

CURRICULUM VITAE

GEORGE G CHASE

Department of Chemical and Biomolecular Engineering, The University of Akron, Akron, Ohio
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CURRENT POSITIONS

Director of Research Initiatives, The University of Akron	2019-present
President University of Akron Research Foundation	2017-present
Professor Department of Chemical and Biomolecular Engineering The University of Akron	2000-present
Faculty Research Associate Institute of Polymer Science and Polymer Engineering The University of Akron	2010-present
Director Coalescence Filtration Nanofibers Consortium The University of Akron	1997-present

ACADEMIC SUMMARY

Publications

161 Refereed Journal Papers (in print and accepted)
h index=36, i10 index=96, 5483 Total citations per Google Scholar (25July2019)
2 Books 11 Book Chapters
216 Proceedings
14 Patents

Research Funding

Government Agencies (NSF, DoD, NASA)	\$2,260,000
Industry (DOW, Cummins, etc.)	\$3,087,000
Other	\$ 436,000

Students Supervised and Graduated: 38 Ph.D. 22 MS-thesis. 52 Undergrad (directed projects)
Courses Taught Graduate and Undergraduate level courses in Transport Phenomena,
Reactions Engineering, Solids Processing, and Numerical Methods

RESEARCH INTERESTS

Filtration, Fluid-Particle Separations	Filter media
Electrospinning, nanofibers	Gas-Liquid and Liquid-Liquid Coalescence Filtration
Nanofiber catalyst support structures	Transport phenomena in porous media

EDUCATION

Ph.D.	Chemical Engineering	The University of Akron	1989
B.S.	Chemical Engineering	The University of Akron	1978

ACADEMIC EXPERIENCE

Director of STEM Research	The University of Akron	2017-2019
Associate Chair of Research	Department of Chemical and Biomolecular Engineering The University of Akron	2014-2017
Area Chair	AICHE, Fluid-Particle Separations Area	2005-2007
Editorial Board member	FILTRATION Journal	2004-2009
Editorial Board member	Filtration News	2000-2008
Area Editor	Journal Engineered Fibers and Fabrics (JEFF)	2010-2018
Chair	American Filtration and Separations Society	2002

Chair	American Filtration and Separations Society	1995
Board of Directors	American Filtration and Separations Society	2017-2020
Board of Directors	American Filtration and Separations Society	2006-2010
Board of Directors	American Filtration and Separations Society	1997-1999
Johansen-Crosby Visiting Chair	Professor Michigan State University	1999
Professor	The University of Akron	2000-present
Associate Professor	The University of Akron	1995-2000
Assistant Professor	The University of Akron	1989-1995

PROFESSIONAL EXPERIENCE

Lieutenant Colonel (retired)	US Army Reserves	1983-2001
Captain	US Army Corps of Engineers	1978-1983
Consultant	Various companies	1989-present

AWARDS AND HONORS

STEM Exemplar, The Ohio Academy of Science	2017
Honorable Mention Alice Hamilton Award, NIOSH, Methods and Lab category	2016
Honary Member Golden Key International Honor Society	2015
Louis A. Hill Jr. Award, College of Engineering, The University of Akron	2012
Inducted into National Academy of Inventors	2011
Lifetime Achievement, American Filtration and Separations Society	2010
Fellow, American Filtration and Separations Society	2009
Graduate Student Mentor of the Year, Conference on Undergraduate and Graduate Student Research, The University of Akron	2005
Louis A. Hill Jr. Award, College of Engineering, The University of Akron	2004
Frank Tiller Award for Leadership in Engineering and Education, The American Filtration and Separations Society	2003
College of Engineering Distinguished Alumni Award, The University of Akron	2002
Senior Scientist Award, The American Filtration and Separations Society	2000
Outstanding Researcher Award, College of Engineering, The University of Akron	2000

REFEREED JOURNAL PUBLICATIONS

ACCEPTED AND PUBLISHED

- 161 J Zhou, OS Roberts, SM Goldwasser, X Lei, GG Chase, A Customized Instrument with Laser Interferometry for Measuring Electrospun Mat Thickness, *Review of Scientific Instruments*, **90**, 075110, 2019, DOI: 10.1063/1.5100137.
- 160 Ragavendra Prasad Panakarajupally *, Michael Presby, Manigandan Kannan, Jianyu Zhou, George Chase, Gregory Morscher, Thermo-Mechanical Characterization of SiC/SiC Ceramic Matrix Composites in a Combustion Facility, *Ceramics*, **2**, 407-425, 2019. Doi 10.3390/ceramics2020032.
- 159 A Gadhve, SN Mehdizadeh, GG Chase, Effect of pore size and wettability of multilayered coalescing filters on water-in ULSD coalescence, *SEPPUR*, **221**, 236-248, 2019. <https://doi.org/10.1016/j.seppur.2019.03.093>
158. A Abutaleb*, D Lolla, A Aljuhani, H Shin, MA Ali, A Housef, I Maafa, G Chase, Liquid Phase Selective Hydrogenation of Phenol of Cyclohexanone over Electrospun Pd/PVDF-HFP Catalysis, *Fibers*, **7**, 28, 2019. Doi:10.3390/fib7040028.
157. AS Aljuhani*, D Lolla, A Abutaleb, GG Chase, Coating Gradient Effect on Contact Angle in Electrowetting, *Am J Modern Physics and Application*, **5**(4), 70-76, 2018.
156. HU Shin, D Lolla*, A Abutaleb, SY Hwang, GG Chase, CO Oxidation over PD-Au Alloy Nanoparticle Doped Fibrous TiO₂ Support Media, *Intl J Nanoscience Nanoengineering*, **4**(1) 12-23, 2018.
155. M Davoudi, MM Amrei, HV Tafreshi, GG Chase, Measurement of inflection angle and correlation of shape factor of barrel-shaped droplets on horizontal fibers, *SEPPUR*, **204**, 127-132, 2018. <https://doi.org/10.1016/j.seppur.2018.04.033>.
154. J Zhou, A Bandekar, GG Chase, Evaluation of electrowet coalesce in series with PVDF-HFP electrospun fiber membranes for separation of water from ULSD, *FUEL*, **225**, 111-117, 2018. DOI: 10.1016/j.fuel.2018.03.142
153. ZX Huang, X Liu, J Wu, SC Wong*, GG Chase, J Qu, Electrospun poly(vinylidene fluoride) membranes functioning as static charge storage device with controlled crystalline phase by inclusions of nanoscale graphite platelets, *J Mater Sci*, **53**: 3038-3048, 2018.
152. ZX Huang, X Liu, J Wu, X Zhang, SC Wong*, GG Chase, J Qu, Electrospun poly(vinylidene fluoride) membrands as static charge storage device with controlled crystalline phase by inclusions of nanoscale graphite platelets, *POLYMERS*, **131**, 143-150, 2017.
151. M Davoudi, EJ Moore, GG Chase, Motion of Water Drops on Hydrophobic Expanded Polymer Mat Surfaces Due to Tangential Air Flow, *Journal of Taiwan Institute of Chemical Engineers*, **94**, 24-30, 2019. <https://doi.org/10.1016/j.jtice.2017.10.028>
150. A Abutaleb, D Lolla, A Aljuhani, H Shin, J Rajala, GG Chase, Effects of surfactants on the morphology and properties of electrospun polyetherimide fibers, *Fibers*, **5**,33; 2017. DOI:10.3390/FIB5030033.
149. J Fang*, Z Meng, J Li, J Li, Y Du, GG Chase, The influence of ash on soot deposition and regeneration processes in diesel particulate filters, *Applied Thermal Engr*, **124**, 633-640, 2017.
148. HU Shin, A Abutaleb, D Lolla, GG Chase, Effect of calcination temperature on NO-CO decomposition by Pd catalyst nanoparticles supported on alumina nanofibers, *Fibers*, **5**(2), 22, 2017; doi:10.3390/fib5020022.
147. X Zhang, X Yang, GG Chase, Filtration performance of acrylonitrile-butadiene copolymer elastic electrospun fibrous media in solid aerosol filtration, *SEPPUR*, **186**, 96-105, 2017. <http://dx.doi.org/10.1016/j.seppur.2017.06.002>
- 146 Y Li, X Zhang, X Yang, GG Chase Finite element model and experimental comparison of coupled free-channel-porous-media flow, *JCSMD*, **5**, 51-61, 2017.
145. X Zhang, GG Chase, Solid aerosol filtration by electrospun Poly (vinyl pyrrolidone) fiber mats and dependence on pore size, *JTEFT*, **1**(5), 00030, 2017.
- 144 A Bandekar, GG Chase, Performance of an Electrowet-Coalescer, *Int J Engr Adv Tech*, **6**(4) 175-181, 2017.

