

## Shyam Menon, Ph.D.

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CONTACT INFORMATION	<b>Assistant Professor</b> Mechanical & Industrial Engineering Louisiana State University 3272U Patrick F Taylor Hall, Baton Rouge, LA 70808	Voice: (225) 578-7279 Email:smenon@lsu.edu Research Website
EDUCATION	<ul style="list-style-type: none"><li>• <b>University of Maryland</b>, College Park, Maryland, USA M.S., Department of Aerospace Engineering, 2005 Ph.D., Department of Aerospace Engineering, 2010</li><li>• <b>VJTI</b>, Mumbai, Maharashtra, INDIA B.E.(<i>First class</i>), Department of Mechanical Engineering, June 2001</li></ul>	
ACADEMIC APPOINTMENTS	<b>Louisiana State University</b> , Baton Rouge, LA <i>Assistant Professor</i> <b>2016–present</b>	
	<b>Oregon State University</b> , Corvallis, OR <i>Post-doctoral scholar</i> <b>2014–2016</b>	
	<b>University of Southern California</b> , Los Angeles, CA ( <i>Joint appointment with</i> ) <b>Princeton university</b> , New Brunswick, NJ <i>Combustion energy research fellow</i> <b>2013–2014</b>	
	<b>California Institute of Technology (Caltech)</b> , Pasadena, CA <i>Post-Doctoral Researcher</i> <b>2010–2013</b>	
	<b>University of Maryland at College Park</b> , College Park, MD <i>Graduate Research Assistant</i> <b>2002–2010</b>	
TEACHING EXPERIENCE	<b>Oregon State University</b> : ME 312 (Thermodynamics), Winter 2015; ENGR 112 (Introduction to Engineering Computing), Winter 2016 <b>Louisiana State University</b> : ME 7433 (Advanced Heat Transfer - I)– <i>Fall 2016</i> ; ME 4621 (Thermal Systems Laboratory)– <i>Spring 2017, Spring 2018</i> ; ME 2543 (Simulation Methods for Mechanical Engineers)– <i>Fall 2017, Spring 2021</i> ; ME 4933 (Aircraft Propulsion)– <i>Spring 2018, Spring 2019</i> ; ME 4943 (Rocket Propulsion)– <i>Fall 2018</i> , ME 4943 (Rotorcraft Aerodynamics)– <i>Fall 2020, Fall 2021</i> , ME 2334 (Thermodynamics)– <i>Fall 2020, Fall 2021</i> , ME 4433 (Heat Transfer) – Spring 2022	
WORK EXPERIENCE	<b>Cognizant Technology Solutions</b> , Chennai, Tamil Nadu, India <i>Programmer Analyst</i> <b>2001–2002</b>	

## HONORS AND AWARDS

- CEFRC postdoctoral research fellowship: Two-year postdoctoral fellowship, USC and Princeton, 2013-2015.
- Member of rotorcraft design team that won **2nd** prize at the annual AHS graduate student design competition (accomplished the complete design of a gas turbine engine for a 3-seater helicopter including a detailed CATIA solid object model of the engine parts).
- Ratan and JRD Tata scholarships for academic merit (VJTI, Mumbai).

