

# Khaled A. Sallam, Ph.D.

Associate Professor  
School of Mechanical and Aerospace Engineering  
Oklahoma State University

<https://scholar.google.com/citations?user=zKPV5M0AAAAJ&hl=en>

Lab Webpage: <https://www.sallamresearchlab.com>

Email: [khaled.sallam@okstate.edu](mailto:khaled.sallam@okstate.edu) Tel: (405) 762-0749

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## I. Summary

Dr. Sallam research is focused on thermal fluid sciences with application to high speed propulsion and energy conversion systems, and desalination. Dr. Sallam received his PhD in 2002 in aerospace engineering from the University of Michigan, Ann Arbor. He received The 2017 Excellent Teacher Award, College of Engineering, OSU, The 2014 OSU-Tulsa President's Outstanding Teaching Award, The 2014 *Lockheed Martin Aeronautic* Teaching Excellence Award, College of Engineering, OSU, The 2007 Halliburton Excellent Young Teacher Award, College of Engineering, OSU, The 2006 W.R. Marshall award, Institute for Liquid Atomization and Spray Systems, North and South America, and The 2001 Distinguished Achievement Award, University of Michigan. He received a summer faculty fellowship from the Air Force Research Lab at Wright-Patterson Air Force Base. Dr. Sallam developed 3 new graduate courses and 8 undergraduate courses at OSU. He supervised 4 PhD students and 19 MS students and published more than 60 journal articles and conference papers. Dr. Sallam served as the chair of the ASME Mid Continent Section. He is an associate fellow of AIAA and he is currently the Communication Chair of the AIAA High Speed Air Breathing Propulsion Technical Committee. He is also a member of ASHRAE, the American Physical Society, and ILASS-Americas.

## II. Education

- 2002      **Ph.D. - Aerospace Engineering**, University of Michigan, Ann Arbor.  
Dissertation: "Properties of Spray Formation by Turbulent Primary Breakup," 156 p.  
Advisor: Prof. G.M. Faeth (deceased).
- 2000      **M.S.E. - Aerospace Engineering**, University of Michigan, Ann Arbor. Courses: Combustion Processes, Turbulent Combustion, Introduction to Turbulent Flow, Compressible Flow, Viscous Flow, Gas Kinetics, Topics in Fluid Dynamics, Numerical Methods for Scientific Computing. GPA 8.5/9.0.
- 1997      **M.E. - Mechanical Power Engineering**, Cairo University, Egypt.  
Courses: CFD, Turbulence, Advanced Fluid Mechanics, Numerical Methods, Technical English.  
Thesis: "Characteristics-Based Nonlinear Simulation of Reactive Silencers," 95 p.  
Advisor: Prof. M.A. Serag-Eldin, GPA 8.6/9.0.
- 1993      **B.S. - Mechanical Power Engineering**, Cairo University, Egypt.  
Thesis: "Design of Crude-Oil Pipelines," 155 p.  
Advisor: Prof. M. Fouad., Distinction with honor (95%).

### III. Professional Experience

- 2003-Present **Oklahoma State University, School of Mechanical and Aerospace Engineering**  
**Associate Professor [2009-present], Assistant Professor [2003-2009]**  
 - Created and taught the following new graduate courses (3):  
 MAE 5263-Combustion, MAE 5253-Multiphase Flow, MAE 5243-Micro Flows.  
 - Updated and taught the following undergraduate courses (8):  
 MAE 3524 Thermal Fluids Design, MAE 4263-Energy Conversion Systems, MAE 4243-Propulsion and Power, MAE 3233-Heat Transfer, MAE 3013-Engineering Analysis, MAE 4273-Experimental Fluid Dynamics, MAE 3293-Compressible Flow, ENSC 3233-Fluid Mechanics.
- Designed and Established the undergraduate fluid dynamics lab at OSU – Tulsa:  
 The lab includes PIV system and high speed camera, jet engine test rig, subsonic wind tunnel, hydraulic channel and a pump test rig.
- Conducted Experimental Studies on :
- 1) Entrainment in diffusion flames.
  - 2) Atomization in the near-injector region of scramjet engine.
  - 3) Drift of agricultural sprays in crosswind.
  - 4) The effect of nozzle internal geometry on the atomization of liquid jets
  - 5) Surface flow generated by the feeding of apple.
  - 6) Steering of micro-drops on hydrophobic surface using a laser beam.
  - 7) Generation of biodegradable nanofibers and nano spheres.
  - 8) Jet Breakup and Pinch-off in micro liquid-liquid systems
- Conducted Computational Studies on:
- 1) Human-powered desalination unit.
  - 2) The effect of tip-speed on the aerodynamic performance of a vertical axis wind turbine.
  - 3) Deformation and wave phenomena of round liquid jets in gaseous crossflow.
  - 4) The flow of DNA in a nanochannel using Dissipative Particle Dynamics.
- 5-7/2008 **Summer Faculty Fellow, Air Force Research Lab, Wright-Patterson Air Force Base, Ohio:**  
 - Using digital holographic diagnostics to investigate aerated fuel injection in subsonic crossflow.
- 2002-2003 **Post-doctoral Research Fellow, University of Michigan, Ann Arbor, Michigan, and Air Force Research Lab, Wright-Patterson Air Force Base, Ohio:**  
 - Investigating experimentally the breakup of round liquid jets subjected to crossflow in a shock wave tube using double-pulsed shadowgraphy. Research funded by Air Force office of Scientific Research.  
 - Investigating experimentally the injection of aerated liquid jets in supersonic wind Tunnel (Mach number of 2) using wet holography diagnostics. Research funded by Taitech, Inc.
- 1997-2001 **Research Assistant, University of Michigan, Ann Arbor, Michigan:**  
 - Investigating experimentally the breakup of turbulent round and plane liquid jets injected in still gases theoretically and experimentally using holography, shadowgraphy and a customized PIV system. The Research was funded by the U.S. office of Naval Research.
- 1993-1997 **Research Assistant, Cairo University, Egypt:**  
 Investigation computationally noise transmission in reactive mufflers attached to an impedance tube configuration. Developed my own characteristics-based non-linear code written in FORTRAN and run on UNIX workstations. Research involved grid generation, the use of FFT to obtain the transmission loss of various mufflers designs, and the use of TECPLOT for post processing.
- 1993-1997 **Teaching Assistant, Cairo University, Egypt:**  
 Conducting problem-solving/lab sessions for the following courses
- 1) New and Renewable Energies (4 semesters)

- 2) Numerical methods in thermal-sciences (4 semesters).
- 3) Automatic Control of Energy Systems (4 semesters)
- 4) Fluid Mechanics (3 semesters)
- 5) Mechanical Engineering Lab (3 semesters)
- 6) Mechanical Drawing (2 semesters)

- Fall 96      **Teaching Assistant, The American University in Cairo, Egypt:**  
Grading and holding office hours for:  
1) Numerical methods in thermal-sciences (1 semester).  
2) Heat Transfer (1 semester).
- Summer 92      **Undergraduate Intern, 1300 MW Steam Power Plant, Cairo, Egypt:** Training on diesel engine simulator and Maintenance procedures of different systems.
- Summer 91      **Undergraduate Intern, EgyptAir, Cairo International Airport, Egypt:** Training included non-destructive tests of the fan blades of Boeing and Airbus airplanes during their periodic maintenance.
- Summer 90      **Undergraduate Intern, EgyptAir, Cairo International Airport, Egypt:** Training included maintenance of ovens and mixers in the Airport Catering Facility.

#### IV. Honors and Awards

- 2019 As Advisor of Andrew Williamson, Top 5 Finalists in the 2019 Collegiate Inventors Competition.
- 2019 15 years Tenure Award, Oklahoma State University
- 2017 CEAT Excellent Teacher Award, Oklahoma State University.
- 2015 Grand Marshal of the graduation procession, Oklahoma State University-Tulsa.
- 2014 The President's Outstanding Teaching Award, Oklahoma State University-Tulsa.
- 2014 *Lockheed Martin Aeronautic* Teaching Excellence Award, College of Engineering, OSU.
- 2014 Associate Fellow of AIAA.
- 2013 Provost 10 year tenure award, Oklahoma State University.
- 2007 Halliburton Excellent Young Teacher Award, College of Engineering, Oklahoma State University.
- 2006 The W.R. Marshall award, Institute for Liquid Atomization and Spray Systems, North and South America.
- 2001 Distinguished Achievement Award, University of Michigan.
- 2000 Rackham Predoctoral Fellowship, University of Michigan.
- 1999 Tau Beta Pi, The National Engineering Honor Society, member.
- 1993 Medal of Distinction in Engineering Studies, Egyptian Syndicate of Engineers, Egypt.
- 1993 Medal of Distinction in Undergraduate Studies, Cairo University, Egypt.
- 1988-1993 Scholarship for Distinction, Cairo University, Egypt.

## VI. Publications and Presentations

(student authors advised by Dr. Sallam are underlined, \*indicates corresponding author)

### Book Chapters:

- 1) K.A. Sallam, (2010) "Chapter 17: Liquid Fuel Atomization Testing," In C.E. Baukal (Ed.) *Industrial Combustion Testing*, (pp. 369-374) CRC Press.

### Invention Disclosure :

- 1) K.A. Sallam, P. Sarin, and D.-Y. Kim, "Zero Liquid Discharge Evaporation Unit for Solar Desalination (ZEUS) of Produced Water," Oklahoma State University (Invention Number 2018-014).
- 2) K.A. Sallam, "Digital Holographic Microscope for Smart Phones," Oklahoma State University (Invention Number 2017-011).