- 143 J Zhou, AS Almansour, GG Chase, GN Morscher, Enhanced oxidation resistance of SiC/SiC minicomposites via slurry infiltration of oxide layers, *J European Ceramic Society*, 37, 3241-3253, 2017.
- 142 MM Amrei, M Davoudi, GG Chase, HV Tafreshi*, Effects of Roughness on Droplet Apparent Contact Angles on a Fiber, *SEPPUR*, 180, 107-113, 2017.
- 141 V Raja, SG Benis, GG Chase, Comparison of Experiment Data to Model of Shaker Separator, *IJERT*, 6(2) 88-95, 2017.
140. SJ Kim, P Raut, SC Jana*, GG Chase, Electrostatically Active Polymer Hybrid Aerogels for Airborne Nanoparticle Filtration, *ACS Applied Materials & Interfaces*, 9, 6401-6410, 2017.
- 139 S Rajgarhia, S Jana*, GG Chase, Separation of water from ULSD using novel polymer nanofiber-coated glass fiber media, *ACS Applied Materials & Interfaces*, 8(33), 21683-21690, 2016.
- 138 D Lolla, M Lolla, A Abutaleb, HU Shin, DH Reneker, GG Chase, Fabrication, polarization of electrospun PVDF electret fibers and effect on capturing nanoscale solid aerosols, *Materials*, 9(8), 671-689, 2016. doi:[10.3390/ma9080671](https://doi.org/10.3390/ma9080671)
137. X Yang, X Zhang, H Wang, GG Chase, Vibration assisted water-diesel separation by electrospun PVDF-HFP fiber mats, *Separation and Purification Technology*, 171, 280-288, 2016.
136. J Fang, A Aljuhani, GG Chase, Water drop movement on woven fiber mats surfaces due to flow of diesel fuel, *SEPPUR*, 171, 123-130, 2016.
<http://dx.doi.org/10.1016/j.seppur.2016.07.012>
- 135 X Zhang, GG Chase, Electrospun elastic acrylonitrile butadiene copolymer fibers, *JPOL*, 97, 440-448, 2016.
- 134 A Bandekar, GG Chase, Electro-coalescence of water drops in water-oil dispersions. *J Coating Science Technology*, 3, 41-49, 2016.
- 133 SJ Kim, GG Chase, SC Jana*, The role of mesopores in achieving high efficiency airborne nanoparticle filtration using aerogel monoliths, *Separation and Purification Technology*, 166, 48-54, 2016.
132. M Davoudi, J Fang, GG Chase, Barrel Shaped Droplet Movement at Junctions of Perpendicular Fibers with Different Orientations to the Air Flow Direction, *SEPPUR*, 162 (2016) 1-5. <http://dx.doi.org/10.1016/j.seppur.2016.02.009>
131. G Manzo, Y Wu, GG Chase, A Goux, Comparison of Nonwoven Glass and Stainless Steel Microfiber Media in Aerosol Coalescence Filtration, *SEPPUR*, 162 (2016) 14-19.
130. HU Shin, RD Ramsier, GG Chase Influence of calcination temperature on the surface area of submicron sized Al₂O₃ electrospun fibers, *Applied Physics A*, (2016) 122:145, DOI [10.1007/s00339-016-9690-x](https://doi.org/10.1007/s00339-016-9690-x).
- 129 Y Li, X Zhang, E Trudick, GG Chase, Simulation of electrostatic field in electrospinning of polymer nanofibers, *Nanoscale Systems: Mathematical Modeling, Theory and Applications*, (2015) 4, 35-49.
- 128 S Jana*, SJ Kim, GG Chase, Polymer Aerogels for Efficient Removal of Airborne Nanoparticles, *SEPPUR*, 156, 803-808, 2015.
127. X Yang, H Wang, GG Chase, Performance of Hydrophilic Glass Fiber Media to Separate Dispersed Water Drops from ULSD Supplemented by Vibrations, *SEPPUR*, 156, 665-672, 2015. DOI: [10.1016/j.seppur.2015.10.062](https://doi.org/10.1016/j.seppur.2015.10.062)
- 126 JW Rajala, HU Shin, GG Chase, Core-Shell Electrospun Hollow Aluminum Oxide Ceramic Fibers, *Fibers*, 3, 450-462, 2015. Doi: [10.3390/fib3040450](https://doi.org/10.3390/fib3040450).
125. E.K. Wujcik, S.E. Duirk, G.G. Chase, and C.N. Monty*, "A visible colorimetric sensor based on nanoporous polypropylene fiber membranes for the determination of trihalomethanes in treated drinking water," *Sensors and Actuators B*, 223, 1-8, 2016.
124. HU Shin, D Lolla, Z Nikolov, GG Chase, Pd-Au Alloy Nanoparticles Supported by TiO₂ Fibers for Catalytic NO Decomposition by CO, *J Industrial Engineering Chemistry*, 33, 91-98, 2016.
123. D Lolla, J Gorse, C Kisielowski, J Miao, PL Taylor, GG Chase, DH Reneker*, Polyvinylidene fluoride molecules in nanofibers, imaged at atomic scale by aberration corrected electron microscopy, *Nanoscale*, 8(1), 120-128, 2016, DOI: [10.1039/c5nr01619c](https://doi.org/10.1039/c5nr01619c).

