

**Markus M. Hoffmann**  
**The College at Brockport, Department of Chemistry and Biochemistry**  
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## **PROFESSIONAL PREPARATION**

Technische Universität Darmstadt, Germany	Chemistry	“Vordiplom”	1991
Washington University, St. Louis, MO	Physical Chemistry	M.A.	1996
Washington University, St. Louis, MO	Physical Chemistry	Ph.D.	1997
Pacific Northwest National Laboratory (PNNL), Supercritical Fluids Group, Richland, WA			
Physical Inorganic/Hydrothermal Chemistry	Post-Doctoral Fellow		1998-1999
	Post-Doctoral Associate		1999-2000

## **APPOINTMENTS**

**Department Chair** (Sept. 2018 – present)  
**The College at Brockport, State University of New York, Dept. of Chemistry and Biochemistry, Brockport, NY**

**Professor** (Sept. 2011 – present)  
**The College at Brockport, State University of New York, Dept. of Chemistry and Biochemistry, Brockport, NY**

**Associate Professor** (Sept. 2007 – 2011)  
**The College at Brockport, State University of New York, Dept. of Chemistry and Biochemistry, Brockport, NY**

**Assistant Professor** (Sept. 2000 – 2007)  
**The College at Brockport, State University of New York, Dept. of Chemistry and Biochemistry, Brockport, NY**

**Adjunct Faculty Member** (Sept. 1999 – June 2000)  
**Columbia Basin College, Department of Math and Science, Pasco, WA**

## **SABBATICAL LEAVES**

**Friedrich-Schiller-Universität (FSU), Institute for Technical and Environmental Chemistry, Jena, Germany** (July 2007 – June 2008)  
**Technische Universität Darmstadt, Institute for Physical Chemistry, Darmstadt** (Aug. 2015 – Jan. 2016), as **Deutsche Forschungsgemeinschaft (DFG)-sponsored Mercator Fellowship**.

## **COLLABORATORS AND RESEARCH ADVISORS (denoted by asterisks)**

<b>Washington University:</b>	Mark S. Conradi (Physics)*, Jacob Schaefer (Chemistry)*
<b>PNNL:</b>	Raymond S. Addleman, John G. Darab, John L. Fulton*, Steve M. Heald, Bruce J. Palmer, Clement R. Yonker*, James S. Young
<b>TU Darmstadt, Germany:</b>	Bernd Buntkowsky, Torsten Gutmann

## UNDERGRADUATE RESEARCH COLLABORATORS WITH FIRST JOB PLACEMENT OR GRADUATE SCHOOL PLACEMENT

Renee Earl (2001)	SUNY at Albany	Chemistry, M.S.
Richard Taylor (2001 – 2002)	The College at Brockport, SUNY	Education, M.S.
Quang Phan (2001)	Eastman Kodak Company	Technician
Stacey Hess (2001 – 2002)	The College at Brockport, SUNY	Biology, M.S.
Jason Tubbs (2001 – 2004)	University of Rochester	Chemistry, Ph.D.
Jason Salter (2001 – 2002)	University of Rochester	Chem. Biology, Ph.D.
Christopher Woods (2002 – 2003)	Columbia Analytical Services	Chemist
Paul Drake (2002 – 2003)	Eastman Kodak Company	Retired chemist
Jason Carr (2002 – 2003)	SUNY at Buffalo	Chemistry, Ph.D.
Megan Bennett (2003 – 2005)	Virginia Polytechnic University	Chemistry, Ph.D.
Jim Hutchings (2003 – 2005)	Arizona State University	Chemistry, Ph.D.
Anthony Marshall (2004 – 2005)	University of Arizona	Chemistry, Ph.D.
Jennifer Woodworth (2004 – 2005)	SUNY Upstate Medical Center	Medicine, Ph.D.
Michelle Sullivan (2005 – 2006)	University of Rochester	Chemistry, Ph.D.
Lawrence LaRussa (2005 – 2007)	Temple University	Medicine, Ph.D.
Joshua Caccamis (2005 – 2006)	University of Florida, Gainesville	Chemistry, Ph.D.
Patrick Kendall (2005 – 2006)	Darien Center, NY	Ceramic Tile Mechanic
Lisa Schwenk (2005 – 2006)	Virginia Commonwealth University	Forensic Science, M.S.
Hanna Sobstyl (2006 – 2007)	The College at Brockport, SUNY	Education, M.S.
Sandra Climenhaga (2006 – 2007)	The College at Brockport, SUNY	Education, M.S.
Jacob Hammell (2006)	SUNY at Buffalo	Chemistry, Ph.D.
Fenix Garcia-Tiguerros (2007)	SUNY at Binghamton	Chemistry, B.S.
Stephen Seedhouse (2007 – 2008)	SUNY at Buffalo	Medic. Chem., Ph.D.
Vincent Badali (2008 – 2009)	Stony Brook University	Dental Med., Ph.D.
Carl Schrader (2009 – 2010)	University of California, Santa Cruz	Chemistry, Ph.D.
Anthony Zidell (2009 – 2010)	Pennsylvania State University	Chemistry, Ph. D.
Jennifer Fasciano (2010 – 2011)	Miami University, Ohio	Chemistry, Ph.D.
Joseph Russo (2010 – 2011)	New Jersey Institute of Technology	Chem. Engin., M.S.
Khalil Jones (2010 – 2011)	Xerox	Chemist
Nathan Scharf (2010 – 2012)	University of Michigan	Chemistry, Ph.D.
Eric Sylvester (2012 – 2014)	SUNY at Buffalo	Chemistry, Ph.D.
David Saeva (2012 – 2014)	University of Baltimore	Biochemistry, Ph.D.
Daniel Clark (2013 – 2014)	Waste Stream Technol., Buffalo	Chemistry Intern
Elise Cade (2013 – 2015)	Georgia Tech	Biochemistry, Ph.D.
Peter McGarvey (2014 – 2015)	Xerox	Chemist
João Petenuci, Jr. (2014 – 2014)	Brasil	Chemistry, BS.
Morgan Wilson (2015 – 2015)	Sabin Metal	Chemist
Tanner Davis (2015 – 2015)	Ortho Clinical Diagnostics	Packing Operator
Leeza Kerr (2015 – 2015)		
Camri Taylor (2015 – 2015)	U of Rochester Medical Center	Ambulatory Techn.
Albert Welch (2017 – 2017)	Ortho Clinical Diagnostics	Lab Technician
Jessica Zagari (2018 – 2019)		
Jaelyn Neubauer (2018 -)		
Alex Verrelli (2018 -)		

High school students supervised for summer research through the SEED mentor program of the American Chemical Society:

Nicole Bushie (2002)

Jacob Terrance (2003 and 2004)

Min Gonzales (2018)

## **PUBLICATIONS FROM SCHOLARSHIP AT THE COLLEGE AT BROCKPORT (undergraduate collaborators are underlined)**

1. “New Biradicals for Direct Excitation Highfield Dynamic Nuclear Polarization”, Bothe, S.; Nowag, J.; Klimavičius, V.; Hoffmann, M.; Troitskaya, T.; Amosov, E.; Tormyshev, V.; Kirilyuk, I.; Taratayko, A.; Kuzhelev, A.; Parkhomenko, D.; Bagryanskaya, E.; Gutmann, T.; Buntkowsky, *Journal of Physical Chemistry C*, **2018**, Vol. 122, 11422-11432, 10.1021/acs.jpcc.8b02570.
2. “Combining Freezing Point Depression and Self-Diffusion Data for Characterizing Aggregation”, Hoffmann, M.M.; Both, S.; Gutmann, T.; Buntkowsky, G., *Journal of Physical Chemistry B*, **2018**, Vol. 122, 4913-4921, 10.1021/acs.jpcc.8b03456.
3. “Solubility of Some Mineral Salts in Polyethylene Glycol and Related Surfactants”, McGarvey, P. and Hoffmann, M.M., *Tenside Surfactants Detergents*, **2018**, Vol. 55 (3), 203-209, 10.3139/113.110555.
4. “Comparative Study of the Magnetic Field Dependent Signal Enhancement in Solid-State Dynamic Nuclear Polarization Experiments”, Bothe, S.; Hoffmann, M.M.; Gutmann, T.; Buntkowsky, G., *Journal of Physical Chemistry C*, **2017**, Vol. 121, 27089-27097, 10.1021/acs.jpcc.7b07967.
5. “Unusual Local Molecular Motions in the Solid State Detected by Dynamic Nuclear Polarization Enhanced NMR Spectroscopy”, Hoffmann, M.M.; Bothe, S.; Gutmann, T.; Buntkowsky, G., *Journal of Physical Chemistry C*, **2017**, Vol. 121, 22948-22457, 10.1021/acs.jpcc.7b07965.
6. “Directly vs Indirectly Enhanced  $^{13}\text{C}$  in Dynamic Nuclear Polarization Magic Angle Spinning NMR Experiments of Nonionic Surfactant Systems”, Hoffmann, M.M.; Bothe, S.; Gutmann, T.; Hartmann, F.-F.; Reggelin, M.; Buntkowsky, G., *Journal of Physical Chemistry C*, **2017**, Vol. 121, 2418-2427, 10.1021/acs.jpcc.6b13087.
7. “Transport Properties of the 1-Hexyl-3-methylimidazolium Bis(trifluoromethylsulfonyl)amide – Trichloromethane Binary System – Indication of Trichloromethane Segregation”, Saeva, D.R.; Petenuci, III, J.; Hoffmann, M.M., *Journal of Physical Chemistry B*, **2016**, Vol. 120 (36), 9745–9754, 10.1021/acs.jpcc.6b06974.
8. “Density and Viscosity Study of Interactions of Some Amino Acids in Aqueous Solutions of Sodium Benzoate”, Haghani, A.; Iloukhani, H; Hoffmann, M.M. *Journal of Chemical and Engineering Data*, **2016**, 10.1021/acs.jced.5b01031.
9. “Aggregation Behavior of Several Ionic Liquids in Molecular Solvents of Low Polarity – Indication of a Bimodal Distribution”, Cade, E. A., Petenuci, III, J., Hoffmann, M. M. *ChemPhysChem*, **2016**, Vol. 17, 520-529, 10.1002/cphc.201500990.
10. Comparing composition- and temperature-dependent viscosities of binary systems with ionic liquids” Haghani, A.; Hoffmann, M.M. *Journal of Chemical and Engineering Data*, **2015**, Vol. 60, 3272-3288, DOI: 10.1021/acs.jced.5b00503.

