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EDUCATION

BSME	University of Pennsylvania	1987
MSME	University of California-Berkeley	1989
Ph.D.	University of California-Berkeley	1991
Post-Doc	National Institute of Standards and Technology	1992

PROFESSIONAL EXPERIENCE:

The University of Texas at Austin, Professor (9/05), Associate Professor, (9/98-8/05), & Assistant Professor, (1/93-8/98) Research interests include thermal-fluid design, fire, combustion, internal combustion engines, and heat transfer processes in combustion chambers.

National Institute of Standards and Technology, NRC Post-doctoral Fellow, (12/91-12/92)
 Building and Fire Research Lab: Performed computational and analytical studies on laminar diffusion flamelets for application to large fire combustion modeling.

University of California at Berkeley, Research Assistant, (8/87-11/91)
 Conducted research on flame wall interactions for engine applications. Performed experimental and numerical studies on unsteady flame quenching.

HONORS AND AWARDS:

General Motors Scholar, 1985-1987
 4 Year Letterman (Varsity Wrestling) Univ. of Pennsylvania
 Magna Cum Laude, University of Pennsylvania, 1987
 AT&T Corporate Research Fellowship, 1987-1991

E.V. Laitone Prize in Combustion (UCB) 1990
NRC Postdoctoral Research Fellow (NIST), 1991-1992
Society of Automotive Engineers Ralph Teetor Educators Award, 1997
National Science Foundation Early Career Award (CAREER), 1997
3M Untenured Faculty Fellowship, 1996, 1997
College of Engineering Faculty Excellence Award, 1998
Halliburton Foundation, Faculty Award of Excellence, 1999
Student Engineering Council Faculty Appreciation Week Award 2003
Mechanical Engineering Honorary Graduate Engineering Award 2004
Fellow, American Society of Mechanical Engineers, 2006
Texas Exes Black Alumni Legacy Award, 2007

MEMBERSHIPS IN PROFESSIONAL AND HONORARY SOCIETIES:

Tau Beta Pi 1985-1991
Pi Tau Sigma 1985- 1987
Member Society of Automotive Engineers (SAE) 1993-2002
Member The Combustion Institute 1993-present
Member American Society of Engineering Education 1993-96
Member National Society of Black Engineers 1983-87, 1993-1998
Member National Fire Protection Association, 1998-present
Member, National Society of Professional Engineers, 2000-2002
Member American Society of Mechanical Engineers 1990-present
(member K11 committee on heat transfer in fire and combustion systems,)
Member Society of Fire Protection Engineers, 2001-present
Member International Association for Fire Safety Science, 2005-present
Member American Association Aerosol Researchers, 2005-present

UNIVERSITY COMMITTEE ASSIGNMENTS:

Instructional Technology Committee, 1995-1997
Engineering Awards Committee, 2000-present
Equal Opportunity in Engineering Committee, 1993-1998; 2002-present
ME Dept. Chair Search Committee, 1997
ME Dept. Promotions/Rewards Sub-Committee, 1995
ME Strategic Planning Committee, 1998
ME Dept. Chair Search Committee, 2000
ME Graduate Student Recruiting Committee, 2000-present

ME Safety Committee, 2002-present
ME Chair of (TFS) Faculty Recruiting Committee, 2000-2001
Civil Engineering Dept. Chair Review Committee, 2005-06
Mechanical Engineering Dept. Chair Review Committee (Chair) 2006-07
Faculty Building Advisory Committee, 2003-2008 (Chair, 2006-08)
Cockrell School of Engineering Dean Search Committee 2008
Civil Arch. Envr. Engineering Dept. Chair Search Committee, 2008
Jackson School of Geosciences Dean Search Committee 2009

COMMUNITY AND UNIVERSITY SERVICE:

Scholarship Essay Judge (African American Staff Advocating Progress) 10/1993
Science Fair Judge (Doss Elementary School) Spring 1995, 2004, 2006
Faculty Adviser, National Society of Black Engineers, 1993-present
Faculty Adviser, Society of Fire Protection Engineers, 2003-present
Faculty Mentor, UT Equal Opportunities in Engineering, 1993-1997, 2002-2003
Scientific and Technical Support for Austin Fire Department, 2002-present

PROFESSIONAL SOCIETY AND MAJOR GOVERNMENTAL COMMITTEES:

Member, Academic Enrichment Committee, National Science Foundation Alliance for Minority Participation, 1993-1994
Member, Committee on Fire and Combustion (K-11 of the American Society of Mechanical Engineers), 1990-present
Executive Board Member, Central States Section of Combustion Institute, 2002-present
Member, National Academy Sci. /NRC Committee on Future of Fire Research, 2001-2002
Member, NSF Fire Workshop, 2007

CONFERENCES ORGANIZED/CHAired:

Session Co-Organizer, ASME NHTC K-11 sessions, Portland, Oregon, 1995
Session Chair, ASME NHTC K-11 sessions Portland, Oregon, 1995
Session Co-Organizer, ASME IMECE K-11 sessions, Atlanta, Georgia, 1996
Session Chair, ASME IMECE K-11 sessions, Atlanta, Georgia, 1996
Session Chair, ASME IMECE K-11 sessions, Baltimore, Maryland, 1997
Session Chair, AIAA/ASME K-11 sessions, Albuquerque, New Mexico, 1998
Session Co-Organizer, ASME IMECE K-11 sessions, Anaheim, California, 1998
Session Chair, Western States Section of Combustion Inst. Spring meeting, Golden, Colorado 2000

Session Chair, ASME NHTC, Pittsburgh, Pennsylvania, 2000

Session Chair, AIAA/ASME, St. Louis, MO, 2002

Session Chair, Central States Section of Combustion Inst. Spring meeting, April 2002

U.S. Session Organizer/Chair, Combustion and Fire Sessions, ASME-JSME Thermal Eng. Conf., 2003

Local Host/Arrangements Chair, Central States Section Combustion Institute, March 2004

Symposium Organizer, AIAA-ASME Joint Thermal Conference, San Francisco, CA June 2006.

Session Chair, AIAA-ASME Joint Thermal Conference, San Francisco, CA June 2006

Session Chair, ASME Summer Heat Transfer Conference, Vancouver, BC Canada July 2007

Session Chair, ASME Summer Heat Transfer Conference, Jacksonville, FL August 2008

OTHER PROFESSIONAL HIGHLIGHTS:

Associate Editor and Reviewer, ASME Journal of Heat Transfer

Reviewer, Combustion and Flame

Reviewer, Combustion Theory and Modeling

Reviewer, Combustion Institute

Reviewer, Combustion Science and Technology

Reviewer, Experimental Thermal and Fluid Science

Reviewer, AIAA J. of Thermophysics and Heat Transfer

Reviewer, Transactions of the Society of Automotive Engineers

Reviewer, National Science Foundation

Reviewer, Israel Science Foundation

Reviewer, NASA Microgravity Combustion Proposal Panel

Reviewer, Numerical Heat Transfer

Reviewer, Journal of Acoustical Soc. of America

Reviewer, Environmental Progress

International Association Fire Safety Science.

International Journal of Hydrogen Energy.

International Heat Transfer Conference (IHTC-13).

