

Brian M. Tande

Associate Professor and Chair of Chemical Engineering
University of North Dakota, Grand Forks, ND 58202
Phone: 701-777-2337 mail: brian.tande@engr.und.edu

EDUCATION

University of Minnesota	Chemical Engineering	B.S.ChE	1998
University of Minnesota	Chemistry	B.S.	1998
University of Delaware	Chemical Engineering	Ph.D. ChE	2002

PROFESSIONAL EXPERIENCE

University of North Dakota	Grand Forks, ND	2006-Present
Chair of Chemical Engineering		2013 to Present
Associate Professor of Chemical Engineering		2012 to Present
Director of the Jodsaas Center		2011 to 2015
Assistant Professor of Chemical Engineering		2006 to 2012
Twilight Labs, Inc.	Fargo, ND	2005 to Present
Tecton Products, LLC	Fargo, ND	
Director of Operations		2005-2006
Quality Manager		2004-2005
Process Dev. Leader		2003-2004

PEER-REVIEWED PUBLICATIONS

1. **Tande, Brian M.**, Wagner, Norman J., Jeong, Miyoun, Mackay, Michael E., and Craig J. Hawker. "Viscosimetric, Hydrodynamic and Conformational Properties of Dendrimers." *Macromolecules*, 2001, 34, 8580-8585
2. Mackay, Michael E., **Tande, Brian M.**, Wagner, Norman J., Gido, Samuel P., Jeong, Miyoun, and Craig J. Hawker. "Microphase Separation of Hybrid Dendron-Linear Diblock Copolymers into Ordered Structures." *Macromolecules*, 2002, 35 (22), pp. 8391-8399.
3. **Tande, B.M.**, Wagner, Norman J., Dietcher, Robert, and Stanley I. Sandler. "UNIFAC-Free Volume Applied to Dendritic Molecules in Solution." *J. Chemical Engineering Data*. 2002, 47 (2), pp. 376-377.

4. **Tande, B.M.**, Wagner, Norman J., Mackay, Michael E. "Phase Behavior of Hybrid Dendron-Linear Copolymers and Blends with Linear Homopolymer." *Comptes Rendus Chimie*, 2003, 6 (8-10), pp. 853-864.
5. **Tande, B.M.**, Wagner, Norman J., and Young H. Kim. "Influence of End Groups on Dendrimer Rheology." *Macromolecules*, 2003, 36 (12), pp. 4619-4623.
6. **Tande, B.M.**, Wagner, Norman J., and Young H. Kim "Polypropyleneimine Dendrimers as Plasticizers for Polyvinyl Chloride" *Journal of Polymer Science B: Polymer Physics Edition*, 2007, 45, pp. 1970-1975.
7. Braegelmann, M.P., Azure, A.D, Stahl, D, **Kubátová, A, Seames, W.S., and Tande, B.M.** "Extraction of Fatty Acids from Noncatalytically Cracked Triacylglycerides using Aqueous Amines." *Separation Science and Technology*, 2011, 46 (14) , pp. 2167-2173
8. Gandhi, S., Kadrmas, J., Šťávková, J. **Kubátová, A., Muggli, D., Seames, W.S., Sadrameli, M, and Tande, B.M.** "Extraction of Fatty Acids from Noncatalytically Cracked Triacylglycerides with Water and Aqueous Sodium Hydroxide", *Separation Science and Technology*, 2012, 47 (1) , pp. 66-72
9. Fegade, S.L., Cho, H., **Tande, B.M., Seames, W.S.,** Sakodynskaya, I., Muggli, D., Kozliak, E. "The catalytic reforming of propylene over HZSM-5 to produce aromatic compounds: A design of experiments (DOE) approach." 2012. *Chemical Engineering Communications*. 200 (8), pp. 1039-1056.
10. Rutala, W.A., Gergen, M.F., **Tande, B.M.,** Weber, D.J. "Rapid Hospital Room Decontamination Using UV Light with a Nanostructured UV-Reflective Wall Coating" *Infection Control and Hospital Epidemiology*, 2012 34 (5 SPL), pp. 527-529
11. Wang, H., Kolodka, E., **Tande, B.M.** Thermomechanical and rheological studies of copolymers of methyl methacrylate with a series of linear vinyl esters (2013) *Industrial and Engineering Chemistry Research*, 52 (14), pp. 5111-5119.
12. Dongari, N., Sauter, E.R., **Tande, B.M.,** Kubátová, A. Determination of Celecoxib in human plasma using liquid chromatography with high resolution time of flight-mass spectrometry (2014) *Journal of Chromatography B: Analytical Technologies in the Biomedical and Life Sciences*, 955-956 (1), pp. 86-92.
13. Rutala, W.A., Weber, D.J., Gergen, M.F., **Tande, B.M.,** Sickbert-Bennett, E.E. Does coating all room surfaces with an ultraviolet C light-nanoreflective coating improve decontamination compared with coating only the walls? (2014) *Infection Control and Hospital Epidemiology*, 35 (3), pp. 323-325.
14. Zhang, X., Seames, W.S., **Tande, B.M.** Recovery of CO₂ from Monoethanolamine using a Membrane Contactor (2014) *Separation Science and Technology (Philadelphia)*, 49 (1), pp. 1-11.