11. "Synthesis of Imidazolium-Functionalized Ionic Liquid Specialties", Sylvester, E.D.; Stark, A.; Hoffmann, M.M. Proceedings of The National Conference On Undergraduate Research (NCUR), 2014 (Lexington, KY), 389-396.
12. "On the Temperature Dependence of Several Physicochemical Properties for Aqueous Solutions of the Ionic Liquid 1-Butyl-3-methylimidazolium Methanesulfonate ([C<sub>4</sub>mim][MeSO<sub>3</sub>])", Hoffmann, M.M.; Sylvester, E.D.; Russo, J.W. *Journal of Molecular Liquids*, **2014**, Vol. 199, 175-183, <http://dx.doi.org/10.1016/j.molliq.2014.08.031>.
13. "Comparing Composition and Temperature Dependent Excess Molar Volumes of Binary Systems Involving Ionic Liquids", Cade, E.A.; Saeva, D.R.; Hoffmann, M.M. *Journal of Chemical and Engineering Data*, **2014**, Vol. 59, 1892-1914, <http://dx.doi.org/10.1021/je500053c>.
14. "Calorimetric Study on the Ion Pairing of 1-Ethyl-3-methylimidazolium bis(trifluoromethylsulfonyl)amide ([C<sub>2</sub>mim][NTf<sub>2</sub>]) and Related Ionic Liquids in the Low-Dielectric Solvent Chloroform", Scharf, N.T.; Stark, A.; Hoffmann, M.M. *Journal of Solution Chemistry*, **2013**, Vol. 42, 2034-2056, <http://dx.doi.org/10.1007/s10953-013-0082-y>.
15. "Ion Man", Hoffmann, M.M. *International Innovation*, **2012**, November issue, 109-111.
16. "Ion Pairing and Dynamics of the Ionic Liquid 1-Hexyl-3-methylimidazolium bis(trifluoromethylsulfonyl)amide ([C<sub>6</sub>mim][NTf<sub>2</sub>]) in Low-Dielectric Solvent Chloroform", Scharf, N. T.; Stark, A.; Hoffmann, M.M. *Journal of Physical Chemistry B*, **2012**, Vol. 116, 11488-11497, <http://dx.doi.org/10.1021/jp3047592>.
17. "Composition Dependent Physicochemical Property Data for the Binary System Water and the Ionic Liquid 1-Butyl-3-methylimidazolium Methanesulfonate ([C<sub>4</sub>mim][MeSO<sub>3</sub>])" Stark, A., Zidell, A.W., Russo, J.W., Hoffmann, M.M. *Journal of Chemical and Engineering Data*, **2012**, Vol. 57, 3330-3339, <http://dx.doi.org/10.1021/je300045c>.
18. "Nuclear Magnetic Resonance: Basic Principles and Liquid State Spectroscopy" Hoffmann, M.M. in: "Characterization of Materials", 2<sup>nd</sup> ed., **2012**, Wiley, Hoboken, NJ, pp. 1295-1316, <http://dx.doi.org/10.1002/0471266965.com109.pub2>.
19. "Measurements of Surface Tension and Chemical Shift on Several Binary Mixtures of Water and the Ionic Liquids and their Comparison for Assessing Aggregation", Russo, J.W.; Hoffmann M.M. *Journal of Chemical and Engineering Data*, **2011**, Vol. 56, 3703-3710, <http://dx.doi.org/10.1021/je100949x>.
20. "Is the Ionic Liquid 1-Ethyl-3-methylimidazolium Methanesulfonate [Emim][MeSO<sub>3</sub>] Capable of Rigidly Binding Water?", Stark, Annegret; Zidell, A.W. Hoffmann, M.M. *Journal of Molecular Liquids*, **2011**, Vol. 160, 166-179, <http://dx.doi.org/10.1016/j.molliq.2011.03.01>.
21. "The Influence of Typical Impurities on the Surface Tension Measurements on Binary Mixtures of Water and the Ionic Liquids 1-Butyl-3-Methylimidazolium Tetrafluoroborate and Chloride", Russo, J.W.; Hoffmann M.M. *Journal of Chemical and Engineering Data*, **2010**, Vol. 55, 5900-5905, <http://dx.doi.org/10.1021/je100949x>.
22. "T<sub>2</sub> Relaxation Measurement with Solvent Suppression and Implications to Solvent Suppression in General", Hoffmann, M.M.; Sobstyl, H.S.; Badali, V.A. *Magnetic Resonance in Chemistry*, **2009**, Vol. 47, 593-600, <http://dx.doi.org/10.1002/mrc.2434>.
23. "An Interactive Spreadsheet for Demonstration of Basic NMR and Fourier Transform Concepts", Hoffmann, M.M. *Journal of Chemical Education*, **2009**, Vol. 86(3), 399, <http://dx.doi.org/10.1021/ed086p399>.
24. "Quantitative Analysis of Nail Polish Remover Using Nuclear Magnetic Resonance Spectroscopy", Hoffmann, M.M.; Caccamis, J.T.; Heitz, M.P.; Schlecht, K.D. *Journal of Chemical Education*, **2008**, Vol. 85(10), 1421-1423. <http://dx.doi.org/10.1021/ed085p1421>

25. "The Knoevenagel Condensation at Room Temperature", Trotzki, R.; Hoffmann, M.M.; Ondruschka, B. *Green Chemistry*, **2008**, Vol. 10(8), 873-878, <http://dx.doi.org/10.1039/B808265K>.
26. "Studies on the Solvent-Free and Waste-Free Knoevenagel Condensation", Trotzki, R.; Hoffmann, M.M.; Ondruschka, B. *Green Chemistry*, **2008**, Vol. 10(7), 767-772, <http://dx.doi.org/10.1039/B801661E>.
27. "Thermal Isomerization of cis- and trans-Pinane Leading to  $\beta$ -Citronellene and Isocitronellene", Stolle, A.; Hoffmann, M.M.; Ondruschka, B.; Bonrath, W.; Netscher, Th.; Findeisen, M.; Theyssen, N. *Chemistry – A European Journal*, **2008**, Vol. 14(22), 6805-6814, <http://dx.doi.org/10.1002/chem.200800298>.
28. " $T_1$  Relaxation Measurement with Solvent Suppression", Hoffmann, M.M.; Sobstyl, H.H.; Seedhouse, S.S. *Magnetic Resonance in Chemistry*, **2008**, Vol. 46(7), 660-666, <http://dx.doi.org/10.1002/mrc.2228>.
29. "Magnetic Field Gradient Calibration as an Experiment to Illustrate Magnetic Resonance Imaging", Hoffmann, M.M.; Seedhouse, S.J. *Journal of Chemical Education*, **2008**, Vol. 85(6), 836-838, <http://dx.doi.org/10.1021/ed085p836>.
30. "Using Nuclear Magnetic Resonance Spectroscopy for Measuring Ternary Phase Diagrams", Woodworth, J.K.; Terrance, J.C.; Hoffmann, M.M. *Journal of Chemical Education*, **2006**, Vol. 83(7), 1065-1066, <http://dx.doi.org/10.1021/ed083p1065>.
31. "Determination of the Mole Fraction of Various Gases Absorbed by Trihexyltetradecylphosphonium Chloride Using the Stoichiometric Method", Hutchings, J.W.; Hoffmann, M.M., Proceedings of the National Conference On Undergraduate Research (2005), Washington & Lee University and VMI Lexington, Virginia, April 21-23, 2005, 1446-1451.
32. "Water Partitioning in "Dry" Poly(Ethylene Oxide) Alcohol ( $C_mE_n$ ) Nonionic Surfactant - A Proton NMR Study", Hoffmann, M.M.; Bennett, M.E.; Fox, J.D.; Wyman, D.P.; *Journal of Colloid and Interface Science*, **2005**, Vol. 287, 712-716, <http://dx.doi.org/10.1016/j.jcis.2005.02.044>.
33. "Surprisingly High Solubility of the Ionic Liquid Trihexyltetradecylphosphonium Chloride in Dense Carbon Dioxide", Hutchings, J.W.; Fuller, K.L.; Heitz, M.P.; Hoffmann, M.M., *Green Chemistry*, **2005**, Vol. 7, 475-478, <http://dx.doi.org/10.1039/B502204E>.
34. "Ion Pair Formation of the Ionic Liquid 1-Ethyl-3-methylimidazolium bis(triflyl)imide in Low Dielectric Media", Tubbs, J.D., Hoffmann, M.M., *Journal of Solution Chemistry*, **2004**, Vol. 33, 379-392, <http://dx.doi.org/10.1023/B:JOSL.0000036308.36052.01>.
35. "Measuring  $P$ - $V$ - $T$  Phase Behavior with a Variable Volume View Cell", Hoffmann, M.M. Salter, J.D., *Journal of Chemical Education*, **2004**, Vol. 81, 411-413, <http://dx.doi.org/10.1021/ed081p411>.
36. "A Classroom Exercise Aiming at the Development of an Intuitive Understanding of  $P$ - $V$ - $T$  Phase Behavior of Fluids", Hoffmann, M.M., *Journal of Chemical Education*, **2004**, Vol. 81, 376-378, <http://dx.doi.org/10.1021/ed081p376>.
37. "Surfactants in Green Solvent Systems - Current and Possible Future Research Directions", Hoffmann, M.M.; Heitz, M.P.; Carr, J.B.; Tubbs, J.D., *Journal of Dispersion Science and Technology*, **2003**, Vol. 24, 155-171, <http://dx.doi.org/10.1081/DIS-120019966>.
38. "Microwave-Assisted Synthesis of 1-Ethyl-3-Methylimidazolium Bromide", Woods, C.M.; Bushie, N.T.; Hoffmann, M.M., *Journal of Undergraduate Chemistry Research*, **2003**, Vol. 2, 1-4.

## PUBLICATIONS FROM POST-DOCTORAL RESEARCH AT PNNL

1. “NMR Investigation of High Pressure, High Temperature Chemistry and Fluid Dynamics”, Yonker, C.R.; Hoffmann, M.M., in “Supercritical Fluid Technology in Materials Science and Engineering: Synthesis, Properties and Applications”, edited by Sun, Y.-P., Marcel Dekker, Inc., NY, **2002**, 59-85.
2. “Ion Hydration and Ion-Pair Formation in Water”, Fulton, J.L., Hoffmann, M.M., Darab, J.G., Palmer, B.J., Stern, E.A., *APS Forefront*, **2001**, Vol. 1, 83-85.
3. “An Infrared and X-ray Absorption Study of the Structure and Equilibrium of Chromate, Bichromate and Dichromate in High-Temperature Aqueous Solutions”, Hoffmann, M.M.; Darab, J.G.; Fulton, J.L., *Journal of Physical Chemistry A* **2001**, Vol. 105, 6876-6885.
4. “An Infrared and X-ray Absorption Study of the Equilibria and Structures of the Chromate, Bichromate and Dichromate in Ambient Aqueous Solutions”, Hoffmann, M.M.; Darab, J.G.; Fulton, J.L., *Journal of Physical Chemistry A* **2001**, Vol. 105, 1772-1782.
5. “X-ray Absorption Spectroscopy and Imaging of Heterogeneous Hydrothermal Mixtures Using a Diamond Microreactor Cell”, Fulton, J.L.; Darab, J.G.; Hoffmann, M.M., *Review of Scientific Instruments*, **2001**, Vol. 72, 2117-2122.
6. “An X-ray Absorption Fine Structure Study of Copper(I) Chloride Coordination Structure in Water up to 325°C”, Fulton, J.L.; Hoffmann, M.M.; Darab, J.G., *Chemical Physics Letters*, **2000**, Vol. 330, 300-308.
7. “Copper(I) and Copper(II) Coordination Structure under Hydrothermal Conditions at 325°C: An XAFS and MD Study”, Fulton, J.L.; Hoffmann, M.M.; Darab, J.G.; Palmer, B.J.; Stern, E.A., *Journal of Physical Chemistry A*, **2000**, Vol. 104, 11651-11663.
8. “The Corrosion of Nickel Metal by a High Temperature Aqueous Sodium Tungstate Solution Observed *in situ* by IR Spectroscopy”, Hoffmann, M.M.; Fulton, J.L., *Corrosion Journal*, **2000**, Vol. 56, 501-504.
9. “XAFS Studies of Aqueous Tungstate and Chrome Solutions at High Temperatures and Pressures”, Hoffmann, M.M.; Darab, J.G.; Fulton, J.L., in: Proceedings of the 13<sup>th</sup> International Conference on the Properties of Water and Steam, Eds. Tremaine, P.R.; Hill, P.G.; Irish, D.E.; Balakrishnan, P.V., NRC Press, Ottawa, **2000**, 585-592.
10. “A Transition from a Six- to a Four-Coordinate Ni<sup>2+</sup> Complex in High-Temperature Aqueous Solutions from X-ray Absorption Spectroscopy”, Fulton, J.L.; Darab, J.G.; Hoffmann, M.M., in: Proceedings of the 13<sup>th</sup> International Conference on the Properties of Water and Steam, Eds. Tremaine, P.R.; Hill, P.G.; Irish, D.E.; Balakrishnan, P.V.; NRC Press, Ottawa, **2000**, 593-598.
11. “A Short-Path Length, High-Pressure Optical Flow-Cell for Static and Time-Resolved Infrared Spectroscopy, Suitable for Supercritical Fluid Solutions Including Hydrothermal Systems”, Hoffmann, M.M.; Addleman, R.S.; Fulton, J.L., *Review of Scientific Instruments*, **2000**, Vol. 71, 1552-1556.
12. “Unusual Dysprosium Ceramic Nano-Fiber Growth in a Supercritical Aqueous Solution”, Hoffmann, M.M.; Young, J.S.; Fulton, J.L., *Journal of Material Science*, **2000**, Vol. 35, 4177-4183.
13. “New Experimental Developments for *in situ* XAFS Studies of Chemical Reactions under Hydrothermal Conditions”, Hoffmann, M.M.; Darab, J.G.; Heald, S.M.; Yonker, C.R.; Fulton, J.L., *Chemical Geology*, **2000**, Vol. 167, 89-103.
14. “A Transition in the Ni<sup>2+</sup> Structure from Six- to Four-Coordinate upon Formation of the Ion Pair Species in Supercritical Water: An XAFS, NIR, and MD Study”, Hoffmann, M.M.; Darab, J.G.; Palmer, B.J.; Fulton, J.L., *Journal of Physical Chemistry A*, **1999**, Vol. 103, 8471-8482.
15. “Studying *in situ* Hydrothermal Reactions with X-ray Absorption Spectroscopy”, Hoffmann, M.M.; Darab, J.G.; Fulton, J.L.; Stern, E.A., *Mineralogical Magazine*, **1998**, Vol. 62A, 636-637.