### Peer Reviewed Journal Articles and Conference Papers:

- 1) E.-O. Enwa, S. Pradhan, P. Bikkina, and K.A. Sallam, "Wettability Control of Copper and Brass Surfaces using TiO<sub>2</sub> Nanoparticles," The 19<sup>th</sup> International Topical Meeting on Nuclear Reactor Thermal Hydraulics (NURETH-19), Brussels, Belgium, March 6 - 11, 2022, Submitted.
- 2) M.S. Raza, A. Valiaev, and K.A. Sallam\*, "Air-Assisted Atomization of Beveled Needle Point Injector," Proceedings of 15<sup>th</sup> Triennial International Conference on Liquid Atomization and Spray Systems, Edinburgh, UK, 29 Aug. – 2 Sept.26, 2021, Submitted.
- 3) N. Indrawan\*, A. Kumar, M. Moliere, K.A. Sallam, R.L. Huhnke, "Distributed power generation via gasification of biomass and municipal solid waste: A review," *Journal of the Energy Institute* (2020), doi: <https://doi.org/10.1016/j.joei.2020.07.001>.
- 4) S. Srivastava, A.M. Sheridan, M. Henneke, and K.A. Sallam\*, "Computational and Experimental Investigation of Inclined Choked Injection of Gaseous Jet," AIAA Paper No. 2020-2027, AIAA SciTech Forum, Orlando, Florida, January 6-10, 2020.
- 5) A. Williamson, and K.A. Sallam\*, "Human Powered Desalination Unit," ASME Paper No. IMECE2019-12046, Proceedings of International Mechanical Engineering Congress & Exposition (IMECE), Salt Lake City, Utah, November 11-14, 2019.
- 6) M.S. Raza, K.A. Sallam\*, and S.L. Post, "The Effect of Crosswind Velocity on the Spray Drift of Flat Fan Nozzle," ASME Paper No. IMECE2019-12049, Proceedings of International Mechanical Engineering Congress & Exposition (IMECE), Salt Lake City, Utah, November 11-14, 2019.
- 7) A.M. Sheridan, S. Srivastava, M. Henneke, M.S. Raza, K.A. Sallam\*, "Inclined Injection of Under expanded supersonic Gas Jet," ASME Paper No. IMECE2019-12020, Proceedings of International Mechanical Engineering Congress & Exposition (IMECE), Salt Lake City, Utah, November 11-14, 2019.
- 8) K.A. Sallam, "Core Breakup of Turbulent Liquid Sheets," Proceedings of 14<sup>th</sup> International Conference on Heat Transfer, Fluid Mechanics and Thermodynamics, Wicklow, Ireland, July 22–24, 2019.
- 9) T.E. Crane and K.A. Sallam\*, "Micro Liquid Jet Breakup and Pinch-off in Immiscible Liquid-Liquid Systems," Proceedings of 14<sup>th</sup> International Conference on Heat Transfer, Fluid Mechanics and Thermodynamics, Wicklow, Ireland, July 22–24, 2019.
- 10) K.A. Sallam\*, K.-C. Lin, S.D. Hammack, and C.D. Carter, "Effect of Nozzle Geometry on Aerated-Liquid Injection in Supersonic Crossflow," Proceedings of 14<sup>th</sup> International Conference on Liquid Atomization and Spray Systems, Chicago, IL, July 22–26, 2018.
- 11) J. Lee and K.A. Sallam\* (2017), "Column Thickness Variation of 100- $\mu$ m Liquid Jets in Still Air," *Atomization and Sprays*, 17 (1): 1-13.
- 12) S. Simon, and K.A. Sallam\*, "Simulation of the Flow of Single Stranded DNA through a Microchannel using Dissipative Particle Dynamics," Proceedings of ASTFE 2<sup>nd</sup> Thermal and Fluids Engineering Conference, Las Vegas, Nevada, April 2-5, 2017.
- 13) A. Choudhari, and K.A. Sallam\*, "Simulation of Supersonic Injection of Aerated Liquid Jet," Proceedings of ASTFE 2<sup>nd</sup> Thermal and Fluids Engineering Conference, Las Vegas, Nevada, April 2-5, 2017.
- 14) N. Davis, and K.A. Sallam\*, "Modeling of Membrane Fouling for Rotating Filtration Systems," Proceedings of ASTFE 2<sup>nd</sup> Thermal and Fluids Engineering Conference, Las Vegas, Nevada, April 2-5, 2017.
- 15) A. Herrington, and K.A. Sallam\*, "On PIV measurements of Diffusion Flames," Proceedings of ASTFE 2<sup>nd</sup> Thermal and Fluids Engineering Conference, Las Vegas, Nevada, April 2-5, 2017.

- 16) K.A. Sallam\*, K.-C. Lin, S.D. Hammack, and C.D. Carter, "Digital Holographic Analysis of the Breakup of Aerated Liquid Jets in Supersonic Crossflow," AIAA Paper No. 2017-1957, 55<sup>th</sup> AIAA Aerospace Sciences Meeting, Grapevine, Texas, January 2017.
- 17) A. Adebayo, K.A. Sallam\*, K.-C. Lin, and C.D. Carter, "Drop Size and Velocity Distributions of the Spray of Aerated Injection in Subsonic Crossflow," Proceedings of ICLASS 2015, 13th Triennial International Conference on Liquid Atomization and Spray Systems, Tainan, Taiwan, August 23-27, 2015.
- 18) Lee, J., and Sallam\*, K.A., (2014), "Three Dimensional Trajectory of Electrospun Polymer Solution Jet using Digital Holographic Microscopy," Polymer Engineering and Science, Vol. 54, No. 8, pp. 1765-1773.
- 19) Olinger, D.S., Sallam\*, K.A., Lin, K.-C., and Carter, C.D., (2014) "Digital Holographic Analysis of the Near Field of Aerated-Liquid Jets in Crossflow," Journal of Propulsion and Power, Vol. 30, No. 6, pp. 1636-1645, doi: <http://arc.aiaa.org/doi/abs/10.2514/1.B34984>.
- 20) D.S. Olinger, K.A. Sallam\*, K.-C. Lin, and C.D. Carter, "Image Processing Algorithms for Digital Holographic Analysis of Near-Injector Sprays," Proceedings of the ILASS Americas, 25th Annual Conference on Liquid Atomization and Spray Systems, Pittsburgh, PA, May 2013.
- 21) D.S. Olinger, K.A. Sallam\*, K.-C. Lin, and C.D. Carter, "Digital Holographic Analysis of Near-Field Aerated Liquid Jets in Crossflow. Part II: Measurements," AIAA Paper No. 2013-0167, 51<sup>th</sup> AIAA Aerospace Sciences Meeting, Grapevine, Texas, January 2013.
- 22) D.S. Olinger, J. Lee, A. Osta, K.A. Sallam\*, K.-C. Lin, and C.D. Carter, "Digital Holographic Analysis of Near-Field Aerated Liquid Jets in Crossflow. Part I: Algorithm Development," AIAA Paper No. 2013-0164, 51<sup>th</sup> AIAA Aerospace Sciences Meeting, Grapevine, Texas, January 2013.
- 23) Osta, A.R., Lee, J., Sallam\*, K.A., and Fezzaa, K., (2012), "Study of the Effects of the Injector Length/Diameter ratio on the Surface Properties of Turbulent Liquid Jets in Still Air using X-ray Imaging," International Journal of Multiphase Flow, Vol. 38, pp. 87-98.
- 24) Ng, C.-L., and Sallam\*, K.A., "Simulation of Laminar Liquid Jets in Gaseous Crossflow before the Onset of Primary Breakup," ASME paper No. IMECE2011-65338, Proceedings of the ASME 2011 International Mechanical Engineering Congress & Exposition, Denver, Colorado, November 11-17, 2011.
- 25) Osta, A.R., and Sallam\*, K.A., (2010) "Nozzle-Geometry Effects on the Upwind Surface Properties of Turbulent Liquid Jets in Gaseous Crossflow," J. Prop. Power, Vol. 26, No. 5, pp. 936-946.
- 26) K.A. Sallam\*, K.-C. Lin, and C.D. Carter, "Spray Structure of Aerated Liquid Jets using Double-View Digital Holography," AIAA paper No. 2010-194, 48<sup>th</sup> AIAA Aerospace Sciences Meeting, Orlando, Florida, January 2010.
- 27) Shukla, R., and Sallam\*, K.A., (2009) "Effect of Liquid Transparency on Laser-Induced motion of Drops," J. Fluids Engineering, Vol. 131, No. 8, 081301-1 – 081301-7.
- 28) Lee, J., Sallam\*, K.A., Lin, K.-C., and Carter, C.D., (2009), "Spray Structure in Near-Injector Region of Aerated Jet in Subsonic Crossflow," J. Prop. Power, Vol. 25, No. 2, pp. 258-266.
- 29) Lee, J., Miller, B., and Sallam\*, K.A., (2009), "Demonstration of Digital Holographic Diagnostics for the Breakup of Liquid Jets Using a Commercial-Grade CCD Sensor," Atom. Sprays, Vol. 19, No. 5, pp. 445-456.
- 30) A. Osta, J. Lee, K.A. Sallam\*, and K. Fezzaa "Investigating the Effect of the Injector Length/Diameter ratio on the Primary Breakup of Liquid Jets using X-ray Diagnostics," Proceedings of 11th International Conference on Liquid Atomization and Spray Systems, Vail, Colorado, July 26-30, 2009.
- 31) D.S. Olinger, K.A. Sallam\*, K.-C. Lin, and C.D. Carter, "Effects of GLR on the Spray Structure in the Near-Injector Region of Aerated Liquid Jets in Subsonic Crossflow," AIAA paper No. 2009-1373, 47<sup>th</sup> AIAA Aerospace Sciences Meeting, Orlando, Florida, January 2009.
- 32) A. Osta and K.A. Sallam\*, "The Effect of the Nozzle Length to Diameter Ratio on the Surface Properties of Turbulent Liquid Jets in Gaseous Crossflow," AIAA paper No. 2009-1374, 47<sup>th</sup> AIAA Aerospace Sciences Meeting, Orlando, Florida, January 2009.
- 33) Ng, C.-L., Sankarakrishnan, R., and Sallam\*, K.A., (2008), "Bag Breakup of nonturbulent liquid jets in crossflow," Int. J. Multiphase Flow, Vol. 34, No. 3, pp. 241-259.
- 34) Miller, B., Sallam\*, K.A., Bingabr, M., Lin, K.-C., and Carter, C.D., (2008), "Breakup of Aerated Liquid Jets in Subsonic Crossflow," J. Prop. Power, Vol. 24, No. 2, pp. 253-258.
- 35) D.S. Olinger and K.A. Sallam\*, "Toward a Fully-Automated Digital Holographic Spray Analyzer," AIAA Paper No. 2008-4045, 38<sup>th</sup> Fluid Dynamics Conference, Seattle, Washington, June, 2008.
- 36) D.S. Olinger, J. Lee, A. Osta, and K.A. Sallam\*, "Single- and Double-View Digital Holographic Diagnostics for Sprays," Proceedings of 21<sup>st</sup> Annual ILASS-Americas Conference, Orlando, Florida, May 18-21, 2008.