PUBLICATIONS:

A. Refereed Archival Journals

1. Lu, J.H., Ezekoye, O.A., Greif, R., and Sawyer, R.F., "Unsteady Heat Transfer during Side-Wall Quenching of a Laminar Flame", *Twenty-Third Symposium (International) on*

- Combustion*, The Combustion Institute, 1990.
2. Ezekoye, O.A., Greif, R., and Sawyer, R.F., "Increased Surface Temperature Effects on Wall Heat Transfer during Unsteady Flame Quenching", *Twenty-Fourth Symposium (International) on Combustion*, The Combustion Institute, 1992.
 3. Baum, H.R., Ezekoye, O.A., McGrattan, K.B., and Rehm, R.G., "Mathematical Modeling and Computer Simulation of Fire Phenomena", *Theoretical and Computational Fluid Dynamics*, 6, 1994.
 4. Ezekoye, O.A. and Zhang, Z., "Modeling of a Lagrangian Flamelet with Radiation Interaction", *Combustion Science and Technology* 106, p363 1995.
 5. Manoucheri, M. and Ezekoye, O.A., "Polystyrene Soot Agglomeration Enhancement in an Ultrasonic Acoustic Field," *Journal of Hazardous Waste and Hazardous Materials*, v.13,121, 1996.
 6. Zhang, Z. and Ezekoye, O.A., "Analysis of Laminar Acetylene-Air Diffusion Flames using Reduced Chemical Mechanisms and State Relationships," *Combust. Sci. and Tech.* 112, p231, 1996
 7. Ezekoye, O.A., "Heat Transfer Modeling during Knock and Flame Quenching in an Engine Chamber," *Twenty-Sixth Symposium (International) on Combustion*, The Combustion Institute, 1996.
 8. Fuss, S.P., Ezekoye, O.A., and Hall, M.J., "The Absorptance of Infrared Radiation by Methane at Elevated Temperatures," *ASME Journal of Heat Transfer* v.118, 1996.
 9. Hackert, C.L., Ellzey, J.L., Ezekoye, O.A., and Hall, M.J. "Transverse Dispersion at High Peclet Numbers in Short Porous Media," *Experiments in Fluids* v.21, 1996
 10. Ezekoye, O.A. and Zhang, Z., "Soot Oxidation and Agglomeration Processes in a Microgravity Diffusion Flame," *Combustion and Flame*, v 110, pp127-139, 1997
 11. Ezekoye, O.A. and Zhang, Z., "Convective and Radiative Coupling in a Burner Supported Diffusion Flame," *AIAA Journal of Thermophysics and Heat Transfer*, v 11, pp239-245, 1997
 12. Martin, K. and Ezekoye, O.A., "Acoustic Filtration and Sedimentation of Soot Particles," *Experiments in Fluids*, v23, pp483-488, 1997
 13. Leach, S.V., Ellzey, J.L. and Ezekoye, O.A., "A Numerical Study of Reverse Smoldering Combustion," *Combustion Science and Technology*, V. 130, pp. 247-267, 1997
 14. Ezekoye, O.A., "Heat Transfer Consequences of Condensation during Premixed Flame Quenching," *Combustion and Flame*, v112 pp.266-269, 1998
 15. Hackert, C.L., Ellzey, J.L. and Ezekoye, O.A., "Effects of Thermal Boundary Conditions on Flame Shape and Quenching in Ducts," *Combustion and Flame*, v112 pp.73-84, 1998
 16. Hackert, C.L., Ellzey, J.L. and Ezekoye, O.A., "Combustion and Heat Transfer in Model

- Two-Dimensional Porous Burners” *Combustion and Flame*, v.116, pp.177-191, 1998
17. Ezekoye, O.A, Lowman, C.D., Fahey, M.T., and Hulme-Lowe, A.G., “Polymer Weld Strength Predictions Using a Thermal and Polymer Chain Diffusion Analysis,” *Polymer Engineering and Science*, v. 38, #6, pp. 976-991, 1998
 18. Zhang, Z. and Ezekoye, O.A., “Soot Production Rate Calculations at Elevated Pressure in a Methane-Air Jet Diffusion Flame,” *Combustion Science and Technology*, v 137, pp. 323-346, 1998
 19. S.V. Leach, J.L. Ellzey and O.A. Ezekoye, “Convection, Pyrolysis and Damkohler Number Effects on Extinction of Reverse Smoldering Combustion,” *Twenty-Seventh Symposium (International) on Combustion*, The Combustion Institute, pp. 2873-2880, 1998
 20. Ezekoye, O.A. and Wibowo, Y. “Simulation of Acoustic Agglomeration Processes using a Sectional Algorithm,” *Journal of Aerosol Science*, vol. 30, pp. 1117-1138, 1999
 21. S.P. Fuss, M.J. Hall and O.A. Ezekoye, “Band-Integrated Infrared Absorptance of Low-Molecular-Weight Paraffin Hydrocarbons at High Temperatures” *Applied Optics* v.38 no. 13, pp. 2895-2904, 1999
 22. J.R. Howell, O.A. Ezekoye and J.C. Morales, "Inverse Design Model for Radiative Heat Transfer", *ASME J. Heat Transfer*, v. 122, pp 492-502, 2000
 23. S.V. Leach, G. Rein, J.L. Ellzey and O.A. Ezekoye and J.L. Torero, “Kinetic and Fuel Property Effects on Forward Smoldering Combustion,” *Combustion and Flame*, v.120, pp. 346-358, 2000
 24. J.A. Carter, K.M. Martin, W.B., Campbell, N.A. Hall and O.A. Ezekoye, "Design of an Oscillating Flow Apparatus for the Study of Low Reynolds Number Particle Dynamics," *Experiments in Fluids* v.30, pp. 578-583, 2001
 25. F.H.R. Franca, O.A. Ezekoye, J.R. Howell, “Inverse Boundary Design Combining Radiation and Convection Heat Transfer” *ASME J. Heat Transfer*, Vol. 123, no. 5, pp. 884-891, 2001
 26. Erturk, H., Ezekoye, O.A., and Howell, J.R., “Comparison of Three Regularized Solution Techniques in a Three-Dimensional Inverse Radiation Problem”, IHTC, Turkey, 2001 and *J. of Quantitative Spectroscopy and Radiative Transfer*, vol. 73, pp. 307-316, January, 2002
 27. Hakan Ertürk, O.A. Ezekoye and John R. Howell, “The Application of an Inverse Formulation in the Design of Boundary Conditions for Transient Radiating Enclosures,” *ASME J. Heat Transfer*, Vol. 124, no. 6, pp. 1095-1102, Dec., 2002.
 28. M.D. Rumminger, X. Zhou, K. Balakrishnan, B.L. Edgar, and O.A. Ezekoye, "Regeneration Behavior and Transient Thermal Response of Diesel Particulate Filters",