## **PUBLICATIONS FROM DOCTORAL RESEARCH AT WASHINGTON UNIVERSITY IN ST. LOUIS**

1. "Nuclear Magnetic Resonance Evidence of Disorder and Motion in Yttrium Trideuteride", Balbach, J.J.; Conradi, M.S.; Hoffmann, M.M.; Udovic, T.J.; Adolphi, N.L., *Physical Review B*, **1998**, Vol. 58, pp. 14823-14832.
2. "Hydrogen Exchange Reactions in Supercritical Media Monitored by *in situ* NMR", Hoffmann, M.M.; Conradi, M.S., *Journal of Supercritical Fluids*, **1998**, Vol. 14, pp. 31-40.
3. "Are There Hydrogen Bonds in Supercritical Methanol and Ethanol?", Hoffmann, M.M.; Conradi, M.S., *Journal of Physical Chemistry B*, **1998**, Vol. 102, pp. 263-271.
4. "Hydrogen Bonding and Exchange in Alcohols and Water", Hoffmann, M.M.; Conradi, M.S., Symposium on General Papers, American Chemical Society, Division of Petroleum Chemistry, J. Reynold, Ed.; Las Vegas, NV, **1997**, pp. 686-690.
5. "Hydrogen Bonding in Supercritical Water, Methanol and Ethanol", Hoffmann, M.M.; Conradi, M.S., Proceedings of the Fifth International Symposium on Hydrothermal Reactions, Palmer, A.P.; Wesolowski, D.J., Ed.; Gatlinburg, TN, **1997**, pp. 176-180.
6. "Are There Hydrogen Bonds in Supercritical Water?", Hoffmann, M.M.; Conradi, M.S., *Journal of the American Chemical Society*, **1997**, Vol. 119, pp. 3811-3817.
7. "Nuclear Magnetic Resonance Probe for Supercritical Water and Aqueous Solutions", Hoffmann, M.M.; Conradi, M.S., *Review of Scientific Instruments*, **1997**, Vol. 68, pp. 159-164.

## **PATENTS**

1. "Rare Earth Oxide Fluoride Nanoparticles and Hydrothermal Method for Forming Nanoparticles", J.L. Fulton, M.M., Hoffmann, U. S. Patent No. 6,316,377; Nov. 13, 2001.

## **STUDENT INITIATED AWARDS AND TRAVEL STIPENDS**

1. Undergraduate Summer Research Internship 2013 to Daniel Clark from The College at Brockport, \$2,560.
2. Undergraduate Summer Research Internship 2009 to Anthony Zidell from The College at Brockport, housing-only option.
3. ACS National Meeting Travel Grant for undergraduate student affiliates, awarded \$200 to Jim Hutchings to attend 228<sup>th</sup> ACS National Meeting, Philadelphia, August 22-25, 2004.
4. Student Affiliate Chapter Minigrant project to organize the undergraduate program of the Northeast Regional Meeting of the American Chemical Society, \$2,400 awarded to the ChemClub.
5. Third prize (\$200) Du Vigneaud Merit Award to Jason Tubbs for third best abstract submitted to Undergraduate Science Research Conference, University of Rochester, School of Medicine and Dentistry, Nov. 8 2003.
6. The Rochester Academy of Sciences awarded a \$100 2002/2003 student research grant to Christopher Woods, who wrote a proposal "Surfactant Studies Using ESR Spectroscopy".
7. ACS local section Undergraduate \$300 Travel Grant awarded to Jason Tubbs to present a poster at the National American Chemical Society Meeting in Boston, MA, August 18-22 2002.
8. "Phase Behavior Studies of Ionic Liquid/Supercritical Carbon Dioxide Microemulsion Systems", Jason D. Salter, \$500 Student Research Grant, The College at Brockport Feb. 2001.

9. "Electrochemistry Studies on the Reduction of Metal Oxides in Ionic Liquids", Stacey Hess, \$500 Student Research Grant, The College at Brockport Feb. 2001.

## STUDENT HONORS THESIS

1. "Intermolecular Interactions of Two Non-Ionic Surfactants with Water Studied Through Nuclear Magnetic Resonance", Megan E. Bennett, 2005.
2. "NMR Diffusion and Relaxation Studies on Surfactant Systems", Steven J. Seedhouse, 2008.
3. "Heats of Dissolution of Several Imidazolium-Based Ionic Liquids into Low Dielectric Media", Nathan T. Scharf, 2012.
4. "Aggregation Properties of Ionic Liquids in Low Polarity Solvents", Elise A. Cade, 2015.

## EXTERNAL GRANTS AND CONTRACTS

1. Deutsche Forschungsgemeinschaft "Characterization of the Properties and Phase Behavior of nonionic surfactants confined in mesoporous silica materials employing solid state NMR techniques," Buntkowsky, G. (Principal), Hoffmann, M. M. (Co-Principal), Gutmann, T. (Co-Principal), \$257,000.00. (September 1, 2015 - August 31, 2018).
2. Deutsche Forschungsgemeinschaft "Antrag einer Gewährung einer Unterstützung zum Aufbau internationaler Kooperationen", Gerd Buntkowsky, Markus M. Hoffmann, \$2,800, July 15, 2014 – July 14, 2015.
3. National Science Foundation (NSF) ARI-R2 infrastructure grant #0963239: "Improving Research Capabilities in Chemistry, Physics, Computational Science and Environmental Science at The College at Brockport, SUNY, a Primarily Undergraduate Institution", Markus M. Hoffmann with Co-PI's Stephen A. Godleski, Leigh J. Little, Jacques J. Rinchar and Mohammed Z. Tahar, \$1,569,329, 2010 - 2013.
4. Purchase Order Fixed-Price Contract for *The Rochester Midland Magnetic Resonance Fellowship*, RMC Fiscal Year 2010, \$2,500.
5. National Science Foundation (NSF) Research at Undergraduate Institution (RUI) #0842960: "RUI: Ion Pairing and Aggregation of Bis(trifluoromethanesulfonyl)amide Ionic Liquids in Media of Low Polarity", Markus M. Hoffmann, \$236,329, awarded for award period 2009-2012.
6. Purchase Order Fixed-Price Contract for *The Rochester Midland Magnetic Resonance Fellowship*, RMC Fiscal Year 2009, \$2,500.
7. Purchase Order Fixed-Price Contract for *The Rochester Midland Magnetic Resonance Fellowship*, RMC Fiscal Year 2008, \$4,000.
8. Application for the Undergraduate Faculty Sabbatical Leave Program of the Petroleum Research Fund (UFS-PRF) of the American Chemical Society, #46578: "Investigating the Thermodynamics and Mobility of Mixed Ionic Liquid – Water Systems", \$50,000, awarded for the period 08-01-2007 to 07-31-2008.
9. CoPI on Merck AAAS Undergraduate Science Research proposal, \$60,000, award period 2005-2008.
10. Purchase Order Fixed-Price Contract for *The Rochester Midland Magnetic Resonance Fellowship*, RMC Fiscal Year 2007, \$4,000
11. Purchase Order Fixed-Price Contract for *The Rochester Midland Magnetic Resonance Fellowship*, RMC Fiscal Year 2006, \$8,000



12. Purchase Order Fixed-Price Contract with *RCAg Industries* to conduct environmental oil degradation analysis according to EPA protocols, \$5,150 awarded in 2005.
13. Purchase Order Fixed-Price Contract for *The Rochester Midland Magnetic Resonance Fellowship*, RMC Fiscal Year 2005, \$8,000
14. Year 2004 CCLI award #0408617 to fund new NMR instrument, "Incorporation of Modern NMR spectroscopy into the Chemistry Curriculum of a Four-Year Undergraduate Institution", Hoffmann, M.M.; Heitz, M. P.; Logan, M. E., \$127,201.
15. Purchase Order Fixed-Price Contract for *The Rochester Midland Magnetic Resonance Fellowship*, RMC Fiscal Year 2004, \$7,000
16. Purchase Order Fixed-Price Contract for *The Rochester Midland Magnetic Resonance Fellowship*, RMC Fiscal Year 2003, \$7,000
17. Year 2003 Petroleum Research Fund type G Award from the American Chemical Society, "Combining Ionic Liquids and Supercritical Carbon Dioxide into a One-Phase Solvation Medium for Chemical Reactions", \$35,000.
18. Year 2003 Workshop Project Associate Program Starter Grant for Peer-Led-Team Learning, "Increasing Retention in Introductory College Level Chemistry Courses While Preparing Future School Science Teachers", Hoffmann, M.M.; Schlecht, K. D.; Sakshaug, L. E.; Veronesi, P. D., \$5,650.
19. Purchase Order Fixed-Price Contract: NMR analysis for Assistant Professor Anja Müller of Clarkson University, summer 2002, \$2000.
20. Year 2000 Camille and Henry Dreyfus Faculty Start-up Grant for Undergraduate Institutions, "Basic Spectroscopic Studies on Environmental Solvent Systems, \$20,000.

## INTERNAL AWARDS

1. 2017/2018 Faculty/Staff Technology Support Initiative Grant award for NMR support, \$4,770.
2. Approved Sabbatical Application, 2015.
3. UUP Individual Development Award 2015: \$353 to attend and present at the Northeast Regional Meeting of the American Chemical Society at Ithaca, NY.
4. Scholarly Incentive Award, 2015: \$415 for "X-ray Absorption Spectroscopy Studies on Rubidium Bromide Dissolved in Binary Surfactant Water Solvent".
5. **2014 Roland Fontaine Award for Faculty-Student Scholarship, The College at Brockport.**
6. Provost's Post-tenure Fellowship "Solubility of inorganic salts in nonionic surfactants for the purpose of organic synthesis, \$4,000, May 15, 2013 – May 14, 2015.
7. **2011 Chancellor's Award for Excellence in Scholarship and Creative Activity, State University of New York.**
8. Approved Sabbatical Application, 2007.
9. 2006/2007 Faculty/Staff Technology Initiative Grant award for the purchase of 20 NMR simulator software licenses, \$1,900.
10. Faculty/Staff Technology Support Initiative for AY 2005/2006: "Modernization of Magnetic Resonance Spectroscopy in the Physical Sciences", M. P. Heitz, M. M. Hoffmann, \$5,000.
11. **SUNY Promising Inventor Award, received on November, 4, 2004 in Albany, NY.**
12. Scholarly Incentive Award: \$490 for "Aggregation of Ionic Liquids in dilute ether solutions", Spring 2004.
13. UUP Individual Development Award 2002: \$436 for "Measuring the Amount of Gas Absorption into Ionic Liquids".

