Curriculum Vitae of

# SUBRAMANYAM R. GOLLAHALLI

**Professor/Lesch Centennial Chair**
**School of Aerospace and Mechanical Engineering**
**The University of Oklahoma**
**Norman, Oklahoma, 73019**

## ADDRESS

***Office:*** School of Aerospace and Mechanical Engineering
The University of Oklahoma, Norman, OK 73019
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***Residence:*** 4400 Pennington Court, Norman, OK
Phone: (405) 329-5725

***Personal:*** Married; Two children
Naturalized Citizen of U.S.A.

## EDUCATION

***Formal:*** B. E. (Mechanical Eng.): The University of Mysore, Mysore, India, 1963. Graduated with first class and ranked fourth within the entire state.

M. E. (Propulsion Eng.): The Indian Institute of Science, Bangalore, India, 1965. Graduated with Distinction and first rank. Thesis: Studies on Rocket Models.

M. A. Sc. (Mechanical Eng.): The University of Waterloo, Waterloo, Ontario, Canada, 1970. GPA 4.0. Thesis: Water Tank Modeling of Buoyant Flows.

Ph.D. (Mechanical Eng.): The University of Waterloo, Waterloo, Ontario, Canada, 1973. GPA 4.0. Dissertation: Studies on the Flame Structure in the Wakes of Burning Liquid Drops.

***Special:*** Faculty Development Seminars on Energy: Sponsored by the U. S. Energy, Research and Development Administration, The University of Oklahoma, Norman, OK, June 1979.

Short Course on Combustion Diagnostics: Purdue University, West Lafayette, Indiana, May 1979.

Short Course on Coal Resources and Utilization: Sponsored by the U. S. Department of Energy, The University of Tulsa, Tulsa, OK, August 1979.

Workshop on Chairing the Academic Department: Sponsored by the American Council on Education, San Diego, CA, February 20-23, 2002.

# PROFESSIONAL EXPERIENCE

## EMPLOYMENT

The Department of Internal Combustion Engineering, The Indian Institute of Science, Bangalore, India: ***Lecturer*** , August 1965 - April 1968.

John Fowlers (India) Limited, Bangalore, India: ***Research and Development Engineer,*** May 1968 - August 1968.

Department of Mechanical Engineering, University of Waterloo, Waterloo, Ontario, Canada: ***Postdoctoral Fellow***, May 1973 - Oct. 1973; ***Research Assistant Professor***, November 1973 - April 1975; ***Assistant Professor***: May 1975- September 1976.

School of Aerospace and Mechanical Engineering, University of Oklahoma, Norman, Oklahoma.: ***Assistant Professor***, Oct. 1976 - September 1980; ***Associate Professor***, September 1980-84, **Tenured**: July 1980; ***Professor***, 1984-present; ***Lesch Centennial Professor,*** 1992-2000, ***Lesch Centennial Chair***, 2000-present, **Academic Director** (2001-2009).

## VISITING

United Nations TOTKEN Visiting Advisor: Indian Institute of Science, Bangalore India, Indian Institute of Technology, Madras, India (1985)

Visiting Distinguished Professor: University de Cergy-Pontoise, France (2000)

## CONSULTING

Steel Company of Canada, 1976; Waterloo Research Institute, 1974-76; J. D. Neese Company, 1976: University Technologists, Inc. 1981-present; BOC Group of Companies, 1984, Conoco, 1990; Brown & Williams Corporation, 1992; Philip Morris Corporation, 1992. John Zink Inc., 2002-present, ApTech Research Center, 2002-present.

## PROFESSIONAL AFFILIATIONS (Past and Present)

American Society of Mechanical Engineers (Fellow)
American Institute of Aeronautics and Astronautics (Associate Fellow)
American Society of Engineering Education (Member)
Society of Automotive Engineers (Member)
The International Combustion Institute (Member)
The Oklahoma Academy of Science (Member)
The Institution of Chartered Engineers of India (Member)
Sigma Xi, Pi Tau Sigma,

## CIVIC AFFILIATIONS

Boy Scouts of America, India Cultural Foundation.