## RESEARCH GRANTS AND CONTRACTS (AWARDED)

- Office of Naval Research (ONR), **PI**, “Molten particle adhesion study in a multiphase turbine test rig” – June 2022 (\$60,724).
- LaSPACE, Research Enhancement Program (REA)**PI**, “Investigation of high-speed particle-laden jets simulating rocket plume impingement” – September 2020 (\$33,500).
- LaSPACE, Graduate Student Research Assistance (GSRA)**PI**, “Development of a shock tube apparatus for fuel spray breakup studies” – August 2020. (\$8,000).
- LaSPACE, Graduate Student Research Assistance (GSRA)**PI**, “Development of a hardware-in-the-loop test platform for hybrid aircraft powertrains” – August 2019 (\$8,000).
- Louisiana NASA EPSCoR, Research Awards Program (RAP)**PI**, “Development of a distributed airblast-atomized liquid fuel injection system for low-emission aircraft gas turbine engines” – January 2019 (\$40,000).
- Department of Air Force - Research Laboratory **Co-PI**, “Investigation of hybrid powertrains for small unmanned aircraft systems” – August 2018 (\$103,000).
- LSU Discover, Undergraduate student research **PI**, “A distributed liquid fuel injection system to achieve low emission gas turbine engines for aircraft propulsion” – January 2018 (\$1,000).
- LaSPACE, Graduate Student Research Assistance (GSRA)**PI**, “Water spray characterization for cooling rocket engine exhaust plumes” – October 2017 (\$8,000).
- LaSPACE, Research Enhancement Program (REA)**PI**, “Tunable laser diode based temperature measurements in a rocket engine exhaust plume” – July 2017 (\$32,875).
- NSF EPSCoR sponsored Travel Grants for Emerging Faculty (TGEF) – June 2017 (\$1,200).
- Department of Energy, Co-optimization of Fuels and Engines (Co-Optima), **Co-PI**, “Micro-Liter Fuel Characterization and Property Prediction” – March 2017 (\$1.6 M total between 5 PI’s).
- Louisiana NASA EPSCoR, Research Awards Program (RAP)**PI**, “An experimental investigation of cooling water spray on a rocket exhaust plume” – January 2017 (\$40,000).
- Oregon Metals Initiative, “UAV engine development”, **Co-PI**, 2015 (\$11,000).
- Jointly authored a start-up request and subsequently a research proposal to obtain computing time on NSF managed XSEDE supercomputers with Prof. Fokion Egolfopoulos for a total award of 300,000 CPU hours.
- Jointly authored a research proposal to obtain computing time on NSF managed XSEDE supercomputers with Prof. Fokion Egolfopoulos for a total award of 800,000 CPU hours.

## BOOK CHAPTER

1. S. Menon and C.Cadou, “Small Scale Reciprocating Engines”, in Microscale Combustion and Power Generation(2014), edited by C. Cadou, Y. Ju, and K. Maruta, Momentum Press.

1. Menon, S., Moulton, N., and Cadou, C., Development of a dynamometer for measuring small internal-combustion engine performance. *AIAA Journal of Propulsion and Power*, 2007, Vol.23 (1), 194-202. <http://dx.doi.org/10.2514/1.19825>
2. Menon, S., and Cadou, C., Scaling of miniature piston engine performance -Part I: Overall engine performance. *AIAA Journal of Propulsion and Power*, 2013, Vol.29 (4), 774-787. <http://dx.doi.org/10.2514/1.B34638>
3. Menon, S., and Cadou, C., Scaling of miniature piston engine performance -Part II: Engine loss mechanisms. *AIAA Journal of Propulsion and Power*, 2013, Vol.29 (4), 788-799. <http://dx.doi.org/10.2514/1.B34639>
4. Menon, S., Boettcher, P.A., and Blanquart, G., Enthalpy based modeling of hot-surface ignition and flame propagation. *Combustion and Flame*, 2013, Vol.160 (7), 1242-1253. <http://dx.doi.org/10.1016/j.combustflame.2013.02.008>
5. Menon, S., and Cadou, C., Investigation of combustion processes in miniature internal combustion (IC) engines. *Combustion Science and Technology*, 2013, Vol.185 (11), 1667-1695. <http://dx.doi.org/10.1080/00102202.2013.829720>
6. Boettcher, P.A., Menon, S., Blanquart, G., and Shepherd, J., Cyclic flame propagation in premixed combustion. *Journal of Fluid Mechanics*, 2013, Vol.735, 176-202. <http://dx.doi.org/10.1017/jfm.2013.495>
7. Chatelain, K., Mevel, R., Menon, S., Blanquart, G., and Shepherd, J., Ignition and chemical kinetics of acrolein-oxygen-argon mixtures behind reflected shock waves. *Fuel*, 2014, Vol.135, 498-508. <http://dx.doi.org/10.1016/j.fuel.2014.07.004>
8. Menon, S., Boettcher, P.A., Ventura, B., and Blanquart, G., Hot surface ignition of n-hexane in air. *Combustion and Flame*, 2016, Vol. 163, 42-53. <http://dx.doi.org/10.1016/j.combustflame.2015.08.011>
9. Deng, Y., Menon, S., Lavrich, Z., Wang, H., and Hagen, C., Design, simulation, and testing of a novel micro-channel heat exchanger for natural gas cooling in automotive applications. *Applied Thermal Engineering*, 2017, Vol. 110, 327-334. <http://dx.doi.org/10.1016/j.applthermaleng.2016.08.193>
10. Menon, S., Ganti, H., Niemeyer, K., and Hagen, C., Effects of oil and water contamination on natural gas engine combustion processes. *Journal of Natural Gas Science and Engineering*, 2017, Vol. 41, 30-39. <https://doi.org/10.1016/j.jngse.2017.02.038>
11. Jones, H., Menon, S. Liquid jet penetration and breakup in a free supersonic gas jet. *Experiments in Fluids*, 2019, Vol. 60, 161 <https://doi.org/10.1007/s00348-019-2812-4>
12. Dang, W., Zhao, W., Schoegl, I., Menon, S. A small-volume, high-throughput approach for surface tension and viscosity measurements of liquid fuels. *Measurement Science and Technology*, 2020, Vol. 31, 9. <https://doi.org/10.1088/1361-6501/ab8b23>
13. Dehesa, D., Menon, S., Dynamic analysis of a series hybrid-electric powertrain for an unmanned aerial vehicle. *Journal of Propulsion and Power*, 2022, Vol. 38, 1, 84-96. <https://doi.org/10.2514/1.B38261>