- SAE2001-01-1342 and *Journal of Fuels and Lubricants*, Vol. 110, No. 4, pp. 1015-1022, 2002.
29. C.H.Lan, O.A.Ezekoye, J.R.Howell ,K.S.Ball, “Stability Analysis for Three-dimensional Rayleigh Benard Convection with Radiatively Participating Medium Using Spectral Methods”, *International Journal of Heat and Mass Transfer*, Vol. 46, No. 8, pp. 1371-1383, 2003.
 30. Upadhyay, R.R. and Ezekoye, O.A., “Evaluation of the 1-Point Quadrature Approximation in QMOM for Combined Aerosol Growth Laws”, *Journal of Aerosol Science*, v.34, pp 1665-1683, 2003
 31. Bhat, S, Ezekoye, O.A., and Matthews, R.D., “Impact of Railplug Circuit Parameters on Energy Deposition and Durability,”, SAE2003-01-3135 and *J. of Fuels and Lubricants*, vol. 112, pp. 2221-2233, 2003.
 32. Erturk, H, Ezekoye, O.A., and Howell, J.R., “Boundary Condition Design to Heat a Moving Object at Uniform Transient Temperature using Inverse Formulation,” *J. Manufacturing Science and Engineering*, vol. 126, No. 3, pp619-626, 2004
 33. Ezekoye, O.A., Martin, K.M., Bisetti, F., “Pulsed Flow Modulation of Soot Production in a Laminar Jet-Diffusion Flame”, *Proceedings of Combustion Institute*, Vol. 30, No. 1, pp. 1485-1492, 2005
 34. Upadhyay, R.R. and Ezekoye, O.A., "Smoke Buildup and Light Scattering in a Cylindrical Cavity above a Uniform Flow", *Journal of Aerosol Science*, v36, Issue 4, Pages 471-493, 2005
 35. Ezekoye, O.A., Lakshminarasimhan, K, Seers, P., and Nicks, R., "Effect of PPV Attack on Thermal Conditions in a Compartment Downwind of a Fire", *Fire Technology*, Volume 41, Number 3, 2005
 36. Upadhyay, R.R. and Ezekoye, O.A., "Treatment of Size Dependent Aerosol Transport Processes using Quadrature Based Moment Methods ", *Journal of Aerosol Science*, Volume 37, Issue 7, pp 799-819 2006
 37. Ezekoye, O.A. and Diller, K.R., “A Model for Assessing Ignition, Flame Spread, and Burn Hazard Potential of a Multilayered Jacket” *J Burn Care Res.* July/August; 27(4): pp487-495, 2006
 38. Barve, V.V., Ezekoye, O.A., Clemens, N.T. and Katta, V.R., “Numerical Study of the Evolution of Strongly Forced Axisymmetric Laminar Cold-Flow Jets” *AIAA Journal* vol. 44 no. 8, 2006
 39. Lakshminarasimhan, K, Clemens, N.T., and Ezekoye, O.A., “Characteristics of Strongly-Forced Turbulent Nonpremixed Jet Flames”, *Experiments in Fluids*, Volume 41, Number 4, 2006

40. Lakshminarasimhan, K., Ryan, M. D., Clemens, N. T., and Ezekoye, O. A., "Mixing Characteristics in Strongly Forced Nonpremixed Methane Jet Flames" *Proceedings of Combustion Institute*, Volume 31, Issue 1, January 2007, Pages 1617-1624
41. Ekici, O., Ezekoye, O.A., Hall, M.J., and Matthews R.D., "Thermal and Flow Fields Modeling of Fast Spark Discharges in Air", *ASME Journal of Fluids Engineering*, vol. 129, issue 1, pp. 55-65, 2007
42. Qu, Y., Howell, J.R. and Ezekoye, O.A., "Monte Carlo Modeling of a Light-pipe Radiation Thermometer", *IEEE Transactions of Semiconductor Manufacturing*, Volume 20, Issue 1, Feb. 2007 Page(s):39 - 50
43. Qu, Y., Puttitwong, E., Howell, J.R. and Ezekoye, O.A., "Errors Associated with Light-pipe Radiation Thermometer Temperature Measurements", *IEEE Transactions of Semiconductor Manufacturing*, Volume 20, Issue 1, Feb. 2007 Page(s):26 - 38
44. Ekici, O., Matthews R.D., and Ezekoye, O.A., "Geometrical and electromagnetic effects on arc propagation in a railplug ignitor" *J. Applied Physics D*, v40, pp 7707-7715, 2007
45. S. Biegalski, O.A. Ezekoye, M. Pickering, and J.M. Jena, "Detection Limit Improvements Forecasted at CTBTO IMS Radionuclide Stations Based on Size Separation of Aerosols by Aerodynamic Diameter", in press *Journal of Radioanalytical and Nuclear Chemistry*, , Vol. 276, 2008, No. 2, pp. 441-445
46. Erturk, H., Gamba, M., Ezekoye, O.A., and Howell, J.R., "Validation of Inverse Boundary Condition Design in a Thermometry Test Bed", Fifth International Symposium on Radiative Transfer, June 2007, Bodrum, Turkey and also *J. of Quantitative Spectroscopy and Radiative Transfer* v.109 (2), p.317-326, 2008
47. Upadhyay, R.R. and Ezekoye, O.A., "Treatment of Design Fire Uncertainty using Quadrature Method of Moments", *Fire Safety Journal*, Vol. 43, 2008, No. 2, pp. 127-139
48. Weinschenk, C., Nicks, R., and Ezekoye, O.A., "Analysis of Fireground Standard Operating Guidelines/Procedures Compliance for Austin Fire Department", *Fire Technology*, Vol. 44, 2008, pp. 39-64
49. Beal, C.M., Fakhreddine, M., and Ezekoye, O.A., "Effects of Leakage in Simulations of Positive Pressure Ventilation" *Fire Technology*, DOI: 10.1007/s10694-008-0055-7, 2008
50. Bruns, M.C., Koo, J.H., and Ezekoye, O.A., "Population-based Models of Thermoplastic Degradation: Using Optimization to Determine Model Parameters", *Polymer Degradation and Stability*, accepted 2009
51. Ho, D.W.K., Koo, J.H., and Ezekoye O.A., "Kinetics and Thermophysical Properties of Polymer Nanocomposites for Solid Rocket Motor Insulation", *Journal of Spacecraft and Rockets*, accepted 2009
52. Singhal, S., El-Khatib, B., Stuber, J., Sreenivasan, S.V., Ezekoye O.A., "Characterization

- of wet batch cleaning process in advanced semiconductor manufacturing”, IEEE Transactions of Semiconductor Manufacturing, in review 2009
53. Barve, V.V., Ezekoye, O.A., and Clemens, N.T., “Soot Reduction in Strongly Forced Lifted CH₄-Air Laminar Flames”, Combustion Theory and Modeling, in review, 2009
 54. Hubbard, J., Haglund, J., and Ezekoye, O.A., “Simulating the Evolution of Particle Size Distributions Containing Coarse Particulate in the Atmospheric Surface Layer with a Simple Convection-Diffusion-Sedimentation Model, Atmospheric Environment in review 2009.
 55. Upadhyay, R.R., and Ezekoye, O.A., “Partially Stirred Reactor Analysis using the Direct Quadrature Method of Moments”, AIChE Journal in review 2009.
 56. Wayne, S.K., Ezekoye, O.A. and Corsi, R., “Thermal Effects on PBDE Emissions from Computer Towers” in preparation 2009

