Membrane Fuel Cells"
238th American Chemical Society National Meeting
Washington, DC, August 16-20, 2009

122. Gregg R. Dieckmann, Inga H. Musselman, Steven O. Nielsen, Eric J. Becraft, Anton Klimenko, Jane H. Nguyen
"Use of Closeable Cyclic Peptides and Other Designed Biomolecules for the Noncovalent Functionalization of Carbon Nanotubes"
238th American Chemical Society National Meeting
Washington, DC, August 16-20, 2009

123. Ma. Josephine Ordoñez, Inga H. Musselman, Kenneth J. Balkus, Jr., John P. Ferraris (Talk)
"MIL-53 in Mixed-Matrix Membranes for Gas Separation"
43rd Annual ACS DFW Meeting-in-Miniature, The University of Texas at Dallas
Richardson, TX, April 17, 2010

124. Zhen Zhang, Kenneth J. Balkus, Jr., John P. Ferraris, Inga H. Musselman (Talk)
"Zeolitic Imidazolate Framework 7 Matrimid® Mixed-Matrix Membranes for Gas Separations"
43rd Annual ACS DFW Meeting-in-Miniature, The University of Texas at Dallas
Richardson, TX, April 17, 2010

125. D. R. Samarajeewa, G. R. Dieckamnn, I. H. Musselman (Talk)
"Effect of Surfactant Peptides on Electronic Properties of Single-walled Carbon Nanotubes"
43rd Annual ACS DFW Meeting-in-Miniature, The University of Texas at Dallas
Richardson, TX, April 17, 2010

126. David K. Bushdiecker II, Rockford K. Draper, Steven O. Nielsen, Paul Pantano, Inga H. Musselman (Talk)
"Carboxylation of Single-Walled Carbon Nanotubes for Use in Toxicology Studies"
43rd Annual ACS DFW Meeting-in-Miniature, The University of Texas at Dallas
Richardson, TX, April 17, 2010

127. Pauras Memon, Ma. Josephine Ordoñez, Kenneth J. Balkus, Jr., John P. Ferraris, Inga H. Musselman (Talk)
"Synthesis and Characterization of ZIF-69 Metal-Organic Framework for Incorporation into Mixed-Matrix Membranes for Gas Separations"
43rd Annual ACS DFW Meeting-in-Miniature, The University of Texas at Dallas
Richardson, TX, April 17, 2010

128. Inga H. Musselman, Kenneth J. Balkus, Jr., John P. Ferraris, Grace Kalaw, Jing Liu, Pauras Memon, Josephine Ordoñez, Edson Perez, Sumudu Wijenayake, Zhen Zhang (Talk)
"Zeolitic Imidazolate Framework Containing Mixed-Matrix Membranes for Hydrogen Separations"
Energy Researcher's Workshop – Meeting Energy Demands of the Future
Sponsored by the UT System Energy Council
Richardson, TX, May 19-20, 2010

129. Ma. Josephine Ordoñez, Kenneth J. Balkus, Jr., John P. Ferraris, Inga H. Musselman (Talk)
"MIL-53 in Mixed-Matrix Membranes for Gas Separation"
20th Annual Conference of the North American Membrane Society (NAMS 2010)
Washington D.C., July 17-22, 2010

130. Zhen Zhang, Kenneth J. Balkus, Jr., John P. Ferraris, Inga H. Musselman (Poster)
"ZIF-7/Matrimid® Mixed-Matrix Membrane for Gas Separations"
20th Annual Conference of the North American Membrane Society (NAMS 2010)
Washington D.C., July 17-22, 2010

131. G. D. Kalaw, K. J. Balkus, Jr., I. H. Musselman, J. P. Ferraris (Poster)
"Perfluorocyclobutyl (PFCB) Polymers for Gas Separation Applications"
20th Annual Conference of the North American Membrane Society (NAMS 2010)
Washington D.C., July 17-22, 2010

132. S. N. Wijenayake, K. J. Balkus, Jr., I. H. Musselman, J. P. Ferraris (Poster)
"ZIF-8/6FDA-Durene Mixed-Matrix Membranes for Gas Separation"
20th Annual Conference of the North American Membrane Society (NAMS 2010)
Washington D.C., July 17-22, 2010