14. Dang, W., Gurunadhan, M., Schoegl, I., Menon, S., Temperature effects on droplet oscillation with application to fuel property measurement. *Atomization and Sprays*, Vol. 31, 10. <https://doi.org/10.1615/AtomizSpr.2021039068>
15. Dang, W., Gurunadhan, M., Ard, W., Schoegl, I., Menon, S., Droplet Evaporation-Based Approach for Microliter Fuel Property Measurements. *International Journal of Thermophysics*, 2022, Vol. 43, 4, 1-27. <https://doi.org/10.1007/s10765-022-02987-1>
16. Viswamithra, V., Menon, S., A Distributed Fuel Injection Approach to Suppress Lean Blow-Out and NOx Emissions in a Methane-Ammonia-Fueled Premixed Swirl Combustor. *Journal of Engineering for Gas Turbines and Power*, 2022. <https://doi.org/10.1115/1.4054105>
17. Menon, S., Gurunadhan, M., Droplet behavior in overexpanded supersonic two-phase jets. *International Journal of Multiphase Flow*, 2022. <https://doi.org/10.1016/j.ijmultiphaseflow.2022.104076>
18. Leung, J., Gurunadhan, M., Menon, S., Single and two-phase fluid droplet breakup in impulsively generated high-speed flow. Submitted for review in *Shock Waves*.
19. Viswamithra, V., Gurunadhan, M., Menon, S., Expanding swirl combustor operability on methane-ammonia-air mixtures using a distributed fuel injection technique and inlet air preheating. Under review in *International Journal of Hydrogen Energy*.

CONFERENCE  
PAPERS

1. S. Menon, N.Moulton and C. Cadou, "Performance measurement and scaling in small internal combustion engines", AIAA-2003-0671, 41st AIAA Aerospace Sciences Meeting and Exhibit, Reno, Nevada, Jan. 6-9, 2003.
2. S. Menon and C. Cadou, "Scaling of losses in small IC aero engines with engine size", AIAA-2004-690, 42nd AIAA Aerospace Sciences Meeting and Exhibit, Reno, Nevada, Jan. 5-8, 2004.
3. S. Menon and C. Cadou, "Experimental and computational investigation of small internal combustion engine performance", 5th U.S Combustion institute meeting, San Diego, CA, Mar. 25-28, 2007.
4. S. Menon and C. Cadou, "Investigation of performance scaling in small internal combustion engines", Eastern states section meeting of the combustion institute, Charlottesville, VA, Oct. 21-24, 2007.
5. S. Menon and C.Cadou, "Performance scaling in miniature internal combustion engines", Eastern states section meeting of the combustion institute, College Park, MD, Oct. 18-21, 2009.
6. S. Menon and C.Cadou. "Miniaturization limits of small IC engines", PowerMEMS 2009, December 1-4, Washington DC.
7. S. Menon and C. Cadou, "Investigation of combustion processes in miniature internal combustion (IC) engines", 7th U.S Combustion institute meeting, Atlanta, GA, Mar. 20-23, 2011.
8. S. Menon, G. Blanquart, P. Boettcher, B. Ventura and J. Shepherd, "Modeling hot-surface ignition of hydrocarbon-air mixtures", 7th U.S Combustion institute meeting, Atlanta, GA, Mar. 20-23, 2011.