15. Rutala, W.A., Gergen, M.F., **Tande, B.M.**, Weber, D.J. Room decontamination using an ultraviolet-C device with short ultraviolet exposure time (2014) *Infection Control and Hospital Epidemiology*, 35 (8), pp. 1070-1072.
16. Krishnamoorthy, G. and **Tande, B.M.** Improving the effectiveness of ultraviolet germicidal irradiation through reflective wall coatings: Experimental and modeling based assessments (2014) *Indoor and Built Environment*, 1420326X14547785
17. Jones, B., Linnen, M., **Tande, B.M.** Seames, W.S. A Renewable Process for the Production of Vinyl Acetate Monomer. (2015) *Processes*, 3(3), 619-633
18. Fegade, S.; **Tande, B.M.**; Kubatova, A.; Seames, W.S.; Kozliak, E. A novel two-step process for the production of renewable aromatic hydrocarbons from triacylglycerides (2015) *Industrial & Engineering Chemistry Research* 54, 9657–9665

PATENTS / PENDING PATENT APPLICATIONS

1. **US 7520099** Pultruded Building Product and System (issued April 21, 2009)
2. **US 7966746** Decoy or fishing lure exhibiting realistic spectral reflectance (Issued June 28, 2011)
3. **US 8076504** Method for production of short chain carboxylic acids and esters from biomass and product of same (Issued December 13, 2011)
4. **US 8450541** Method for producing cyclic organic compounds from crop oils (Issued May 28, 2013)
5. **US 8528248** Method of creating animal metamers and compositions with surfaces which constitute animal metamers (Issued September 10, 2013)
6. **US 8650795** Coating for a decoy or fishing lure exhibiting realistic spectral reflectance (Issued Feb 18, 2014)
7. **US 9149033** Camouflage covering using compositions with surfaces which constitute animal metamers (Issued Oct 6, 2015)
8. **US 20120271083** Production of aromatics from noncatalytically cracked fatty acid based oils (filed 4/22/2012, pending)

CONFERENCE PROCEEDINGS

1. Pringle, T.A., **Tande, B.M.**, Onken, A.O., Howard, W. “Balsa Sandwich Composite Delamination Due to Excessive Infusion of Resin” 2010 International SAMPE

Symposium and Exhibition (Proceedings).