133. I. H. Musselman, E. V. Perez, M. J. C. Ordoñez, K. J. Balkus, Jr., J. P. Ferraris (Talk)
"Incorporation of Hybrid Crystalline Microporous Materials in Mixed-Matrix Membranes for Gas Separation"
Microscopy and Microanalysis 2010
Portland, OR, August 1-5, 2010

134. D. R. Samarajeewa, G. R. Dieckmann, I. H. Musselman (Talk)
"Effect of Surfactant Peptides on Electronic Properties of Single-walled Carbon Nanotubes"
Microscopy and Microanalysis 2010
Portland, OR, August 1-5, 2010

135. I. H. Musselman, P. Bajaj, C. Mikoryak, R. H. Wang, D. K. Bushdiecker, II, P. Memon, G. R. Dieckmann, R. K. Draper, P. Pantano (Talk)
"Microscopy, Fluorescence, and Confocal Raman Imaging of Biotinylated Single-walled Carbon Nanotubes Bound to Breast Tumor Cells"
Microscopy and Microanalysis 2010
Portland, OR, August 1-5, 2010

136. Grace Jones D. Kalaw, Judy Anne N. Wahome, Kenneth J. Balkus, Jr., Inga H. Musselman, Duck-Joo Yang, John P. Ferraris
"Perfluorocyclobutyl (PFCB) Polymers for Proton Exchange Membrane Fuel Cell (PEMFC) Applications"
240th ACS National Meeting
Boston, MA, August 22-26, 2010

137. Grace Jones D. Kalaw, Kenneth J. Balkus, Jr., Inga H. Musselman, John P. Ferraris
"Perfluorocyclobutyl (PFCB) Polymers: Basolite Z1200 Mixed-Matrix Membranes (MMMs) for Gas Separation Applications"
240th ACS National Meeting
Boston, MA, August 22-26, 2010

138. Gregg R. Dieckmann, Inga H. Musselman, Steven O. Nielsen, Anton S. Klimenko, Dinushi R. Samarajeewa, Chi-cheng (Talk)
"Controlling the Surface Features of Carbon Nanotubes Using Designed Reversible Cyclic Peptides"
Joint 66th Southwest and 62nd Southeast Regional Meeting of the American Chemical Society
New Orleans, LA, December 1-4, 2010

139. I. H. Musselman, M. C. Ordoñez, Z. Zhang, K. J. Balkus, Jr., J. P. Ferraris (Talk)
"Polymer-Based Mixed-Matrix Membranes Containing Zeolitic Imidazolate Frameworks for Gas Separations"
Pacifichem 2010
Honolulu, HI, December 15-20, 2010

140. I. H. Musselman, D. R. Samarajeewa, G. R. Dieckman (Poster)
"Perturbation of Single-Walled Carbon Nanotube Electronic Properties Using Surfactant Peptides"
Pacifichem 2010
Honolulu, HI, December 15-20, 2010

141. J. P. Ferraris, K. J. Balkus, Jr., I. H. Musselman, G. J. Kalaw, M. C. Ordoñez, S. N. Wijenayake (Talk)
"Mixed-Matrix Membranes (MMMs) Comprising Metal Organic Frameworks and Novel Perfluorocyclobutyl-Based Polymers or High Temperature Polyimides for Gas Separations"
Pacifichem 2010
Honolulu, HI, December 15-20, 2010

142. Edson V. Perez, Kenneth J. Balkus, Jr., John P. Ferraris, Inga H. Musselman
"VTEC Polymer Membranes for $H_2/CO_2$ Separations in Water-Gas Shift Membrane Reactors: Design of a High Temperature/High Pressure Permeameter and Membrane Membrane Testing" (Poster)
ACS Dallas-Fort Worth Section, "Meet DFW's New Young Investigators" Meeting
Dallas, TX, January 29, 2011

143. Grace Jones D. Kalaw, Kenneth J. Balkus, Jr., Inga H. Musselman, John P. Ferraris
"Zeolitic Imidazolate Framework (ZIF) Materials and Thermally Stable Polymers as Mixed-Matrix Membranes (MMMs) for Gas Separations"
ACS Dallas-Fort Worth Section, "Meet DFW's New Young Investigators" Meeting
Dallas, TX, January 29, 2011