B. Refereed Conference Proceedings

1. Lu, J.H., Ezekoye, O.A., Iiyama, A., Greif, R., and Sawyer, R., “Effect of Knock on Time Resolved Engine Heat Transfer”, *Society of Automotive Engineers* Paper 890158, 1989
2. Ezekoye, O.A. and Greif, R., “A Comparison of One and Two Dimensional Flame Quenching: Heat Transfer Results,” *ASME HTD Vol. 250*, p.11, 1993
3. Zhang, Z. and Ezekoye, O.A., “Combustion of a Spherical Diffusion Flame in a Radiative Field”, *HTD bound vol. 296* ASME WAM, Chicago, Illinois, December 1994.
4. Zhang, Z. and Ezekoye, O.A., “Computational Study of State Relationships for Acetylene-Air Diffusion Flames with Soot Radiation”, *HTD bound vol. 304* ASME NHTC, Portland, Oregon, August 1995.
5. Fuss, S.P., Ezekoye, O.A., and Hall, M.J., “The Absorptance of Infrared Radiation by Methane at Elevated Temperatures,” ASME IMECE November 1995 .
6. Zhang, Z. and Ezekoye, O.A., “Radiation Simulation of a Microgravity Diffusion Flame,” *HTD bound vol. 335* ASME IMECE, Atlanta Georgia, November 1996
7. Hackert, C.L., Ellzey, J.L., and Ezekoye, O.A., “Modification of Premixed Flame Shapes by Thermal Boundary Conditions,” *HTD bound vol. 335* ASME IMECE, Atlanta Georgia, November 1996
8. Bokka, V.K., Matthews, R.D., Ezekoye, O.A., and Davis, G.C., “Numerical Simulation of Spark Ignition and Flame Propagation,” *HTD bound vol. 335* ASME IMECE, Atlanta Georgia, November 1996
9. Hackert, C.L., Ellzey, J.L., and Ezekoye, O.A., “Numerical Simulation of a Porous Honeycomb Burner” ASME NHTC, Baltimore, Maryland, 1997

10. Lowman, C.D., Schmidt, P.S., Ezekoye, O.A, Fahey, M.T., and Hulme-Lowe, A.G. "A Simple Phenomenological Model of Polyethylene Weld Strength," ASME NHTC, Baltimore, Maryland, 1997
11. Leach, S.V., Ellzey, J.L., and Ezekoye, O.A., "A Numerical Study of Smoldering Combustion," ASME NHTC, Baltimore, Maryland, 1997
12. Ezekoye, O.A., "Vapor Condensation Processes Associated with Premixed Flame Quenching," ASME IMECE, Dallas, Texas, 1997
13. Stanglmaier, R.H., Roberts, C.E., Ezekoye, O.A., and Matthews, R.D., "Condensation of Fuel on Combustion Chamber Surfaces as a Mechanism for Increased HC Emissions from SI Engines During Cold Start," SAE Fuels and Lubric. Meeting, 1997
14. O.A. Ezekoye, Z. Zhang and K.J. Vidacovich, "Global and Local Analysis of Sealed Outdoor Electronics Cabinets," AIAA/ASME Joint Thermophysics Conference, Albuquerque, NM 1998
15. J. Borlik, O.A. Ezekoye and J.L. Torero, "Strain and Heat Loss Modification to a Counterflow Diffusion Flame," AIAA/ASME Joint Thermophysics Conference, Albuquerque, NM 1998
16. F. H. R. Franca, O.A. Ezekoye and J.R. Howell, "Inverse Determination of Heat Source Distribution in Radiative Systems with Participating Media", ASME National Heat Transfer Conference, NHTC99-93, Albuquerque, NM 1999
17. F. H. R. Franca, O.A. Ezekoye and J.R. Howell, "Inverse Heat Source Design Combining Radiation and Conduction Heat Transfer", ASME IMECE, HTD-Vol.364-1, Nashville, TN 1999
18. CH Lan, O.A. Ezekoye and J.R. Howell, "Transitions and Bifurcations to Chaos in Combined Radiation and Natural Convection in a Two Dimensional Participating Medium", ASME IMECE, HTD-Vol. 364-1, Nashville, TN 1999
19. Baker, D.K, Ezekoye, O.A. Schmidt, P.S. ,Jones, C.M., and Liu, M., "ThermoNet: A Web-Based Learning Resource for Engineering Thermodynamics", Proceedings of American Society for Engineering Education Annual Meeting, St. Louis, MO, June (2000).
20. CH Lan, O.A. Ezekoye and J.R. Howell, "Radiative Combined-Mode Heat Transfer in a Rectangular Participating Medium Using the Spectral Methods", ASME 34th National Heat Transfer Conference, NHTC2000-12124, Pittsburgh, PA 2000
21. H. Gao and O.A. Ezekoye, "Heat Release Analysis of Diesel Simulation Processes", ASME 34th National Heat Transfer Conference, NHTC2000-12228, Pittsburgh, PA 2000
22. F. H. R. Franca, O.A. Ezekoye and J.R. Howell, "Inverse Boundary Design Combining Radiation and Convection Heat Transfer", ASME 34th National Heat Transfer

- Conference, NHTC2000-12061, Pittsburgh, PA 2000
23. Erturk, H., Ezekoye, O.A., and Howell, J.R., “Inverse Solution of Radiative Heat Transfer in Two Dimensional Irregularly Shaped Enclosures”, HTD-Vol. 366-1, ASME 2000.
 24. Erturk, H., Ezekoye, O.A., and Howell, J.R., “Inverse Transient Boundary Condition Estimation Problem in a Radiating Enclosure”, ASME 35th National Heat Transfer Conference, NHTC2001-20227, Anaheim, CA 2001
 25. Erturk, H., Gamba, M., Ezekoye, O.A., and Howell, J.R., “Design of a Rapid Thermal Processing Chamber Using an Inverse Formulation”, American Society of Mechanical Engineers, Heat Transfer Division, (Publication) HTD, v 372, n 3, 2002, p 237-246
 26. Ezekoye, O.A., Lan, C.H., and Anderson, O. “The Role of Strong Vent Flows in Fire Hazard Predictions Using FDS” 8th AIAA/ASME Joint Thermophysics and Heat Transfer Conference, 2002
 27. Erturk, H., Ezekoye, O.A., and Howell, J.R., “The Use of Inverse Formulation in Design and Control of Transient Radiant Systems”, Heat Transfer 2002: Proc of the 12th International Heat Transfer Conference, Grenoble, pp. 729-734, France, 2002
 28. Lan, C-H, Ezekoye, O.A., and Howell, J.R., “Linear Stability Analysis for Three Dimensional Rayleigh-Bérnard Convection with Radiatively Participating Medium”, Heat Transfer 2002: Proc. Of the 12th International Heat Transfer Conference, pp. 435-440, Grenoble, France, 2002
 29. O.A. Ezekoye, T.S. Patil, S. Nichols, J.S. Butler, J. Nolen, and J. Doggett, “Development of Business Skills in Engineering Students through Collaborative Engineering-Business School Activities”, American Society for Engineering Education Annual Conference & Exposition, Montreal, Canada, ASEE, 2002
 30. Ezekoye, O.A., Lan, C.H., and Nicks, R., “Positive Pressure Ventilation Attack for Heat Transport in a House Fire”, 6th ASME-JSME Thermal Engineering Joint Conference, TED-AJ03-409, 2003
 31. Bisetti ,F., Clemens, N.T., and Ezekoye, O.A., “Flame Length and Exit Plane Mixing in Resonantly Excited Jet Diffusion Flames”, 6th ASME-JSME Thermal Engineering Joint Conference, TED-AJ03-408, 2003
 32. Ezekoye, Ofodike, A., Schmidt, Kathy J., Cone, Justin, and Patil, Tushar, “Beyond Solution Fixation: A Short Course on Engineering and Business Concepts”, ASEE Annual Meeting, Nashville, TN, ASEE 2003
 33. O. Ekici, V.K. Bokka, O.A. Ezekoye, and R.D. Matthews, “A Numerical Study of Spark Ignition”, Proceedings of ASME ICEF04, ICEF2004-884, Long Beach, CA, October 24-27, 2004
 34. H. Gao, O. A. Ezekoye, M. J. Hall, and R. D. Matthews, “A New Ignitior for Large-Bore