2. Fegade, S.L., Bithi, S., **Tande, B.**, Seames, W., Muggli, D., Kubátová, A., Kozliak, E. Production of bio-based aromatic compounds from crop oil (2011) ACS National Meeting Book of Abstracts, 1 p.
3. Fegade, S.L., Cho, H., **Tande, B.**, Seames, W., Muggli, D., Kozliak, E. Determination of significant factors influencing the aromatization of propylene via statistical path (2011) ACS National Meeting Book of Abstracts, 1 p.
4. Fuqua, M., Ulven, C.A., Chevali, V., Pryor, S., Wiesenborn, D., Gustafson, C., Chisholm, B., **Tande, B. M.**, Seames, W., Dworshak, J. Development of agricultural by-products as multifunctional fillers for polyolefins (2011) International Polyolefins Conference 2011: Evolving Technology for the Global Economy, 31 p.
5. Zhang, X., **Tande, B.M.**, Regeneration of CO₂ solvents with polymeric membranes (2011) 11AICHE - 2011 AICHE Annual Meeting, Conference Proceedings, 1 p.
6. Fegade, S.L., **Tande, B.M.**, Seames, W., Kubátová, A., Kozliak, E. Catalytic conversion of 1-tetradecene to aromatic compounds over zeolites under mild conditions (2011) ACS National Meeting Book of Abstracts, 1 p.
7. Fegade, S.L., **Tande, B.M.**, Seames, W., Kubátová, A., Kozliak, E. Triglycerides as an alternative feedstock for manufacturing aromatic compounds (2011) ACS National Meeting Book of Abstracts, 1 p.
8. Muggli DS, **Tande, B.M.**, "A model for initiating ABET-accredited engineering degree programs using distance education", 118th ASEE Annual Conference and Exposition (2011).
9. Muggli DS, **Tande, B.M.**, "Distance Education allows Small Liberal Arts Colleges to Offer ABET-Accredited Degrees in Chemical, Civil, Electrical, and Mechanical Engineering", ASEE Midwest 2012 Conference, Rolla, MO (2012).
10. Pesaran, A., **Tande, B.M.** Application of composite polymeric membranes for efficient regeneration of physical solvents (2013) CO₂ Capture 2013 - Topical Conference at the 2013 AICHE Annual Meeting: Global Challenges for Engineering a Sustainable Future, pp. 72-73.
11. **Tande, B.M.**, Rutala, W., Guerrero, D.M., Carson, P, Designing Healthcare Facilities to Maximize the Effectiveness of UV Disinfection, Association for Professionals in Infection Control and Epidemiology, 2014 Conference and Exposition, Anaheim, CA June 7-9, 2014.
12. O'Malley, P., Muggli DS, **Tande, B.M.**, "Distance Education allows Small Liberal Arts Colleges to Offer ABET-Accredited Degrees in Chemical, Civil, Electrical, and

Mechanical Engineering- Program Updates", ASEE Midwest 2014 Conference, Fort Smith, AR, Sept. 24-26, 2014

FUNDED RESEARCH PROJECTS

1. "Polymers and Composites from Cracked Canola Oil", \$369,000, US Department of Agriculture, PI, 9/1/08-8/31/11.
2. "Efficient Regeneration of Solvents for Carbon Capture using Membrane Contactors", \$300,000, US DOE - National Energy Technology Laboratory, PI, 12/1/09-15/30/13.
3. "SUNRISE BioProducts Center of Excellence", \$2,970,000, North Dakota Department of Commerce, Co-PI, 9/1/08-8/31/11.
4. "Polymers, Chemicals, and Composites from Soybean Oil", \$110,000, North Dakota Soybean Council, Co-PI, 7/1/09-6/30/10.
5. "Measurement of O₂ Barrier Films for Flexible Electronics" \$105,000 NSF EPSCoR (subaward), 9/1/08-8/31/11.
6. "Polymeric Membranes for Carbon Capture", \$138,975, DOE EPSCoR (subaward), 9/1/08-8/31/11.
7. "Development of a Laminate Repair Resin." \$64,000, LM Windpower, 3/1/10-2/28/11.
8. "Distance Education to Startup Full Engineering Programs at Other Schools and Establish Pre-Engineering Programs at Two-Year Colleges" \$247,734. NSF CCLI 7/1/10-6/30/14.
9. Biobased Polymers from Cracked Crop Oils \$70,000 Confidential Client 10/1/2011 – 9/30/12
10. "Dakota Bio Consortium" NSF EPSCoR, \$243,888 (subaward) 8/1/13-7/31/16
11. "NUE: Exposing Engineering Students to Nanoscience and Nanotechnology at the University of North Dakota" \$200,000, NSF, Co-PI 9/1/14-8/30/16
12. "New Faculty Startup Grant" \$150,000, North Dakota EPSCoR 9/1/2015-8/31/2017
13. "Improving Ultraviolet Germicidal Irradiation - Modeling and Validation" \$30,000, NASA EPSCoR 10/1/2014-9/15/2015