- 37) J. Lee, K.A. Sallam\*, K.-C. Lin and C.D. Carter, "Spray Structure in Near-Injector Region of Aerated Jet in Subsonic Crossflow," AIAA paper No. 2008-1043, 46<sup>th</sup> AIAA Aerospace Sciences Meeting, Reno, Nevada, January 2008.
- 38) A.R. Osta and K.A. Sallam\*, "Effect of Injector Length/Diameter Ratio on the Breakup of Round Liquid Jet in Crossflow," AIAA paper No. 2008-1040, 46<sup>th</sup> AIAA Aerospace Sciences Meeting, Reno, Nevada, January 2008.
- 39) Lee, K., Aalburg, C., Diez, F.J., Faeth\*, G.M., and Sallam, K.A., (2007), "Primary Breakup of Turbulent Round Liquid Jets in Uniform Crossflows," AIAA Journal, Vol. 45, No. 8, pp. 1907-1916.
- 40) J. Lee, B. Miller, K.A. Sallam\*, and M. Bingabr, "Digital Double-Pulsed Microscopic Holography Diagnostics for Sprays using Commercial-Grade CCD," International Conference on Multiphase Flow, ICMF 2007, Leipzig, Germany, July 9 – 13, 2007.
- 41) A.M. El-Leathy and K.A. Sallam\*, "Effect of Polymer Concentration on Beads Formation during Electro Spinning of Nanofibers," Twelfth International Conference on Aerospace Sciences and Aviation Technology, ASAT-12, May 29-31, 2007, Cairo, Egypt.
- 42) J. Lee, B. Miller, K.A. Sallam\*, K.-C. Lin, and C.D. Carter, "Velocity and Size Measurements of Aerated Spray using Digital Microscopic Holography," ILASS-AMERICAS 2007, May 15-18, 2007 - Chicago, Illinois.
- 43) B. Miller, K.A. Sallam\*, M. Bingabr, K.-C. Lin and C. Carter, "Secondary Breakup of Aerated Liquid Jets in Subsonic Crossflow," AIAA paper No. 2007-1342, 45<sup>th</sup> AIAA Aerospace Sciences Meeting, Reno, Nevada, January 2007.
- 44) Sallam\*, K.A., Aalburg, C., Faeth, G.M., Lin, K.-C., Carter, C.D., and Jackson, T.A., (2006), "Primary Breakup of Aerated-Liquid Jets in Supersonic Crossflows," Atomization and Sprays, Vol. 16, No. 6, pp. 657-672.
- 45) B. Miller, K.A. Sallam\*, K.-C. Lin and C. Carter, "Digital Holographic Spray Analyzer," ASME paper No. FEDSM2006-98526, ASME Joint U.S.-European Fluids Engineering Summer Meeting, Miami, Florida, July 2006.
- 46) K.A. Sallam\*, C. Aalburg, K. Lee, C.-L. Ng and R. Sankarakrishnan "Breakup of Turbulent and Non-Turbulent Liquid jets in Gaseous Crossflows," AIAA paper No. 2006-1517, 44<sup>th</sup> AIAA Aerospace Sciences Meeting, Reno, Nevada, January 2006, (**Invited**).
- 47) K. Lee, J.F. Diez, G.M. Faeth\*, C. Aalburg, and K.A. Sallam, "Breakup of Round Turbulent Liquid Jets in Air Crossflows," Proceedings of the 18<sup>th</sup> Annual Conference on Liquid Atomization and Spray Systems, Irvine, CA, May 2005 (Awarded the Marshall Award, Toronto, Canada, 2006).
- 48) Aalburg, C., Van Leer, B., Faeth\*, G.M., and Sallam, K.A., (2005), "Properties of Nonturbulent Round Liquid Jets in Uniform Gaseous Crossflows," Atomization and Sprays, Vol. 15 No. 3, pp. 271-294.
- 49) R. Sankarakrishnan, K.A. Sallam\*, and F.W. Chambers "Effects of Turbulence on the Breakup of Round Liquid Jets in Gaseous Crossflow," ASME paper No. FEDSM2005-77407, ASME Fluids Engineering Summer Conference, Houston, TX, June 2005.
- 50) C.-L. Ng, K.A. Sallam\*, H.M. Metwally, and C. Aalburg "Deformation and Surface Waves Properties of Round Nonturbulent Liquid Jets in Gaseous Crossflow," ASME paper No. FEDSM2005-77469, ASME Fluids Engineering Summer Conference, Houston, TX, June 2005.
- 51) C. Aalburg, G.M. Faeth\*, and K.A. Sallam, "Primary Breakup of Round Turbulent Liquid Jets in Uniform Gaseous Crossflows," AIAA paper No. 2005-0734, 43<sup>rd</sup> AIAA Aerospace Sciences Meeting, Reno, Nevada, January 2005.
- 52) Sallam, K.A., Aalburg, C., and Faeth\*, G.M., (2004), "Breakup of Round Liquid Jets in Gaseous Crossflows," AIAA Journal, Vol. 42, No. 12, pp. 2529-2540.
- 53) K.A. Sallam, C. Aalburg, G.M. Faeth\*, K.-C. Lin, C.D. Carter, and T.A. Jackson "Breakup of Aerated-Liquid Jets in Supersonic Crossflows," AIAA paper No. 2004-0970, 42<sup>nd</sup> AIAA Aerospace Sciences Meeting, Reno, Nevada, January 2004.
- 54) C. Aalburg, K.A. Sallam, and G.M. Faeth\*, "Properties of Nonturbulent Round Liquid Jets in Uniform Crossflows," AIAA paper No. 2004-0969, 42<sup>nd</sup> AIAA Aerospace Sciences Meeting, Reno, Nevada, January 2004.
- 55) K.A. Sallam, C. Aalburg, G.M. Faeth\*, K.-C. Lin, C. D. Carter, and T. A. Jackson "Primary Breakup of Aerated-Liquid Jets in Uniform Gaseous Crossflows," Proceedings of the 19<sup>th</sup> Annual Conference, ILASS-Europe, Nottingham, UK, September 2004.
- 56) K.A. Sallam, C. Aalburg, and G.M. Faeth\*, "Primary Breakup of Nonturbulent Round Liquid Jets in Uniform Gaseous Crossflows," Proceedings of the 19<sup>th</sup> Annual Conference, ILASS-Europe, Nottingham, UK, September 2004.

- 57) K.A. Sallam, C. Aalburg, G.M. Faeth\*, K.-C. Lin, C.D. Carter, and T. A. Jackson "Properties of Aerated-Liquid Jets in Supersonic Crossflows," Proceedings of the 17<sup>th</sup> Annual Conference on Liquid Atomization and Spray Systems, Arlington, Virginia, May 2004.
- 58) Sallam, K.A., and Faeth\*, G.M., (2003), "Surface Properties during Turbulent Primary Breakup of free Liquid Jets," AIAA Journal, Vol. 41, pp. 1514-1524.
- 59) K.A. Sallam, C. Aalburg, and G.M. Faeth\*, "Primary Breakup of Nonturbulent Liquid Jets in Gaseous Crossflows," Proceedings of the 16<sup>th</sup> Annual Conference on Liquid Atomization and Spray Systems, Monterey, California, May 2003 (Featured on the conference proceeding cover).
- 60) K.A. Sallam, C. Aalburg, and G.M. Faeth\*, "Primary Breakup of Round Nonturbulent Liquid Jets in Gaseous Crossflows," AIAA Paper No. 2003-1326, 41<sup>st</sup> AIAA Aerospace Sciences Meeting, Reno, Nevada, January 2003.
- 61) Sallam, K.A., Dai, Z., and Faeth\*, G.M., (2002), "Liquid Breakup at the Surface of Turbulent Round Liquid Jets in Still Gases," International Journal of Multiphase Flow, Vol. 28, pp. 427-449.
- 62) K.A. Sallam, Z. Dai, and G.M. Faeth\*, "Turbulent Primary Breakup of Round and Plane Liquid Jets in Still Air," AIAA Paper No. 2002-1115, 40<sup>th</sup> AIAA Aerospace Sciences Meeting, Reno, Nevada, January 2002.
- 63) Sallam, K.A., Dai, Z., and Faeth\*, G.M., (1999), "Drop Formation at the Surface of Plane Turbulent Liquid Jets in Still Gases," International Journal of Multiphase Flow, Vol. 25, pp. 1161-1180.
- 64) K.A. Sallam, Z. Dai, and G.M. Faeth\*, "Breakup of Turbulent Liquid Jets in Still Gases," AIAA Paper No. 99-3759, 30<sup>th</sup> AIAA Fluid Dynamics Conference, Norfolk, Virginia, June 1999.
- 65) K.A. Sallam, Z. Dai, and G.M. Faeth\*, "Breakup Lengths of Turbulent Liquid Jets in Still Gases," Proceedings of the 12<sup>th</sup> Annual Conference on Liquid Atomization and Spray Systems, Indianapolis, Indiana, May 1999, pp. 219-223.
- 66) Z. Dai, K.A. Sallam, and G.M. Faeth\*, "Turbulent Primary Breakup of Plane Free Bow Sheets," Proceedings of the 22<sup>nd</sup> Symposium on Naval Hydrodynamics, National Academy Press, Washington, D.C., 1998, pp. 568-581.
- 67) K.A. Sallam\*, A.S. Sabry, M.A. Serag-Eldin, and M.A. Fouad, "Characteristics Based Nonlinear Simulation of Reactive Silencers," Proceedings of the International Congress on Fluid Dynamics & Propulsion, Cairo, Egypt, December 1996, pp. 370-385.

Conferences Proceedings (Abstracts or Posters):

- 1) A.J. Williamson and K.A. Sallam, "A Novel Compression and Expansion Fusion for Improving Vapor Compression Refrigeration Cycles," Proceedings of the 40<sup>th</sup> Oklahoma AIAA/ASME Symposium, April 3, 2021, Virtual Meeting, Stillwater, OK, Honor Mention by the Selection Committee (Abstract Only).
- 2) M.S. Raza, A. Valiaev, R. Taylor, and K.A. Sallam, "Air-Assisted Atomization of Micro Beveled Needle Injector," Proceedings of the 40<sup>th</sup> Oklahoma AIAA/ASME Symposium, April 3, 2021, Virtual Meeting, Stillwater, OK (Abstract Only).
- 3) B. da Silva, K.A. Sallam, C. Borges, and F. da Fonseca, "Membrane Distillation Processes and High Salinity Water Desalination," Proceedings of the 40<sup>th</sup> Oklahoma AIAA/ASME Symposium, April 3, 2021, Virtual Meeting, Stillwater, OK (Abstract Only).
- 4) M.S. Raza, S.L. Post, and K.A. Sallam, "Primary Breakup of Flat Fan Spray in Crosswind," Proceedings of the 39<sup>th</sup> Oklahoma AIAA/ASME Symposium, April 6, 2019, Tulsa, OK (Abstract Only).
- 5) A.J. Williamson, and K.A. Sallam, "Effect of Evaporation Ratio on Small-Scale Mechanical Vapor Compression Desalination," Proceedings of the 39<sup>th</sup> Oklahoma AIAA/ASME Symposium, April 6, 2019, Tulsa, OK (Abstract Only).
- 6) A.M. Sheridan, S. Srivastava, M. Henneke, and K.A. Sallam, "Effect of Injection Angle of Shock Diamonds of Under Expanded Gas Jet," Proceedings of the 39<sup>th</sup> Oklahoma AIAA/ASME Symposium, April 6, 2019, Tulsa, OK (Abstract Only).
- 7) A.J. Williamson and K.A. Sallam, "Human-Powered Desalination Unit," 20<sup>th</sup> Annual Oklahoma Research Day, March 8, 2019, Southwestern Oklahoma State University, Weatherford, Oklahoma (Poster Only).
- 8) M.S. Raza, K.A. Sallam, and S.L. Post, "Eliminating Spray Drift of Flat Fan Nozzle," 20<sup>th</sup> Annual Oklahoma Research Day, March 8, 2019, Southwestern Oklahoma State University, Weatherford, Oklahoma (Poster Only).
- 9) Y. Xu, D.R. Lowry, K.A. Sallam, and P. Sarin, "Development of Low-Cost Ceramic Membranes for Ultra/Nanofiltration of Produced Water," 2018 Water Research Symposium, Reed Conference Center, December 5, 2018, Midwest City, OK (Poster Only).