- Natural Gas Engines – Railplug Design Improvement and Optimization”, SAE, 2004
35. S. Hari, M. J. Hall, O.A. Ezekoye, and R. D. Matthews, “Analysis of Factors that Affect the Performance of Railplugs”, SAE, 2004
 36. Myung Jun Lee, M. J. Hall, O.A. Ezekoye, and R. D. Matthews, “Voltage, and Energy Deposition Characteristics of Spark Ignition Systems” SAE, 2004
 37. Qu, Y., Ezekoye, O.A., Howell, J.R., and Ball, K.S., “Drawdown Effect of Lightpipes in Silicon Wafer Surface Temperature Measurements”, ASME National Heat Transfer Conference, July 2005
 38. Gamba, M., Clemens, N.T., Ezekoye, O.A., and Boxx, I.G., “Experimental Study of Acoustically-Forced Jet Flames under Low- and Normal- Gravity Conditions”, 44th AIAA Meeting, Reno, NV 2006.
 39. Biegalski, S. and Ezekoye, O.A., “Design of Aerosol Sampler to Remove Radon and Thoron Progeny Interference from Aerosol Samples for Nuclear Explosion Monitoring”, Proceedings of the 2005 Seismic Research Review, pp761-769, 2005
 40. Seers, P., Ashford, M.A., Ezekoye, O.A., and Matthews, R.D. “Influence of Spark Parameters on Combustion Stability in a Direct Injection Spark Ignition Engine”, Proceedings of JRCICE2007, 2007 ASME/IEEE Joint Rail Conference & Internal Combustion Engine Spring Technical Conference, March 13-16, 2007, Pueblo, Colorado, USA
 41. Barve, V.V., Ezekoye, O.A., and Clemens, N.T., “Effects of Flame Lift-Off Height on Soot Processes in strongly forced methane-air laminar diffusion flames” ASME-JSME Joint Thermal Conference, Vancouver, 2007
 42. Upadhyay, R. R. and Ezekoye, O. A. “Performance Based Engineering with a Bivariate PDF of Fire Size and Vent Opening”, 5th International Seminar of Fire and Explosion Hazards, Edinburgh, Scotland, April 2007
 43. Colin M. Beal and Ofodike A Ezekoye, "Effects of Exit Vent Location on Fire Room Conditions during PPV," ASME National Heat Transfer Conference, Jacksonville, FL, August 2008
 44. Hakan Erturk, Ofodike A Ezekoye and John R Howell, "Reverse Monte Carlo Modeling of Signal Transport in Light-Pipe Radiation Thermometers," ASME National Heat Transfer Conference, Jacksonville, FL, August 2008

C. Other Major Publications

1. Lesser, M. B. & Ezekoye, O. A. Proc. 7th Int. Conf. on Erosion by Liquid and Solid Impact (eds Field, J. E. & Dear, J. P.) (Cavendish Laboratory, Cambridge, UK, 1987).

2. Ezekoye, Lu, Fabris, Greif, and Sawyer, "Effect of Variable Wall Temperature on Wall Heat Flux during Laminar Flame Quenching", Western States Section Meeting/The Combustion Institute, La Jolla, California, 1990
3. Ezekoye, O. A., "A Thermal Element Method for Combustion Processes in Fires" presented at the National Institute of Standards and Technology Annual Conference on Fire Research, Rockville, Maryland, 1992
4. Baum, H.R., Ezekoye, O.A., McGrattan, K.B., and Rehm, R.G., "Large Eddy Simulation of Fire Phenomena", Ninth Symposium on Turbulent Shear Flows, Kyoto, Japan, August 1993
5. Ezekoye, O. A. and Baum, H.R., "A Lagrangian Element Analysis of Combustion Processes in Fires", Central & Eastern States Sections of the Combustion Institute joint meeting, New Orleans, Louisiana, 1993. Connelly, Ogasawara, Lee, Greif, Sawyer, and Ezekoye, "Stagnation Quenching of Laminar, Methane-Air Flames in a Constant Volume Chamber: Wall Temperature Effects", Western States Section Meeting/The Combustion Institute, Stanford, California, 1994
6. Zhang, Z. and Ezekoye, O.A., "Acetylene-Air Diffusion Flame Computations: Comparison of State Relationships with Finite Rate Kinetics," Proceedings of International Conference on Fire Research and Engineering, Orlando, Florida, September 1995
7. Ezekoye, O.A., "Pressure Transient Augmentation of Heat Transfer During Laminar Flame Quenching," Joint Central and Western States Section Meeting of the Combustion Institute, April 1995.
8. Fuss, S.P., Ezekoye, O.A., and Hall, M.J., "Effect of Temperature on the Infrared Radiation Properties of Methane," Joint Central and Western States Section Meeting of the Combustion Institute, April 1995.
9. Ezekoye, O. and Manoucheri, M., "Polystyrene Soot Agglomeration Enhancement in an Ultrasonic Acoustic Field," The Fourth International Congress on Toxic Combustion Byproducts, Berkeley, California, June 1995
10. Z. Zhang and O.A Ezekoye, "Thermal and Chemical Characterization of a Confined Methane-Air Coflow Flame," Central States Section Meeting of the Combustion Institute, April 1997
11. J. Borlik, O.A. Ezekoye, and J.L. Torero, "Flame Extinction in a Strained Vortical Flow," Central States Section Meeting of the Combustion Institute, April 1997
12. K.M. Martin and O.A. Ezekoye, "Acoustic Methods for Enhanced Filtration of Combustion Aerosols," Sixteenth International Conference on