## PROFESSIONAL ENGINEER REGISTRATION

No. 12641, The State of Oklahoma, 1981-present.

## HONORS AND AWARDS

***School of Aerospace and Mechanical Engineering, University of Oklahoma, Outstanding Service Award*** May 2009
***University of Oklahoma Recognition*** of 30-Year Service as a Faculty Member for Knowledge, Dedication, and Commitment to the University, April 2007
***Regents Award for Superior Accomplishments in Professional and University Service***, University of Oklahoma, April 2006
***Sustained Service Award:*** Presented b***y*** American Institute of Aeronautics and Astronautics for "longtime service to the aerospace engineering profession and to AIAA as an educator, researcher, consultant, and for dedicated professional involvement", June 2006
***George Westinghouse Gold Medal,*** Presented by the American Society of Mechanical Engineers for " for outstanding and exemplary contributions as an educator, researcher, and consultant in techniques, design, and applications in the field of combustion and power generation, with emphasis on fuels, flames, burners, environmental effects and safety," Presented in the Electric Power/ASME Power Conference m Chicago, Il, April 2005.
***Energy Systems Award***, Presented by American Institute of Aeronautics and Astronautics for "Distinguished Contributions to Education, Research, Professional Service and Advancement of Energy and Combustion Science," in the International Energy Conversion Engineering Conference, Savannah, GA, August 2001.
***Best Paper Award***, *CIE/Design Conference*, American Society of Mechanical Engineers, Las Vegas, September 1999
***Research Award*** *to the Combustion Laboratory for the Best Student Paper Produced Under the Direction of Prof. Gollahalli*, American Society of Mechanical Engineers, Fuels and Combustion Technologies Division, 1998
*Elected to the* ***Fellow Grade***: American Society of Mechanical Engineers, 1992.
*Elected to the* ***Associate Fellow Grade***: American Institute of Aeronautics and Astronautics, 1996.
***Ralph James Award*** - Petroleum Division, American Society of Mechanical Engineers, 1993.
***Samuel Collier Award*** - Petroleum Division, American Society of Mechanical Engineers, 1993.
*Lesch Centennial Professorship*, University of Oklahoma, 1992, Elevated to *Chair*, 2000.
*Engineering Excellence Award*, University of Oklahoma, 1992-1994.
*ETCE Service Award*, American Society of Mechanical Engineers, 1990, 1991, 1992.
*Senior Faculty Fellowship Award*, University of Oklahoma, 1989.
*University Faculty Associates Award*, University of Oklahoma, 1989-92.
*Dean's Merit Award*, College of Engineering. University of Oklahoma, 1988.
***Award of Excellence, Halliburton Educational Foundation,*** 1984.
***Regent's Award*** *for Superior Teaching*, University of Oklahoma, 1983
***Robert Angus Medal*** *for the Best Research Paper published in Mechanical Engineering subjects in 1976*, The Canadian Society of Mechanical Engineering and The Engineering Institute of Canada, 1978.
***Ralph Teetor Memorial Award***, Society of Automotive Engineers, 1978.
*Junior Faculty Summer Fellowship Award*, University of Oklahoma, 1977
The National Research Council of Canada Postgraduate Fellowship, 1970-73.
*Distinction for Superior Performance* in the M. E. Degree Program, The Indian Institute of Science, 1963.
The Government of India Postgraduate Merit Scholarship, 1963-65.
The Government of India Undergraduate Merit Scholarship, 1960-63.
The Government of the State of Mysore (India) Merit Scholarship, 1958-60.