- 10) K.A. Sallam, P. Sarin, and D.Y. Kim, "Treatment of Produced Water using Evaporative Desalination Technology," Proceedings of the 38<sup>th</sup> Oklahoma AIAA/ASME Symposium, April 14, 2018, Edmond, OK (Abstract Only).
- 11) A.M. Sheridan, K.A. Sallam, and M. Henneke, "Mixing and Entrainment of Chocked Gaseous Jets," Proceedings of the 38<sup>th</sup> Oklahoma AIAA/ASME Symposium, April 14, 2018, Edmond, OK (Abstract Only).
- 12) A. Choudhari and K.A. Sallam, "Supersonic Injection of Aerated Liquid Jet," APS 69<sup>th</sup> Annual Meeting of the Division of Fluid Dynamics, Bulletin of the American Physical Society, Vol. 61, No. 20, November 20-22, 2016, Portland, Oregon (Abstract Only).
- 13) A. Choudhari and K.A. Sallam, "Simulation of Exit Flow for Supersonic Nozzles," Proceedings of the 36<sup>th</sup> Oklahoma AIAA/ASME Symposium, April 16, 2016, Norman, OK (Abstract Only).
- 14) K.A. Sallam, "Digital Holographic Microscopy for Dispersed Flows," Fall 2015 Meeting of the Texas Section of the American Physical Society, October 29-31, 2015, Baylor University, Waco, TX (Abstract Only).
- 15) J. Lee and K.A. Sallam, "Column Thickness Variation of Micro Liquid Jets in Still Air," Paper No. AJK2015-30720, Proceedings of the ASME-JSME-KSME Joint Fluids Engineering Conference 2015, Seoul, Korea, July 26-31, 2015 (extended abstract only).
- 16) K. Choi, D. Branson, A.R. Osta, and K.A. Sallam, "Development of TPU/PCM Nanofibers using Coaxial Electrospinning at Elevated Temperatures," 2015 OSU in Tulsa Research Day, February 20, 2015, Tulsa, OK (Poster Only).
- 17) A. Adebayo and K.A. Sallam, "Secondary Breakup Effects on Fuel Atomization in Crossflow," Proceedings of the 34<sup>th</sup> Oklahoma AIAA/ASME Symposium, March 29, 2014, Edmond, OK (Abstract Only).
- 18) A. Adebayo and K.A. Sallam, "Drop Size Distribution of Fuel Spray Injected in High Speed Crossflow," OSU in Tulsa Research Day, February 21, 2014, Tulsa, OK (Poster Only).
- 19) A. Adebayo, K.A. Sallam, K.-C. Lin, C.D. Carter, "Drop Size Distributions of Aerated Liquid Jets Injected in Subsonic Crossflow," APS 66<sup>th</sup> Annual Meeting of the Division of Fluid Dynamics, Bulletin of the American Physical Society, Vol. 58, No. 18, pp. 256, 2013 (Abstract Only).
- 20) D. Olinger, and K.A. Sallam, "Automatic Digital Holographic Analysis of Dispersed Flows," 2012 OSU in Tulsa Research Day, April 4, 2012, Tulsa, OK (Poster Only).
- 21) D. Olinger, and K.A. Sallam, "Automatic Digital Holographic Analysis of Aerated Liquid Jet in Cross Flow," Proceedings of the 32<sup>th</sup> Oklahoma AIAA/ASME Symposium, March 11, 2012, Tulsa, OK (Abstract Only).
- 22) E. Vaishnav, and K.A. Sallam, "The Aerodynamic Performance of a Vertical Axis Wind Turbine," 22<sup>nd</sup> OSU Research Symposium, February 25, 2011, Tulsa, Oklahoma (Poster Only).
- 23) K. Choi, D. Branson, A.R. Osta, and K.A. Sallam, "Preparation of Electrospun TPU/PCMs Nanofibers as a Thermostatic Clothing Material," TechConnect World Conference and Expo, June 21-24, 2010, Anaheim, CA (Poster Only).
- 24) K. Saini, and K.A. Sallam, "Velocity Measurements of Dispersed Flows Using HPIV," Proceedings of the 30<sup>th</sup> Oklahoma AIAA/ASME Symposium, Saturday, April 10, 2010, Stillwater, OK (Abstract Only).
- 25) R. Singh, and K.A. Sallam, "Spatial-Calibration of Double-View Holographic Particle Analyzer," Proceedings of the 30<sup>th</sup> Oklahoma AIAA/ASME Symposium, Saturday, April 10, 2010, Stillwater, OK (Abstract Only).
- 26) A.R. Osta, and K.A. Sallam, "Investigating Liquid Jet Surface Characteristics Using Digital Holography and X-Ray Phase Contrast Techniques," Proceedings of the 30<sup>th</sup> Oklahoma AIAA/ASME Symposium, Saturday, April 10, 2010, Stillwater, OK (Abstract Only).
- 27) D.S. Olinger, and K.A. Sallam, "Digital Holographic Spray Analysis of the Near Injector Region," Proceedings of the 30<sup>th</sup> Oklahoma AIAA/ASME Symposium, Saturday, April 10, 2010, Stillwater, OK (Abstract Only).
- 28) A.R. Osta, K.A. Sallam, K. Choi, and D. Branson, "Coaxial Electrospinning of Nanofibers using a Single Nozzle using Pressure Injection at Elevated Temperatures," Proceedings of the 30<sup>th</sup> Oklahoma AIAA/ASME Symposium, Saturday, April 10, 2010, Stillwater, OK (Abstract Only).
- 29) R. Singh, K. Saini, A. Osta, and K.A. Sallam, "Auto-Calibrated Double-View Holographic Particle Analyzer," Oklahoma Research Day, November 13, 2009, Broken Arrow, Oklahoma (Poster Only).
- 30) K. Saini, R. Singh, A. Osta, and K.A. Sallam, "Holographic Particle Image Velocimetry for Turbulent Dispersed Flows," Oklahoma Research Day, November 13, 2009, Broken Arrow, Oklahoma (Poster Only).
- 31) E. Vaishnav, P. Deshmukh, and K.A. Sallam, "Harnessing the Wake Energy of Moving Vehicles by Micro Wind Turbines," Oklahoma Research Day, November 13, 2009, Broken Arrow, Oklahoma (Poster Only).
- 32) S. Ariekela and K.A. Sallam, "Simulation of the Nozzle Flow during the Synthesis of Core-Shell Structured Nanofibers," Oklahoma Research Day, November 13, 2009, Broken Arrow, Oklahoma (Poster Only).
- 33) P. Deshmukh and K.A. Sallam, "A Numerical Model of a Personal Micro Wind Turbine," Oklahoma Research Day, November 13, 2009, Broken Arrow, Oklahoma (Poster Only).

- 34) A.R. Osta, J. Lee, K.A. Sallam, and K. Fezzaa, "X-Ray Diagnostics for the Breakup of Round Liquid Jet in Still Air," Oklahoma Research Day, November 13, 2009, Broken Arrow, Oklahoma (Poster Only).
- 35) J. Lee and K.A. Sallam, "Three-Dimensional Motion of Polymer Jets during Electrospinning of Nanofibers," Oklahoma EPSCoR Annual State Conference, March 31 – April 1, 2009, Oklahoma City, Oklahoma (Poster Only).
- 36) J. Lee and K.A. Sallam, "Three-Dimensional Motion of Polymer Jets during Electrospinning of Nanofibers," 20th Annual OSU Research Symposium and Research Scholar Conference Wednesday, February 18 - 20, 2009 (Poster Only).
- 37) J. Lee and K.A. Sallam, "Orthogonal Double View Digital Holographic Diagnostics for Random Motion of Micro Polymer Jet by Electrospinning," APS 61<sup>th</sup> Annual Meeting of the Division of Fluid Dynamics, Bulletin of the American Physical Society, Vol. 53, No. 15, pp. 127, 2008 (Abstract Only).
- 38) A. Osta and K.A. Sallam, "Effect of Nozzle Passage Length on the Surface Properties of Turbulent Liquid jets in Crossflow," APS 61<sup>th</sup> Annual Meeting of the Division of Fluid Dynamics, Bulletin of the American Physical Society, Vol. 53, No. 15, pp. 145, 2008 (Abstract Only).
- 39) J. Lee, and K.A. Sallam, "Holographic Diagnostics for the Breakup of Micro Liquid Jets," Proceedings of the 28<sup>th</sup> Oklahoma AIAA/ASME Symposium, Saturday, March 8, 2008, Tulsa, OK (Abstract Only).
- 40) A. Osta, D. Olinger, and K.A. Sallam, "Investigating the Onset of Primary Breakup of Liquid Jets Using Digital Holographic Microscopy," Proceedings of the 28<sup>th</sup> Oklahoma AIAA/ASME Symposium, Saturday, March 8, 2008, Tulsa, OK (Abstract Only).
- 41) K.A. Sallam, A.M. El-Leathy, A. Narasimhan, and V. Joseph, "The Mechanism of Beads Formation during Electrospinning of Biodegradable Nanofibers," NanoFocus and Oklahoma NSF EPSCoR Annual State Conference, Oklahoma City, Oklahoma, March 6-7, 2008 (Poster Only).
- 42) D. Olinger and K.A. Sallam, "Automating Digital Holographic Spray Analysis," APS 60<sup>th</sup> Annual Meeting of the Division of Fluid Dynamics, Bulletin of the American Physical Society, Vol. 52, No. 17, pp. 151, 2007 (Abstract Only).
- 43) K.A. Sallam, A. Osta, and A.M. El-Leathy, "Instabilities of Charged Liquid Jet of Polymer Solution and Electrospinning of Nanofibers," APS 60<sup>th</sup> Annual Meeting of the Division of Fluid Dynamics, Bulletin of the American Physical Society, Vol. 52, No. 17, pp. 269, 2007 (Abstract Only).
- 44) A. Osta and K.A. Sallam, "Effect of Nozzle Length/Diameter Ratio on the Breakup of Liquid Jets in Crossflow," APS 60<sup>th</sup> Annual Meeting of the Division of Fluid Dynamics, Bulletin of the American Physical Society, Vol. 52, No. 17, pp. 150, 2007 (Abstract Only).
- 45) J. Lee and K.A. Sallam, "Breakup of Micro Liquid Jets in Crossflow," APS 60<sup>th</sup> Annual Meeting of the Division of Fluid Dynamics, Bulletin of the American Physical Society, Vol. 52, No. 17, pp. 247, 2007 (Abstract Only).
- 46) R. Shukla and K.A. Sallam, "Effect of Liquid Transparency on Laser-Induced-Motion of Drops," APS 60<sup>th</sup> Annual Meeting of the Division of Fluid Dynamics, Bulletin of the American Physical Society, Vol. 52, No. 17, pp. 22-23, 2007 (Abstract Only).
- 47) A. Narasimhan, A.M. El-Leathy, and K.A. Sallam, "Electrospinning of Polymeric Nano-Spheres," Oklahoma NSF EPSCoR Annual State Conference, Stillwater, Oklahoma, May 17, 2007 (Poster Only).
- 48) A. Narasimhan, J. Lee, A.M. El-Leathy, and K.A. Sallam, "Generation of Biodegradable Nano-Spheres," 5<sup>th</sup> annual NanoMaterials for Defense Applications Symposium: Accelerating the Transition, 23 - 26 April 2007 in San Diego, CA. (Poster Only).
- 49) R. Shukla and K.A. Sallam, "Laser Induced Micro Drop Motion," Proceedings of the 27<sup>th</sup> Oklahoma AIAA/ASME Symposium, Saturday, March 31, 2007, Tulsa, OK (Abstract Only).
- 50) A. Osta, and K.A. Sallam, "Effect of Injector Length/Diameter Ratio on the Breakup of Liquid Jets in Crossflow," Proceedings of the 27<sup>th</sup> Oklahoma AIAA/ASME Symposium, Saturday, March 31, 2007, Tulsa, OK (Abstract Only).
- 51) K.A. Sallam, C.-L. Ng, and R. Sankar Krishnan, "On Breakup Regime Transitions of Liquid Jets in Gaseous Crossflow," APS 59<sup>th</sup> Annual Meeting of the Division of Fluid Dynamics, Bulletin of the American Physical Society, Vol. 51, No. 9, pp. 95, 2006 (Abstract Only).
- 52) S. Bogadi and K.A. Sallam, "Primary Breakup of a Charged Round Liquid Jet in a Cross Electric Field," Proceedings of the 26<sup>th</sup> Oklahoma AIAA/ASME Symposium, Saturday, April 15, 2006, Norman, OK (Abstract Only).
- 53) B. Miller and K.A. Sallam, "Digital In-Line Holography and its Use in Spray Diagnostics," Proceedings of the 26<sup>th</sup> Oklahoma AIAA/ASME Symposium, Saturday, April 15, 2006, Norman, OK (Abstract Only).