Incineration and Thermal Treatment Technologies, May 1997

13. J. Sutula, J. Jones, J.L. Torero, J. Borlik, and O.A. Ezekoye, "Diffusion Flame Extinction in a Low Strain Flow," Fourth International Microgravity Combustion Workshop, Cleveland OH, May 1997
14. K.M. Martin and O.A. Ezekoye, "Acoustic Control of Sooting Flames", Fifth International Conference on Technologies and Combustion for a Clean Environment, Lisbon, Portugal, July 1999
15. O.A. Ezekoye and K.M. Martin, "Case Study of an Explosion and Fire during Fueling of a Steel Can", 15th Triennial Meeting of International Association of Forensic Sciences, Los Angeles CA, August 1999
16. O.A. Ezekoye and Y. Wibowo "Computation of Sedimentation Rates for Acoustically Enhanced Agglomeration," AICHE CCPS Annual International Conference and Workshop on Modeling Consequences of Accidental Releases of Hazardous Materials, San Francisco, CA Sept. 1999
17. Sutula, J.A., Mehta, S.N., Ezekoye, O.A. and Torero, J.L., "Buoyancy effects on a Low Strain Counter-Flow Diffusion Flame," Joint Meeting of the United States Sections of the Combustion Institute, March 1999.
18. C.F. Palacios, K.M. Martin and O.A. Ezekoye, "Development of an Apparatus for Analysis of a Diffusion Flame with Pulsed Fuel Supply", Spring Western States Section Meeting of the Combustion Institute, March 2000.
19. G. Paganoni and O.A. Ezekoye, "Numerical Analysis of Counterflow Flame Instabilities", Spring Western States Section Meeting of the Combustion Institute, March 2000.
20. N.A. Hall, N.A. Tanner, V.H. Mehta, K.M. Martin, and O.A. Ezekoye, "Acoustic Modifications to the Single-Droplet Combustion Process", Spring Western States Section Meeting of the Combustion Institute, March 2000.
21. K.M. Martin and O.A. Ezekoye, "Changes in Emissions of Soot and Gaseous Pollutants from an Acoustically Forced Acetylene-Air Diffusion Flame", Spring Western States Section Meeting of the Combustion Institute, March 2000.
22. H. Gao and O.A. Ezekoye, "Global Soot Production in Transient Spray Flames", Spring Western States Section Meeting of the Combustion Institute, March 2000.
23. C.F. Palacios, K.M. Martin and O.A. Ezekoye, "Correlation of Aerodynamic and Geometric Particle Size Properties of Soot Generated by an Acetylene Diffusion Flame," Joint Section Meeting of US Combustion Institute, Oakland CA, March 2001
24. G. Paganoni, J.L. Ellzey and O.A. Ezekoye, "Simulations of Buoyancy Induced Instabilities in a Counterflow Diffusion Flame," Joint Section Meeting of US Combustion

Institute, Oakland CA, March 2001

25. Bisetti, F., Martin, K.M. and Ezekoye, O. A. "Extended Flame Stability for Partially Premixed Acetylene-Air Flames by Acoustic Control" Central States Section Combustion Institute Meeting, Knoxville, TN 2002
26. O. Ekici, O. A. Ezekoye and R. D. Matthews, "Arc Evolution Modeling for a Railplug Igniter" Central States Section Combustion Institute Meeting, Austin, TX 2004
27. F. Bisetti, K. Lakshminarasimhan, J. Whitaker, N.T. Clemens, and O. A. Ezekoye, "Diffusion Flame Properties in Transitional Pulsed Jet Flows" Central States Section Combustion Institute Meeting, Austin, TX 2004
28. V. V. Barve and O. A. Ezekoye, "Computations of Time-Varying Flame Properties for Laminar, Methane-Air Diffusion Flames" Central States Section Combustion Institute Meeting, Austin, TX 2004
29. R. R. Upadhyay and O. A. Ezekoye, "Study of Smoke Buildup and Light Scattering in a Model Photoelectric Smoke Detector", Central States Section Combustion Institute Meeting, Austin, TX 2004
30. O. A. Ezekoye and R. R. Upadhyay, "Design Fire Evaluation using Quadrature Based Moment Methods", 4th Joint Meeting of The U.S. Sections of the Combustion Institute, March 2005
31. K. Lakshminarasimhan, N.T. Clemens, O.A. Ezekoye "Flame Characteristics of a Resonantly Excited Transitional Methane Jet Diffusion Flame", 4th Joint Meeting of The U.S. Sections of the Combustion Institute, March 2005
32. Ozgur Ekici, Ofodike A. Ezekoye, Matthew J. Hall, and Ronald D. Matthews, "Numerical Simulation of a Railplug Ignitor", 4th Joint Meeting of The U.S. Sections of the Combustion Institute, March 2005
33. R. R. Upadhyay and O. A. Ezekoye, "Transported PDF Simulations using Direct Quadrature Method of Moments", 4th Joint Meeting of The U.S. Sections of the Combustion Institute, March 2005
34. R. R. Upadhyay and O. A. Ezekoye, "Simulation of Turbulent Mixing and Chemical Reaction in a Partially Stirred Reactor Using the Direct Quadrature Method of Moments" AICHE Annual Meeting (Cincinnati, OH) 2005
35. Mike Adler, O.A. (D. K.) Ezekoye and Timothy Klatt, "Arson of the Ancestors? Interdisciplinary Research into Ancient Structure Fires in the American Southwest," Southwest Symposium: Acts Of History: Ritual, Landscape, and Historical Archaeology In The U.S. Southwest And Northwest Mexico, Las Cruces New Mexico, January 2006.
36. E. Puttitwong, Y. Qu, J. Howell, and O. Ezekoye, "Effects of Thermal Environment and

- Surface Roughness on LPRT Surface Temperature Measurements ," 9th AIAA/ASME Joint Thermophysics And Heat Transfer Conference, San Francisco, CA, June 2006.
37. Y. Qu, E. Puttitwong, J. Howell, and O. Ezekoye, "Shadow Effect of Lightpipes in Silicon Wafer Surface Temperature Measurements ," 9th AIAA/ASME Joint Thermophysics And Heat Transfer Conference, San Francisco, CA, June 2006.
 38. Barve, V.V., Ezekoye, O.A., Clemens, N.T. and Katta, V.R., "Soot Production Rates in Strongly Forced Methane- Air Laminar Diffusion Flames" AIAA/ASME Joint Thermophysics And Heat Transfer Conference, San Francisco, CA, June 2006
 39. Koo, J.H. , Ho, D.W.H., , and Ezekoye, O.A., "A Review of Numerical and Experimental Characterization of Thermal Protection Materials – Part I. Numerical Modeling", AIAA-2006-4936, 42nd AIAA/ASME/SAE/ASEE Joint Propulsion Conference, Sacramento, CA, 9-11 July 2006.
 40. Gamba, M. Clemens N. and Ezekoye, O., "Strongly-Pulsed Turbulent Non-Premixed Jet Flames in Cross-Flow", 45th AIAA Aerospace Sciences Meeting and Exhibit, Reno, Nevada, Jan. 8-11, 2007
 41. Marr, K., Gamba, M., Clemens, N.T., Ezekoye, O.A., "Strongly-Forced Non-Premixed Jet Flames in Cross-Flow" 5th US Combustion Meeting of The U.S. Sections of the Combustion Institute, March 2007
 42. Koo, J. , Ho, W., Bruns M., and Ezekoye O., "A Review of Numerical and Experimental Characterization of Thermal Protection Materials Part II: Properties Characterization", AIAA-2007-2131 48th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, Honolulu, Hawaii, Apr. 23-26, 2007
 43. . Koo, J. , Ho, W., Bruns M., and Ezekoye O., "A Review of Numerical and Experimental Characterization of Thermal Protection Materials: Part III - Material Testing", AIAA-2007-5773 43rd AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, Cincinnati, OH, July 8-11, 2007
 44. Bruns, M., Ezekoye, O. and Koo, J. "Determining Failure Time for Weak-Char Ablatives" AIAA-2007-5772 43rd AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, Cincinnati, OH, July 8-11, 2007
 45. Nguyen, K., Koo, J., Ho, W., Bruns, M.,. and Ezekoye, O. "Experimental Characterization of Thermoplastic Polyurethane Nanocomposite under Extreme Conditions". AIAA-2007-5770 43rd AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, Cincinnati, OH, July 8-11, 2007
 46. Ezekoye, O.A., Svensson, S., and Nicks, R., "Investigating Positive Pressure Ventilation", Interflam 2007, London, England, UK, September 2007
 47. Josh Hubbard, John Haglund, Ofodike Ezekoye, "Control-Volume Numerical Simulation