***Associate Editorship***. Journal of Engineering for Gas Turbines and Power, ASME Transactions, 1999-2005
***Associate Editorship***: Journal of the Energy Resources Technology, ASME Transactions, 1994-2000
***Editorial Boar Member***: Journal of Combustion, 2009-present

*Memberships in the following national level and Technical Committees:* Emerging Energy Technology Committee of the Petroleum Division, American Society of Mechanical Engineers 1983-present, Chair 1990-93; Technical Program Committee of the International Symposia on Combustion, The International Combustion Institute, 1979-present; Terrestrial Energy Committee of The American Institute of

Aeronautics and Astronautics, 1993-present; Fuels and Combustion Committee of the Power Division of the American Society of Mechanical Engineers 1995-present; Technical Committee on Propellants and Combustion, American Institute of Aeronautics and Astronautics, 1981-84; The Subcommittee on the Alternate Fuels for Aviation, The Gas Turbine Division of the American Society of Mechanical Engineers, 1981-84; Technical Committee on Combustion and Fuels, The Gas Turbine Division of the American Society of Mechanical Engineers, 1977-89.

*Honorary Membership*s: Pi Tau Sigma, Mechanical Engineering Honor Society, elected in 1979, Sigma Xi, Scientific Research Society, elected in 1977.

*Memberships in the following national level Review Panels:* National Science Foundation Research Equipment Grants, 1997; U. S. Environmental Protection Agency Research Programs, 1996, 1999, 2005, 2006 ; Joint National Science Foundation and Environmental Protection Agency Research Programs, 1995, US Civilian Research and Development Foundation for the Independent States of the Former Soviet Union, 2001, 2002.

*Listings in* "American Men and Women of Science", "Who's Who in Aviation & Aerospace", "Who's Who in Technology Today", "Who's Who in Frontier Science and Technology", "Who's Who in Aviation", "Personalities of the South", "Biography International", "Who's Who Among Asian Americans", "Who's Who Among Indian Origin Academics", "Who's is Who in South and Southwest", Who's who in Science and Engineering, Who's who in World, United Who's Who Empowering executives and Professionals; The Contemporary Who's Who., International Biographical Center, 21st Century Award for Achievement, Who's Who among America's Teachers.

## SERVICE RECORD

### *University-Internal*

Member: CoE Energy Research Strategy Committee (2009-present)
Member CoE Dean's Evaluation Committee (2009)
Chair: Laboratory Committee, School of AME (1989-2001) (2009-present)
Member: College Of Engineering Senior Faculty Advisory Committee (1996-1999) (2009-present)
Member: Faculty Search NASA EPSCoR Biofuels positions (2008-present)
Leader: Energy Research Team AME (1995-present)
North Campus-AME Coordinator (1992-present)
Institutional Representative: SCERDC-Clemson University, (1990-present)
Building Coordinator—Aeropropulsion Lab (2008-present)
Director, School of Aerospace and Mechanical Engineering, (2001-2009)
Member: L. A. Comp Chair search Committee (2006-07)
Chair, Thermal Sciences Search Committee (2005-06)
Chair, Thermal Science Faculty Search Committee (2003-2004)
Honors and Co-op Coordinator-AME (2003-2009)
Member, College of Engineering Executive Committee (2001-2009)
Member, Supervisory Board, University of Oklahoma Bio Eng. Center (2001-2006)
Member, Intelligent Aerospace Systems Faculty Search Committee (2001-02)
Member, AME Director Search Committee, (2000-2001)
Chair, Adhoc Committee on Space-AME, (2000)
Chair: AME Graduate Committee (1980-81, 1988-1997, 1999-2001)
Member: Norman Campus Faculty Senate (1999-2002)
Member: Adhoc Faculty Committee on the Future of Aerospace Program, 1999
Chair-1999 Midwestern Mechanics Conference (1997-1999)
Member, Interdisciplinary Research Committee, College of Engineering, 1998
Chair, Norman Campus Tenure Committee (1997-98)
Member: Engineering Dean Search (1996-1998)
Member: Campus Tenure Committee, University of Oklahoma (1995-97)
Chair, AME Graduate Programs Committee (1996-97)
Member, AME Planning Action Council (1996-97)
Energy Liaison of AME: University of Oklahoma (1988-98)
Member, AME Space Allocation Committee, (1995-96)
Member: Junior Faculty Award Review Panel, OU Research Council, (1996)
Coordinator, 1996-Fall Foster Lecture, (1996)
Chair: AME Open Faculty Selection Policy Committee, (1995)
Member: President's Task Force on "Professor of Excellence" selection procedures (1995)
Chair: Thermal Science Faculty Search (1992-93)
Member: Academic Programs Council, University of Oklahoma (1991-94)
Chair: Lesch Centennial Professor Search Committee (1990-91)
Member: Research and Development Committee-AME (1991-92)
Member: Faculty Senate Committee on Committees. University of Oklahoma (1987-91)
Member: ROTC Advisory Committee. University of Oklahoma (1987-90)
Member: Academic Regulations Committee. University of Oklahoma (1987-88)
Chair: Ad Hoc Committee on Lab Planning Document (1988)
Member: Ad Hoc Committee on Faculty Nominations, CoE (1989)
Member: AME/SAE Mini-Baja Committee (1989-90)
Member: Faculty Appeals Board. University of Oklahoma (1984-1988)
Member: Committee A (The Executive Advisory Committee), AME (1984-85), (1986-87), (1991-93)
Member: Dean's Advisory Committee on Personnel Matters, College of Engineering (1985-86), (1986-87)
Graduate Studies Coordinator: School of AMNE, University of Oklahoma (1981-84)
Director: AMNE Research Center, North Campus, University of Oklahoma (1978-1992)
Chair: Graduate Studies Committee, School of AMNE, University of Oklahoma (1981-84)
Chair: Class Scheduling Committee, School of AMNE, University of Oklahoma (1981-84)