- 54) C.-L. Ng, K.A. Sallam, H.M. Metwally, and C. Aalburg, "3D Simulation of Round Nonturbulent Liquid Jets in Uniform Gaseous Crossflow," Proceedings of the 26<sup>th</sup> Oklahoma AIAA/ASME Symposium, Saturday, April 15, 2006, Norman, OK (Abstract Only).
- 55) K.A. Sallam, C.-L. Ng, and R. Sankarakrishnan, "Bag Breakup of Liquid Jets in Gaseous Crossflow," APS 58<sup>th</sup> Annual Meeting of the Division of Fluid Dynamics, Bulletin of the American Physical Society, Vol. 50, No. 9, pp. 184-185, 2005 (Abstract Only).
- 56) G. Bassiri, N. B. Phelps and K.A. Sallam, "Apple Snail: a Bio Cleaner of the Water Free Surface," APS 58<sup>th</sup> Annual Meeting of the Division of Fluid Dynamics, Bulletin of the American Physical Society, Vol. 50, No. 9, pp. 247, 2005 (Abstract Only).
- 57) B. Miller, and K.A. Sallam, "Comparison of Different Holographic Techniques and Their Application to Sprays," Oklahoma Research Day, University of Central Oklahoma, Edmond, Oklahoma, November 11, 2005 (Poster Only).
- 58) R. Sankarakrishnan, and K.A. Sallam, "Properties of Turbulent Liquid Jets in Gaseous Crossflow," Oklahoma Research Day, University of Central Oklahoma, Edmond, Oklahoma, November 11, 2005 (Poster Only).
- 59) S. Bogadi, and K.A. Sallam, "Properties of Round Nonturbulent Liquid Jets in a Cross Electric Field," Oklahoma Research Day, University of Central Oklahoma, Edmond, Oklahoma, November 11, 2005 (Poster Only).
- 60) C.-L. Ng, and K.A. Sallam, "Wave Phenomena and Droplets Properties of Liquid Jets within the Bag Breakup Regime," Oklahoma Research Day, University of Central Oklahoma, Edmond, Oklahoma, November 11, 2005 (Poster Only).
- 61) S. Bogadi and K.A. Sallam, "Pressure-Assisted Electrostatic Atomization of Liquid Jets," 18<sup>th</sup> Annual Conference on Liquid Atomization and Spray Systems, Irvine, CA, May 2005 (Poster Only).
- 62) R. Sankarakrishnan, K.A. Sallam, and C.W. Chambers, "Breakup of nonturbulent liquid jets in Turbulent crossflow," 18th Annual Conference on Liquid Atomization and Spray Systems, Irvine, CA, May 2005 (Poster Only).
- 63) C.-L. Ng, K.A. Sallam, H.M. Metwally, and C. Aalburg "Surface Properties of Round Nonturbulent Liquid Jets in Gaseous Crossflow," 18th Annual Conference on Liquid Atomization and Spray Systems, Irvine, CA, May 2005 (Poster Only).
- 64) S.M. Bogadi and K.A. Sallam, "Monodisperse Nanoparticles Generation by Electrostatic Atomization," APS 57<sup>th</sup> Annual Meeting of the Division of Fluid Dynamics, Bulletin of the American Physical Society, Vol. 49, No. 9, pp. 17, 2004 (Abstract Only).
- 65) C. Aalburg, K. Lee, G.M. Faeth and K.A. Sallam, "Experimental Study of the Breakup of Turbulent Round Liquid Jets in Gaseous Crossflows," APS 57<sup>th</sup> Annual Meeting of the Division of Fluid Dynamics, Bulletin of the American Physical Society, Vol. 49, No. 9, pp. 236, 2004 (Abstract Only).
- 66) K.A. Sallam, S.M. Bogadi, and R. Sankarakrishnan, "Fabrication and Transport of Metallic Nano Particles via Electrostatic Atomization," Transport Phenomena in Micro and Nanodevices meeting, Kona, Hawaii, October 2004 (Abstract Only).
- 67) S. Jakkamreddy, R. Sankarakrishnan, and K.A. Sallam, "Metallic Nano Particles Generation by Electrostatic Atomization," Oklahoma NSF EPSCoR Annual State Conference, Stillwater, Oklahoma, May 2004, pp. 4 (Poster Only).
- 68) K.A. Sallam, C. Aalburg, and G.M. Faeth, "Experimental Study of the Breakup of Nonturbulent Round Liquid Jets in Gaseous Crossflows," APS 56<sup>th</sup> Annual Meeting of the Division of Fluid Dynamics, Bulletin of the American Physical Society, Vol. 48, No. 10, pp. 27-28, 2003 (Abstract Only).
- 69) C. Aalburg, B. van Leer, G.M. Faeth, and K.A. Sallam, "Properties of Nonturbulent Round Liquid Jets in Uniform Gaseous Crossflow," APS 56<sup>th</sup> Annual Meeting of the Division of Fluid Dynamics, Bulletin of the American Physical Society, Vol. 48, No. 10, pp. 158-159, 2003 (Abstract Only).
- 70) K.A. Sallam and G.M. Faeth, "Measurements of Deformation and Breakup of Liquid Jets in Gaseous Crossflows," APS 55<sup>th</sup> Annual Meeting of the Division of Fluid Dynamics, Bulletin of the American Physical Society, Vol. 47, No. 10, p. 43, 2002 (Abstract Only).
- 71) K.A. Sallam and G.M. Faeth, "Surface Properties of Turbulent Liquid Jets in Still Air," APS 54<sup>th</sup> Annual Meeting of the Division of Fluid Dynamics, Bulletin of the American Physical Society, Vol. 46, No. 10, p. 136, 2001 (Abstract Only).
- 72) K.A. Sallam, Z. Dai, and G.M. Faeth, "Liquid Breakup Properties at the Surface of Turbulent Liquid Jets in Still Air," 14<sup>th</sup> Annual Conference on Liquid Atomization and Spray Systems, Dearborn, Michigan, May 2001, pp. 301-303 (Poster Only).

- 73) K.A. Sallam, G.M. Faeth, and Z. Dai, "Turbulent Primary Breakup of Round and Plane Liquid Jets," APS 53<sup>rd</sup> Annual Meeting of the Division of Fluid Dynamics, Bulletin of the American Physical Society, Vol. 45, No. 9, pp. 176-177, 2000 (Abstract Only).
- 74) K.A. Sallam, Z. Dai, and G.M. Faeth, "Turbulent Primary Breakup of Round and Plane Liquid Jets in Still Air," 8<sup>th</sup> International Conference on Liquid Atomization and Spray Systems, Pasadena, California, 16-20 July 2000, pp. 167-168 (Poster Only).

Presentations and Invited Talks:

- 75) K.A. Sallam, "The Case for hybrid Experimental & Computational Approach in Fluid Mechanics research" Baker Hughes Energy Innovation Center, Webinar, March 10, 2021 (Invited).
- 76) K.A. Sallam, "Velocity Measurements in Choked Jets" John Zink Hamworthy Combustion, Tulsa, Oklahoma, September 11, 2018 (Invited).
- 77) K.A. Sallam, "Combining Laser Diagnostics and CFD for Undergraduate Fluid Education – Does it work?" ASTFE 2<sup>nd</sup> Thermal and Fluids Engineering Conference, Las Vegas, Nevada, April 2-5, 2017.
- 78) K.A. Sallam, "Teaching Energy Conversion," ASME mid Continent Section meeting, Tulsa, Oklahoma, April 21, 2016 (Invited).
- 79) K.A. Sallam, "Atomization, Spray and imaging of Polymer Nanofibers and Nanoparticles," Nanotechnology for Development of Advanced Energy Harvest and Storage Devices, Masdar Institute of Science and Technology, Abu Dhabi, United Arab Emirates, February 17-18, 2015 (Invited).
- 80) K.A. Sallam, "Breakup of Liquid Jets in Crossflow," Air Force Research Lab, Edwards Air Force Base, CA February 5, 2015 (Invited).
- 81) K.A. Sallam, "Experimental and Computational Investigation of Liquid Fuel Atomization," John Zink Company, Tulsa, OK, April 2, 2008 (Invited).
- 82) K.A. Sallam, "Digital Holography for Near-Injector Diagnostics," UTRC Workshop on Primary Atomization, June 18, 2007, East Hartford, CT (Invited).
- 83) K.A. Sallam "High Speed Imaging/PIV for Undergraduate Education," Session 164-FD-33 Instruction in Experimental Methods, 45<sup>th</sup> AIAA Aerospace Sciences Meeting, Reno, Nevada, January 2007 (Invited).
- 84) K.A. Sallam, "Near-Injector Digital Double-Pulsed Holography," Fuel Transport Team Meeting, G.E. Global Research Center, Albany, NY, October 25-26, 2006 (Invited).
- 85) K.A. Sallam "On Effective Teaching and Advising: strategies for achieving academic success at OSU," New Faculty Orientation, Oklahoma State University, Stillwater, Oklahoma, August 17, 2006 (Invited).
- 86) C.-L. Ng, K.A. Sallam, H.M. Metwally, and C. Aalburg, "VOF Modeling of Round Nonturbulent Liquid Jets in Crossflow Within Column, Bag, and Shear Breakup Regimes," Fluent's 2006 CFD Summit, Monterey, CA, May 22-23, 2006.
- 87) G. Bassiri, B. Miller and K.A. Sallam, "Apple Snail: A Bio Cleaner of Free Surface," APS 58<sup>th</sup> Annual Meeting of the Division of Fluid Dynamics, Bulletin of the American Physical Society, Vol. 50, No. 9, pp. 10, 2005 (Video Entry).
- 88) R. Sankarakrishnan and K.A. Sallam, "Bubble nest of Siamese Fighting Fish," APS 58<sup>th</sup> Annual Meeting of the Division of Fluid Dynamics, Bulletin of the American Physical Society, Vol. 50, No. 9, pp. 9, 2005 (Video Entry).
- 89) K.A. Sallam, "Breakup of Turbulent and Nonturbulent Liquid Jets in Crossflow," GE Transport, Cincinnati, Ohio, June 2005 (Invited).
- 90) K.A. Sallam, "Primary Breakup of Turbulent and Nonturbulent Liquid Jets in Gases," Wright-Patterson Air Force Base, Dayton, Ohio, January 2003 (Invited).
- 91) K.A. Sallam, "Primary Breakup of Liquid Jets in Crossflow," Oklahoma State University, Stillwater, Oklahoma, January 2003 (Invited).
- 92) K.A. Sallam, "Primary Breakup of Turbulent Liquid Jets," Fluid and Gas Dynamics Seminar, Department of Aerospace Engineering, The University of Michigan, Ann Arbor, Michigan, November 2000.
- 93) K.A. Sallam, Z. Dai and G.M. Faeth, "Turbulent Primary Breakup of Round and Plane Free Liquid Jets in Still Gases," ONR 2000 Free Surface Turbulence and Bubbly Flows Workshop, California Institute of Technology, Pasadena, California, March 2000, p. 40.
- 94) K.A. Sallam, "Turbulent Primary Breakup of Round and Plane Free Liquid Jets in Still Gases," Fluid and Gas Dynamics Seminar, Department of Aerospace Engineering, The University of Michigan, Ann Arbor, Michigan, March 2000.
- 95) K.A. Sallam, "Breakup Lengths of Turbulent Liquid Jets in Still Gases," Fluid and Gas Dynamics Seminar, Department of Aerospace Engineering, The University of Michigan, Ann Arbor, Michigan, April 1999.

- 96) K.A. Sallam, "Breakup of Turbulent Liquid Jets in Still Air", Fluid and Gas Dynamics Seminar, Department of Aerospace Engineering, The University of Michigan, Ann Arbor, Michigan, October 1998.
- 97) K.A. Sallam, Z. Dai, and G.M. Faeth, "Turbulent Primary Breakup of Plane Free Bow Sheets," ONR 1998 Workshop on Free-Surface and Wall-bounded Turbulence and Turbulent Flows, California Institute of Technology, Pasadena, California, February 1998.