14. Scholarly Incentive Award, 2002: \$500 for "Measuring the Amount of Gas Absorption into Ionic Liquids".
15. Scholarly Incentive Award, 2001: \$500 to support ongoing basic physics-chemical research on room-temperature ionic liquid samples by allowing for safe and routine sample preparation techniques.
16. UUP Individual Development Award, 2001: \$600 to support travel of Jason Tubbs and myself to present a poster at the National American Chemical Society Meeting in Boston, MA, August 18-22.
17. Scholarly Incentive Award, 2000: \$1000 to support the exploration of electrochemical processes for the reduction of metal oxides.
18. UUP Individual Development Award, 2000: \$300 towards the purchase of sapphire windows

### **PRESENTATIONS PRESENTED BY UNDERGRADUATE COLLABORATORS**

1. Poster: "Method Development and Application of Polymer Analysis", Jessica Zagari, Markus M. Hoffmann, 45<sup>th</sup> Annual Rochester Academy of Sciences Fall Scientific Paper Session, SUNY Geneseo, Geneseo, NY, Nov. 10, 2018.
2. Poster: "Optimization of Purification of Surfactant-Thermally Synthesized  $[\text{Cu}_3(\text{BTC})_2]$  Metal-Organic Frameworks Using  $^1\text{H}$  Nuclear Magnetic Resonance Spectroscopy", Cory Forsyth, Jessica Zagari, Carly R. Reed, Markus M. Hoffmann, 63<sup>rd</sup> Annual ACS Rochester Local Section Undergraduate Research Symposium, The College at Brockport, Brockport, NY, April 28, 2018.
3. Poster: "Alkali Halide Salts Dissolved in Nonionic Surfactants Studied by  $^{23}\text{Na}$ ,  $^{81}\text{Br}$ , and  $^{87}\text{Rb}$  Nuclear Magnetic Resonance Spectroscopy", Morgen E. Wilson, Leeza M. Kerr, Markus M. Hoffmann, 60<sup>th</sup> Annual ACS Rochester Local Section Undergraduate Research Symposium, SUNY Geneseo, Geneseo, NY, April 18, 2015.
4. Poster: "Solubility of Mineral Salts in Binary Solvent Systems of Nonionic Surfactants and Water", Peter W. McGarvey, Markus M. Hoffmann, 60<sup>th</sup> Annual ACS Rochester Local Section Undergraduate Research Symposium, SUNY Geneseo, Geneseo, NY, April 18, 2015.
5. Poster: "Solubility of Mineral Salts in Binary Solvent Systems of Nonionic Surfactants and Water", Peter W. McGarvey, Markus M. Hoffmann, 1<sup>st</sup> Annual SUNY Undergraduate Research Conference (SURC), The College at Brockport, SUNY, Brockport, NY, April. 10, 2015.
6. Poster: "Solubility of Mineral Salts in Binary Solvent Systems of Nonionic Surfactants and Water", Peter W. McGarvey, Markus M. Hoffmann, Rochester Academy of Science 41<sup>st</sup> Annual Fall Scientific Paper Session, The College at Brockport, SUNY, Brockport, NY, Nov. 15, 2014.
7. Talk: "Physical Behaviors of Ionic Liquids in Low Polarity Solvents", Elise A. Cade, Markus M. Hoffmann, 59<sup>th</sup> Annual ACS Rochester Local Section Undergraduate Research Symposium, The Rochester Institute of Technology, Rochester, NY, April 26, 2014.
8. Talk: "Synthesis of Specialty Imidazolium-Based Ionic Liquids: Chiral ILs and Isotopically Enriched ILs", Eric D. Sylvester, Markus M. Hoffmann, 59<sup>th</sup> Annual ACS Rochester Local Section Undergraduate Research Symposium, The Rochester Institute of Technology, Rochester, NY, April 26, 2014.
9. Talk: "Solubility of Mineral Salts in Nonionic Surfactant-Water Binary Solvents", Daniel S. Clark, Markus M. Hoffmann, 59<sup>th</sup> Annual ACS Rochester Local Section Undergraduate Research Symposium, The Rochester Institute of Technology, Rochester, NY, April 26, 2014.
10. Talk: "Physical Behaviors of Ionic Liquids in Low Polarity Solvents", Elise A. Cade, Markus M. Hoffmann, Scholars Day 2014, The College at Brockport, Brockport, NY, April 9, 2014.

11. Talk: "Synthesis of Specialty Imidazolium-Based Ionic Liquids: Chiral ILs and Isotopically Enriched ILs", Eric D. Sylvester, Markus M. Hoffmann, Scholars Day 2014, The College at Brockport, Brockport, NY, April 9, 2014.
12. Talk: "Solubility of Mineral Salts in Nonionic Surfactant-Water Binary Solvents", Daniel S. Clark, Markus M. Hoffmann, Scholars Day 2014, The College at Brockport, Brockport, NY, April 9, 2014.
13. Poster: "Physical Behaviors of Ionic Liquids in Low Polarity Solvents", Elise A. Cade, Markus M. Hoffmann, National Conference on Undergraduate Research (NCUR) 2014, University of Kentucky, Lexington, KY, April 3-5, 2014.
14. Talk: "Synthesis of Specialty Imidazolium-Based Ionic Liquids: Chiral ILs and Isotopically Enriched ILs", Eric D. Sylvester, Markus M. Hoffmann, National Conference on Undergraduate Research (NCUR) 2014, University of Kentucky, Lexington, KY, April 3-5, 2014.
15. Talk: "Solubility of Mineral Salts in Nonionic Surfactant-Water Binary Solvents", Daniel S. Clark, Markus M. Hoffmann, National Conference on Undergraduate Research (NCUR) 2014, University of Kentucky, Lexington, KY, April 3-5, 2014.
16. Poster: "Physical Behaviors of Ionic Liquids in Low Polarity Solvents", Elise A. Cade, Markus M. Hoffmann, Rochester Academy of Science 40<sup>th</sup> Annual Fall Scientific Paper Session, Nazareth College, Rochester, NY, Nov. 9, 2013.
17. Poster: "Synthesis of Isotopically Labeled Ionic Liquids", Eric D. Sylvester, Markus M. Hoffmann, Rochester Academy of Science 40<sup>th</sup> Annual Fall Scientific Paper Session, Nazareth College, Rochester, NY, Nov. 9, 2013.
18. Poster: "Solubility of Mineral Salts in Nonionic Surfactant-Water Binary Solvents", Daniel S. Clark, Markus M. Hoffmann, Rochester Academy of Science 40<sup>th</sup> Annual Fall Scientific Paper Session, Nazareth College, Rochester, NY, Nov. 9, 2013.
19. Poster: "Solubility of Mineral Salts in Nonionic Surfactant-Water Binary Solvents", Daniel S. Clark, Markus M. Hoffmann, School of Medicine and Dentistry Undergraduate Research Day, University of Rochester, Rochester, NY, Oct. 25, 2013.
20. Poster: "Synthesis of Isotopically Labeled Ionic Liquids", Eric D. Sylvester, Markus M. Hoffmann, School of Medicine and Dentistry Undergraduate Research Day, University of Rochester, Rochester, NY, Oct. 25, 2013.
21. Poster: "Physical Behaviors of Ionic Liquids in Low Polarity Solvents", Elise A. Cade, Markus M. Hoffmann, 40<sup>th</sup> Annual Fall Scientific Paper Session of the Rochester Academy of Sciences, Nazareth College, Rochester, NY, Nov. 9, 2013.
22. Poster: "Solubility of Mineral Salts in Nonionic Surfactant-Water Binary Solvents", Daniel S. Clark, Markus M. Hoffmann, 40<sup>th</sup> Annual Fall Scientific Paper Session of the Rochester Academy of Sciences, Nazareth College, Rochester, NY, Nov. 9, 2013.
23. Poster: "Synthesis of Isotopically Labeled Ionic Liquids", Eric D. Sylvester, Markus M. Hoffmann, 40<sup>th</sup> Annual Fall Scientific Paper Session of the Rochester Academy of Sciences, Nazareth, Rochester, NY, Nov. 9, 2013.
24. Poster: "Solubility of Mineral Salts in Nonionic Surfactant-Water Binary Solvents", Daniel S. Clark, Markus M. Hoffmann, School of Medicine and Dentistry Undergraduate Research Day, University of Rochester, Rochester, NY, .Oct 25, 2013.
25. Poster: "Synthesis of Isotopically Labeled Ionic Liquids", Eric D. Sylvester, Markus M. Hoffmann, School of Medicine and Dentistry Undergraduate Research Day, University of Rochester, Rochester, NY, .Oct 25, 2013.
26. Talk: "Physical Properties of the Binary System Choloform with the Ionic Liquid 1-Hexyl-3-Methylimidazolium Bis(trifluoromethylsulfonyl)amide ([C<sub>6</sub>mim][NTf<sub>2</sub>] Solvent Chloroform)",

- David R. Saeva, Markus M. Hoffmann, 57<sup>th</sup> Annual ACS. Undergraduate Research Symposium, The College at Brockport, Brockport, NY, April 27, 2013.
27. Poster: "Preparation of Chiral Ionic Liquids", Eric Sylvester, Markus M. Hoffmann, 57<sup>th</sup> Annual ACS. Undergraduate Research Symposium, The College at Brockport, Brockport, NY, April 27, 2013.
  28. Talk: "Physical Properties of the Binary System Chloroform with the Ionic Liquid 1-Hexyl-3-Methylimidazolium Bis(trifluoromethylsulfonyl)amide ([C<sub>6</sub>mim][NTf<sub>2</sub>] Solvent Chloroform)", David R. Saeva, Markus M. Hoffmann, 2013 National Conference on Undergraduate Research, University of Wisconsin, LaCrosse, April 11-April 13 2013.
  29. Poster: "Preparation of Chiral Ionic Liquids", Eric Sylvester, Markus M. Hoffmann, 2013 National Conference on Undergraduate Research, University of Wisconsin, LaCrosse, April 11-April 13 2013.
  30. Poster: "Physical Properties of the Binary System Chloroform with the Ionic Liquid 1-Hexyl-3-Methylimidazolium Bis(trifluoromethylsulfonyl)amide ([C<sub>6</sub>mim][NTf<sub>2</sub>] Solvent Chloroform)", David R. Saeva, Markus M. Hoffmann, 39<sup>th</sup> Annual Fall Scientific Paper Session of the Rochester Academy of Sciences, St. John Fisher College, Rochester, NY, Nov. 10, 2012.
  31. Poster: "Preparation of Chiral Ionic Liquids", Eric Sylvester, Markus M. Hoffmann, 39<sup>th</sup> Annual Fall Scientific Paper Session of the Rochester Academy of Sciences, St. John Fisher College, Rochester, NY, Nov. 10, 2012.
  32. Poster: "Physical Properties of the Binary System Chloroform with the Ionic Liquid 1-Hexyl-3-Methylimidazolium Bis(trifluoromethylsulfonyl)amide ([C<sub>6</sub>mim][NTf<sub>2</sub>] Solvent Chloroform)", David R. Saeva, Markus M. Hoffmann, Northeast Regional Meeting of the American Chemical Society, Rochester, NY, Sep. 30 – Oct. 1, 2012.
  33. Poster: "Ion-pairing of the ionic Liquid 1-hexyl-3-methylimidazolium bis(triflyl)amide in chloroform," Nathan T. Scharf, Markus M. Hoffmann, The 5th Annual Undergraduate Research Symposium of the Western New York Section of the American Chemical Society, Canisius College, Buffalo, NY, April 14, 2012.
  34. Talk: "Ion-pairing of the ionic Liquid 1-hexyl-3-methylimidazolium bis(triflyl)amide in chloroform," Nathan T. Scharf, Markus M. Hoffmann, M. M., Scholars Day 2012, The College at Brockport, Brockport, NY, April 11, 2012.
  35. Talk: "Ion-pairing of the ionic Liquid 1-hexyl-3-methylimidazolium bis(triflyl)amide in chloroform", Nathan T. Scharf, Markus M. Hoffmann, 2012 National Conference on Undergraduate Research, Weber State University, Ogden, Utah, March 31-April 2 2012.
  36. Poster: "Ion-pairing of the ionic Liquid 1-hexyl-3-methylimidazolium bis(triflyl)amide in chloroform", Nathan T. Scharf, Markus M. Hoffmann., Rochester Academy of Science Fall 2011 Scientific Papers Day, Monroe Community College, NY, October 29, 2011.
  37. Poster: "Aggregation in Imidazolium-Based Ionic Liquids in Low Dielectric Media", Nathan T. Scharf, Markus M. Hoffmann, Brockport Foundation Summer Undergraduate Research Poster Session, The College at Brockport, Brockport, NY, October 14, 2011.
  38. Talk: "The Influence of Typical Impurities on The Surface Tension Measurements of Binary Mixtures of Water and the Ionic Liquids 1-Butyl-3-Methylimidazolium", Joseph W. Russo, Markus M. Hoffmann 56th Annual ACS 2011 Undergraduate Research Symposium, University of Rochester, Rochester, NY, April 30, 2011.
  39. Talk: "Ion Pairing of 1-Ethyl-3-Methylimidazolium Bis-Trifluoromethanesulfonylamide in Low Dielectric Media, Jennifer M. Fasciano, Markus M. Hoffmann, 56th Annual ACS 2011. Undergraduate Research Symposium, University of Rochester, Rochester, NY, April 30, 2011.