122. HU Shin, Y Li, A Paynter, K Nartetamrongsutt, GG Chase, Microscopy analysis and production rate data for needleless vertical rods electrospinning parameters, *Data in Brief*, 5, 41-44, 2015.
121. JW Rajala, EA Evans, GG Chase, Heat Exchanger Lab for Chemical Engineering Undergraduates, *CEE*, 49 (4) 208-214, 2015.
120. HU Shin, AB Stefaniak, N Stojilovic, GG Chase, Comparative dissolution of electrospun Al₂O₃ nanofibres in artificial human lung fluids, *EnviroSci Nano*, 2015,2(3), 251-261. DOI: 10.1039/C5EN00033E. Includes COVER ART
119. AS Aljuhani, GG Chase, Electrowetting Water Droplet Contact Angle Relaxation on Coated Stainless Steel Plates, *Int J Surface Science and Engineering*, 10(3) 224-239, 2016. <http://www.inderscience.com/info/ingeneral/forthcoming.php?jcode=IJSURFSE>
118. HU Shin, Y Li, A Paynter, K Nartetamrongsutt, GG Chase, Vertical Rod Method for Electrospinning Polymer Fibers, *POLYMER*, 65, 26-33, 2015. <http://dx.doi.org/10.1016/j.polymer.2015.03.052>
117. H Wu, Y Han, X Yang, G Chase, Q. Tang, C.-J. Lee, B. Cao, J. Zhe, and G. Cheng (lead), A versatile microparticle-based Immunoaggregation assay for macromolecular biomarker detection and quantification, *Analytical and Bioanalytical Chemistry*, *Plos One*, 2015. **10**(2), e0115046.
116. L Shahreen, GG Chase, Morphology of Electrospun PdO-TiO₂ Fibers, *JEFF Journal*, 10(3) 136-145, 2015.
115. Y Wu, GM Manzo, GG Chase, Thickness Shrinkage of Microfiber media in Gas-Liquid Coalescence Filtration, *SEPPUR*, (2015), 141, 188-196.
114. J Fang, M Davoudi, GG Chase, Drop movement along a fiber axis due to pressure driven air flow in a thin slit, *Separation Purification Technology*, 140, 77-83, 2015.
113. SU Patel, GG Chase, Separation of Water Droplets from Water-in-Diesel Emulsion using Superhydrophobic Polypropylene Fibrous Membranes, *SEPPUR*, 126, 62-68, 2014.
112. PS Kulkarni, SU Patel, SU Patel, GG Chase Effect of electrospun polypropylene fibers on wettability and performance of microglass fiber media for liquid-liquid coalescence, *SEPPUR*, 124, 1-8, 2014.
111. SU Patel, PS Kulkarni, SU Patel, GG Chase, Glass fiber coalescing filter media augmented with polymer nanofibers and modified with angled drainage channels, *SEPPUR*, 120, 230-238, 2013.
110. J Sunthornvarabhas*, P Chatakanonda, K Piyachomkwan, GG Chase, H-J Kim, K Sriroth, Physical structure behavior to wettability of electrospun poly(lactic acid)/polysaccharide composite nanofibers, *Advanced Composite Materials*, DOI: 10.1080/09243046.2013.843815.
109. SU Patel, SU Patel, GG Chase, Electrospun Superhydrophobic PVDF-HFP Fibrous Membranes for Separation of Dispersed Water from Ultra Low Sulfur Diesel, *Energy and Fuels Journal*, 27(5), 2458-2464, 2013.
108. L Shahreen, GG Chase, AJ Turinske, SA Nelson, N Stojilovic, NO decomposition by CO over Pd catalyst supported on TiO₂ nanofibers, *Chemical Engineering Journal*, 225, 340-349, 2013.
107. K Nartetamrongsutt, GG Chase, The Influence of salt and solvent concentrations on electrospun polyvinylpyrrolidone fiber diameters and bead formation, *Polymer*, 54, 2166-2173, 2013. 10.1016/j.cej.2013.03.102
106. SU Patel, PS Kulkarni, SU Patel, GG Chase, Coalescence Filter Media with Drainage Channels, *Drying Technology*, 31(2),185-192 2013.
105. G Viswanadam, GG Chase, Modified Electric Fields to Control the Direction of Electrospinning Jets, *Polymer*, 54, 1397-1404, 2013.
104. G Viswanadam, GG Chase, Water-Diesel Secondary Dispersion Separation using Superhydrophobic Tubes of Nanofibers, *SEPPUR*, 104, 81-88, 2013. <https://doi.org/10.1016/j.seppur.2012.11.020>
103. SU Patel, GM Manzo, SU Patel, PS Kulkarni, GG Chase, Permeability of Electrospun Superhydrophobic Nanofiber Mats, *J Nanotechnology*, 483976, 2012.

102. JS Tobin, AJ Turinske, N Stojilovic*, AF Lotus, GG Chase, Temperature induced changes in morphology and structure of TiO₂-Al₂O₃ fibers, *Current Applied Physics*, 12, 919-923, 2012.
101. SU Patel, PS Kulkarni, SU Patel, GG Chase, The effect of surface energy of woven drainage channels in coalescing filters, *Sep Pur Tech*, 87, 54-61, 2012.
100. PS Kulkarni, SU Patel, GG Chase, Layered hydrophilic/hydrophobic fiber media for water-in-oil coalescence, *Sep Pur Tech*, 85, 157-164, 2012.
99. G Viswanadam, GG Chase, Contact angles of drops on curved superhydrophobic surfaces, *J. Colloid Interface Sci*, 367, 472-477, 2012. <http://dx.doi.org/10.1016/j.jcis.2011.11.004>.
98. JS Varabhas, GG Chase, DH Reneker, New methods to electrospin fibers, *JEFF*, 6(3), 32-38, 2011.
97. AF Lotus, SN Tacastacas, LA Britton, N Stojilovic, RD Ramsier, GG Chase, Fabrication and Characterization of TiO₂-ZnO Composite Nanofibers, *Physica E*, 43, 857-861, 2011.
96. SU Patel, GG Chase, Gravity Orientation and Woven Drainage Structures in Coalescing Filters, *Separation & Purification*, 75(3) 392-401, 2010.
95. SJ Park, YC Kang, RD Ramsier, KU Jeong, and GG Chase, Investigation of the Characteristics of Platinum Group Metal Modified Alumina Nanofibers, *J Nanoscience and Nanotechnology*, 10(8) 5225-5231, 2010.
94. SJ Park*, GG Chase, KU Jeong, HY Kim, Mechanical Properties of titania nanofiber mats fabricated by electrospinning of sol-gel precursor, *J Sol-Gel Sci and Tech*, 54(2), 188-194, 2010.
93. S Dawar, GG Chase, Correlations for transverse motion of liquid drops on fibers, *Separation & Purification Technology*, 72, 282-287, 2010, <http://dx.doi.org/10.1016/j.seppur.2010.02.018>
92. SJ Park, S Bhargava and GG Chase, Fitting of Kinetic Parameters of NO Reduction by CO in Fibrous Media Using a Genetic Algorithm, *Computers and Chemical Engineering*, 34, 485-490, 2010.
91. SJ Park, YC Kang, JY Park, EA Evans, RD Ramsier, GG Chase, Physical Characteristics of Titania Nanofibers Synthesized by Sol-Gel and Electrospinning Techniques, *JEFF*, 5(1), 50 - 56 , 2010.
90. AF Lotus, RK Feaver, LA Britton, ET Bender, DA Perhay, N Stojilovic, RD Ramsier, GG Chase, Characterization of TiO₂-Al₂O₃ composite nanofibers formed by electrospinning a sol-gel and and polymer mixture, *Matl Sci Engr B*, 167, 55-59, 2010; [10.1016/j.mseb.2010.01.027](http://dx.doi.org/10.1016/j.mseb.2010.01.027)
89. AF Lotus, YC Kang, JI Walker, RD Ramsier, and GG Chase, Effect of Aluminum Oxide Doping on the Structural, Electrical, and Optical Properties of Zinc Oxide (AOZO) Nanofibers Synthesized by Electrospinning, *J Mat Sci Eng B*, 166, 61-66, 2010.
88. AF Lotus, YC Kang, RD Ramsier, and GG Chase, Investigation of the Physical and Electronic Properties of Indium Doped Zinc Oxide Nanofibers Synthesized by Electrospinning, *J. Vac. Sci. Technol. B*, 27(6), 2331-2336, 2009.
87. AF Lotus, SV Bhargava, ET Bender, EA Evans, RD Ramsier, DH Reneker, GG Chase, Electrospinning Route for Fabrication of P-N Junctions using Nanofiber Yarns, *J. Appl Phys.*, 106(1), 014303/1-014303/4, 2009.
86. JS Varabhas, S Tripatanasuwan, GG Chase, DH Reneker, Electrospun jets launched from polymeric bubbles, *JEFF*, 4(4), 46-50, 2009.
85. A Genc, GG Chase, A Foos, Electrokinetic Removal of Manganese from River Sediment, *J Water Air Soil Pollution*, (2009), 197(1-4), 131-141. DOI 10.1007/s11270-008-9796-7
84. JS Varabhas, GG Chase, DH Reneker, Electrospun Nanofibers from a Porous Hollow Tube, *Polymer* 49 (2008), pp. 4226-4229: [10.1016/j.polymer.2008.07.043](http://dx.doi.org/10.1016/j.polymer.2008.07.043)
83. R Bharadwaj, A Patel, S Chokdeepanich and GG Chase, Oriented Fiber Filter Media, *J Engineered Fibers Fabrics*, 3(2), 29-34, 2008.
82. S Andan, SI Harihajana, and GG Chase, Continuum Model Evaluation of the Effect of Saturation on Coalescence Filtration, *Separation Science and Technology*, (2008), 43(8), 1955-1973.