9. P. Boettcher, B. Ventura, J. Shepherd, S. Menon and G. Blanquart, "Experimental investigation of hot surface ignition of hydrocarbon-air mixtures", 7th U.S Combustion institute meeting, Atlanta, GA, Mar. 20-23, 2011.
10. S. Menon, P. Boettcher and G. Blanquart, "Enthalpy based modeling of hot-surface ignition and flame propagation", Western States Section of the Combustion Institute, Fall 2011 Meeting, Riverside, CA, Oct. 16-18, 2011.
11. P. Boettcher, J. Shepherd, S. Menon, G. Blanquart and B. Ventura, "Hot-surface ignition and flame propagation", Western States Section of the Combustion Institute, Fall 2011 Meeting, Riverside, CA, Oct. 16-18, 2011.
12. S. Menon, G. Blanquart, P. Boettcher and J. Shepherd, "Puffing flame instability - Part I: Numerical investigation and analysis", 64th Annual Meeting of the APS Division of Fluid Dynamics, Baltimore, MD, Nov. 20-22, 2011.
13. P. Boettcher, J. Shepherd, S. Menon and G. Blanquart, "Puffing flame instability - Part II: Predicting the onset and frequency", 64th Annual Meeting of the APS Division of Fluid Dynamics, Baltimore, MD, Nov. 20-22, 2011.
14. S. Menon, P. Boettcher, B. Ventura, G. Blanquart and J. Shepherd, "Investigation of hot surface ignition of a flammable mixture", Western States Section of the Combustion Institute, Spring 2012 Meeting, Tempe, AZ, Mar. 18-19, 2012.
15. S. Menon and G. Blanquart, "Investigation of ignition dynamics in a mixing layer with a vortex", 65th Annual Meeting of the APS Division of Fluid Dynamics, San Diego, CA, Nov. 20-22, 2012.
16. S. Menon, P. Boettcher, B. Ventura, J. Shepherd and G. Blanquart, "A tabulated chemistry approach to predict transient ignition phenomena in flammable mixtures", 14th International conference on numerical combustion, San Antonio, TX, Apr. 8-10, 2013.
17. S. Menon and G. Blanquart, "Investigation of ignition dynamics in a mixing layer with a vortex", 8th U.S Combustion institute meeting, Park City, UT, May 19-23, 2013.
18. S. Coronel, S. Menon, R. Mevel, G. Blanquart, and J. Shepherd, "Ignition of Nitrogen Diluted Hexane-Oxygen Mixtures by Moving Heated Particles", 24th International Colloquium on the Dynamics of Explosions and Reactive Systems – Taipei, Taiwan, July 28 - August 2, 2013.
19. S. Menon, R. Zhao, J. Jayachandran and F.N. Egolfopoulos, "Evaluating flamelet configuration for simulating stretched laminar flames", Western States Section of the Combustion Institute, Spring 2014 Meeting, Pasadena, CA, Mar. 24-25, 2014.
20. K. Souflas, S. Menon, G. Paterakis, E. Dogkas, P. Koutmos, V. Gururajan, and F.N. Egolfopoulos, "Determination of Laminar Flame Speeds Using Axisymmetric Bunsen Flames: Intricacies and Accuracy", *to be presented at the 9<sup>th</sup> Mediterranean Combustion Symposium*, Jun. 7-11, 2015.
21. S. Menon, H.Ganti, K.Niemeyer, and C.Hagen, "Effect of natural gas conditions on combustion characteristics and overall performance of a novel bimodal internal combustion engine", 9th U.S Combustion institute meeting, Cincinnati, OH, May 17-20, 2015.
22. S. Menon, H.Ganti, and C.Hagen, "Development and analysis of micro-channel heat exchangers for natural gas cooling", 13th International Conference on Nanochannels, Microchannels, and Minichannels, ICNMM2015, July 6-9, 2015, San Francisco, California, USA.