144. Josephine Hsieh, Kenneth Balkus, Jr., John Ferraris, Inga Musselman
"Cross-Linked ZIF-8/Matrimid® Mixed-Matrix Membranes for Gas Separations" (Poster)
21st Annual Conference of the North American Membrane Society (NAMS 2011)
Las Vegas, NV, June 4-8, 2011

145. Edson V. Perez, Grace D. Kalaw, Kelsey I. Musselman, Kenneth J. Balkus Jr., John P. Ferraris, Inga H. Musselman
"Gas Permeation Studies of PBI, VTEC, PIM-1, and 6FDA-NDA Polymers at High Pressures and Temperatures" (Poster)
21st Annual Conference of the North American Membrane Society (NAMS 2011)
Las Vegas, NV, June 4-8, 2011

146. Grace Kalaw, Edson Perez, Mishelle Kochumuttom, Kenneth, J. Balkus, Jr., Inga Musselman, John Ferraris
"Mixed-Matrix Membranes Based on Different ZIFs and Thermally Stable Polymers for Gas Separations" (Poster)
21st Annual Conference of the North American Membrane Society (NAMS 2011)
Las Vegas, NV, June 4-8, 2011

147. Sumudu Wijenayake, Kenneth J. Balkus, Jr., Inga H. Musselman, John P. Ferraris
"Surface Cross-Linked ZIF-8/6FDA-Durene Mixed-Matrix Membranes for Hydrogen Separation" (Poster)
21st Annual Conference of the North American Membrane Society (NAMS 2011)
Las Vegas, NV, June 4-8, 2011

148. Kenneth J. Balkus, William Regner, Catherine Eckert, Chalita Ratanatawanate, John P. Ferraris, Inga H. Musselman
"ZIF-7 and ZIF-8 Asymmetric Mixed-Matrix Membranes" (Talk)
21st Annual Conference of the North American Membrane Society (NAMS 2011)
Las Vegas, NV, June 4-8, 2011

149. P. Bajaj, J. Nguyen, C. Gilpin, G.R. Dieckmann, C.C. Chiu, S.O. Nielsen, I. H. Musselman
"Transmission Electron Microscopy and Three-Dimensional Tomography of Peptide-Coated Single-Walled Carbon Nanotubes" (Poster)
Microscopy & Microanalysis 2011
Nashville, TN, August 7-11, 2011

150. C. Ratanatawanate, John P. Ferraris, Inga H. Musselman, Kenneth J. Balkus, Jr.
"ZIF-8 Asymmetric Mixed-Matrix Membranes for Gas Separation" (Talk)
242nd ACS National Meeting & Exposition
Denver, CO, August 28-September 1, 2011

151. Edson V. Perez, Grace D. Kalaw, Kenneth J. Balkus, Jr., John P. Ferraris, Inga H. Musselman
"Gas Permeation Studies of VTEC and PBI Membranes and ZIF-8/PBI Mixed-Matrix Membranes at High Pressures and Temperatures" (Poster)
2nd American Chemical Society's Meet DFW's New Young Investigators
Dallas, TX, January 28, 2012.

152. Grace Jones D. Kalaw, E. V. Perez, I. H. Musselman, K. J. Balkus, Jr., J. P. Ferraris
"ZIF-8/Polybenzimidazole (PBI) Mixed-Matrix Membranes (MMMs) for $H_2/CO_2$ Separations" (Poster)
2nd American Chemical Society's Meet DFW's New Young Investigators
Dallas, TX, January 28, 2012.

153. Bao L. Nguyen, Grace D. Kalaw, Inga H. Musselman, Kenneth J. Balkus, Jr., John P. Ferraris
"6FDA-Based Polyimide Mixed-Matrix Membranes (MMMs) for Gas Separations" (Talk)
45th Annual ACS DFW Meeting-in-Miniature, University of Dallas
Irving, TX, April 21, 2012

154. Jing Liu, Grace Jones D. Kalaw, Kenneth J. Balkus, Jr., John P. Ferraris, Inga H. Musselman
"Spin-Coated Mixed-Matrix Membrane for Gas Separation at High Pressure and High Temperature" (Talk)
45th Annual ACS DFW Meeting-in-Miniature, University of Dallas
Irving, TX, April 21, 2012

155. David K. Bushdiecker II, Ruhung Wang, Gregg R. Dieckmann, Rockford K. Draper, Steven O. Nielsen, Paul Pantano, Inga H. Musselman
"The Effect of Carboxylic Acid Functionality on Single-Walled Carbon Nanotube Cytotoxicity" (Talk)
45th Annual ACS DFW Meeting-in-Miniature, University of Dallas
Irving, TX, April 21, 2012