81. SJ Park, S Bhargava, ET Bender, GG Chase, and RD Ramsier, Palladium Nanoparticles Supported by Alumina Nanofibers Synthesized by Electrospinning, *J Materials Research*, (2008), 23(5), 1193-1196.
80. GG Chase, P Dachavijit, An Experimental Study of Electrorheological Fluid Flow through a Packed Bed of Glass Beads, *Transport in Porous Media*, 72, 25-35, 2008, DOI: 10.1007/s11242-007-9133-4
79. S Dharmanolla, GG Chase, Computer Program for Filter Media Design Optimization, *J Chinese Institute of Chemical Engineers*, 39(2) 161–167, 2008. doi: 10.1016/j.jcice.2007.11.002
78. S Dawar, GG Chase, Drag correlation for axial motion of drops on fibers, *Separation and Purification Technology* 60, 6–13, 2008. doi:10.1016/j.seppur.2007.07.027
77. AF Lotus, ET Bender, EA Evans, RD Ramsier, DH Reneker and GG Chase, Electrical, Structural, and Chemical Properties of Semiconducting Metal-Oxide Nanofiber Yarns, *J Appl Physics*, 103, 024910/1-024910/6, 2008. DOI: 10.1063/1.2831362. Also published in February 4, 2008 issue of *Virtual Journal of Nanoscale Science & Technology*, <http://www.vjnano.org>.
76. CJ Thompson, GG Chase, AL Yarin, DH Reneker, Effects of Parameters on Nanofiber Diameter Determined from Electrospinning Model, *J. Polymer*, 48, 6913-6922, 2007. doi:10.1016/j.polymer.2007.09.017.
75. ET Bender, P Katta, GG Chase, RD Ramsier, Spectroscopic investigation of the composition of electrospun titania nanofibers. *Surface and Interface Analysis* (2007), 39(4), 374.
74. S Dawar, H Li, JA Dobson, GG Chase, Drag Correlation of Drop Motion on Fibers, *J. Drying Technology*, 24, 1283-1288, 2006, DOI: 10.1080/07373930600838082.
73. H An, C Shin, GG Chase, Ion Exchanger Using Electrospun Polystyrene Nanofibers, *J. Membrane Sci.*, 283, 84-87, 2006.
72. ET Bender, P Katta, GG Chase, RD Ramsier, Spectroscopic Investigation of the Composition of Electrospun Titania Nanofibers, *Surface and Interface Analysis*, 38(9), 1252 – 1256, 2006. Published Online, 19 Jun 2006, DOI 10.1002/sia.2383 <http://www3.interscience.wiley.com/cgi-bin/jissue/112751591>.
71. SV Doiphode, DH Reneker, GG Chase, Nanofibers and Spheres by Polymerization of Cyanoacrylate Monomer, *Polymer Journal*, 47(12), 4328-4332, 2006.
70. ET Bender, P Katta, A Lotus, SJ Park, GG Chase, RD Ramsier, Identification of CO₂ sequestered in electrospun metal oxide nanofibers, *Chemical Physics Letters*, 423, 302-305, 2006.
69. C Shin, GG Chase, Separation of water-in-oil emulsions using glass fiber media augmented with polymer nanofibers, *J. Dispersion Science and Technology*, 27(4), 517-522, 2006.
68. C Shin, GG Chase, Separation of liquid drops from air by glass fiber filters augmented with polystyrene nanofibers, *J Dispersion and Technology*, 27(1), 5-9, 2006.
67. C Shin, H An, GG Chase, Comparison of Ion Exchange Performance of Polystyrene Nanofiber Cation Exchanger and Glass Fibers Coated with Poly(styrene-co-divinylbenzene), *Chemical Engineering and Technology*, 29(3), 364-367, 2006.
66. OO Dosunmu, GG Chase, W Kataphinan, DH Reneker, Electrospinning of Polymer Nanofibers from Multiple Jets on a Porous Tubular Surface, *Nanotechnology*, 17, 1123-1127, 2006.
65. AL Yarin, W. Liu, SV Doiphode, GG Chase, and DH Reneker, Liquid Drop Growth on a Fiber, *AIChE J*, 52(1), 217-227, 2006.
64. C Shin, GG Chase, Coalescence Filtration in Layered Filter Media, *J. Residuals Science and Technology*, 2(2), 91-96, 2005.
63. C Shin, GG Chase, Nanofibers from recycle waste expanded polystyrene using natural solvent, *Polymer Bulletin*, 55(3), 209-215, 2005.
62. GG Chase, P Dachavijit, A Correlation for Yield Stress Fluid Flow Through Packed Beds, *Rheologica Acta*, 44, 495-501, 2005, DOI 10.1007/s00397-004-0430-3.
61. C Shin, DH Reneker, GG Chase, The effect of nanofibers on liquid-liquid coalescence filtration, *AIChE J*, 51(12) 3109-3113, 2005. DOI 10.1002/aic.10564.

60. G Vasudevan, SI Hariharan, GG Chase, Modeling the Loading Stage in Coalescence Filtration, *J Porous Media*, 8 (3), 299-310, 2005.
59. C Shin, GG Chase, and DH Reneker, Recycled Expanded Polystyrene Nanofibers Applied in Filter Media, *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, 262(1-3) 211-215, 2005.
58. V Tomer, R Trey-Mensah, JC Tokash, N Stojilovic, W Kataphinan, EA Evans, GG Chase, RD Ramsier, DJ Smith, and DH Reneker, Selective Emitters for Thermophotovoltaics: Erbium-modified Electrospun Titania Nanofibers, *Solar Energy Matl: Solar Cells*, 85(4), 477-488, 2005.
57. G Zhang, W Kataphinan, R Teye-Mensah, P Katta, L Khatri, EA Evans, GG Chase, RD Ramsier, and DH Reneker, Electrospun Nanofibers for Potential Space-Based Applications, *Material Science and Engineering B*, 116(3), 353-358, 2005.
56. GG Chase, DH Reneker, Nanofibers in Filter Media, *FPSJ*, 16(2), 105-117, 2004.
55. C-G Shin and GG Chase, Wettability Effect on Droplet Attachment to Glass Rods, *FPSJ*, 16(1), 19-25, 2004.
54. W Wang and GG Chase, Effects of pH and alum concentrations on TiO₂ capture on cellulose fibers during co-filtration, *J. Chinese Institute of Chemical Engineers*, 35(1), 5-16, 2004.
53. C.Shin and GG Chase, Water-in-oil coalescence in micro- nanofiber composite filters, *AIChE J*, 50(2) 343-350, 2004.
52. P Katta, M Alessandro, RD Ramsier, and GG Chase, Continuous Electrospinning of Aligned Polymer Nanofibers onto a Wire Drum Collector, *Nano Letters*, 4(11), 2215-2218, 2004.
51. R Teye-Mensah, V Tomer, W Kataphinan, JC Tokash, N Stojilovic, GG Chase, EA Evans, RD Ramsier, DJ Smith, and DH Reneker, Erbium-modified electrospun titania nanofibers for selective infrared emitters, *J Phys Cond Mater*, 16, 7557-7564, 2004.
50. C Shin and GG Chase, The Effect of Wettability on Drop Attachment to Glass Rods, *J. Colloid and Interface Science*, 272(1), 186-190, 2004.
49. G Vasudevan and GG Chase, Performance of B-E glass fiber media in coalescence filtration. *J Aerosol Science*, 35(1), 83-91, 2004.
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- 208.GG Chase and J Soma, Pressure Gradients in Flows Through Porous Wire Mesh With Non-Uniform Porosity, *Advances in Filtration and Separation Technology*, 7, 1-4, 1993.
- 209.J Arconti and GG Chase, Use of Local Measurements to Analyze the Drag Force and Stress-Strain Relation for Compressive Packed Beds, *Advances in Filtration and Separation Technology*, 7, 657-660, 1993.
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- 214.MS Willis and GG Chase, Engineering Science and Multiphase Processes, *Advances in Filtration and Separation Technology*, 4, 87-91, 1991.
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PRESENTATIONS (NOT PUBLISHED IN ARCHIVABLE PROCEEDINGS)