23. S. Menon, R. Zhao, J. Jayachandran and F.N. Egolfopoulos, "Effects of flamelet configuration on chemistry tabulation", Western States Section of the Combustion Institute, Fall 2015 Meeting, Provo, UT, Oct. 5-6, 2015.
24. S. Brown, S. Menon, C. Hagen, "Investigation of scaling laws for combustion engine performance", Western States Section of the Combustion Institute, Fall 2015 Meeting, Provo, UT, Oct. 5-6, 2015.
25. S. Menon, K. Weyer, D. Pedersen, C. Hagen, "Self-regulating system for natural gas cooling in a bimodal internal combustion engine", Proceedings of the ASME Internal Combustion Engine Division Fall Technical Conference, ICEF2015, November 8-11, 2015, Houston, Texas, USA.
26. S. Menon, Z. Taie, C. Hagen, "Internal combustion engines as chemical reactors: Issues and challenges", 2016 Spring technical meeting, Western states section of the combustion institute, University of Washington, Seattle, WA, Mar. 20-22, 2016
27. Z. Lavrich, Z. Taie, S. Menon, W. Beckwith, S. Daly, D. Halliday, C. Hagen, "Internal Combustion Engines as Fluidized Bed Reactors", 69th Annual Meeting of the APS Division of Fluid Dynamics, Volume 61, Number 20, Portland, Oregon, November 20-22, 2016.
28. Z. Lavrich, Z. Taie, S. Menon, S. Daly, D. Halliday, C. Hagen, "Internal Combustion Engines as Fluidized Bed Reactors", ASME 2017 Internal Combustion Engine Division Fall Technical Conference, Seattle, Washington, USA, October 15-18, 2017.
29. H. Jones, C. Jeansonne, and S. Menon, " Investigation of Cooling Water Injection into Supersonic Rocket Engine Exhaust", 70th Annual Meeting of the APS Division of Fluid Dynamics, Denver, CO, Nov. 19-21, 2017.
30. W. Dang, W. Zhao, and S. Menon, "Investigation of a piezoelectric droplet delivery method for fuel injection and physical property evaluation", 70th Annual Meeting of the APS Division of Fluid Dynamics, Denver, CO, Nov. 19-21, 2017.
31. H. Jones and S. Menon, "Investigation of water jet breakup behavior in crossflow with a supersonic air jet", ICLASS 2018: 14th International conference on liquid atomization & spray systems, July 22-26, 2018, Chicago, USA.
32. W. Dang, W. Zhao, and S. Menon, "Evaporation of single droplets of multicomponent liquid fuel blends at elevated temperatures", ICLASS 2018: 14th International conference on liquid atomization & spray systems, July 22-26, 2018, Chicago, USA.
33. H. Jones and S. Menon, "Investigation of water jet breakup by supersonic rocket exhaust ", AIAA Propulsion and Energy Forum, July 9-11, Cincinnati, OH, USA.
34. W. Dang and S. Menon, "Physical property measurement of primary reference fuels and blends using a droplet generator and high-speed imaging", 71st Annual Meeting of the APS Division of Fluid Dynamics, Atlanta, GA, Nov. 18-20, 2018.
35. H. Jones and S. Menon, "Water jet interaction with supersonic air jet", 71st Annual Meeting of the APS Division of Fluid Dynamics, Atlanta, GA, Nov. 18-20, 2018.
36. S. Menon, H. Jones, J. Leung, W. Zhao, "Characterization of spray structures formed during water injection into a free supersonic air jet", AIAA Propulsion and Energy Forum, August 19-22, 2019, Indianapolis, IN, USA.