- of Bioaerosol Dispersion in the Atmospheric Surface Layer," *American Association Of Aerosol Research*, Reno, NV, September 2007
48. Scot Wayne, Steven Biegalski, Ofodike Ezekoye, "Development of an Aerosol Cascade Impactor Interactive Design Tool," *American Association Of Aerosol Research*, Reno, NV, September 2007
49. Morgan C. Bruns, Joseph H. Koo, and Ofodike A. Ezekoye, "EXAMINATION OF POLYMER DEGRADATION AND TRANSPORT USING POPULATION BALANCE TECHNIQUES.," *Central States Section Combustion Institute*, Tuscaloosa AL, April 2008
50. D. Ho, J. Koo, J. Lee, and O. Ezekoye, "Thermophysical Properties Characterization of Thermoplastic Polyurethane Elastomer Nanocomposites," 44th AIAA/ASME/SAE/ASEE Joint Propulsion Conference & Exhibit, Hartford, CT, July 2008
51. J.H. Koo, D.W. K. Ho, O. A. Ezekoye,, "Thermoplastic Polyurethane Elastomer Nanocomposites: Morphology, Thermophysical and Flammability Properties," *SAMPE 08*, Long Beach CA, May 2008
52. Morgan C. Bruns, Joseph H. Koo, and Ofodike A. Ezekoye, "Thermal Degradation of a Spatially Lumped Population of Thermoplastic Chains" submitted to 6th US Combustion Meeting of The U.S. Sections of the Combustion Institute, March 2009
53. Gamba, M. Clemens N. and Ezekoye, O.A., "Simultaneous 3D Volumetric PIV and 2D OH PLIF in the Far-Field of a Nonpremixed Turbulent Jet Flame", submitted to 6th US Combustion Meeting of The U.S. Sections of the Combustion Institute, March 2009
54. Marr, K., Clemens, N.T., Ezekoye, O.A., "Mixing Characteristics and Emissions of Acoustically-Forced Non-Premixed Jet Flames in Crossflow", submitted to 6th US Combustion Meeting of The U.S. Sections of the Combustion Institute, March 2009

Books, Proceedings, Book Chapters Authored/Co-authored, Editor/Co-Editor of Books

1. Peterson, R.B., Ezekoye, O.A., and Simon, T., *Proceedings of the 1995 National Heat Transfer Conference, Vol 2 Combustion and Fire Research* , The American Society of Mechanical Engineers, 1995 (editor)
2. Menguc, M.P., Ball, K.S. and Ezekoye, O.A., *Proceedings of the ASME Heat Transfer Division, Vol 4 Heat Transfer in Fire and Combustion Systems* , The American Society of Mechanical Engineers, 1996 (editor)
3. Franca, Francis, Howell, John R., Ezekoye, Ofodike, and Morales, Juan, "Inverse Design of Thermal Systems with Dominant Radiative Transfer," *Advances in Heat Transfer*, J.P. Hartnett

and T.F. Irvine, eds., vol. 36, pp. 1-110, Elsevier Science (USA), 2002.

4. Baker, Derek, Schmidt, Philip, Ezekoye, Ofodike and Howell, John, **Thermodynamics: An Integrated Learning System**, John Wiley & Sons, New York pp., 1-480, 2004.

INVITED PRESENTATIONS (Selected)

- Kyoto University, Kyoto Japan, “Advances in use of Statistical (Population Balance) Methods for Fire Safety Simulations”, January 2008
- University of Edinburgh, Scotland, “Application of Population Balance Methods to Fire Engineering Problems”, August 2006
- Fire Prevention Association of North Texas (FPANT) “Fire Dynamics Simulator (FDS) & Fire Model Impacts on the AHJ” July 2006
- Fire Department Instructors Conference (FDIC) “Scientific Methods Applied to Fire Tactics”, Indianapolis, IN, April 2006
- Dallas Fort Worth Society of Fire Protection Engineering (SFPE) “Use of FDS for AHJ Applications” April 2006
- Texas Association Fire Educators (TAFE) “Investigation of Positive Pressure Ventilation Studies”, March 2006
- Central Texas Fire Investigator’s Association “Use of Fire Dynamics in Fire Investigation”, October 2005
- Rutgers- State University of New Jersey “Synthetic Jet Flow Effects in Nonpremixed Jet Flames: Experimental and Computational Findings “, February 2005
- Virginia Polytechnic and State University “Examination of High-Amplitude Flow Forcing of Nonpremixed Jet Flames: Experimental and Computational Findings” November 2004
- Fire Department Instructors Conference (FDIC) “Scientific Methods Applied to Fire Tactics”, Indianapolis, IN, April 2004
- Austin San Antonio Society of Fire Protection Engineering (SFPE) “Issues in Smoke Control For Fire Protection Engineers and Firefighters” March 2004
- Texas Association Fire Educators (TAFE) “AFD-UT Positive Pressure Ventilation Studies”, January 2004
- Austin Fire Department Battalion Chief’s Meeting, “AFD-UT Positive Pressure Ventilation Studies”, January 2004
- University of Oklahoma, “Acoustic and Pulsed Flow Field Modification of Flame Length and Luminosity”, April 2003
- Texas A&M University, “Acoustic and Pulsed Flow Fields Modification of Flame Length and Luminosity”, October 2002

- NIST, “Sooting Flame Modifications by Acoustic and Pulsed Flow Fields” April 2002
- Purdue University, “Soot Evolution in Acoustic and Pulsed Flow Fields”, March 2001
- Society for Advancement Chicano and Native American (SACNAS) National Convention, “Research in Combustion” September 2001
- Society for Advancement Chicano and Native American (SACNAS) National Convention, “Soot Evolution in Combustion Systems”, October 2000
- United Technologies (Hartford, Connecticut), “Fundamentals of Combustion”, October 2000
- Michigan State University, “Modifications to Soot Evolution by Pulsed and Acoustic Flows”, Nov. 1999
- University of Minnesota, “New Ways of Looking at Fire”, September 1999
- Institute for Acoustics (Madrid, Spain), “Combustion Aerosol Evolution in Acoustic Fields”, July 1999
- Nihon University (Japan), “Heat and Mass Transfer During Flame Quenching in Engines”, July 1998
- Nihon University (Japan), “Soot Aerosol Formation and Control in Flames”, July 1998
- Texas A&M University, “Soot - Chemistry Interactions in Non-Premixed Flames”, 1995
- University of Texas-Austin, “Laminar Flame Quenching”, 1992

RESEARCH TOPICS :

Fire Dynamics

The goal in these projects is to develop and utilize computational codes that can be used to predict fire behavior such that improvements can be made in fire service tactics in fighting fire and building design codes for fire prevention.

Combustion (Reacting Flows) Dynamics

Our goals are to investigate mechanisms (aerodynamic and acoustic) to control reacting flows (flames) in order to reduce pollution emission and satisfy constraints of size, luminosity, etc. We are investigating the existence of meta-stable combustion configurations through active control that would not be realizable under steady conditions. Experimental and computational tools are used in these studies.