1. GG Chase, DH Reneker, D Lolla, Atomic scale engineering of polymer fibers for enhanced filtration performance, 8th World Congress on Particle Technology, AIChE Annual Conference, Orlando, FL, 22-26 April 2018.
2. L Pan, GG Chase, Hydrogenation of phenol to cyclohexanone via tubular nanofiber supported catalyst, Pittsburgh-Cleveland Catalysis Society, Akron Ohio, 25 May 2017.
3. GG Chase, Functional Fibers in Filter Media, 2010 TecFusion Symposium, Parker Hannifin, Cleveland, Ohio, 30 Nov 2010.
4. GG Chase, Improved Microfiber Filter Performance by Augmentation with Nanofibers, SPE ANTEC, Orlando, May 2010.
5. S Swaminathan, C Loskofsky, GG Chase, Nanofiber Based Support Media for Catalyst Applications, SPE ANTEC, Orlando, May 2010.
6. A Aljuhani, GG Chase, Control of droplet contact angle via electrowetting, Produced Water Society Seminar, Nassau Bay, TX, Jan 2010.
7. V Raja, GG Chase, B Jones, Computational Modeling and Analysis of Shale Shaker Dynamics, Produced Water Society Seminar, Nassau Bay, TX, Jan 2009.
8. PS Kulkarni and GG Chase, Wettability Characterization of Filter Media using Modified Washburn Equation, Produced Water Society Seminar, Nassau Bay, TX, Jan 2009.

9. SN Tacastacas, MJ Pinti, N Stofilovic, AF Lotus, GG Chase, XRD and DRIFTS Study of Titania/Zinc Oxide Nanofibers, OSAPS conference Dayton, OH, Oct.2008.
10. GG Chase, Developments in Coalescence Filtration, Cummins Filtration 1st Annual Filtration Conference, Warsaw, Poland, September 2008.
11. N Bjelac, N Schafer, Nenad Stojilovic, S-J Park, GG Chase, Microscopy of Metal Oxide Nanofibers, Ohio-Region Section of the American Physical Society, Dayton, Ohio, October 2008.
12. GG Chase, CA Petty, Produced Water Management, Produced Water Society Seminar, Nassau Bay, TX, 16-18 Jan 2008.
13. PS Kulkarni, K Moorthy, B Newby, GG Chase, Effect of Surface Wettability on Liquid-Liquid Coalescence, Produced Water Society Seminar, Nassau Bay, TX, 16-18 Jan 2008.
14. AF Lotus, EA Evans, RD Ramsier, DH Reneker, GG Chase, Fabrication, Characterization, and Electrical Properties of Ceramic Nanofiber Yarns by Electrospinning, AICHE annual conference, Salt Lake, Nov 2007.
15. S Dharmanolla and GG Chase, Computer Program for Filter Media Design Optimization, AICHE annual conference, Salt Lake, Nov 2007.
16. SJ Park, B Raghavan, S Bhargava, and GG Chase, Ceramic Nanofiber Filter Media, AICHE annual conference, Salt Lake, Nov 2007.
17. S Dawar, GG Chase, Drag Correlation for Drop Motion in Filters with Surface Properties and Flow Fields, Conference for Undergraduate and Graduate Student Research, The University of Akron, Feb 2007.
18. K Moorthy, B Newby, GG Chase, Removal of Water Drops from Viscor Oil, Produced Water Society Seminar, Nassau Bay, TX, 17-19 Jan 2007.
19. DH Reneker, GG Chase, EA Evans, RD Ramsier, A. Buldum, GW Young, KL Kreider, , S. I. Hariharan, DJ Smith, AL Yarin, Nanofiber Manufacturing for Energy Conversion and Utilization, NSF NIRT conference, Alexandria, VA, Dec 2006.
20. GG Chase, Electrospun Nanofiber Enhanced Filter Media, INDA, Filtration 2006 conference, Philadelphia, November 2006.
21. S Dawar, GG Chase, Drag Correlation including Surface Properties for Motion of Drops on Fibers, AICHE, Orlando, 24 April 2006.
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25. GG Chase, Nanofibers for Automotive and Other Industries, Nano-App Summit 2005, Cleveland, 17-19 October 2005
26. C Shin and GG Chase, Polystyrene Nanofibers for Cation Exchange, Produced Water Seminar, Nassau Bay, TX, 19-22 Jan 05
27. A Patel and GG Chase, Control of Glass Fiber Orientation in non-Woven Media by Electric Field, AICHE Annual Conference, Austin, TX , November 2004.
28. P Katta, L Khatri, RD Ramsier and GG Chase, Synthesis and Characterization of Titania Nanostructures, AICHE Annual Conference, Austin, TX , November 2004.
29. C Shin and GG Chase, Polymer Nanofibers from Recycling of Waste Expanded Polystyrene, Produced Water Seminar, Nassau Bay, TX, 21-24 Jan 04.
30. L Khatri, M. Alesandro, E.Evans, R. Ramsier, and GG Chase, , Alignment of Electrospun Nanofibers, AICHe Annual Conference, San Francisco, November 2003.
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33. C Shin and GG Chase, Water-in-oil coalescence using galas filber filters augmented with polymer nanofibers, Produced Water Seminar, Nassau Bay, Texas, January 2003.
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 43. HR Patel and GG Chase, Hydrodynamic Performance of Six Lobe Sand Filters, Produced Water Seminar, Nassau Bay, Texas, January 2001.
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 45. P Dachavijit and GG Chase, Yield Stress Fluid Flow Through a Packed Bed: A Modified Ergun Equation, AIChE 2000 Annual Meeting, Los Angeles, Nov 2000.
 46. NSF Combined Research Curriculum Development on Multiphase Transport Phenomena, M. Amey, (MSU), A. Benard (MSU), G. Chase (UA), K. Jayaraman (MSU), R Mohan (UT), C. Petty (speaker, MSU), S. Parks (MSU), T. Radcliff (UA), S. Shao (MSU), S. Shirazi (UT), O. Shoham (UT), K. Wisecarver (UT), M. Zhuang (MSU), *2000 North Central American Society for Engineering Education Meeting*, Kellogg Center, Michigan State University, March 31, 2000.
 47. EA Stephan and GG Chase, Effects of pH, Salt Concentration & Injected Particle Concentration on Zeta Potential and Core-flood Experiments, Produced Water Seminar, Nassau Bay, Texas, January 2000.
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 49. EA Stephan and GG Chase, Prediction of Permeability Loss – Experimental Results, Produced Water Seminar, Nassau Bay, Texas, January 1999.
 50. GG Chase, B Beniwal, and C. Venkataraman, Measurement of Fiber Orientation in Filter Media, AIChE Annual Meeting, Miami, November 1998.
 51. GG Chase, Solids Education for Chemical Engineers, AIChE Annual Meeting, Las Angeles, November 1997.
 52. GG Chase and K Jacob, An Undergraduate Course in Solids Processing: A Combined Academic –Industrial Approach, ASEE Workshop, Snowbird Utah, August 1997.
 53. EA Stephan and GG Chase, A Volume-Average Scale Model for Fines Migration in Sandstone, Produced Water Seminar, Clear Lake, Texas, January 1997.
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 55. GG Chase, Thermodynamics of Solid/Liquid Separations, AIChE Annual Meeting, St. Louis, Nov. 1994.
 56. GG Chase, J Arconti, and J Kanel, The Effects of Filter Cakes on Filter Medium Resistance, AIChE Annual Meeting, St. Louis, Nov. 1993.
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60. I Tosun, U Yetis, MS Willis, GG Chase, Specific Cake Resistance: Myth or Reality, Special Conference, Wastewater Sludge Dewatering, Aalborg, Denmark, July 1992.
61. GG Chase, Fluid/Particle Separations in the USA: Closing the Education Gap in Fluid-Particle Operations, Special education meeting of the American Filtration Society, Gainesville, Florida, January, 1992.
62. MS Willis and GG Chase, A Continuum Analysis of Multiphase Material Systems: The Education Challenge, Special education meeting of the American Filtration Society, Gainesville, Florida, January, 1992.
63. MS Willis and GG Chase, A General Strategy for Multiphase Processes, Summer meeting of the American Institute of Chemical Engineers, Pittsburgh, Pa, August 1991.
64. GG Chase and MS Willis, Continuum Analysis of Non-Linear Cake Filtration, Annual Meeting of the American Institute of Chemical Engineers, Chicago, IL, November 1990.