37. W. Dang and S. Menon, "Small-volume, High-throughput Techniques for Fuel Physical Property Measurements", AIAA Propulsion and Energy Forum, August 19-22, 2019, Indianapolis, IN, USA.
38. D. Dehesa and S. Menon, "Modeling of Hybrid-Electric Powertrain for Unmanned Aerial Systems", AIAA Propulsion and Energy Forum, August 19-22, 2019, Indianapolis, IN, USA.
39. M. Gurunadhan, S. Menon, A. Baran, "Numerical Simulation of Combustion in a Hybrid Rocket with Liquefying Fuels", AIAA Propulsion and Energy Forum, August 19-22, 2019, Indianapolis, IN, USA.
40. W. Dang and S. Menon, "Determination of heat of vaporization and vapor pressure by micro-liter fuel droplet vaporization", AIAA Propulsion and Energy Forum, August 24-26, 2020, New Orleans, LA, USA.
41. J. Leung, M. Gurunadhan, and S. Menon, "Design and Test of a Shock Tube Facility to Investigate Droplet Aerobreakup", AIAA Propulsion and Energy Forum, August 24-26, 2020, New Orleans, LA, USA.
42. V. Viswamithra and S. Menon, "Development of an additively manufactured liquid swirl combustor with ammonia addition for soot reduction", AIAA Propulsion and Energy Forum, August 24-26, 2020, New Orleans, LA, USA.
43. D. Dehesa, M. Monju, and S. Menon, "Modeling and Testing of Control Logic Approaches for Series Hybrid-Electric Powertrains for Unmanned Aerial Systems", AIAA Propulsion and Energy Forum, August 24-26, 2020, New Orleans, LA, USA.
44. W. Dang, I. Schoegl, and S. Menon, "Droplet-based fuel property measurement techniques", presented at ACS Fall Meeting 2021, August 22-26, 2021, Atlanta, GA, USA.
45. C. Becnel, M. Gurunadhan, and S. Menon, "Temperature measurements in the reaction zone of a small scale hybrid rocket combustor using near-infrared tunable diode laser absorption spectroscopy", at 2022 Spring Technical Meeting of the Eastern States Section of the Combustion Institute, March 6-9, 2022, Orlando, FL, USA.
46. V. Viswamithra, M. Gurunadhan, and S. Menon, "A study on the impact of elevated air temperatures on flame stability and NO<sub>x</sub> emissions of methane-ammonia-air mixtures in a premixed swirl combustor", at 2022 Spring Technical Meeting of the Eastern States Section of the Combustion Institute, March 6-9, 2022, Orlando, FL, USA.
47. J. Leung, M. Gurunadhan, and S. Menon, "Experimental and computational study of droplet-shockwave interaction for pure fluids and nanofluids", at 2022 Spring Technical Meeting of the Eastern States Section of the Combustion Institute, March 6-9, 2022, Orlando, FL, USA.
48. M. Gurunadhan, V. Viswamithra, K. Gonthier, A. Baran, and S. Menon, "A numerical investigation of melt layer effects on hybrid combustion of liquefying fuels", 2022 Spring Technical Meeting of the Eastern States Section of the Combustion Institute, March 6-9, 2022, Orlando, FL, USA.

GRADUATE  
STUDENT  
SUPERVISION

- Hansen Jones (M.S.) - 2018; Currently a liquid propulsion systems engineer at SpaceX, California

- Darren Dehesa (M.S.) - *2020*; Boeing at Michoud Assembly Facility.
- Wanjun Dang (Ph.D.) - *2021*; Currently a post-doctoral researcher at the Colorado School of Mines, Boulder, Colorado
- Varun Viswamithra (Ph.D.) - *expected graduation 2023*
- Ryan Meraux (M.S.) - *expected graduation 2022*
- Connor Becnel (Accelerated M.S.) - *expected graduation 2022*
- James Leung (Ph.D.) - *expected graduation 2023*

UNDERGRADUATE  
STUDENT  
SUPERVISION

- Eddie Veal
- Chris Jeansonne
- Joshua Vrettos
- Wei Zhao
- Vaibhav Rajora
- Connor Becnel
- Amer Algalban
- Sabrina Huevo
- Matthew Monju
- Laura Broadbridge
- Jasmine Li
- Tucker Poret
- Caitlynn Sengchiam
- Luke Russell
- James Szeszycki
- Ian Archangel

INVITED TALK

- “Energy and propulsion research at Louisiana State University”, NASA Glenn Research Center, Cleveland, OH, June 26, 2019.
- “Scaling of performance and losses in miniature internal combustion engines”, Air Force Research Laboratory, Dayton, OH, October 26, 2017.
- “Scaling of performance and losses in miniature internal combustion engines”, Aerospace and Mechanical engineering seminar, University of Arizona, Tucson, AZ, April 19, 2016.
- “Scaling of performance and losses in miniature internal combustion engines”, Faculty candidate seminar, Louisiana State University, Baton Rouge, LA, Feb. 15, 2016.



- “Performance measurement and scaling in small internal combustion engines”, Faculty candidate seminar, Marquette University, Jan. 22, 2016.
- “Numerical modeling of ignition and flame propagation phenomena for aircraft fuel tank safety”, AME department seminar, University of Southern California, Los Angeles, CA, Nov.18, 2014.
- “Computational strategies for modeling sustainable-energy approaches in transportation”, The 14th annual CALTECH alumni college, California Institute of Technology, Pasadena, CA, Sept. 16-17, 2011.