156. Dinushi R. Samarajeewa, Gregg R. Dieckmann, Steven O. Nielsen, Inga H. Musselman
"Surfactant Peptide/Single-Walled Carbon Nanotube (SWCNT) Composites with Altered Electronic Properties" (Talk)
45th Annual ACS DFW Meeting-in-Miniature, University of Dallas
Irving, TX, April 21, 2012

157. Sumudu Wijenayake, Kenneth J. Balkus, Jr., Inga H. Musselman, John P. Ferraris
"ZIF-8/6FDA-Durene Mixed-Matrix Membranes for $H_2/CO_2$ Separation" (Talk)
45th Annual ACS DFW Meeting-in-Miniature, University of Dallas
Irving, TX, April 21, 2012

158. Nimanka P. Panapitiya, Do Nguyen, Kenneth J. Balkus, Jr., Inga H. Musselman, John P. Ferraris
"Fabrication and Characterization of Novel MOF Stabilized Immiscible Polymer Blend Mixed-Matrix Membranes for Gas Separations" (Talk)
45th Annual ACS DFW Meeting-in-Miniature, University of Dallas
Irving, TX, April 21, 2012

159. Grace Jones D. Kalaw, E. V. Perez, I. H. Musselman, K. J. Balkus, Jr., J. P. Ferraris
"ZIF-8/Polybenzimidazole Mixed-Matrix Membranes for Gas Separations" (Talk)
22nd Annual Conference of the North American Membrane Society (NAMS 2012)
New Orleans, LA, June 9-13, 2012

160. Sumudu Wijenayake, Kenneth J. Balkus, Jr., Inga H. Musselman, John P. Ferraris
"Asymmetric ZIF-8/6FDA-Durene Mixed-Matrix Membranes for $H_2/CO_2$ Separation" (Poster)
22nd Annual Conference of the North American Membrane Society (NAMS 2012)
New Orleans, LA, June 9-13, 2012

161. Nimanka P. Panapitiya, Do Nguyen, Kenneth J. Balkus, Jr., Inga H. Musselman, John P. Ferraris
"Fabrication and Characterization of Novel Metal Organic Framework Stabilized Immiscible Polymer Blend Membranes for Gas Separations" (Poster)
22nd Annual Conference of the North American Membrane Society (NAMS 2012)
New Orleans, LA, June 9-13, 2012

162. Dinushi Samarajeewa, Gregg R. Dieckmann, Steven O. Nielsen, Inga H. Musselman
"Surfactant Peptide/Single-Walled Carbon Nanotube Composites with Altered Electronic Properties" (Talk)
Microscopy & Microanalysis 2012
Phoenix, AZ, July 29-August 2, 2012

163. Yu Huang, Kenneth J. Balkus, Jr., John P. Ferraris, Inga H. Musselman
"Rapid Synthesis and Characterization of Zeolitic Imidazolate Framework 78"
46th Annual ACS DFW Meeting-in-Miniature, Texas A&M - Commerce
Commerce, TX, April 27, 2013

164. Natasha Varughese, David K. Bushdiecker II, Kenneth J. Balkus, Jr., John P. Ferraris, Inga H. Musselman
"Synthesis and Characterization of Nanometer-Sized ZIF-20 Particles for Gas Separations"
46th Annual ACS DFW Meeting-in-Miniature, Texas A&M - Commerce
Commerce, TX, April 27, 2013

165. Jing Liu, Grace Jones D. Kalaw, Kenneth J. Balkus, Jr., John P. Ferraris, Inga H. Musselman
"Spin-coated Mixed-Matrix Membranes for Gas Separations"
46th Annual ACS DFW Meeting-in-Miniature, Texas A&M – Commerce
Commerce, TX, April 27, 2013

166. David Bushdiecker II, Nimanka P. Panapitiya, Kenneth J. Balkus, Jr., John P. Ferraris, Inga H. Musselman
"Local Young's Modulus of Pure and Blended Polymers Using PeakForce™ Quantitative Nanomechanical Mapping"
46th Annual ACS DFW Meeting-in-Miniature, Texas A&M - Commerce
Commerce, TX, April 27, 2013