Reports:

- 98) A. Williamson, and K.A. Sallam, "Value of Blending Heat-Pumps and Chillers on Multiuse Property," Report Number: TFL-KAS-21-01, Oklahoma State University, January 2021, 27 p.
- 99) M.S. Raza and K.A. Sallam, "Turbulent Kinetic Energy of Impinging Jets," Report Number: MFL-KAS-19-01, Oklahoma State University, April 2019, 42 p.
- 100) K.A. Sallam, B. Nguyen, Z. Mandevill, and J. Wright, "High Resolution Holographic Diagnostics for Liquid Atomization in Crossflow," Report Number: MFL-KAS-18-090, Oklahoma State University, Stillwater, Oklahoma, September 2018, 13 p.
- 101) A. Sheridan, M. S. Raza, A. Williamson, and K.A. Sallam, "Flow Field Velocimetry and Mixing of Impinging Gas Jets," Report Number: MFL-KAS-18-01, Oklahoma State University, July 2018, 56 p.
- 102) K.A. Sallam, "Double-Pulsed Digital Holographic Diagnostics for Aerated Liquid Jets in Supersonic Crossflow," Report Number: MFL-KAS-16-02, Oklahoma State University, Stillwater, Oklahoma, October 2016, 43 p.
- 103) A. Choudhari, and K.A. Sallam, "Wake Flow of Sonar Transducer," Report Number: MFL-KAS-15-01, Oklahoma State University, Tulsa, Oklahoma, May 2015, 11 p.
- 104) K.A. Sallam, "Spray Diagnostics for Fuel Injection in Scramjet Engine Using Double-Pulsed Double-View Digital Holography," Report Number: MFL-KAS-08-02, Oklahoma State University, Stillwater, Oklahoma, October 2008, 10 p.
- 105) J. Lee, A.R. Osta, and K.A. Sallam, "Friction Velocity Threshold For Carbon Black Material," Report Number: MFL/KAS-08-01, Oklahoma State University, Stillwater, Oklahoma, February 2008, 15 p.
- 106) D. Olinger, J. Lee, and K.A. Sallam, "Double-Pulsed Digital Holographic Diagnostics for Aerated Liquid Jets in Crossflow," Report Number: MFL-KAS-07-02, Oklahoma State University, Stillwater, Oklahoma, December 2007, 23 p.
- 107) J. Lee, D. Olinger, and K.A. Sallam, "Spray Structure in the Near field of Aerated Injector using Microscopic Digital Holography," Report Number: MFL-KAS-07-01, Oklahoma State University, Stillwater, Oklahoma, July 2007, 46 p.
- 108) B. Miller and K.A. Sallam, "Secondary Breakup of Aerated-Liquid Jets in Subsonic Crossflows," Report Number: MFL-KAS-06-01, Oklahoma State University, Stillwater, Oklahoma, November 2006, 92 p.
- 109) K.A. Sallam, C. Aalburg, and G. M. Faeth, "Dynamics of Breakup of Aerated-Liquid Jets in Supersonic Crossflows," Report Number: GDL-GMF-04-01, The University of Michigan, Ann Arbor, Michigan, February 2004, 38 p.
- 110) K.A. Sallam, Z. Dai, W.-H. Chou, L.-P. Hsiang, P.-K. Wu, and G. M. Faeth, "Drop Breakup and Structure Properties of the Bow Sprays of Ships," Report Number: GDL-GMF-00-01, The University of Michigan, Ann Arbor, Michigan, July 2000, 31 p.

Other Publications:

- 111) K.A. Sallam, "Europe, China and U.S. cite progress in hypersonic propulsion," Aerospace America, p. 26, December 2020.
- 112) G. Johnston, K.A. Sallam, and A. Cintron, "Lighting fires that can't be extinguished," Aerospace America, p. 49, December 2019.
- 113) K.A. Sallam, "To speak for those who can't," American Physical Society News Series II, Vol. 17, No. 5, pp. 3, May 2008.

## VII. Supervision

### - Visiting Scholars Supervised (1 completed, 1 in progress):

- 1) A.M. El-Leathy, Assistant Professor, "Electrospinning of biodegradable nanofibers and nano spheres," Nov. 2006 - April 2007.
- 2) Bruno Valim, "Hydrophobic Air Gap Membrane Desalination," Feb 2021 - Present.

### - Ph.D. Graduate Students Supervised (4 completed):

- 1) David Olinger, "3D Size and Velocity Measurements of Sprays using Digital Holography," Ph.D. Thesis, Advisor: K.A. Sallam, Oklahoma State University, spring 2012.
- 2) Anu Osta, "Effect of Nozzle Length-to-Diameter Ratio on Atomization of Turbulent Liquid Jets," Ph.D. Thesis, Advisor: K.A. Sallam, Oklahoma State University, fall 2010.
- 3) Jaiho Lee, "Digital Holographic Diagnostics of Near-Injector Region," Ph.D. Thesis, Advisor: K.A. Sallam, Oklahoma State University, spring 2009.
- 4) Chee-Loon (Kelvin) Ng, "Deformation, Wave Phenomena, and Breakup Outcomes of Round Nonturbulent Liquid Jets in Gaseous Crossflow," Ph.D. Thesis, Advisor: K.A. Sallam, Oklahoma State University, fall 2006.

### - M.S. Graduate Students Supervised (19 completed, 2 in progress):

- 1) Andrew Williamson, "Effect of Fuel/Air Ratio on Furnace Performance," M.S. Thesis, Advisor, K.A. Sallam, Oklahoma State University, *In progress, expected Summer 2021*.
- 2) Saqib Raza, "Aerodynamic Effect on Atomization of Micro Liquid Jets," M.S. Thesis, Advisor, K.A. Sallam, Oklahoma State University, *In progress, expected fall 2021*.
- 3) Elo-Oghene Enwa, "Solar Thermal Desalination Technology Development," M.S. Thesis, Co-advisor with Dr. P. Bikkina, Chemical Engineering, Oklahoma State University, July 14, 2021.
- 4) Alex Sheridan, "The Effects of Injection Angle on the Structure of Choked Gaseous Jets," M.S. Thesis, Advisor: K.A. Sallam, Oklahoma State University, 7/16/2019.
- 5) Abhijit Choudhari, "Simulation of Supersonic Injection of Underexpanded Aerated Liquid Jet," M.S. Thesis, Advisor: K.A. Sallam, Oklahoma State University, 11/3/2016.
- 6) Nikolas Davis, "Cake Fouling Model for a Novel High Speed Dynamic Membrane Filtration System," *M.S. Creative Component Report*, Advisor: K.A. Sallam, Oklahoma State University, 8/1/2016.
- 7) Adam Harrington, "Solid Particle Seeder Design and PIV of Diffusion Flame," *M.S. Creative Component Report*, Advisor: K.A. Sallam, Oklahoma State University, 5/1/2015.
- 8) Adegboyega Adebayo, "Drop Size and Velocity Distributions of the Spray of Aerated Injection in Subsonic Crossflow," M.S. Thesis, Advisor: K.A. Sallam, Oklahoma State University 7/16/2014.
- 9) Atanu Banerjee, "Application of Holographic Particle Image Velocimetry in Bubbly Flow," M.S. Thesis, Advisor: K.A. Sallam, Oklahoma State University, spring 2013.
- 10) Saumya Simon, "Simulation of the Flow of a Single Stranded DNA in a Channel using Dissipative Particle Dynamics," M.S. Thesis, Advisor: K.A. Sallam, Oklahoma State University, Fall 2011.
- 11) Samuel Ariekele, "Numerical Investigation of the Hydrodynamic Focusing Phenomena in a Microflow Cytometer," M.S. Thesis, Advisor: K.A. Sallam, Oklahoma State University, Spring 2011.
- 12) Ramanjeet Singh, "Spatial-Calibration of Double-View Holographic Particle Analyzer," *M.S. Creative Component Report*, Advisor: K.A. Sallam, Oklahoma State University, Fall 2010.
- 13) Etesh Vaishnav, "Investigating the Aerodynamic Performance of a Vertical Axis Wind Turbine," M.S. Thesis, Advisor: K.A. Sallam, Oklahoma State University, Fall 2010.
- 14) Khushwant Saini, "Applying Holographic Particle Image Velocimetry to Sprays," M.S. Thesis, Advisor: K.A. Sallam, Oklahoma State University, Fall 2010.
- 15) Parvez Deshmukh, "Harnessing Wind Energy by a Symmetric Airfoil Rotating around a Fixed Axis," *M.S. Creative Component Report*, Advisor: K.A. Sallam, Oklahoma State University, Fall 2009.
- 16) Atul Narasimhan, "Formation of Fibers and Spheres by Electrospinning of Polyethylene Oxide Solution," M.S. Thesis, Advisor: K.A. Sallam, Oklahoma State University, Fall 2008.
- 17) Vimal Joseph, "CFD of Cylindrical and Spherical Wakes," M.S. Creative Component Report, Advisor: K.A. Sallam, Oklahoma State University, Spring 2008.
- 18) Rohit Shukla, "Effect of Liquid Transparency on Laser-Induced Motion of Drops," M.S. Thesis, Advisor: K.A. Sallam, Oklahoma State University, Fall 2007.
- 19) Brian Miller, "Digital Holographic Diagnostics of Aerated-Liquid Jets in a Subsonic Crossflow," M.S. Thesis, Advisor: K.A. Sallam, Oklahoma State University, Fall 2006.

- 20) Todd Crane, "Jet Breakup and Pinch-off in Liquid-Liquid Systems," M.S. Thesis, Advisor: K.A. Sallam, Oklahoma State University, Summer 2006.
- 21) Vern Skach, "Design and Construction of a Shock Tube," *M.S. Creative Component Report*, Advisor: K.A. Sallam, Oklahoma State University, Fall 2005.
- 22) Ram Sankarakrishnan, "Breakup of Turbulent Round Liquid Jets in Uniform Crossflow," M.S. Thesis, Advisor: K.A. Sallam, Oklahoma State University, Fall 2005.

- Undergraduate Research Assistants Supervised (10 completed):

- 1) Chris Scott, Undergraduate Research Assistant, Fall 2020.
- 2) Christopher Vallery, Undergraduate Research Assistant, Fall 2019-Spring 2020
- 3) Andrew Williamson, MAE undergraduate research assistant, Spring 2018-Spring 2019.
- 4) Saqib Raza, MAE undergraduate research assistant, Fall 2017-Fall 2019.
- 5) John Wright, MAE undergraduate research assistant, Spring 2018.
- 6) Zach Mandevill, MAE undergraduate research assistant, Spring 2018.
- 7) Benjamin Nguyen, MAE undergraduate research assistant, 2017.
- 8) Jubal Kurudamannil, Freshman Scholar, fall 2010, Oklahoma State University.
- 9) Golnaz Bassiri, undergraduate research assistant, summer 2005, Ms. Bassiri presented her work in the APS 58th Annual Meeting of the Division of Fluid Dynamics.
- 10) Richa Jolly, Undergraduate Research Assistant, fall 2002, spring 2003, University of Michigan, Ann Arbor. Ms. Jolly presented the work at the 17<sup>th</sup> national conference on undergraduate research, 2003, Salt lake city, Utah.
- 11) Diana Ma, Undergraduate Research Assistant, fall 2002, spring 2003, University of Michigan, Ann Arbor.