#### PEER REVIEW - JOURNALS

- AIAA Journal of Propulsion and Power
- AIAA Journal
- Aerospace Science and Technology
- Energy and Fuels
- SAE International Journal of Fuels and Lubricants
- ASME Journal of Biomechanical Engineering
- ASME Journal of Heat Transfer
- Combustion Theory and Modeling
- Combustion and Flame
- Energy Engineering
- Fluids
- Chemical Engineering Journal
- Science China Technological Sciences

#### PEER REVIEW - CONFERENCES

- AIAA Propulsion and Energy Forum (2020,2021)
- Symposium (International) on Combustion (2014, 2016, 2020, 2022)
- SAE World Congress (2016, 2017, 2018, 2019,2020)
- International Conference on Liquid Atomization Sprays and Systems (2018)
- International Powertrain Fluids and Lubricants meeting (2018)

#### BOOK REVIEW

- “Experimental design of aero engine combustor casing”, Sashi Kanta Panigrahi and Niranjana Sarang, Published June 9, 2017, CRC Press, Taylor and Francis Group.

#### PROPOSAL REVIEW

- Department of Energy - Office of Science
- Department of Energy - EPSCoR

PROFESSIONAL  
MEMBERSHIP

Member of American Institute of Aeronautics and Astronautics (AIAA), American Physical Society(APS), Combustion Institute, Society for Industrial and Applied Mathematics(SIAM), and Society of Automobile Engineers (SAE).

PROFESSIONAL  
SERVICES

- *Committee Member:* AIAA Propellants and Combustion Technical Committee
- *Session Organizer:* 2018 SAE International Powertrains, Fuels and Lubricants (IPF&L) Meeting, San Antonio, TX, USA, September 17–20, Fuel Injection and Sprays.
- *Session Organizer & Session Chair:* 14th International conference on liquid atomization and spray systems, July 22–26, 2018, University of Illinois - Chicago, Chicago, IL, USA, July 22–26.
- *Session Organizer:* 2020 SAE World Congress, Detroit, Michigan, USA, April 4–6, Fuel Injection and Sprays.
- *Session Organizer:* 2019 SAE World Congress, Detroit, Michigan, USA, April 4–6, Fuel Injection and Sprays.
- *Session Organizer:* 2018 SAE World Congress, Detroit, Michigan, USA, April 4–6, Fuel Injection and Sprays.
- *Session Organizer:* 2017 SAE World Congress, Detroit, Michigan, USA, April 4–6, Fuel Injection and Sprays.

INSTITUTIONAL  
SERVICES

- Member of College Policy Committee (CPC), 11/2021 - present
- Seminar organizer (Sidney Fuchs seminar series) in the MIE department for 2018–2020
- Faculty advisor: 2016 Shell Eco-Marathon team, 2017 Shell Eco-Marathon team, 2017,2018 SAE Advanced Aero design team, 2018 Project Andromeda-3, 2019 Aerial drone competition, 2019 SAE Advanced Aero design team, 2021 SAE Aero Design (Regular Class), 2020 Aerial drone competition
- Member of Undergraduate Studies Committee in the Mechanical engineering department at LSU
- Participant in the Graduate School Mentoring program at LSU
- Graduate committee member : Pranaya Pokharel (ME, LSU), Pawan Sharma (ME, LSU), Veerendra Naralasetti (ME, LSU), Susheel Singh (ME, LSU), Domingo Elias (ME, LSU), Edison E Chukwuemeka (ME, LSU), Navid Roohani (ME, LSU), Robert Frazee (ME, LSU)
- Dean's representative: David Kekejian (Physics, LSU), Narayan Bhusal (Physics, LSU), Karen Bichler (Physics, LSU), Amit Kumar (Mathematics, LSU)
- Undergraduate honors thesis committee: Lauren Baxter (ME, LSU)
- Judge at LSU Discover Day (2017, 2019)

- Participation in LSU summer camps: REHAMS (2018, 2019, 2020, 2021), XCITE (2018, 2019, 2020, 2021)
- Participant in High School Summer Research Program (HSSR). Mentored:
  - Alexis Harvey (St. Joseph's Academy) in 2020, Alexis won the 2nd prize in the program overall and has been selected for Nationals based on LSU research.
  - Lailah Collins (Mckinley Senior High School) in 2021.