167. Grace D. Kalaw, Edson V. Perez, Inga H. Musselman, Kenneth J. Balkus Jr. John P. Ferraris
"Effect of Functionalization of Metal Organic Framework (MOF) Material in Polyimides for Gas Separations" (Talk and Poster)
23rd Annual Conference of the North American Membrane Society (NAMS 2013)
Boise, ID, June 8-12, 2013

168. Dinushi R. Samarajeewa; Udayana Ranatunga; Blake Wilson; Ariane Lemieux; Gregg Dieckmann; Steve Nielsen; Inga Musselman
"Adsorption of Naphthalene and Pyrene Containing Surfactant Peptides onto Single- Walled Carbon Nanotubes: A Microscopy, Spectroscopy, and Theoretical Study" (Poster)
Microscopy & Microanalysis 2013
Indianapolis, IN, August 4-8, 2013

169. Inga H. Musselman, David K. Bushdiecker II, Nimanka P. Panapitiya, Charles K. Miller, Kenneth J. Balkus, Jr., John P. Ferraris
"Local Young's Modulus of Pure and Blended Polymers Using PeakForce Quantitative Nanomechanical Mapping" (Poster)
247th ACS National Meeting and Exposition
Dallas, TX, March 16-20, 2014

170. Yu Huang, Edson V. Perez, Kenneth J. Balkus, Jr., John P. Ferraris, Inga H. Musselman
"Polymer-Coated Tubular Membrane Reactor for Water-Gas Shift Reaction and Gas Separation" (Poster)
247th ACS National Meeting and Exposition
Dallas, TX, March 16-20, 2014

171. Edson V. Perez, Grace D. Kalaw, Kenneth J. Balkus, Jr., John P. Ferraris, Inga H. Musselman
"Effects of Functionalization of Metal Organic Framework (MOF) and Metal Organic Polyhedra (MOP) Materials in Polyimides for Gas Separations at High Pressure and High Temperature" (Poster)
247th ACS National Meeting and Exposition
Dallas, TX, March 16-20, 2014

172. Nimanka P. Panapitiya, Kenneth J. Balkus, Jr., Kenneth J. Balkus, Jr., Inga H. Musselman, John P. Ferraris
"Stabilization of Immiscible Polymer Blends Using Structure Directing Metal Organic Frameworks (MOFs)" (Poster)
247th ACS National Meeting and Exposition
Dallas, TX, March 16-20, 2014

173. Sumudu N. Wijenayake, Kenneth J. Balkus, Jr., Inga H. Musselman, John P. Ferraris
"Fabrication of Asymmetric ZIF-8/Polyimide Mixed Matrix Membranes (MMMs) Using a Spin Coating Technique for Gas Separations" (Poster)247th ACS National Meeting and Exposition
Dallas, TX, March 16-20, 2014

174. Cindy Nguyen, Nimanka P. Panapitiya, Kenneth J. Balkus, Jr., Inga H. Musselman, John P. Ferraris
"Use of Colloidal Metal-Organic Frameworks (MOFs) as Multifunctional Compatibilizers for Immiscible Polyimide/Polybenzimidazole Blend Membranes" (Talk)
47th Annual ACS DFW Meeting-in-Miniature, Texas Wesleyan University
Fort Worth, TX, April 26, 2014

175. Do Nguyen, Kenneth J. Balkus, Jr., Inga H. Musselman, John P. Ferraris
"A Fast and Facile Synthetic Route for Zeolitic Imidazolate Framework 11 Nanoparticles" (Talk)
47th Annual ACS DFW Meeting-in-Miniature, Texas Wesleyan University
Fort Worth, TX, April 26, 2014

176. E. V. Perez, J. P. Ferraris, K. J. Balkus, Jr., and I. H. Musselman
"High Pressure and High Temperature Gas Adsorption in Mixed-Matrix Membranes Containing Metal Organic Polyhedra-18" (Talk)
24th Annual Conference of the North American Membrane Society (NAMS 2014)
Houston, TX, May 31-June 4, 2014

177. Edson V. Perez, Grace Jones D. Kalaw, John P. Ferraris, Kenneth J. Balkus, Jr., Inga H. Musselman
"$NH_2$-MIL-53/VTEC™ Mixed-Matrix Membranes for $H_2/CO_2$ Separations" (Poster)
24th Annual Conference of the North American Membrane Society (NAMS 2014)
Houston, TX, May 31-June 4, 2014