- Membership of Ph.D. Graduate Student Committee (Not an advisor):

- 1) Real Kc, Ph.D. Thesis, Chair: Prof. B. Elbing, Oklahoma State University, Joined committee on 12/9/2020, *In progress*.
- 2) Tharun Kotikalapudi, Ph.D. Thesis, Chair: Prof. Raman Singh, Oklahoma State University, 8/29/2019, Prelim. Exam 8/6/2020, 2<sup>nd</sup> Prelim Exam 12/14/2020, *In progress*.
- 3) Manikantam Gaddam, "Roles of Unsteady Breathing Patterns and Mucus Layer Thickness on Particle Deposition in Human Airway Models," Ph.D. Thesis, Chair: Prof. A. Santhanakrishnan, Oklahoma State University, 4/25/2018, *In progress (Prelim. 11/2018, Qualifier 1/2021)*.
- 4) Blaze Heckert, "Poss-Based Carbon Fiber Treatment for Enhanced Durability of Composites," Ph.D. Thesis, Chair: Prof. Raman Singh, Oklahoma State University, 7/11/2020.
- 5) Yasaman Farsiani, "Modification of a High Reynolds Number Turbulent Boundary Layer with Addition of Drag-Reducing Polymer Solution," Ph.D. Thesis, Chair: Prof. B. Elbing, Oklahoma State University, 3/30/2020
- 6) Milad Samaee, Ph.D. Thesis, Chair: Prof. A. Santhanakrishnan, Oklahoma State University, 12/2/2019.
- 7) Libin K. Babu, "The Use of AFM Indentation to Quantify Mechanical Properties of the Interphase Region in Fiber-Reinforced Composites," Ph.D. Thesis, Chair: Prof. Raman Singh, Oklahoma State University, 6/27/2019.
- 8) Natarianto Indrawan, "Advanced Biopower Generation via Gasification of Biomass and Municipal Solid Waste," Ph.D. Thesis, Chair: Prof. A. Kumar, Oklahoma State University, 10/12/2018.
- 9) Aaron Alexander, "Computational Studies of Flow Control in Vertical Axis Wind Turbines," Ph.D. Thesis, Chair: Prof. A. Santhanakrishnan, Oklahoma State University, 6/22/2018.
- 10) Vahid Shabafrooz, "Poly(Ethylene Terephthalate)-Graphene Nanocomposites from Improved Dispersion," Ph.D. Thesis, Chair: Prof. J. Hanan, Oklahoma State University, 4/2/2018.
- 11) Swanand Bhagwat, "Experimental Measurements and Modeling of Void Fraction and Pressure Drop in Upward and Downward Inclined Non-Boiling Gas-Liquid Two Phase Flow," Ph.D. Thesis, Chair: Prof. A. Ghajar, Oklahoma State University, 7/14/2015.
- 12) Chuck Baukal, "Learning Strategy, Verbal-Visual, and Multimedia Preferences for Continuing Engineering Education Instructional Design," Ph.D. Thesis, Chair: Prof. L.J. Ausburn, Oklahoma State University, 4/2/2014.
- 13) Mehran Andalibi, "Improving the Accuracy of Foreground Estimation in Object Tracking," Ph.D. Thesis, Chair: Prof. L. Hoberock, Oklahoma State University, 2/5/2014.
- 14) Mohsen Shahmohammadi, "Frequency Stability in Thin-Film Piezoelectric-on-Substrate Oscillators," Ph.D. Thesis, Chair: Prof. R. Abdolvand, Oklahoma State University, 11/25/2013.
- 15) Masoud Allahkarami, "X-Ray Diffraction Analysis of Residual Stress in Zirconia Dental Composites," Ph.D. Thesis, Chair: Prof. J. Hanan, Oklahoma State University, 11/06/2012.

- 16) X. Liu, "Development and Experimental Validation of Simulation of Hydronic Snow Melting Systems for Bridges," Ph.D. Thesis, Chair: Prof. J. Spitler, Oklahoma State University, Fall 2004.

- Membership of M.S. Graduate Student Committee (Not an advisor):

- 1) Daniel Velasco, M.S. Thesis, Chair: Dr. K. Rouser, Oklahoma State University, In progress.
- 2) Imran Chowdhury, M.S. Thesis, "Design and Construction of a Pumped Refrigerant Loop for Commercial Scale Low-GWP Refrigerant Heat Exchanger Testing," Chair: Dr. Christian Bach, Oklahoma State University, 7/15/2021.
- 3) Osama Ramadan, "Performance Measurement on the Dedicated Outdoor Air System in the ASHRAE Headquarters Building," M.S. Creative Component Project, Chair: Dr. Jeff Spitler, Oklahoma State University, 7/21/2020.
- 4) Joshua W. Gonya, "Scalability and Effect of Graphene Nanoplatelets on Flexural and Compressive Properties of Carbon Fiber Reinforced Composites," M.S. Creative Component Project, Chair: Dr. Raman Singh, Oklahoma State University, 11/19/2019.
- 5) Zeeshan Saeed, "Characterization of Degraded Drag-Reducing Polymer Solution and its Impact on the Structure of Turbulence," M.S. Thesis, Chair: Prof. Brian Elbing, Oklahoma State University, 11/8/2019.
- 6) Molly Agrimson, "Extraction Bench Evaluation Project," M.S. Creative Component Project, Chair: Dr. Ranji Vaidyanathan, Oklahoma State University, 4/26/2019.
- 7) Shamim Mondal, "The Effect of Dispersion Techniques, Surface Treatments and Coupling Agents on the Fracture Toughness of Graphene Reinforced Epoxy Resin," M.S. Thesis, Chair: Prof. Raman Singh, Oklahoma State University, 4/20/2018.
- 8) Ravi Raja Naidu Akula Venkata, "Effect of Low Constant Direct Currents on Quasi-Static Mechanical Response of Carbon Fiber Polymer Matrix Composites," M.S. Thesis, Chair: Prof. Raman Singh, Oklahoma State University, 4/24/2018.
- 9) Vishwa Teja Kasoju, "Clap and Fling Interaction of Bristled Wings: Effects of Varying Reynolds Number and Bristle Spacing on Force Generation and Flow Structures," M.S. Thesis, Chair: Prof. Arvind Santhanakrishnan, Oklahoma State University, 4/17/2017.
- 10) Manikantam Goud Gaddam, "Currents Generated by Upside-down Jellyfish: Implications for suspension feeding and porewater pumping," M.S. Thesis, Chair: Prof. Arvind Santhanakrishnan, Oklahoma State University, 11/17/2016.
- 11) Ranga Nanda Kishore Korivi, "Hydrodynamics and Heat Transfer in Upward Inclined Gas-Liquid Two-Phase Two-Component Flows," M.S. Thesis, Chair: Prof. A. Ghajar, Oklahoma State University, 11/19/2015.
- 12) Pritam Sai Mekala, "Comparative Study of Diastolic Filling under Varying Left Ventricular Wall Stiffness," M.S. Thesis, Chair: Prof. A. Santhanakrishnan, Oklahoma State University, 7/13/2015.
- 13) Tarebi John, "Non-Boiling Heat Transfer in Downward Inclined Gas-Liquid Two Phase Flow," M.S. Thesis, Chair: Prof. A. Ghajar, Oklahoma State University, 6/26/2015.
- 14) Weiwei Zhu, "Measurements of Thermal Conductivity of Pipe Insulation Systems at Below-Ambient Temperature and in Wet Condensing Conditions with Moisture Ingress," M.S. Thesis, Chair: Prof. L. Cremaschi, Oklahoma State University, 11/13/2014.
- 15) Srinaga B. Kalapatapu, "Non-Boiling Heat Transfer in Horizontal Upward Inclined Gas-Liquid Two Phase Flow," M.S. Thesis, Chair: Prof. A. Ghajar, Oklahoma State University, 7/16/2014.
- 16) Edgar Ignacio Lares Barboza, "Design of an Experimental Setup for Two Phase Flow Studies in Near Horizontal Upward and Downward Pipe Orientations," M.S. Thesis, Chair: Prof. A. Ghajar, Oklahoma State University, 7/10/2014.
- 17) Tabassum Aziz Hossainy, "Non-Boiling Heat Transfer in Horizontal and Near Horizontal Downward Inclined Gas Liquid Two Phase Flow," M.S. Thesis, Chair: Prof. A. Ghajar, Oklahoma State University, 7/3/2014.
- 18) Adekunle Lukman Oyewole, "Study of Flow Patterns and Void Fraction in Inclined Two-Phase Flow," M.S. Thesis, Chair: Prof. A. Ghajar, Oklahoma State University, 11/21/2013.
- 19) Henock Mateos Mekisso, "Comparison of Frictional Pressure Drop Correlations for Isothermal Two-Phase Horizontal Flow," M.S. Thesis, Chair: Prof. A. Ghajar, Oklahoma State University, 12/19/2012.
- 20) Mehmet Mollamahmutoglu, "Study of Isothermal Pressure Drop and Non-Boiling Heat Transfer in vertical Downward Two Phase Flow," M.S. Thesis, Chair: Prof. A. Ghajar, Oklahoma State University, 11/29/2012.
- 21) Krishna Karthik Yanumala, "Validating Working Model of a Scissor Mechanism to a Pro E Model for MAE 3303," M.S. Creative Component Report, Chair: Prof. J. Morton, Oklahoma State University, Summer 2012.
- 22) Adam L. Still, "Multiphase Phenomena in a Vibrating Column Reactor," M.S. Thesis, Chair: Prof. A. Ghajar, Oklahoma State University, Summer 2012.



- 23) Qian Li, "Experimental Investigation of Friction Factor and Heat Transfer for Single Phase Water Flow in Stainless Steel and Nickel Micro-Tubes," M.S. Thesis, Chair: Prof. A. Ghajar, Oklahoma State University, Spring 2012.
- 24) Sengyiu Chong, "Invariance of Integrated Mie Absorption with Damping Constant," *M.S. Creative Component Report*, Chair: Prof. A. Kalkan, Oklahoma State University, Spring 2012.
- 25) Onnittan Jacob N Panachaveettil, "Processing and Characterisation of Bismuth Antimony Telluride and Bismuth Selenium Telluride Based Thermoelectric Materials," M.S. Thesis, Chair: Prof. A. Kalkan, Oklahoma State University, Summer 2011.
- 26) Sadia Nasrin, "Effect of Nanofiller on the Gas Permeability of Epoxy Nanocomposite," M.S. Thesis, Chair: Prof. R. Singh, Oklahoma State University, Summer 2011.
- 27) Swanand Madhav Bhagwat, "Study of Flow Patterns and Void Fraction in Vertical Downward Two-Phase Flow," M.S. Thesis, Chair: Prof. A. Ghajar, Oklahoma State University, Spring 2011.
- 28) Balaji Ramanujakannan, "Permeability Prediction in Compressed Polyurethane Foams in Vacuum Assisted Infiltration Process," M.S. Thesis, Chair: Prof. R. Singh, Oklahoma State University, Fall 2010.
- 29) Nishant Mathure, "Study of Flow Patterns and Void Fraction in Horizontal Two-Phase Flow," M.S. Thesis, Chair: Prof. A. Ghajar, Oklahoma State University, Fall 2010.
- 30) Alok Dange, "Modeling Turbulent Particulate Flow in the Recirculation Zone Downstream of a Backward Facing Step Preceding a Porous Medium," M.S. Thesis, Chair: Prof. F. Chambers, Oklahoma State University, Fall 2010.
- 31) Krishna Chaitanya Ravi, "Numerical Prediction of Particulate Flow over Backward Step Flow Preceding a Filter Medium," M.S. Thesis, Chair: Prof. F. Chambers, Oklahoma State University, Fall 2010.
- 32) Varun Kulkarni, "Calculation of Multi-Room Structural Fires with Smoke Detectors Using the FDS Computer Code," *M.S. Creative Component Report*, Chair: Prof. D. Lilley, Oklahoma State University, Spring 2010.
- 33) Deepak Mandloi, "Grid Refinement Studies for One-Room Structural Fires with a Variety of Burning Items using the Fire Dynamics Simulator Code," *M.S. Creative Component Report*, Chair: Prof. D. Lilley, Oklahoma State University, Spring 2010.
- 34) Mujeer Ahmed Mohammed, "Analysis and Modeling of a Room Fire using BRANZFIRE," *M.S. Creative Component Report*, Chair: Prof. D. Lilley, Oklahoma State University, Fall 2009.
- 35) Subramaniam Mukund Venkitachalam, "Fabrication of Biomaterial Scaffolds and in vitro Biocompatibility Testing with Endothelial Cells and Platelets," M.S. Thesis, Chair: Prof. D. A. Rubenstein, Oklahoma State University, Fall 2009.
- 36) Taiho Yeom, "Lattice Boltzmann Method for Micro Channel and Micro Orifice Flows," M.S. Thesis, Chair: Prof. F.W. Chambers, Oklahoma State University, Spring 2007.
- 37) Ignacio Zea Caloca, "Lattice Bhatnagar-Gross-Krook Model for Micro Flows Simulation," *M.S. Creative Component Report*, Chair: Prof. F.W. Chambers, Oklahoma State University, Summer 2004.