Inverse Methods in Thermal Design

Design of equipment for high-temperature thermal processes is very complex when multiple modes of heat transfer (radiation, convection and/or conduction) are present. Very sophisticated programs have been developed to design such systems. These programs are expensive to run and require large capacity of memory and storage. They are based on “forward” design; that is, the geometry and boundary conditions are specified, and the resulting temperatures and rates of heat

transfer are computed. In this project, we are developing inverse methods for design where the desired outcome for the system is specified, and the necessary inputs required to generate these outcomes are computed.

Experimental and computational studies of aerosol-field interactions

Aerosol agglomeration and evolution rates are enhanced when the aerosol distribution is coupled to electrical or acoustic or complex flow fields. In our studies we experimentally and computationally study the interactions of these fields with the aerosol distribution. Intrusive and nonintrusive laser based diagnostics are used to characterize the aerosol distribution. Theoretically, models for aerosol evolution are developed and evaluated.

COURSES TAUGHT

Undergraduate	Graduate
ME 326 Thermodynamics I	ME 381R4 Heat Transfer
ME 328 Thermodynamics II	ME 381 Conduction
ME 339 Heat Transfer	ME 382 R5 Combustion Theory*
ME 242L Thermal Fluids Laboratory	ME 382 R Fire Dynamics*
ME 139L Heat Transfer Laboratory	
ME 279M Tech. Innovation Leadership *	
ME 360N Intermediate Heat Transfer	

***Introduced class at UT Austin, teaching evaluations 4.45/5.0**

ADDITIONAL TEACHING ACTIVITIES:

Technology Innovation Leadership for Engineers Intersession Course 2002-2004

CONTINUING EDUCATION:

Taught Engineer in Training (EIT) Thermodynamics Review Course (1994, 1995)

PH.D. SUPERVISIONS COMPLETED:

1. Christopher Hackert, co-supervised with J. Ellzey (completed 9/97)
2. Ziji Zhang (completed 5/98)
3. Sharon Leach, co-supervised with J. Ellzey (completed 8/98)
4. Karl Martin (completed 2/2002)
5. Patrice Seers, co-supervised with R.D. Matthews (completed 12/03)
6. Yan Qu, co-supervised with J.R. Howell (completed 8/06)
7. Krishna Lakshminarasimhan, co-supervised with N.T. Clemens (completed 8/06)
8. Ekachai Puttitwong, co-supervised with J.R. Howell (12/06)

9. Vinayak Barve (PhD 12/06)
10. Rochan Upadhyay (PhD 12/06)
11. Ozgur Ekici, co-supervised with R.D. Matthews (5/07)
12. Scot Waye, co-supervised with S. Biegalski (12/08)

M.S. SUPERVISIONS COMPLETED:

1. Michael Manoucheri 8/95
2. Stephen Paul Fuss, co-supervised with M.J. Hall 12/95
3. Vijay K. Bokka, co-supervised with R.D. Matthews 5/96
4. Campbell D. Lowman 5/97
5. Karl Martin 12/97
6. Jeffrey Borlik 5/98
7. Yanuar Wibowo 8/98
8. J.A. Carter 5/00
9. J.J. Schmidt 8/00
10. G. Paganoni 12/00
11. S. Jenkins co-supervised with R.D. Matthews 5/01
12. C. Palacios 8/01
13. Fabrizio Bisetti 8/02
14. Vinayak Barve 12/02
15. Krishna Lakshminarasimhan 12/02
16. Sameer Bhat (with R.D. Matthews) 5/03
17. Mirko Gamba (with J.R. Howell) 5/03
18. Amara Holder 8/03
19. Rochan Upadhyay 8/03
20. Craig Weinschenk 12/07
21. Shrawan Singhal (w/ S.V. Sreenivasan) 12/07
22. Wai-Kit- Ho (w/ Joe Koo) 12/07
23. Khiet Nguyen (w/ Joe Koo) 12/07
24. Eric Burton (w/ J. Haglund)
25. Philip Kokel 12/08
26. Colin Beal 12/08

PH.D. IN PROGRESS:

1. Mirko Gamba (w/ Noel Clemens)

2. Kevin Marr (w/ Noel Clemens)
3. Joshua Hubbard (w/ John Haglund)
4. Morgan Bruns (w/ Joe Koo)
5. Uday Godse (w/ S.V. Sreenivasan)
6. Craig Weinschenk

M.S. IN PROGRESS:

1. Kevin Carollo
2. Reed Anzalone

OTHER RESEARCH SUPERVISION:

Dr. Chao-Ho Lan (Post-doc)

Dr. Biao Zhou (Post-doc)

H. Chin (ME 377K)

P. Sendejo (Excel, TREX)

A. Rosette (Excel, TREX)

T. Johnson (Excel)

Mike Hall (ME 377K)

Will Campbell

Neal Hall (ME 377K)

Michael Hall (ME 377K)

Neal Tanner, Undergraduate Research Assistant

Feras Habal, Undergraduate Research Assistant

Olen Anderson, Undergraduate Research Assistant

Joseph Castro, Undergraduate Research Assistant

Steve Golab (ME377K)

Timothy Klatt (Plan II Honors Thesis)

Michael Mueller, UGRA

Senior Design Project Teams Advisor:

ME466K Summer 2006 “UT PB Gen4 Reactor Study”

ME466K Spring 2004, “Fire Helmet Selection Test Protocol”, for Austin Fire Department

ME 466K Spring 2004, “Design of a High Speed Valve for Combustion Burner Applications”,
for Combustion Research Group

ME 466K Spring 2003, “Electric Beer Tap”, for Quick

- ME 466K Spring 2002, "Feasibility Study of Replacing the Solenoid-Actuated Valve of the Joint Chemical Agent Detector," for BAE Systems
- ME 466K Fall 2001, "Redesign of a Casing Packer Setting Tool: High Force Linear Motion Apparatus," for Schlumberger
- ME 466K Spring 2000, "Design of a New Coal Combustion By-Products Tracking Method for the Fayette Power Project," for Lower Colorado River Authority
- ME 466K Spring 1997, "Redesign of a High Velocity Oxygen Fueled Coating Gun," for Hitemco Southwest
- ME 466K Fall, 1996, "Design of a Sludge Water Recycle System for water Conservation at Monsanto's Chocolate Bayou Facility," for Monsanto Corp.
- ME 466K Fall 1995, "Define Heat/Cold Properties for a Unique Insulating Coating," for Mascoat Products
- ME 466K Spring 1995, "Investigation of Heat Recovery Systems Using the Waste Heat Created by the VOC Abatement System at Motorola Oak Hill," for Motorola Oak Hill
- ME 466 K Spring 1995, "Evaluation and Design of Packed Fiber Bed Particulate Removal Devices for Use in the Semiconductor Industry," for SEMATECH
- ME 466K Spring 1994, "Design and Analysis of a Cogeneration System Using Rice Husks as a Fuel Source," for Verde development Corp.
- ME 466K Fall 1994, "The Design of a Reconfiguration of Southern Union's Dispensing Operation through Analysis of the Flow and Composition of Compressed Natural Gas," for Southern Union Gas
- ME 466K Fall 1993, "Design of an Auxiliary Air Conditioning System to Prevent Heat Soaking in Commuter Aircraft," for Texas Medical Institute of Technology