178. Yu Huang, Edson V. Perez, Charles K. Miller, Kenneth J. Balkus, Jr., John P. Ferraris, Inga H. Musselman
"Integrated Water-Gas Shift Reactor for Polymer-Coated Tubular Membrane" (Poster)
24th Annual Conference of the North American Membrane Society (NAMS 2014)
Houston, TX, May 31-June 4, 2014

179. Nimanka P. Panapitiya, Sumudu Wijenayake, Cindy Nguyen, Do Nguyen, Inga H. Musselman, Kenneth J. Balkus, Jr., John P. Ferraris
"Gas Separation Membranes from Immiscible Polymer Blends Compatibilized with Small Molecules" (Poster)
24th Annual Conference of the North American Membrane Society (NAMS 2014)
Houston, TX, May 31-June 4, 2014
Dr. Panapitiya received the *Journal of Applied Polymer Science* Award for the contributions of his research to the development of polymer sciences.

180. Sumudu N. Wijenayake, Nimanka P. Panapitiya, Cindy Nguyen, I. H. Musselman, Kenneth J. Balkus, Jr., John P. Ferraris
"Different Approaches of Cross-Linking Mixed Matrix Membranes for Hydrogen and Carbon Dioxide Separations" (Poster)
24th Annual Conference of the North American Membrane Society (NAMS 2014)
Houston, TX, May 31-June 4, 2014
Dr. Wijenayake was awarded second place in the student poster competition.

181. I. H. Musselman, N.P. Panapitiya, D.K. Bushdiecker II, M.P. Tomasek, C.K. Miller, C.J. Gilpin, K.J. Balkus, Jr., J.P. Ferraris
"SEM, TEM, and AFM Analyses of Phase-Separated Polymer Blend Membranes for Gas Separations" (Talk)
Microscopy & Microanalysis 2014
Hartford, CT, August 3-7, 2014

182. Edson V. Perez, John P. Ferraris, Kenneth J. Balkus, Jr., Inga H. Musselman
"Carbon Dioxide Sorption in Metal Organic Polyhedras at High Pressure and High Temperature" (Talk)
248th ACS National Meeting and Exposition
San Francisco, CA, August 10-14, 2014

183. Yu Huang, Chamaal Karunaweera, Nimanka Panapitiya, Kenneth J. Balkus, Jr., John P. Ferraris, Inga H. Musselman
"Morphology Control and Hydrogen Separations of Polymer Blend Membranes Consisting of 6FDA-DAM and Polybenzimidazole" (Talk)
48th Annual ACS DFW Meeting-in-Miniature, The University of Texas at Arlington
Arlington, TX, April 25, 2015

188. "Gas Separation Performance of Mixed Matrix Membranes (MMMs) Based on Immiscible Blends of High Performance Polymers Compatibilized by Colloidal Zeolitic Imidazolate Framework (ZIF)"
Do D. Nguyen, Nimanka P. Panapitiya, Bradley K. Moreno, Inga H. Musselman, Kenneth J. Balkus, John P. Ferraris
48th Annual ACS DFW Meeting-in-Miniature, The University of Texas at Arlington
Arlington, TX, April 25, 2015

189. "Novel Mixed Matrix Membranes (MMMs) Based on Immiscible Polymer Blends Compatibilized by Metal Organic Frameworks for Gas Separation at High Temperature and High Pressure"
Bradley K. Moreno, Do D. Nguyen, Nimanka P. Panapitiya, Inga H. Musselman, Kenneth J. Balkus, and John P. Ferraris*
48th Annual ACS DFW Meeting-in-Miniature, The University of Texas at Arlington
Arlington, TX, April 25, 2015

190. Edson V. Perez, Grace D. Kalaw, Kenneth J. Balkus, Jr., John P. Ferraris, Inga H. Musselman
"High Temperature and High Pressure $H_2/CO_2$ Separations with $NH_2$-MIL-53/VTec™ Mixed-Matrix Membranes" (Talk)
25th Annual Conference of the North American Membrane Society (NAMS 2015)
Boston, MA, May 30-June 3, 2015