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2. GG Chase, R. Boggavarapu, and S. Tonangi, Acetone Extraction of 2,4 DNT from Contaminated Sand and Clay Soils: Evaluation of extraction, recovery of acetone by vapor flashing, and evaluations of DNT destruction in aqueous acetone solutions by sandbed and sonochemical reactors, SFIM-AEC-ET-96164, US Army Environmental Center, March 1997.
3. GG Chase, Contaminant Migration through a Phosphogypsum Stack: One Dimensional Computer Model of Water Saturation and Contaminant Concentrations; Genetic Algorithm Fitting of Parameters, Florida Institute of Phosphate Research, June 1996.
4. R Boggavarapu, GG Chase, A Study of Freezing and Vacuum Flashing to Recover Acetone from Acetone-Water-Energetic Mixtures, SFIM-AEC-ETD-CR-95025, US Army Environmental Center, February 1995.
5. GG Chase, Modeling of Contaminant Migration through a Phosphogypsum Stack, US Bureau of Mines, January 1995.
6. GG Chase and SK Kodavanti, Thickening of Clay Slurries by Periodic Pressure Flow Through a Porous Polypropylene Tube, SFIM-AEC-TS-CR-93124, US Army Environmental Center and US Army Research Office (Battelle), October 1993.
7. GG Chase, A Survey of Depots and Ammunition Plants on the Use of Hot Gas Decontamination, ENAEC-TS-CR-93103, US Army Environmental Center and US Army Research Office (Battelle), August 1993.
8. GG Chase, An Evaluation of the Pump-and Treat Remediation of the South Balloon Site at Sharpe Army Depot (SHAD), DAALO3-91-C-0034, US Army Toxic and Hazardous Materials Agency and US Army Research Office (Battelle), July 1992.

POSTDOCS AND VISITING SCIENTISTS

1. Olalekan Adeniyi (Federal University of Technology, Nigeria), Simultaneous Electrospray – Electrospin, 2018-2019
2. Abdulwahab Aljuhani (Yanbo University, Saudi Arabia), Electrowetting, liquid-liquid coalescence, 2014-2015.
3. Sphurti Bhargava (Donaldson, Pennsylvania), Ceramic Nanofibers with Catalyst, 2008.
4. Ayten Genc (Turkey), Metal contaminants in soils, 2006.
5. Dotun Dosunmu (Nigeria), Multijet electrospinning, 2004.
6. Lubna Khatri (Chicago), Ceramic nanofibers, 2002.
7. Hongmin Li (Korea), CFD modeling 2002-2004.

8. Malay Ghose Hajra (Geotech Engineering, Houston), Coalescence Filtration with Nanofibers, 2000.

GRADUATE STUDENTS DIRECTED

38 PhD, 22 MS, 5 non-thesis MS graduated; 9 PhD in progress

1. Jianyu Zhou, Applications of Dispersed Phase Flows through Porous Media, 2018, Parker Hannifin.
2. Saeid Ghaniyari Benis, PhD, Performance Study of a Bench Scale Shale Shaker, 2017, deceased.
3. Masome Davoudi, PhD, Aerosol Droplet Migration in Fibrous Media, 2017, TBA
4. Yalong Li, PhD, Solutions of potential fields using flexible finite element methods with applications in flow through porous media and electrospinning, 2017, Parker Hannifin, TN.
5. Ashish Bandekar, PhD, Electrowet Coalescence of Water Drops in Water-Diesel Dispersion, 2017, Filtration Technology Corporation, Houston.
6. Xu Zhang, PhD, Fabrication, Characterization, and Application of Elastic Superhydrophobic Electrospun Fiber Mats, 2016, Mann&Hummel Purolator Filters LLC, NC.
7. Jon Rajala, PhD, Electrospinning Fabrication of Ceramic Fibers for Transparent Conducting and Hollow Tube Membrane Applications, 2016, American Air Filtration, KY
8. Xi Yang, PhD, Vibration Assisted Water-Diesel Separation by Glass Fiber Media and Electrospun Fiber Media, 2016, ASCO Emerson, MI
9. Dinesh Lolla, PhD, Fabrication, atomic scale imaging, polarization of PVDF and applications as electrets, 2016, Parker Hannifin, CA.
10. Hyeon Ung Shin, PhD, Catalytic Property of Fiber Media Supported Palladium Containing Alloy Nanoparticles and Electrospun Ceramic Fibers Biodurability Study, 2016, Hyundai (S. Korea)
11. Ahmed Abutaleb, PhD, Conversion of Phenol to Cyclohexanone using Nanofiber Supported Catalysts, 2015, Jazan University (Saudi Arabia)
12. Jia Fang, 2015, PhD, Study of Liquid Drop Migration on Fibers and Mats Due to Liquid Flow in a Thin Slit Geometry, 2015, T&T Fluid Technology & Engineering Co. (Xihua University, China)
13. Gabriel Manzo, PhD, Comparison of nonwoven fiberglass and stainless steel microfiber media in aerosol coalescence filtration, 2015, Parker Hannifin.
14. Abdul Aljuhani, PhD, A fundamental study on water droplets coalescence on electrowettable surfaces in air and diesel media, 2013, Post Doc Univ of Akron until May15, currently a professor at Yanbu Univ (Saudi Arabia).
15. Kitchaporn Nartetamrongsutt, PhD, Modification of Electrospinning Solutions and Yarn Production for Filtration Application, 2013, Intel, Oregon.
16. Sarfaraz Patel, PhD, Separation of Water from Ultra Low Sulfur Diesel, 2013, Ingredient, Bridgewater, NJ.
17. Goutham Viswanadam, PhD, Water-Diesel Secondary Dispersion Separation using Superhydrophobic Tubes of Nanofibers, 2013, Numatics Inc., MI.
18. Laila Shahreen, PhD, PdO-TiO₂ Nanofiber Based Catalyst Support for Nitric Oxide Gas Reduction with Carbon Monoxide Gas, 2013, Mann+Hummel, NC.
19. Vidya Raja, PhD, Shale Shaker Model and Experimental Validation, 2012, Schlumberger, Tx.
20. Gabe Manzo, MS, Drop motion on superhydrophobic fiber mats, 2011, PhD student Akron.
21. Prashant Kulkarni, PhD, Mixed hydrophilic/hydrophobic fiber media for liquid-liquid coalescence, 2011, Clarcore, TX.
22. Rahul Bharadwaj, PhD, Improved performance with layer orientation incorporated pleated media on coalescence filtration, 2010, Lydall Filtration Separations Inc, NH.
23. Bharath Raghavan, PhD, Nanofiber filter media for air filtration, 2010. Fiberio Technology Corp, Edinburg, TX; Parker Hannifin, Boston MA.
24. Sneha Swaminathan, PhD, Metal oxide nanofibers as filters, catalyst and catalyst support structures, 2010. Hollingsworth & Vose, MA