40. Talk: "Heats of Dissolution of Several Imidazolium-Based Ionic Liquids in Low Dielectric Media", Nathan T. Scharf, Markus M. Hoffmann, 2011 Scholar's Day, The College at Brockport, Brockport, NY, April 6, 2011.
41. Talk: "The Influence of Typical Impurities on The Surface Tension Measurements of Binary Mixtures of Water and the Ionic Liquids 1-Butyl-3-Methylimidazolium", Joseph W. Russo, Markus M. Hoffmann, 2011 Scholar's Day, The College at Brockport, Brockport, NY, April 6, 2011.
42. Talk: "Ion Pairing of 1-Ethyl-3-Methylimidazolium Bis-Trifluoromethanesulfonylamide in Low Dielectric Media", Jennifer M. Fasciano, Markus M. Hoffmann, 2011 Scholar's Day, The College at Brockport, Brockport, NY, April 6, 2011.
43. Talk: "The Influence of Typical Impurities on The Surface Tension Measurements of Binary Mixtures of Water and the Ionic Liquids 1-Butyl-3-Methylimidazolium", Joseph W. Russo, Markus M. Hoffmann, 25th National Conference of Undergraduate Research, Ithaca College, Ithaca, NY., March 31, 2011.
44. Talk: "Heats of Dissolution of Several Imidazolium-Based Ionic Liquids in Low Dielectric Media", Nathan T. Scharf, Markus M. Hoffmann, 25th National Conference of Undergraduate Research, Ithaca College, Ithaca, NY, March 31, 2011.
45. Talk: "Ion Pairing of 1-Ethyl-3-Methylimidazolium Bis-Trifluoromethanesulfonylamide in Low Dielectric Media", Jennifer M. Fasciano, Markus M. Hoffmann, 25th National Conference of Undergraduate Research, Ithaca College, Ithaca, NY, March 31, 2011.
46. Talk: "Using Surfactants as a Medium in Chemistry and Observing the Behavior of D-Limonene in Surfactant Mixtures", Khalil Jones, Markus M. Hoffmann, 25th National Conference of Undergraduate Research, Ithaca College, Ithaca, NY, March 31, 2011.
47. Poster: "Heats of Dissolution of Several Imidazolium-Based Ionic Liquids in Low Dielectric Media", Nathan T. Scharf, Markus M. Hoffmann, Rochester Academy of Science 37th Annual Fall Scientific Paper Session, Rochester Institute of Technology, Rochester, NY, November 6, 2010.
48. Poster: "Ion Pairing of 1-Ethyl-3-Methylimidazolium Bis-Trifluoromethanesulfonylamide in Low Dielectric Media", Jennifer M. Fasciano, Markus M. Hoffmann, Rochester Academy of Science 37th Annual Fall Scientific Paper Session, Rochester Institute of Technology, Rochester, NY, November 6, 2010.
49. Poster: "The Influence of Typical Impurities on The Surface Tension Measurements of Binary Mixtures of Water and the Ionic Liquids 1-Butyl-3-Methylimidazolium" Joseph W. Russo, Markus M. Hoffmann, Rochester Academy of Science 37th Annual Fall Scientific Paper Session, Rochester Institute of Technology, Rochester, NY, November 6, 2010.
50. Poster: "Using Surfactants as a Medium in Chemistry and Observing the Behavior of D-Limonene in Surfactant Mixtures" Khalil Jones, Markus M. Hoffmann, Rochester Academy of Science 37th Annual Fall Scientific Paper Session, Rochester Institute of Technology, Rochester, NY, November 6, 2010.
51. Poster: "Ion Pairing of 1-Ethyl-3-Methylimidazolium Bis-Trifluoromethanesulfonylamide in Low Dielectric Media", Jennifer M. Fasciano, Markus M. Hoffmann, Celebrating Student Success in the Sciences, The College at Brockport, Brockport, NY, September 24, 2010.
52. Poster: "Heats of Dissolution of Several Imidazolium-Based Ionic Liquids in Low Dielectric Media", Nathan T. Scharf, Markus M. Hoffmann, Celebrating Student Success in the Sciences, The College at Brockport, Brockport, NY, September 24, 2010.
53. Poster: "The Influence of Typical Impurities on The Surface Tension Measurements of Binary Mixtures of Water and the Ionic Liquids 1-Butyl-3-Methylimidazolium" Joseph W. Russo,

- Markus M. Hoffmann, Celebrating Student Success in the Sciences, The College at Brockport, Brockport, NY, September 24, 2010.
54. Poster: "Using Surfactants as a Medium in Chemistry and Observing the Behavior of D-Limonene in Surfactant Mixtures" Khalil Jones, Markus M. Hoffmann, Celebrating Student Success in the Sciences, The College at Brockport, Brockport, NY, September 24, 2010.
  55. Talk: "Using Surfactants as a Medium in Chemistry and Observing the Behavior of D-Limonene in Surfactant Mixtures" Khalil Jones, Markus M. Hoffmann, group meeting at Rochester Midland Corporation, Rochester, NY, Aug. 9, 2010.
  56. Talk: "Is Water Tightly Bound to Ionic Liquids Up to Water Mole Fractions of 0.5?" Anthony W. Zidell, Markus M. Hoffmann, 2010 Undergraduate Research Symposium of the Rochester Section of the American Chemical Society, Hobart and William Smith Colleges, April 24, 2010.
  57. Talk: "Is Water Tightly Bound to Ionic Liquids Up to Water Mole Fractions of 0.5?" Anthony W. Zidell, Markus M. Hoffmann, 24<sup>th</sup> National Conference on Undergraduate Research (NCUR), University of Montana-Missoula, April 15-17, 2010.
  58. Talk: "How Does Non-Polar D-Limonene Aggregate in Aqueous Solutions of Surfactants?" Carl T. Schrader, Markus M. Hoffmann, 24<sup>th</sup> National Conference on Undergraduate Research (NCUR), University of Montana-Missoula, April 15-17, 2010.
  59. Talk: "Is Water Tightly Bound to Ionic Liquids Up to Water Mole Fractions of 0.5?" Anthony W. Zidell, Markus M. Hoffmann, Scholars Day 2010, The College at Brockport, Brockport, NY April 7, 2010.
  60. Talk: "How Does Non-Polar D-Limonene Aggregate in Aqueous Solutions of Surfactants?" Carl T. Schrader, Markus M. Hoffmann, Scholars Day 2010, The College at Brockport, Brockport, NY April 7, 2010.
  61. Poster: "How Does Non-Polar D-Limonene Aggregate in Aqueous Solutions of Surfactant?", Carl T. Schrader, Markus M. Hoffmann, The thirty-sixth Annual Fall Scientific Paper Session of the Rochester Academy of Science, Roberts Wesleyan College, October 31, 2009.
  62. Poster: "Is Water Tightly Bound to Ionic Liquids up to Water Mole Fractions of 0.5?", Anthony W. Zidell, Markus M. Hoffmann, The thirty-sixth Annual Fall Scientific Paper Session of the Rochester Academy of Science, Roberts Wesleyan College, October 31, 2009
  63. Poster: "Nuclear Magnetic Resonance Studies of Aqueous Surfactants containing D-Limonene" Carl T. Schrader, Markus M. Hoffmann, Celebrating Student Success in the Sciences", The College at Brockport, State University of New York, Brockport, NY, September. 18, 2009.
  64. Talk: "Nuclear Magnetic Resonance Studies of Aqueous Surfactants containing D-Limonene" Carl T. Schrader, Markus M. Hoffmann, group meeting at Rochester Midland Corporation, Rochester, NY, Aug. 13, 2009.
  65. Talk: "Solvent Suppression Techniques in NMR Relaxation Measurements" Vincent A. Badali, Markus M. Hoffmann, 23<sup>rd</sup> National Conference on Undergraduate Research (NCUR), University of Wisconsin-La Crosse, April 16-18, 2009.
  66. Poster: "Solvent Suppression Techniques in T<sub>2</sub> Measurements", Vincent A. Badali, Markus M. Hoffmann, The thirty-fifth Annual Fall Scientific Paper Session of the Rochester Academy of Science, Nazareth College, November 1, 2008.
  67. Poster: "Solvent Suppression Techniques in T<sub>2</sub> Measurements", Vincent A. Badali, Markus M. Hoffmann, 10<sup>th</sup> Upstate NY NMR Symposium, Rochester Institute of Technology, Rochester, NY, October 17, 2008.
  68. Poster: "NMR Diffusion and Relaxation Studies on Surfactant Systems" Vincent A. Badali, Markus M. Hoffmann, Celebrating Student Success in the Sciences", The College at Brockport, State University of New York, Brockport, NY, September. 19, 2008.

69. Poster: "NMR Diffusion and Relaxation Studies on Surfactant Systems" Vincent A. Badali, Markus M. Hoffmann, group meeting at Rochester Midland Corporation, Rochester, NY, Aug. 26, 2008
70. Talk: "Using Glycolic Polyesterification Reactions to Test Liquid Surfactants" Lawrence E. LaRussa, Markus M. Hoffmann, 21<sup>th</sup> National Conference On Undergraduate Research, Dominican University, San Rafael, CA, April 12-14, 2007.
71. Talk: "The Ionic Liquid Trihexyl(tetradecyl)phosphonium Chloride Inhibits Laboratory-Grown Freshwater Biofilms", Sandra J. Climenhaga, Markus Hoffmann, and Tracey C. Householder, 21<sup>th</sup> National Conference On Undergraduate Research, Dominican University, San Rafael, CA, April 12-14, 2007.
72. Talk: "Using Glycolic Polyesterification Reactions to Test Liquid Surfactants" Lawrence E. LaRussa, Markus M. Hoffmann, 52<sup>nd</sup> Annual Undergraduate Research Symposium of the Rochester Section of the American Chemical Society, Rochester Institute of Technology, Rochester, April 21, 2007
73. Talk: "NMR Relaxation Studies Including Water Suppression Techniques" Hanna S. Sobstyl, Markus M. Hoffmann, group meeting at Rochester Midland Corporation, Rochester, NY, Aug. 11, 2006.
74. Talk: "Polyesterification in CHEM 29" Lawrence E. LaRussa, Markus M. Hoffmann, group meeting at Rochester Midland Corporation, Rochester, NY, Aug. 11, 2006.
75. Poster: "NMR Relaxation Studies Including Water Suppression Techniques" Hanna S. Sobstyl, Markus M. Hoffmann, First Summer Research at The College at Brockport Poster Session, Brockport, NY, Sept. 8, 2006.
76. Poster: "Using Glycolic Polyesterification Reactions to Test Liquid Surfactants" Lawrence E. LaRussa, Markus M. Hoffmann, First Summer Research at The College at Brockport Poster Session, Brockport, NY, Sept. 8, 2006.
77. Poster: "The Ionic Liquid Trihexyl(tetradecyl)phosphonium Chloride Inhibits Laboratory-Grown Freshwater Biofilms", Sandra J. Climenhaga, Markus Hoffmann, and Tracey C. Householder, First Summer Research at The College at Brockport Poster Session, Brockport, NY, Sept. 8, 2006.
78. Poster: "NMR Relaxation Studies Including Water Suppression Techniques" Hanna S. Sobstyl, Markus M. Hoffmann, Rochester Academy of Science 33<sup>rd</sup> Annual Paper Session, St. John Fisher College, Rochester, NY, Nov. 4, 2006
79. Poster: "Using Glycolic Polyesterification Reactions to Test Liquid Surfactants" Lawrence E. LaRussa, Markus M. Hoffmann, Rochester Academy of Science 33<sup>rd</sup> Annual Paper Session, St. John Fisher College, Rochester, NY, Nov. 4, 2006.
80. Poster: "The Ionic Liquid Trihexyl(tetradecyl)phosphonium Chloride Inhibits Laboratory-Grown Freshwater Biofilms", Sandra J. Climenhaga, Markus Hoffmann, and Tracey C. Householder, Rochester Academy of Science 33<sup>rd</sup> Annual Paper Session, St. John Fisher College, Rochester, NY, Nov. 4, 2006.
81. Talk: "Using Glycolic Polyesterification Reactions to Test Liquid Surfactants" Lawrence E. LaRussa, Markus M. Hoffmann, 21<sup>th</sup> National Conference On Undergraduate Research, Dominican University, San Rafael, CA, April 12-14, 2007.
82. Talk: "The Ionic Liquid Trihexyl(tetradecyl)phosphonium Chloride Inhibits Laboratory-Grown Freshwater Biofilms", Sandra J. Climenhaga, Markus Hoffmann, and Tracey C. Householder, 21<sup>th</sup> National Conference On Undergraduate Research, Dominican University, San Rafael, CA, April 12-14, 2007.