191. Do Nguyen, Nimanka Panapitiya, Bradley Moreno, Yu Huang, Inga H. Musselman, Kenneth J. Balkus, Jr., John P. Ferraris
"Hydrogen Separation Using Mixed-Matrix Membranes (MMMs) Derived from Blends of 6FDA-Durene and Polybenzimidazole Compatibilized with Colloidal ZIF-7" (Poster)
25th Annual Conference of the North American Membrane Society (NAMS 2015)
Boston, MA, May 30-June 3, 2015

192. Nimanka Panapitiya, Sumudu Wijenayake, Namali Abeykoon, Chamaal Karunaweera, Sejin Kim, Do Nguyen, Inga H. Musselman, Kenneth J. Balkus, Jr., John P. Ferraris
"Carbon Molecular Sieve Membranes Derived from Small Module Compatibilized Immiscible Polymer Blends" (Poster)
25th Annual Conference of the North American Membrane Society (NAMS 2015)
Boston, MA, May 30-June 3, 2015

193. Charles J. Holt, Nimanka P. Panapitiya, Kenneth J. Balkus, Jr., John P. Ferraris, Inga H. Musselman
"Characterization of Polybenzimidazole/Polyimide Blend Membranes using Atomic Force Microscopy"
49th Annual ACS DFW Meeting-in-Miniature, Texas Woman's University
Denton, TX, April 23, 2016

194. Yu Huang, Chamaal Karunaweera, Edson V. Perez, Kenneth J. Balkus, Jr., John P. Ferraris, Inga H. Musselman
"Polybenzimidazole/6FDA-DAM Immiscible Blend Mixed-Matrix Membranes for $H_2/CO_2$ Gas Separation"
49th Annual ACS DFW Meeting-in-Miniature, Texas Woman's University
Denton, TX, April 23, 2016

195. Chamaal Kurunaweera, Nimanka P. Panapitiya, Inga H. Musselman, Kenneth J. Balkus, Jr., John P. Ferraris
"Polybenzimidazole/polyimide Precursor Based Carbon Molecular Sieve Membranes (CMSMs) for Hydrogen Separation"
49th Annual ACS DFW Meeting-in-Miniature, Texas Woman's University
Denton, TX, April 23, 2016

196. Yu Huang, Nimanka Panapitiya, Edson Vladimir Perez Jimenez, John P. Ferraris, Kenneth J. Balkus Jr., Inga H. Musselman
"Colloidal ZIF-8 PBI/6FDA-DAM Immiscible Polymer Blend Membranes for $H_2/CO_2$ Separation" (Poster)
26th Annual Conference of the North American Membrane Society (NAMS 2016)
Bellevue, WA, May 21-25, 2016

197. Chamaal Karunaweera, Nimanka P. Panapitiya, Inga H. Musselman, Kenneth J. Balkus Jr., John P. Ferraris
"Carbon Molecular Sieve Membranes from Compatibilized Polyimide-Polybenzimidazole Immiscible Polymer Blends for Gas Separations" (Poster)
26th Annual Conference of the North American Membrane Society (NAMS 2016)
Bellevue, WA, May 21-25, 2016

198. Edson V. Perez, John P. Ferraris, Kenneth J. Balkus Jr., Inga H. Musselman
"High Temperature and High Pressure Gas Separation Properties of Polybenzimidazole Membranes Dried at Different Temperatures" (Poster)
26th Annual Conference of the North American Membrane Society (NAMS 2016)
Bellevue, WA, May 21-25, 2016

199. E. V. Perez, K. J. Balkus, J. P. Ferraris, I. H. Musselman
"Improvement of Gas Separation Properties of Polybenzimidazole Membranes for Gas Separations at High Pressure and High Temperature through Thermal Treatment" (Talk)
252nd ACS National Meeting and Exposition
Philadelphia, PA, August 21-25, 2016

## STUDENT RESEARCH SUPERVISION

***Graduate student research supervision***
Completed supervision of 7 Ph.D. and 24 M.S. students

Doctoral students

2000 Ph.D. Brian Douglas Reid
"Composite Membranes for Gas Separations"

2007 Ph.D. Vasiliki Zorbas Poenitzsch
"Microscopic and Spectroscopic Study of Interactions Between Peptides and Single Walled Carbon Nanotubes"