25. Shagufta Patel, PhD, Improving performance and drainage of coalescing filters, 2010. Clarcor, Dallas TX.
26. Renee Petty, MS, Catalytic Decomposition of Nitric Oxide and Carbon Monoxide Gases using Nanofiber Based Filter Media of Varying Diameters, 2010, BP, Chicago.
27. Saravanan Andan, PhD, Modeling of Drainage in Coalescing Filters, 2010, Fiberweb, Tennessee.
28. Jackapon Sunthorn Varabhas, PhD, Study of Methods to Create and Control Electrospun Liquid Jets, 2009. Government lab, Thailand.
29. Adria Lotus, PhD, Synthesis of Semiconducting Ceramic Nanofibers, Development of P-N Junctions, and Bandgap Engineering by Electrospinning, 2009. Postdoc at University of Western Ontario, Canada.
30. Soo Jin Park, PhD, Catalytic Decomposition of Nitric Oxide and Carbon Monoxide Gases Using Nanofiber Based Filter Media, 2008. South Korea Patent Office
31. Saru Dawar, PhD, Microscale Study of Drop Migration on Fibers in Coalescing Filters, 2007. Cummins Filtration, Wisconsin.
32. Kavitha Moorthy, MS, Effect of Surface Energy of Fibers on Coalescence Filtration, 2007. Southwest Research, San Antonio, TX.
33. Sailaja Dharmanolla, MS, A Computer Program for Filter Media Design Optimization, 2007. Cytochroma, Bannockburn, Illinois.
34. Chris Thompson, MS, An Analysis of Variable Effects on a Theoretical Model of the Electrospin Process for Making Nanofibers, 2006, Babcock and Wilcox.
35. Aaron Hopkins, MS, non-Thesis, 2006. Metallurg Vanadium Corp. in Cambridge, OH.
36. Prathyusha Katta, PhD, Development, Characterization and Testing of Titanium Dioxide Nanofibers Enhanced Ceramic Fibrous Filter Medium for Filtration Applications, 2006. Parker Hannifin.
37. Srinivatsan, Priyavardhana, MS, Nanofiber Incorporated Glass Fiber Filter Media, 2005. Parker Hannifin.
38. Geethakrishnan Vasudevan, PhD, Modeling of Coalescing Filters, 2005, Kaydon, Corp, Lagrange, GA.
39. Gary Gray, MS, non-thesis, 2004, Goodyear, Akron, OH.
40. Ankur Patel, MS, Control of glass fiber orientation in non-woven media by electric field, 2004, Mann & Hummel, Michigan.
41. Chan-Gyun Shin, PhD, Liquid-Liquid Coalescence filtration, 2004, Samsung SDI Co, LTD, Seoul, Korea.
42. Harihara Nemmara, PhD, Synthesis, Characterization, and Testing of Carbon Nanofibers for Coalescence Filtration of Oil from Compressed Air and Adsorption of Chloroform from Air, 2003, Porous Materials Inc, Houston, TX.
43. Anil Suthar, MS, Nanofiber Augmented Meltblown Filter Media, 2003, Donaldson, CT.
44. Patanee Dachavijit, Ph.D. Study of Electrorheology Fluid Flow Through a Packed Bed, 2003, Merck, Thailand.
45. Sanya Chokdepanich, PhD, The Study of Coalescence Filtration and Drainage Design, 2002, Parker.
46. Tim Crouse, non-thesis project: Polymer Engineering Solutions, Inc., 2002, Goodyear, Akron, OH.
47. Vijay Fernandes, MS, Characterizing Three Dimensional Fiber Orientation Distribution of Filter Media, 2002, Parker Hannifin, IN.
48. Kartik Chandrasekaran, MS, Cross Flow Filtration Characteristics of Fiber Oriented Filter Media, 2002, Polycarb Inc, Cleveland, OH.
49. Srihari Rangarajan, MS, Nanofibers in Coalescer Filter Media, 2001, Solberg Mfg Inc, Itasca, IL.
50. Hemang Patel, MS, Characterization of Consolidated Sand Cartridge Filters, 2001, CUNO Inc, Meriden, CT.
51. Wenli Wang, PhD, Effects of pH and Salt Concentration on Particle Capture in co-filtration of Papermaking Slurry, 2001, 3M, MN.

52. Gretchen Dragich, MS Non-thesis, Project: Modeling Time Dependent Species Migration Through a Phosphogypsum Stack & the Effects of a Chemical Reaction, 2001, BP, Cleveland, OH.
53. Ketan Mehta, MS, Effect of Humidity, Temperature and Binder Content in Oil-Droplet Coalescence in Glass Fiber Filter Media with and without Polymer Nanofibers, 2000, Donaldson, Minneapolis, MN.
54. Wijadi Jodi, MS, Permeability Study on Laboratory Scale Water-Based Coalescing Filter, 1999, Donaldson, Minneapolis, MN.
55. Venkataraman Chandrashekar, MS: Effect of Fiber Orientation on Filter Media Performance, 1999
56. Elizabeth Stephan, Ph.D.: Zeta Potential Effects of Clay Migration in Sandstone, 1999.
57. Jinyao Liu, MS: Permeability and Coalescence Performance Study of Filter Material Using Latex as Binder, 1999.
58. Vaibhav Beniwal, MS: Characterizing Fiber Orientation in Fibrous Media, 1999.
59. Ramani Vengimalla Reddy, PhD: Filler Retention in Pre-Formed and Forming Fibrous Media, 1998.
60. Suresh Tonangi, MS: Acetone Extraction of 2,4 DNT from Sand and Clay Soils, 1997
61. Padmaja Baru, MS: Study of Wall Effects in Elastic Packed Beds, 1996
62. Ragesh Boggavarapu, MS: Solvent Recovery of Acetone from Acetone-Water-Energetic Mixtures, 1996
63. Rakesh Boyapati, Non-Thesis Project: Microscopic observation of deep-bed filtration at different pHs 1996.
64. Joe Arconti, MS: Using a Multiphase Continuum Theory and Directly Measured Data to Model Flow Through Packed Beds, 1994
65. Soma Jayaprakash, MS: Two Phase Flow in Porous Media, 1992