83. Talk: "Using Glycolic Polyesterification Reactions to Test Liquid Surfactants" Lawrence E. LaRussa, Markus M. Hoffmann, 52<sup>nd</sup> Annual Undergraduate Research Symposium of the Rochester Section of the American Chemical Society, Rochester Institute of Technology, Rochester, April 21, 2007.
84. Talk: "2,2-Dimethoxypropane as Potential Drying Agent for Green Solvents" Michelle D. Sullivan, Markus M. Hoffmann, 20<sup>th</sup> National Conference On Undergraduate Research, University of North Carolina at Asheville, Asheville, NC, April 6-8, 2006.
85. Talk: "2,2-Dimethoxypropane as Potential Drying Agent for Green Solvents" Michelle D. Sullivan, Markus M. Hoffmann, Scholars Day, The College at Brockport, NY, April. 12, 2006.
86. Talk: "NMR Spectroscopy of Dipropylene Glycol (CHEM 25)" Lawrence E. LaRussa, Markus M. Hoffmann, Scholars Day, The College at Brockport, NY, April. 12, 2006.
87. Talk: "The Binary pressure-volume-temperature behavior of Trihexyl(tetradecyl)phosphonium bis(trifluoromethylsulfonyl)imide in scCO<sub>2</sub>, Patrick Kendall, Markus M. Hoffmann, Scholars Day, The College at Brockport, NY, April. 12, 2006.
88. Talk: "2,2-Dimethoxypropane as Potential Drying Agent for Green Solvents" Michelle D. Sullivan, Markus M. Hoffmann, 51<sup>st</sup> Annual Undergraduate Research Symposium of the Rochester Section of the American Chemical Society, April 22, 2006.
89. Talk: "NMR Spectroscopy of Dipropylene Glycol (CHEM 25)" Lawrence E. LaRussa, Markus M. Hoffmann, 51<sup>st</sup> Annual Undergraduate Research Symposium of the Rochester Section of the American Chemical Society, April 22, 2006.
90. Poster: "The Binary pressure-volume-temperature behavior of Trihexyl(tetradecyl)phosphonium bis(trifluoromethylsulfonyl)imide in scCO<sub>2</sub>, Patrick Kendall, Markus M. Hoffmann, 51<sup>st</sup> Annual Undergraduate Research Symposium of the Rochester Section of the American Chemical Society, April 22, 2006.
91. Talk: "A New Method For Drying Solvents" Michelle D. Sullivan, Markus M. Hoffmann, group meeting at Rochester Midland Corporation, Rochester, NY, Aug. 10, 2005.
92. Talk: "Summer Research 2005: NMR Spectroscopy of CHEM 25 and Dissolving KCl salt in CHEM 1260" Lawrence E. LaRussa, Markus M. Hoffmann, group meeting at Rochester Midland Corporation, Rochester, NY, Aug. 10, 2005.
93. Talk: "2,2-Dimethoxypropane as Potential Drying Agent for Green Solvents" Michelle D. Sullivan, Markus M. Hoffmann, Rochester Academy of Science 32<sup>nd</sup> Annual Paper Session, Finger Lakes Community College, Canandaigua, NY, Nov. 5, 2005.
94. Talk: "NMR Spectroscopy of Dipropylene Glycol (CHEM 25)" Lawrence E. LaRussa, Markus M. Hoffmann, Rochester Academy of Science 32<sup>nd</sup> Annual Paper Session, Finger Lakes Community College, Canandaigua, NY, Nov. 5, 2005.
95. Talk: "A New Method for Drying Solvents", Michelle D. Sullivan, Markus M. Hoffmann, group meeting at Rochester Midland Corporation, Rochester, NY, Aug. 10, 2005.
96. Talk: "NMR Spectroscopy of CHEM 25 and Dissolving KCl Salt in CHEM 1260", Lawrence E. LaRussa, Markus M. Hoffmann, group meeting at Rochester Midland Corporation, Rochester, NY, Aug. 10, 2005.
97. Talk: "Phase Behavior Studies of Ternary Systems" Jennifer K. Woodworth, Jacob C. Terrance, Markus M. Hoffmann, 49<sup>th</sup> Annual Undergraduate Research Symposium, April 24, 2004 at Roberts Wesleyan, NY.
98. Talk: "Phase Behavior of Ionic Liquids in CO<sub>2</sub>, Developing Green Mixed Solvent Systems" James W. Hutchings, Markus M. Hoffmann, 19<sup>th</sup> National Conference On Undergraduate Research, Washington & Lee University and VMI Lexington, Virginia, April 21-23, 2005.



99. Talk: "Intermolecular Interactions of Non-Ionic Surfactants with Water Utilizing Nuclear Magnetic Resonance Spectroscopy", Megan E. Bennett, Markus M. Hoffmann, Jack D. Fox, Donald P. Wyman, 19<sup>th</sup> National Conference On Undergraduate Research, Washington & Lee University and VMI Lexington, Virginia, April 21-23, 2005.
100. Talk: "Phase Behavior of Ionic Liquids in CO<sub>2</sub>, Developing Green Mixed Solvent Systems" James W. Hutchings, Markus M. Hoffmann, The College at Brockport's Scholars Day, April 14, 2005, Brockport, NY.
101. Talk: "Diels Alder Reactions Using Surfactants", Anthony J. Marshall, Markus M. Hoffmann, The College at Brockport's Scholars Day, April 14, 2005, Brockport, NY.
102. Talk: "Intermolecular Interactions of Non-Ionic Surfactants with Water Utilizing Nuclear Magnetic Resonance Spectroscopy", Megan E. Bennett, Markus M. Hoffmann, Jack D. Fox, Donald P. Wyman, 32<sup>nd</sup> The College at Brockport's Scholars Day, April 14, 2005, Brockport, NY.
103. Talk: "Phase Behavior Studies of Ternary Systems" Jennifer K. Woodworth, Jacob C. Terrance, Markus M. Hoffmann, The College at Brockport's Scholars Day, April 14, 2005, Brockport, NY.
104. Poster: "Phase Behavior of Ionic Liquids in CO<sub>2</sub>, Developing Green Mixed Solvent Systems" James W. Hutchings, Markus M. Hoffmann, 32<sup>nd</sup> Northeast Regional ACS Meeting, Rochester, NY, Oct. 31 - Nov. 3, 2004.
105. Poster: "Diels Alder Reactions Using Surfactants", Anthony J. Marshall, Markus M. Hoffmann, 32<sup>nd</sup> Northeast Regional ACS Meeting, Rochester, NY, Oct. 31 - Nov. 3, 2004.
106. Poster: "Intermolecular Interactions of Non-Ionic Surfactants with Water Utilizing Nuclear Magnetic Resonance Spectroscopy", Megan E. Bennett, Markus M. Hoffmann, Jack D. Fox, Donald P. Wyman, 32<sup>nd</sup> Northeast Regional ACS Meeting, Rochester, NY, Oct. 31 - Nov. 3, 2004.
107. Poster: Phase Behavior of Ionic Liquids in CO<sub>2</sub>, James W. Hutchings, Markus M. Hoffmann, 228<sup>th</sup> ACS National Meeting, Philadelphia, PA, Aug. 22-26, 2004.
108. Poster: Ternary Phase Diagrams, Jacob C. Terrance, Markus M. Hoffmann, SEED poster session, 228<sup>th</sup> ACS National Meeting, Philadelphia, PA, Aug. 22-26, 2004.
109. Talk: "Diels Alder Reactions in CHEM 1260", Anthony J. Marshall, Markus M. Hoffmann, group meeting at Rochester Midland Corporation, Rochester, NY, Aug. 13, 2004.
110. Talk: "Summer Research 2004", Megan E. Bennett, Markus M. Hoffmann, Jack D. Fox, Donald P. Wyman, group meeting at Rochester Midland Corporation, Rochester, NY, Aug. 13, 2004.
111. Talk: "Surfactant Research Utilizing Nuclear Magnetic Resonance Spectroscopy", Megan E. Bennett, Markus M. Hoffmann, Jack D. Fox, Donald P. Wyman, 49<sup>th</sup> Annual Undergraduate Research Symposium, April 24, 2004 at Roberts Wesleyan, NY.
112. Talk: "Phase Behavior of Ionic Liquids in CO<sub>2</sub>", James W. Hutchings, Markus M. Hoffmann, 49<sup>th</sup> Annual Undergraduate Research Symposium, April 24, 2004 at Roberts Wesleyan College, NY.
113. Talk: " Surfactant Research Utilizing Nuclear Magnetic Resonance Spectroscopy", Megan E. Bennett, Markus M. Hoffmann, Jack D. Fox, Donald P. Wyman, 18<sup>th</sup> National Conference on Undergraduate Research, April 15-17, 2004, Indiana University-Purdue University, Indianapolis, Indiana.
114. Talk: "Evidence for Ion Pair Formation of 1-Ethyl-3-Methylimidazolium bis-Trifluoromethanesulfonylimide in Low Dielectric Solvents", Jason D. Tubbs, Markus M. Hoffmann, 18<sup>th</sup> National Conference on Undergraduate Research, April 15-17, 2004, Indiana University-Purdue University, Indianapolis, Indiana.

115. Talk: "Phase Behavior of Ionic Liquids in CO<sub>2</sub>", James W. Hutchings, Markus M. Hoffmann, 18<sup>th</sup> National Conference on Undergraduate Research, April 15-17, 2004, Indiana University-Purdue University, Indianapolis, Indiana.
116. Poster: " Surfactant Research Utilizing Nuclear Magnetic Resonance Spectroscopy", Megan E. Bennett, Markus M. Hoffmann, Jack D. Fox, Donald P. Wyman, Undergraduate Science Research Conference, University of Rochester School of Medicine and Dentistry, Rochester, NY, Nov. 11, 2003.
117. Poster: " Phase Behavior of Ionic Liquids in CO<sub>2</sub>", James W. Hutchings, Markus M. Hoffmann", Undergraduate Science Research Conference, University of Rochester School of Medicine and Dentistry, Rochester, NY, Nov. 11, 2003.
118. Poster: " Evidence for Ion Pair Formation of 1-Ethyl-3-Methylimidazolium bis-Trifluoromethanesulfonylimide in Low Dielectric Solvents", Jason D. Tubbs, Markus M. Hoffmann, Undergraduate Science Research Conference, University of Rochester School of Medicine and Dentistry, Rochester, NY, Nov. 1, 2003.
119. Poster/5-minute teaser talk: "Surfactant Research Utilizing Nuclear Magnetic Resonance Spectroscopy", Megan E. Bennett, Markus M. Hoffmann, Jack D. Fox, Donald P. Wyman, "Head Start 2003" - A University of Buffalo Physics Undergraduate Research Symposium, Buffalo, NY, Nov. 1, 2003.
120. Poster/5-minute teaser talk: "Phase Behavior of Ionic Liquids in CO<sub>2</sub>", James W. Hutchings, Markus M. Hoffmann ""Head Start 2003" - A University of Buffalo Physics Undergraduate Research Symposium, Buffalo, NY, Nov. 1, 2003.
121. Poster/5-minute teaser talk: "Evidence for Ion Pair Formation of 1-Ethyl-3-Methylimidazolium bis-Trifluoromethanesulfonylimide in Low Dielectric Solvents", Jason D. Tubbs, Markus M. Hoffmann, "Head Start 2003" - A University of Buffalo Physics Undergraduate Research Symposium, Buffalo, NY, Nov. 1, 2003.
122. Talk: "Surfactant Research Utilizing Nuclear Magnetic Resonance Spectroscopy", Megan E. Bennett, Markus M. Hoffmann, Jack D. Fox, Donald P. Wyman, 5<sup>th</sup> Robert A. Laudise Symposium, Union College, Schenectady, NY, Oct. 11, 2003.
123. Poster: "Phase Behavior of Ionic Liquids in CO<sub>2</sub>", James W. Hutchings, Markus M. Hoffmann, The 5<sup>th</sup> Robert A. Laudise Symposium, Union College, Schenectady, NY, Oct. 11, 2003.
124. Talk: "The Intermolecular Interactions Between CHEM 1260 and Water", Megan E. Bennett, Markus M. Hoffmann, group meeting at Rochester Midland Corporation, Rochester, NY, Aug. 13, 2003.
125. Talk: "Surfactant Studies Using Electron Paramagnetic Resonance Spectroscopy", Christopher M. Woods, Markus M. Hoffmann, Jack D. Fox, 48<sup>th</sup> Annual Undergraduate Research Symposium, April 26, 2003 at The College at Brockport, Brockport, NY.
126. Talk: "<sup>1</sup>H-NMR Chemical Shift and Relaxation Studies of Ionic Liquids", Jason D. Tubbs, Markus M. Hoffmann, 48<sup>th</sup> Annual Undergraduate Research Symposium, April 26, 2003 at The College at Brockport, Brockport, NY.
127. Talk: "CO<sub>2</sub> Thermodynamic Phase Behavior Studies and Evidence of CO<sub>2</sub>/Ionic Liquid Combined Solvent System", Jason B. Carr, Markus M. Hoffmann, 48<sup>th</sup> Annual Undergraduate Research Symposium, April 26, 2003 at The College at Brockport, Brockport, NY.
128. Talk: "Surfactant Studies Using Electron Paramagnetic Resonance Spectroscopy", Christopher M. Woods, Markus M. Hoffmann, Jack D. Fox, The College at Brockport's Scholars Day, April 2, 2003, Brockport, NY.
129. Talk: "<sup>1</sup>H-NMR Chemical Shift and Relaxation Studies of Ionic Liquids", Jason D. Tubbs, Markus M. Hoffmann, The College at Brockport's Scholars Day, April 2, 2003, Brockport, NY.