2009 Ph.D. Edson V. Perez
"Mixed-Matrix Membranes Containing Metal-Organic Frameworks for Gas Separations"

2010 Ph.D. Pooja Bajaj
"Covalent and Noncovalent Modifications of Single-Walled Carbon Nanotubes"

2012 Ph.D. Ma. Josephine O. Hsieh
"MIL-53 Frameworks in Mixed-Matrix Membranes and Cross-Linked ZIF-8/Matrimid® Mixed-Matrix Membranes for Gas Separation"

2012 Ph.D. Dinushi R. Samarajeewa
"Adsorption of Surfactant Peptides on Single-Walled Carbon Nanotubes: Towards Tailoring the Electronic Properties of Carbon Nanotubes"

2016 Ph.D. Yu Huang
"Immiscible Polymer Blend Membranes for High Pressure, High Temperature $H_2/CO_2$ Separation"

Masters students

1994 M.S. Derek L. Smith
"Scanning Probe Microscopy of Langmuir-Blodgett Deposited Films of Poly(gamma-Benzyl-LGlutamate)"

1995 M.S. J. Shawn Roach
"Image Contrast in Scanning Tunneling Microscopy"

1995 M.S. Jean Marie Martino
"Atomic Force Microscopy of Poly(gamma-Benzyl-L-Glutamate) Molecules"

1995 M.S. Deepta Varadarajan
"Poly(3-alkyl)thiophenes as Membranes for Gas Separation"

1996 M.S. Lisa Washmon
"Poly(3-alkylthiophene) Membranes for Gas Separations: A Structure / Property Study"

1997 M.S. Lin Li
"Poly(3-alkylthiophene) Membranes for Gas Separations--Fabrication, Gas Transport Studies and Characterization"

1997 M.S. Suman Iyengar
"Contrast in Scanning Tunneling Microscopy Images of Para-Halogenated Phenyloctadecyl Ethers"

1997 M.S. Brian Reid
"Atomic Force Microscopy of Alzheimer's Disease Paired Helical Filaments"

1999 M.S. Chienwen Tien
"Scanning Tunneling Microscopy Study of Dihalogenated Phenyloctadecyl Ethers"

1999 M.S. Sudha Madhugiri
"Poly(3-octylthiophene) / NaY Zeolite Composite Membranes for Gas Separations"

1999 M.S. Von Ebron
"Poly 2-(3-thienyl)ethylacetate Membranes for Gas Separation"

1999 M.S. Karen Fortune
"A Scanning Tunneling Microscopy Study of Mixed-Monolayer Systems of Alcohols and of 4-Halo-Substituted Phenyl Ether"

2001 M.S. Kim Kangasniemi
"Synthesis and STM Imaging of PARA Substituted Phenylethers"

2002 M.S. Angelo Lubag
"Synthesis and STM Imaging of Substituted Phenyl Alkyl Ethers: Towards Functional Group Resolution"

2002 M.S. Kyle Cattanach
"Gas Permeability Properties of Composite Matrimid® Membranes"

2003 M.S. Hadi Yehia
"Gas Permeability Properties of Copper (II) Biphenyl Dicarboxylate-triethylenediamine/Matrimid® and Other Mixed-Matrix Membranes"

2004 M.S. Vasiliki Zorbas
"Atomic Force Microscopy of Single-Walled Carbon Nanotubes Wrapped with Amphiphilic Peptide Helices"

2006 M.S. Carlos Bárcena
"Gas Permeability Properties of Copper (II) Biphenyldicarboxylate-triethylenediamine in Rubbery Mixed-Matrix Membranes"

2006 M.S. Elfrida Ginting
"Synthesis and STM Imaging of Octadecyloxy Benzothiozol"

2008 M.S. Pooja Bajaj
"Temporal Study of Single-Walled Carbon Nanotube Carboxylation by Nitric Acid Reflux"

2009 M.S. Ma. Josephine C. Ordoñez
"Gas Permeability and Selectivity Properties of ZIF-8/Matrimid® Mixed-Matrix Membranes"

2010 M.S. Dinushi Samarajeewa
"Effect of Surfactant Peptides on Electronic Properties of Single-Walled Carbon Nanotubes"

2013 M.S. David K. Bushdiecker
"Analysis and Cytotoxicity of Nitric Acid Oxidized Single-Walled Carbon Nanotubes"

2015 M.S. Jing Liu
"Gas Permselectivity Properties of PBI-Based Asymmetric Flat and Hollow Fiber Membranes for $H_2/CO_2$ Separation"