INTERNS AND VISITING GRADUATE STUDENTS

1. Yiren Wu, Coalescence Filter Media, Nov 2012-Oct 2013, CSC No. 201206630045

UNDERGRADUATE PROJECTS DIRECTED

1. Theresa Chappa, Fluidized Bed Demonstration Unit, 2019
2. Isaac Obrien, Improving the Delivered Specific Impulse of Composite Rocket Propellant through Alteration of Chemical Composition, 2019
3. Austin Ryan, Improving the Delivered Specific Impulse of Composite Rocket Propellant through Alteration of Chemical Composition, 2019
4. Ron Simpson, Prevention of Harmful Algal Blooms by the Mitigation of Phosphorous Nutrient Loading via Filtration by Steel Wool and Activated Carbon, 2019
5. Elisabeth Meyer, Spacecraft fire safety research: combustion of lithium-ion batteries to predict fire scenerios, 2018
6. Leah McPherson, Correlation of electrospun polyvinylpyrrolidone fiber mat thickness with basis weight, fiber diameter, pore size distribution, air permeability, 2018.
7. Mahshad Shafiee, Droplet movement at boundaries between layers of nonwoven glass fiber mat, 2018.
8. Mike Selzer, Reaction Kinetics of the Hydrogenation of Phenol in a Tubular Reactor, 2018.
9. Ethan Trudick, Effects of Electrostatic field on electrospinning of polymer nanofibers, 2017.
10. Elizabeth Moore, Polarized Elastic Nanofiber Tubular Mat, 2017
11. Michael Pribonic, Salt adsorption by polarized PVDF fiber mats, 2017
12. Katie Wittibschlager, Electrospinning Nanofiber Filtration Tubes using Quadrupole Design, 2016.
13. Alisa Webel, Separation of Water from ULSD using Superhydrophobic PS Nanofiber Mats, 2016.
14. Andrew Marton, Effect of Nanofiber Morphology on PVDF Air Filter Performance, 2015
15. Victoria Smith, New Multiphase Reactor Design Using Electropun Nanofibers, 2015.

16. Kevin Houser, Electrospinning of S-B-S Triblock and S-I-S Triblock Copolymers For Use in Fuel Filtration, 2015
17. Corey Bolden, Filtration of Aerosolized Oils with Layered Filter Media and Drainage Channels, 2015.
18. Zack Richmond, Electrowetting Application for Filtration of Diesel Fuel, 2015.
19. KiAsia Chambers, Performance Study of Bench Scale Shale Shaker, 2015.
20. Todd Simmering, Dual Fuel Lawn Mower Conversion with Propane, 2014.
21. Mikel Petty, The Effect of Fiber Mat Density on Liquid Liquid Separation of Diesel-Water Mixtures on Electrospun Polypropylene Fibers, 2014.
22. Matthew Kelbly, Effects of Viscosity on Diameter of Polycarbonate-Corn Syrup Core-Shell Electrospinning, 2014. (PPG)
23. Mallory Barker, The Effects of Electrical Field Alteration on electrospinning, 2012.
24. Scott Charney, The Effects of Vibration on Properties of a Packed Bed, 2012.
25. Christopher J. King, Formation of Superhydrophobic Nanofibers from Polystyrene via Electrospinning, 2011.
26. Renee Petty, Nanofibers for Filtration Applications, 2010.
27. Jerry Hackley, Attachment of Ceramic Nanofibers to a Metal Substrate, 2009.
28. Gabriel Manzo, Separation of Water from Liquid Fuels with the Development of Superhydrophilic and Super-hydrophobic surfaces, 2009.
29. Laura Seloover, The Application of Noble Metal Doped Alumina Nanofibers for Catalytic Converter Applications, 2009
30. Jason Gordon, Photocatalytic Titania Nanofibers: Resistivity Variation with Ultraviolet Intensity and Exposure Time, 2006.
31. Joe Dobson, Drop Motion on Fiber with Perpendicular Airflow, 2006.
32. Nick Connelly, Modeling Flow of Polymer through a Porous Tube Wall for Multi-jet Nanofiber Production Using FLUENT CFD Software, 2006.
33. Justin Wolfe, Modeling of Fluid Mixing via Air Bubbling for Polymer Nano-fiber and Glass fiber Filter Media Production using FLUENT CFD Software, 2006.
34. Janet Schiffer, Magnesium Oxide Nanofibers, 2005.
35. Natalie Nichols, MgO Nanofibers, 2004
36. Mark Alesandro Alignment of Polymer Nanofibers by Electrospinning, 2004.
37. Dennis Boley, Procedure and Test Trials for Tensile Strength Determination of Randomly Aligned, Die Cut Nano-fiber Tensile Specimens, 2004
38. Marcie Swearingen, Nylon Nanofibers Loaded with Silica Particles, 2003
39. Jonathan C. Roth, Effects of Geometry on Mixing Effects of Inline Mixers, 2002.
40. Eric Lockington, Work-Energy Theorem and Heat Transfer Correlation, 2002.
41. Shaun Fox, Determining Packing Effects in Packed Beds Composed of Different Particle Sizes, 2001.
42. Andrew Smith, Hopper Design Using Material Flow Dynamics, 2001.
43. Amy Zupancic, Design Project Using CFX, 2001.
44. Steve Schapel, Cross-flow hydrocyclone, 1999.
45. Melanie Schmeida, Computational Flow Dynamic Simulations of Converging Flow in Disk-Shaped Filter Media, 1999.
46. Lee W. Zink, Development of a New Distillation Column Design, 1998.
47. John W. Ross, Investigation of the Effects of Fouling of Filter Media, 1998.
48. Laura Wright, Effect of Filter Media Characteristics on Permeability, 1997.
49. James C. Luby, Characterization of Slurry Viscosity, 1997.
50. Jason A. Spect, Utilization of Computational Fluid Dynamics (CFDS) Software to Examine the Performance of a Plate and Frame Filter Press, 1997.
51. Christopher Ries, Destruction of DNT in Aqueous and Acetone Mixtures Using Fenton's Reagent, 1997.
52. Steven J. Alessandro, Destruction of 2,4 DNT in Acetone-Water-Energetics Mixture, 1997.
53. Ronald J. Wascherle, A Study of Enhanced Separation of Slurries in a Slow Rotational Field, 1996.
54. Brian S. Stevenson, Counter-current Auger for Soil Washing, 1996.
55. John Steffen, Microscopic View of Filter Cake Formation, 1993

56. Michael Vicic, A Theoretical Study of Spheres with Holes Through their Centers with Applications in Three-Phase Fluidized Beds, 1992.

COURSES DEVELOPED

UNDERGRADUATE	4200:321 Transport Phenomena 4200:351 Fluid and Thermal Operations 4200:461 Solids Processing
GRADUATE	4200:600 Transport Phenomena 4200:702 Multiphase Transport Phenomena

COURSES TAUGHT OVER CAREER

GRADUATE: Adv Reaction Kinetics, Transport Phenomena, Digital Data Analysis, Multiphase Transport, Solids Processing, Reaction Engineering, Energy Transport, Adv Multiphase Transport, Numerical Methods, Mass Transfer, Chemical Process Dynamics

UNDERGRADUATE: Fluid and Thermal Operations, Solids Processing, Transport Phenomena, Chemical Engineering Computations, Tools for Chemical Engineering, Chemical Engineering Lab