130. Talk: "CO<sub>2</sub> Thermodynamic Phase Behavior Studies and Evidence of CO<sub>2</sub>/Ionic Liquid Combined Solvent System", Jason B. Carr, Markus M. Hoffmann, The College at Brockport's Scholars Day, April 2, 2003, Brockport, NY.
131. Talk: "Surfactant Studies Using Electron Paramagnetic Resonance Spectroscopy", Christopher M. Woods, Markus M. Hoffmann, Jack D. Fox, 17<sup>th</sup> National Conference on Undergraduate Research, March 13-15, 2003, at the University of Utah, Salt Lake City, Utah.
132. Talk: "<sup>1</sup>H-NMR Chemical Shift and Relaxation Studies of Ionic Liquids", Jason D. Tubbs, Markus M. Hoffmann, 17<sup>th</sup> National Conference on Undergraduate Research, March 13-15, 2003, at the University of Utah, Salt Lake City, Utah.
133. Talk: "CO<sub>2</sub> Thermodynamic Phase Behavior Studies and Evidence of CO<sub>2</sub>/Ionic Liquid Combined Solvent System", Jason B. Carr, Markus M. Hoffmann, 17<sup>th</sup> National Conference on Undergraduate Research, March 13-15, 2003, at the University of Utah, Salt Lake City, Utah.
134. Poster: "Surfactant Studies Using Electron Paramagnetic Resonance Spectroscopy", Christopher M. Woods, Markus M. Hoffmann, Jack D. Fox, Undergraduate Science Research Conference, University of Rochester School of Medicine and Dentistry, Rochester, NY, Oct. 26, 2002.
135. Poster: "NMR Relaxation Measurements on Ionic Liquid Solvent Systems", Jason D. Tubbs, Markus M. Hoffmann, Undergraduate Science Research Conference, University of Rochester School of Medicine and Dentistry, Rochester, NY, Oct. 26, 2002.
136. Talk: "Surfactant Studies Using Electron Paramagnetic Resonance Spectroscopy", Christopher M. Woods, Markus M. Hoffmann, Jack D. Fox, 4<sup>th</sup> Robert A. Laudise Symposium, Union College, Schenectady, NY, Oct. 5, 2002.
137. Poster: "NMR Relaxation Measurements on Ionic Liquid Solvent Systems", Jason D. Tubbs, Markus M. Hoffmann, The 4<sup>th</sup> Robert A. Laudise Symposium, Union College, Schenectady, NY, Oct. 5, 2002.
138. Talk: "Surfactant Studies Using Electron Paramagnetic Resonance Spectroscopy", Christopher M. Woods, Markus M. Hoffmann, group meeting at Rochester Midland Corporation, Rochester, NY, Aug. 13, 2002.
139. Poster: "NMR Relaxation Measurements on Ionic Liquid Solvent Systems", Jason D. Tubbs, Markus M. Hoffmann, 224<sup>th</sup> ACS National Meeting & Exposition, Aug. 18-22, 2002, Boston, MA.
140. Talk: "NMR Relaxation Measurements on Ionic Liquid Solvent Systems", Jason D. Tubbs, Markus M. Hoffmann, oral presentation at the National Conference on Undergraduate Research, April 25-27, 2002, at the University of Wisconsin-Whitewater, Whitewater, WI.
141. Talk: "A High-Pressure Variable Volume View Cell For Phase Behavior Studies", Jason D. Salter, Markus M. Hoffmann, oral presentation at the National Conference on Undergraduate Research, April 25-27, 2002, at the University of Wisconsin-Whitewater, Whitewater, WI.
142. Talk: "<sup>1</sup>H-NMR Chemical Shift and Relaxation Studies of Ionic Liquids", Jason D. Tubbs, Markus M. Hoffmann, oral presentation at the 47<sup>th</sup> Annual Undergraduate Research Symposium, April 20, 2002 at Hobart and William Smith Colleges, Geneva, NY.
143. Talk: "Testing Standard Electrochemical Techniques Towards the Goal of Environmental Production of Titanium Metal From Titanium Dioxide", Stacey Hess, Markus M. Hoffmann, oral presentation at The College at Brockport's Scholars Day, April 10, 2002.
144. Talk: "<sup>1</sup>H-NMR Chemical Shift and Relaxation Studies of Ionic Liquids", Jason D. Tubbs, Markus M. Hoffmann, oral presentation at The College at Brockport's Scholars Day, April 10, 2002.

145. Talk: "A High-Pressure Variable Volume View Cell for Phase Behavior Studies", Jason D. Salter, Markus M. Hoffmann, oral presentation at The College at Brockport's Scholars Day, April 10, 2002.
146. Poster: "Preliminary <sup>1</sup>H-NMR Chemical Shift and Relaxation Studies of Ionic Liquids, Jason D. Tubbs, Markus M. Hoffmann, poster presented at the 3<sup>rd</sup> Annual Robert A. Laudise Symposium, held on September 15, 2001 at Union College, Schenectady, NY.
147. Poster: "A High-Pressure Variable Volume View Cell For Phase Behavior Studies", Jason D. Salter, Markus M. Hoffmann, poster presented at the 3<sup>rd</sup> Annual Robert A. Laudise Symposium, held on September 15, 2001 at Union College, Schenectady, NY.

### PRESENTATIONS PRESENTED BY GRADUATE COLLABORATORS

1. **Poster:** "Investigation of Transfer Mechanisms in Dynamic Nuclear Polarization (DNP) <sup>13</sup>C Direct Excitation Experiments on non-ionic surfactants", Sarah Bothe, Markus M. Hoffmann, Torsten Gutmann, Gerd Buntkowsky, 59<sup>th</sup> ENC, Orlando, FL, April 29 – May 4, 2018.

### OWN PRESENTATIONS FROM WORK AT BROCKPORT

2. Talk: "Discovery of Concurrent Direct and Indirect Channel Polarization in Dynamic Nuclear Polarization Experiments with Nonionic Surfactants", Markus M. Hoffmann, Sarah Bothe, Torsten Gutmann, Gerd Buntkowsky, 44<sup>th</sup> Annual Fall Scientific Paper Session of the Rochester Academy of Sciences, St. John Fisher College, Rochester, NY, Nov. 11, 2017.
3. Talk: "Nonionic Surfactants as Green Solvents", Markus M. Hoffmann, invited seminar presentation at Wagner College, Staten Island, NY, Nov. 3, 2017.
4. Poster: "Disagreement of EXAFS Data for Aqueous Rb<sup>+</sup> Solutions with Literature", Markus M. Hoffmann, 2017 CHESS User Meeting, Cornell University, Ithaca, NY, June 6, 2017.
5. Talk: "Physicochemical Studies of Binary Systems with Ionic Liquids and Molecular Solvents of low Polarity", Markus M. Hoffmann, invited seminar presentation at SUNY Cortland, Dec. 5, 2016.
6. Talk: "Indication of Trichloromethane Segregation in 1-Hexyl-3-methylimidazolium bis(trifluoromethylsulfonyl)amide – Trichloromethane Binary System", Markus M. Hoffmann, 43<sup>rd</sup> Annual Fall Scientific Paper Session of the Rochester Academy of Sciences, Roberts Wesleyan College, Rochester, NY, Nov. 12, 2016.
7. Talk: "Water, an Unusual Substance", Markus M. Hoffmann, guest lecture in "Mornings with the Professor" outreach program, The College at Brockport, Brockport, NY, Sept. 27 2016.
8. Talk: "Physicochemical Studies of Binary Systems with Ionic Liquids and Molecular Solvents", Markus M. Hoffmann, invited seminar presentation at Ithaca College, Ithaca, NY, Sept. 9, 2014.
9. Talk: "Grüne Lösungsmittel: Eine Übersicht verschiedener Forschungserfahrungen und Interessen", Markus M. Hoffmann, invited seminar presentation at TU-Darmstadt, Department of Chemistry, July 31, 2014.
10. Talk: "Ionic Liquids Dissolved in Media of Low Polarity", Markus M. Hoffmann, invited seminar presentation at SUNY Potsdam, Department of Chemistry, Potsdam, NY, Oct. 22, 2013.
11. Talk: "Physical Chemistry Research with Undergraduates only: Some Insights and Some Results", Markus M. Hoffmann, invited seminar presentation at Washington University, St. Louis, Department of Chemistry, July 8, 2013.
12. Poster: "Ion Paring and Dynamics of the Ionic Liquid 1-Hexyl-3-Methylimidazolium Bis(trifluoromethylsulfonyl)amide in the Low-Dielectric Solvent Chloroform", Markus M.

- Hoffmann, Nathan T. Scharf, Annegret Stark, 39<sup>th</sup> Annual Fall Scientific Paper Session of the Rochester Academy of Sciences, St. John Fisher College, Rochester, NY, Nov. 10, 2012.
13. Talk: "Ion Pairing and Dynamics of the Ionic Liquid 1-Hexyl-3-Methylimidazolium Bis(trifluoromethylsulfonyl)amide in the Low-Dielectric Solvent Chloroform." Markus M. Hoffmann, Nathan T. Scharf, Annegret Stark, Northeast Regional Meeting of the American Chemical Society, Rochester NY, October 2, 2012.
  14. Talk: "Ion Pairing and Aggregation of the Ionic Liquid 1-Hexyl-3-Methylimidazolium Bis(trifluoromethylsulfonyl)amide in the Low-Dielectric Solvent Chloroform." Markus M. Hoffmann, Jason T. Tubbs, Jennifer M. Fasciano, Anthony W. Zidell, Nathan T. Scharf, Annegret Stark, Seminar presentation at Central Michigan University, Department of Chemistry, July 30, 2012.
  15. Poster: "Is the Ionic Liquid 1-Ethyl-3-Methylimidazolium Methanesulfonate Capable of Rigidly Binding Water?", Markus M. Hoffmann, Annegret Stark, Anthony W. Zidell, 111<sup>th</sup> Annual Meeting of the Deutsche Bunsen-Gesellschaft für Physikalische Chemie, Leipzig, Germany. May 18, 2012.
  16. Talk: "Binary systems with ionic liquids" Markus M. Hoffmann, M. M., Seminar, The College at Brockport, Department of Chemistry, Brockport. April 26, 2012.
  17. Talk: "Why is there much scatter in published data for surface tension and critical aggregation concentration in aqueous solutions of ionic liquids?" Markus M. Hoffmann, 38<sup>th</sup> Annual Fall Scientific Paper Session of the Rochester Academy of Science, Monroe Community College, Rochester, NY, October 29, 2011.
  18. Poster: "The Effect of Water on the Structure and Properties of the Ionic Liquid 1-ethyl-3-methylimidazolium methanesulfonate [C2mim][MeSO<sub>3</sub>]", Markus M. Hoffmann, Annegret Stark, Anthony W. Zidell, Gordon Conference on Liquids, Chemistry & Physics of, Holderness, NH, July 24 to 29, 2011.
  19. Invited Talk: Markus M. Hoffmann, "Chemistry Undergraduate Research at Brockport," 2011 Scholar's Day, The College at Brockport, Brockport, NY, April 6, 2011.
  20. Invited talk: "Does the Ionic Liquid 1-Ethyl-3-Methylimidazolium Methanesulfonate tightly Bind Water?" Markus M. Hoffmann, Anthony W. Zidell, Annegret Stark, Seminar Presentation at the Rochester Institute of Technology, Department of Chemistry, Rochester, NY, January 19, 2011.
  21. Talk: "Is the Ionic Liquid 1-Ethyl-3-Methylimidazolium Methanesulfonate Capable of Rigidly Binding Water?" Markus M. Hoffmann, Anthony W. Zidell, Annegret Stark, Rochester Academy of Science 37<sup>th</sup> Annual Fall Scientific Paper Session, Rochester Academy of Science, Rochester Institute of Technology, November 6, 2010.
  22. Invited talk: "Physicochemical Measurements on Binary Systems with Ionic Liquids", Markus M. Hoffmann, Seminar at the Technical University in Chemnitz, Germany, May 31, 2010.
  23. Talk: "Solvent Suppression Techniques in NMR Measurements", Markus M. Hoffmann, Hanna S. Sobstyl, Steven J. Seedhouse, Vincent A. Badali, 11<sup>th</sup> Upstate NY NMR Symposium, SUNY Buffalo, Buffalo, NY, October 13, 2009.
  24. Poster: "Solvent Suppression Techniques in NMR Measurements", Markus M. Hoffmann, Hanna S. Sobstyl, Steven J. Seedhouse, Vincent A. Badali, The ACS 238<sup>th</sup> National Meeting, Washington DC, August 16-20, 2009.
  25. Invited talk: Markus M. Hoffmann "NMR Spektroskopie am College at Brockport State University of New York (SUNY) USA: Einige Ergebnisse aus Forschung und Lehre," Seminar at the University in Karlsruhe, Germany, June 3, 2009.