## VIII. Service

### - University Service:

Advisor, ASME Student Section, OSU-Tulsa, 2014-present.  
 Member, MAE Student Scholarship and Fellowship committee, 2017-present (Chair: Prof. Shuodao Wang).  
 Member, Mechanical Engineering Curriculum Committee (MCC), 2020-present (Chair: Prof. Christian Bach).  
 Member, Barthelmes Fellowship Selection Committee, 2021  
 Member, MAE search committee for Material or Manufacturing faculty, 2019-2020, (Chair: Prof. D. Fisher).  
 Member, Undergraduate Curriculum Committee (UCC), 2015-2020 (Chair: Prof. Keith Good).  
 Chair, MAE Student Scholarship and Fellowship committee, 2012-2017.  
 Member, Research Award Committee, OSU-Tulsa, 4/2017 (Chair: Prof. Ali Nejadmalayeri).  
 Member, Aerospace Curriculum Committee (ACC), 2008-2015 (Chair: Prof. Andy Arena).  
 Member, MSE RPT committee (spring 2014, Chair: Prof. Ranji Viadyanathan).  
 Member, CEAT Lab Manager Search Committee, OSU-Tulsa, (12/12-2/13, Chair: Dr. Susan Johnson).  
 Member, MAE Energy Faculty Search Committee (fall 2013, Chair: Prof. Jeff Spitler)  
 Member, MAE search committee for fluid faculty (fall 2012, Chair: Prof. Afshin Ghajar).  
 Member, MAE Awards committee, 2003-2008 (Chair: Prof. Ron Delahoussaye).  
 Member, Helmerich Research Center Steering Committee “Energy Group”, Sp 04 – Sp 05.  
 Member, MAE search committee for Bio-fluid faculty (Chair: Prof. Afshin Ghajar).  
 Member, MAE search committee for composites faculty (Chair: Prof. Ranga Komanduri).  
 Member, MAE search committee for Refrigeration faculty (Chair: Prof. Jeff Spitler).  
 Team Lead, Interviewing prospective College of Engineering Scholars, Spring 08, Spring 06.

### - Professional Service (Committee Membership):

- |  |                          |
|--|--------------------------|
| 1- American Society of Mechanical Engineering (ASME) Mid Continent Section | 2017-2021                |
| Immediate Past Chair, 2020-2021  |                          |
| Chair, 2019-2020   |                          |
| Vice Chair, 2017-2019  |                          |
| 2- American Institute of Aeronautics and Astronautics (AIAA)               | 2007-2010, 2019- present |
| Communication Chair, AIAA HSABP TC, 2019-present                           |                          |
| Member, AIAA Fluid Dynamics Technical Committee, 2007-2010                 |                          |
| Member, AIAA Fluid Dynamics TC Best Paper Subcommittee, 2007-2010          |                          |
| 3- American Physical Society (APS)   | 2007-2010                |
| Member, APS Committee on International Freedom of Scientists, 2007-2010    |                          |

### - Professional Service (Conferences Organizing and Chairing):

- |      |   |
|------|---|
| 2019 | - Technical Program Committee Member, 14 <sup>th</sup> International Conference on Heat Transfer, Fluid Mechanics and Thermodynamics, Ireland, 21-24 July 2019 (reviewed 5 papers).<br>- Session Chair (Boiling), 14 <sup>th</sup> International Conference on Heat Transfer, Fluid Mechanics and Thermodynamics, Ireland, 21-24 July 2019 (5 papers).<br>- Session Chair (Fluids III), 39 <sup>th</sup> AIAA/ASME Oklahoma Symposium, Tulsa, Oklahoma, 4/6/2019. |
| 2018 | Session Co-Chair (Liquid Jet in Crossflow I), 14 <sup>th</sup> International Conference on Liquid Atomization and Spray Systems, Chicago, IL, July 22–26, 2018.   |
| 2017 | - Session Chair (Simulations), 37 <sup>th</sup> AIAA/ASME Oklahoma Symposium, Tulsa, Oklahoma, 4/15/2017.<br>- Session Co-Chair (Experimental Methods/Tools and Instrumentation I), American Society of Thermal and Fluids Engineering, 2 <sup>nd</sup> Thermal and Fluids Engineering Conference, Las Vegas, Nevada, 4/2017.   |
| 2016 | Session Chair (Flow Instability: Multiphase Flow), APS 69 <sup>th</sup> Annual Meeting of the Division of Fluid Dynamics, Portland, Oregon, 11/2016.  |
| 2016 | Session Chair (Design, Modeling and Testing), 36 <sup>th</sup> AIAA/ASME Oklahoma Symposium, Norman, Oklahoma, 4/16/2016.   |
| 2012 | Session Chair (Material Properties and Measurements), 32 <sup>th</sup> AIAA/ASME Oklahoma Symposium, Tulsa, Oklahoma, 3/2012.   |

- 2010 - Associate Organizer of the Fluid Dynamics Program, 47th AIAA Aerospace Sciences Meeting, Orlando, Florida, 1/2009.  
- Session Chair (Transition and Turbulence: Experiments II), 47th AIAA Aerospace Sciences Meeting, Orlando, Florida, 1/2009.
- 2008 - Organizer for invited session (seedless velocimetry), AIAA 38th Fluid Dynamics Conference, Seattle, Washington, 6/2008.  
- Session Chair (Multiphase and Multi-Constituent Flows), 46th AIAA Aerospace Sciences Meeting, Reno, Nevada, 1/2008.
- 2007 - Session Chair (Micro Fluids: General VI), APS 60<sup>th</sup> Annual Meeting of the Division of Fluid Dynamics, Salt Lake City, Utah, 11/2007.  
- Session Co-Chair, 18<sup>th</sup> AIAA Computational Fluid Dynamics Conference, Miami, Florida, 6/2007.  
- Session Chair, ILASS 20<sup>th</sup> annual meeting, Chicago, Illinois, 5/2007.
- 2006 Session Chair, AIAA/ASME Oklahoma 26<sup>th</sup> Symposium, Norman, Oklahoma, 4/2006.
- 2005 Organizing Committee Member, of AIAA/ASME Oklahoma 25<sup>th</sup> Symposium, 2/2005.  
Session Chair, AIAA/ASME Oklahoma 25<sup>th</sup> Symposium Stillwater, Oklahoma, 2/2005.

- Journal Articles and Conference Papers Reviewer:

- 2021 Atomization and Sprays, Physical Review Fluids, AIAA 2021 Propulsion & Energy Conference (9 abstracts), ASME-IMECE 2021 conference (4 papers).
- 2020 Journal of Propulsion and Power, Journal of Energy Resources Technology, ASME IMECE 2020 (3 papers), AIAA 2020 Propulsion & Energy Conference (3 abstracts)
- 2019 Microfluidics and Nanofluidics.
- 2018 AIAA Journal, ASTFE 3<sup>rd</sup> TFEC, 2018, Fort Lauderdale, Florida (1 paper).
- 2017 Physics of Fluids, Experiments in Fluids, Journal of Propulsion and Power, Flow, Turbulence and Combustion, Optics and Lasers in Engineering, ASME Turbo Expo 2017: reviewed one paper., ASTFE 2<sup>nd</sup> TFEC 2017, Las Vegas, Nevada (3 papers, 2 extended abstracts).
- 2016 Journal of Fluid Mechanics, Atomization and Sprays (2), Experiments in Fluids (2), Korean Journal of Chemical Engineering, Progress in Energy and Combustion Science, AIAA SciTech 2016, San Diego, California (6 abstracts).
- 2015 Atomization and Sprays (2), International Journal of Multiphase Flow, Polymer Engineering & Science, Canadian Journal of Chemical Engineering, Journal of Hydraulic Engineering, Journal of Visualization.
- 2014 Journal of Fluid Mechanics, Atomization and Sprays, Polymer Engineering & Science, Experiments in Fluids, Optics Express.
- 2013 Atomization and Sprays (2), International Journal of Multiphase Flow, Journal of Propulsion and Power, Polymer Engineering & Science (2), Experiments in Fluids, AIAA Journal, Microfluidics and Nanofluidics (2), Journal of Undergraduate Research of The University of Central Oklahoma, AIAA 51<sup>st</sup> Aerospace Sciences Meeting, 2013, Grapevine, Texas (5 abstracts), AIAA 43<sup>rd</sup> Fluid Dynamics Conference, 2013, (8 abstracts).
- 2012 Atomization and Sprays, Journal of Propulsion and Power, Polymer Engineering & Science, Experimental Thermal and Fluid Science (2), Polymer, International Journal of Heat and Fluid Flow.
- 2011 Atomization and Sprays, International Journal of Hydrogen Energy, Optics and Lasers in Engineering, AIAA 49<sup>th</sup> Aerospace Sciences Meeting, 2011, Orlando, Florida (4 abstracts).
- 2010 Atomization and Sprays, International Journal of Multiphase Flow, ASME Journal of Fluids Engineering (2), Journal of Propulsion and Power, Experiments in Fluids, Energy, AIAA 48<sup>th</sup> Aerospace Sciences Meeting, Jan 2010, Orlando, Florida (10 abstracts), AIAA 40<sup>th</sup> Fluid Dynamics Conference and Exhibit, Jan 2010, Chicago, Illinois (7 abstracts).
- 2009 Physics of Fluids, ASME Journal of Fluids Engineering, AIAA 47<sup>th</sup> Aerospace Sciences Meeting, Jan 2009, Orlando, Florida.
- 2008 International Journal of Multiphase Flow, ASME Journal of Fluids Engineering (3), AIAA Journal, Acta Mechanica, Journal of Applied Polymer Science, AIAA 38<sup>th</sup> Fluid Dynamics Conference, Jun 2008, Seattle, Washington, AIAA 46<sup>th</sup> Aerospace Sciences Meeting, Jan 2008, Reno, Nevada.
- 2007 Atomization and Sprays, ASME Journal of Fluids Engineering, Journal of Propulsion and Power, Experimental Mechanics.
- 2006 International Journal of Multiphase Flow, HVAC&R Research Journal.

- 2005 International Journal of Multiphase Flow, Journal of Propulsion and Power, Journal of Thermophysics and Heat Transfer.
- 2004 Physics of Fluids, Atomization and Sprays, International Journal of Multiphase Flow (2).
- 2002 ASME Journal of Fluids Engineering.
- 2000 AIAA Journal.

- Community Service:

- Coach, Jenks Southeast Elementary School Chess Club 2019-2020
- Coach, First LEGO League 2019-2020
- 1<sup>st</sup> Award Project Research – Tulsa Memorial Qualifier, Tulsa
  - 2<sup>nd</sup> Award – Dell Scrimmage, Oklahoma City
  - 3<sup>rd</sup> Award Robot Performance – Tulsa Memorial Qualifier, Tulsa
- Coach, First LEGO League 2018/2019
- 3<sup>rd</sup> Award Robot Performance - the Oklahoma State Championship,
  - 3<sup>rd</sup> Award Overall Champion - Tulsa University Qualifier
  - 3<sup>rd</sup> Award Robot Performance - Tulsa University Qualifier
- Mentor, 7<sup>th</sup> Engineer Games for high schools students, Tulsa Regional STEM Alliance 10/2018
- Coach, First LEGO League Jr 2016/2017
- Amazing Movement Award, Oklahoma State Exposition
- Liaison, Tulsa Engineering Foundations, Inc. 2016/2017
- Judge, Oklahoma EPSCoR 2<sup>nd</sup> Science Fair, Stillwater, Oklahoma 2005
- Founder, the Arab Student Association at the University of Michigan 2000/2001
- Elected Representative, Graduate Student Government, University of Michigan 1999/2000
- President, the Egyptian Student Association at the University of Michigan 1998/1999
- Assistant Scientific Officer, the Egyptian Student Association in North America 1998/1999