26. Talk: Markus. M. Hoffmann “Changing from Traditional Lecture Style to an Interactive Teaching Approach in a Small-Sized, Upper-Level Undergraduate Science Course, 2009 Teaching and Learning Day, The College at Brockport, State University of New York, Brockport, NY, March 27, 2009.
27. Talk: Markus M. Hoffmann, Hanna S. Sobstyl, Steven J. Seedhouse, Vincent. A. Badali “Solvent Suppression in NMR Relaxation Measurements”, The thirty-fifth Annual Fall Scientific Paper Session of the Rochester Academy of Science, Nazareth College, November 1, 2008.
28. Talk: Markus M. Hoffmann, Annegret Stark, Grit Sauer “Sabbatical Activities and Beyond”, Chemistry Seminar, The College at Brockport, State University of New York, October 2, 2008.
29. Talk: Markus M. Hoffmann, “Sabbatical Activities and Beyond, Up-Dates”, seminar at the Fridrich-Schiller-University, Jena, Germany on May. 22, 2008.
30. Invited talk: Markus M. Hoffmann “Einführung eines modernen NMR Spektrometers in das Chemiecurriculum der State University of New York (SUNY) College at Brockport, USA: Einige Ergebnisse aus Forschung und Lehre”, invited seminar at the Physics Department of the University of Leipzig, Leipzig, Germany, 05-20-2008.
31. Talk: Markus M. Hoffmann, “Sabbatical Activities and Beyond”, seminar at the Fridrich-Schiller-University, Jena, Germany on Nov. 18, 2007.
32. Invited talk: Markus M. Hoffmann "Einige Resultate Physikalisch-Chemischer Untersuchungen Über "Grüne" Lösungsmittel", invited seminar presentation at the Fridrich-Schiller-University, Jena, Germany on Jan. 18, 2005.
33. Invited Talk: "Some Results of Physico-Chemical Investigations Concerning “Green” Solvents", invited seminar presentation at Clarkson University on Nov. 18, 2004.
34. Talk: "Ion Pairing of the Ionic Liquid 1-Ethyl-3-Methylimidazolium bis-Trifluoromethanesulfonylimide in Low Dielectric Media, 32<sup>nd</sup> Northeast Regional ACS Meeting, Rochester, NY, Oct. 31 - Nov. 3.
35. Talk: "Ion Pairing of the Ionic Liquid 1-Ethyl-3-Methylimidazolium bis-Trifluoromethanesulfonylimide in Low Dielectric Media", 228<sup>th</sup> ACS National Meeting, Philadelphia, PA, Aug. 22-26, 2004.
36. Talk: "Defeating the Content Coverage Pressure in the Undergraduate Physical Chemistry Curriculum by Applying a More Student-Centered Approach to Teaching", 228<sup>th</sup> ACS National Meeting, Philadelphia, PA, Aug. 22-26, 2004.
37. Poster: “NMR Spectroscopic Studies on Room Temperature Ionic Liquids”, 5<sup>th</sup> Annual Green Chemistry Conference in Washington, D.C. June 25-28, 2001.
38. Invited talk: “Supercritical Water: What Happens to Water When it is Hot and Compressed?” seminar presentation at Buffalo State College on March 1, 2001.
39. Talk: ”Basic Spectroscopic Studies on Environmental Solvent Systems: Room Temperature Ionic Liquids and Ionic Liquids/Supercritical CO<sub>2</sub> Microemulsions”, Department Seminar, The College at Brockport, Sept. 26, 2000.

## **COURSES TAUGHT at BROCKPORT**

- CHM 205 College Chemistry I (Laboratory)
- CHM 206 College Chemistry II (Lecture and Laboratory)
- CHM 302 Inorganic Chemistry I (Lecture and Laboratory)
- CHM 303 Analytical Chemistry I (Lecture and Laboratory)

- CHM 305 Organic Chemistry I (Laboratory)
- CHM 405/505 Physical Chemistry Lecture I
- CHM 406/506 Physical Chemistry Lecture II
- CHM 408/508 Physical Chemistry Laboratory I
- CHM 409/509 Physical Chemistry Laboratory II
- CHM 413 Spectral Interpretation
- CHM 423 Standard and Modern NMR Techniques (*Self-created course for the winter session*)
- NAS 425 Peer-Led-Workshops for CHM 205/206 (*not offered anymore*)

## DEPARTMENTAL COMMITTEE and SERVICE ACTIVITIES

- Nuclear Magnetic Resonance Instrumentation Steward (2000 – present)
- Facilities and Equipment Committee (2000 – 2007, 2016 - 2018)
- Advisor to ChemClub (2001-2007)
  - 2001-02: Honorable Mention by the American Chemical Society
  - 2002-03: Commendable by the American Chemical Society
  - 2004-05: Honorable Mention by the American Chemical Society
  - 2005-06: Honorable Mention by the American Chemical Society
- Computing Facilities Coordinator (2003-2004)
- Curriculum Committee (2008 – present, Chair, 2011 – 2018)
- Advisement Coordinator and Advisor (~ 50 students) for the Chemistry Degree Program (2009 – 2015)
- Vice Chair, (2016- 2017)
- Undergraduate Research Coordinator (2010 – 2015, 2017-2018)
- Advancement, Promotion and Tenure (APT) Committee: (2011 – present, Chair 2016 - 2018)
- Search Committees
  - AY 2006-07: Chair of the external search hiring Dr. Godleski as Department Chair
  - AY 2008-09: Member of the external search hiring Dr. Vuletich as QAR
  - AY 2009-10: Member of the external search hiring Dr. Vuletich as Assistant Professor, Biochemistry
  - AY 2010-11: Member of the external search hiring Dr. Carly Reed as QAR
  - AY 2011-12: Chair of the external search hiring Dr. Carly Reed as Assistant Professor, Inorganic Chemistry
  - AY 2016-17: Chair of the external search hiring Dr. Robert LeSuer as Assistant Professor, Analytical Chemistry
  - AY 2017-18: Chair of the external search for an Instrument Technician and Organic Chemistry Laboratory Manager.

## CAMPUS WIDE SERVICE

- Search Committee Grants Project Coordinator (2017)

- Departmental Representative at College Faculty Senate (2017)
- Environmental Science Board Representative (2001 – 2009, 2016- 2018)
- Academic Planning Seminar advisor (2005 – 2007)
- College Technology Council and its budget sub-committee (2006 – 2007)
- Ad-hoc Online Course Policy Committee (Spring 2009)
- National Conference on Undergraduate Research (NCUR) campus coordinator (2009 – present)
  - 2009: University of Wisconsin, LaCross, WI, 25 students presented
  - 2010: University of Montana, Missoula, MT, 24 students presented
  - 2011: Ithaca College, Ithaca, NY, 32 students presented
  - 2012: Weber State University, Ogden, Utah, 19 students presented
  - 2013: University of Wisconsin, LaCross, WI, 27 students presented
  - 2014: University of Kentucky, Lexington, KY, 23 students presented
  - 2017: University of Memphis, Memphis, TN, 20 students presented
  - 2018: University of Central Oklahoma, Oklahoma City, OK, 27 students presented
- Research Foundation Advisory Board (2010 – 2011)
- Chair of NCUR Planning Team (2011 – 2013)
- Library Design Committee (2011 – 2014)
- Scholar’s Day Committee (2011 – 2013, 2017-present)
- Back to Basics Working Group Committee (2013 – 2014)
- SUNY Transfer Paths Faculty Review for Chemistry Curriculum (2014)
- Steering Committee to host the inaugural SERC at Brockport (2014-2015)
- Selection Committee for the Roland Fontaine Award for Faculty-Student Scholarship (2015)
- Common Hour Task force (Spring 2015)

## REVIEWER FOR FUNDING AGENCIES

- National Science Foundation, individual proposals and review panels
  - Feb. 6-7, 2017, Review panel for the Chemical Structure, Dynamics and Mechanisms Program A (CSDM-A) program.
  - July 25-26, 2005, Review panel for the Course, Curriculum, and Laboratory Improvement (CCLI) program
  - Feb. 30 – March 1, 2005, Review panel for the Course, Curriculum, and Laboratory Improvement (CCLI) program
  - March 11-12, 2002, Review panel for the Nanoscale Science and Engineering program
- Petroleum Research Fund of the American Chemical Society
- Georgian-U.S. Bilateral Grants Program of the U.S. Civilian Research & Development Foundation

## REVIEWER FOR JOURNALS

- *Applied Physics*



- *Chemical Engineering Communication*
- *Chemical Geology*
- *Chemical Product and Process Modeling (CPPM).*
- *ChemPhysChem*
- *Colloids and Surfaces A: Physicochemical and Engineering Aspects*
- *Fluid Phase Equilibria*
- *Industrial & Engineering Chemistry Research*
- *Inorganic Chemistry*
- *Journal of Chemical & Engineering Data*
- *Journal of Chemical Education*
- *Journal of Colloid and Interface Sciences*
- *Journal of Fluorine Chemistry*
- *Journal of Physical Chemistry*
- *Journal of Solution Chemistry*
- *Journal of Supercritical Fluids*
- *Journal of The American Chemical Society*
- *Journal of Undergraduate Chemistry Research*
- *Langmuir*
- *Physical Chemistry Chemical Physics (PCCP)*
- *Physics and Chemistry of Liquids*
- *Scientific Reports*
- *Scientific World Journal*
- *Sensors*
- *Soils*
- *Zeitschrift für Physikalische Chemie*

## **OTHER REVIEWING**

- Reviewed 2 chapters and Prospectus & TOC of Mosher, M.D.; Branan, D.; Kelter, P.B., *Chemistry - The Practical Science*, 2nd Edition, Roberts Publishing, Denver, CO, USA
- Reviewed 3 Chapters for a Physical Chemistry textbook book by Dor Ben-Amotz.
- Reviewed 6 Chapters, i.e. 6 physical chemistry laboratory experiments, for a Physical Chemistry Laboratory textbook to be published by Wiley.
- Three book chapters for a Physical Chemistry textbook by Peter Atkins, Julio DePaula and Ronald Friedmann
- Independent reviewer for The United States Military Academy at West Point for the purpose of assessing the scholarly quality of Dr. John T. Bays and Dr. Andrew I. Biagolow.
- Independent reviewer of the scholarship of Dr. Alexander Nazarenko for the purpose of promotion to Full Professor.