Senator: Faculty Senate of the Norman Campus of the University of Oklahoma (1981-84)
Faculty Advisor: Student Branch of the Society of Automotive Engineers at the School of AMNE, University of Oklahoma (1977-83)
Member: Interdisciplinary Group (Integrated Energy Systems Research), University of Oklahoma (1983-85).
Member: University Level Committee on Class Scheduling, University of Oklahoma (1977-81).
Member: Faculty Senate Subcommittee on the Position Paper, "The International Aspects -University Programs and Activities," University of Oklahoma (1981-82)
Member: Faculty Senate Subcommittee on the Position Paper, "The Faculty Governance at the University of Oklahoma," University of Oklahoma (1982-83)
Instructor: College of Engineering "FATE" program for Minority Students, University of Oklahoma (1982-83)
Member: College of Engineering Graduate Programs Coordination Committee, University of Oklahoma (1980-83)
Member: Senate Committee to Draft Faculty Evaluation Forms (1986)
Member: College of Engineering Committee on Thermodynamics Core Course, University of Oklahoma (1977-81)
Member: College of Engineering Committee on Fluid Mechanics Core Course, University of Oklahoma (1983-84)
Member: College of Engineering Ad Hoc Committee for Planning of Felgar Hall Expansion, University of Oklahoma (1982).
Member: AMNE Committee on Research Center Relocation (1985)
Member: Scholarship and Fellowship Committee. Oklahoma Mining and Mineral Resources Research Institute (1982)
Member: AMNE Committee on Student Programs in Undergraduate Research, University of Oklahoma (1978-79)
Member: AMNE Committee on Mechanical Engineering Undergraduate Curriculum Revision, University of Oklahoma (1978)
Member: AMNE Search Committees for Fluid Mechanics Faculty (1979), Thermal Sciences Faculty (1980 and 1987)
Member: Board of Studies, The ICE Department, The Indian Institute of Science, India (1964-65)

### *External*

Member Editorial Board, Journal of Combustion (2009-present)
Associate Editor, Journal of Engineering for Gas Turbines and Power, ASME Transactions (1999-2005)
Associate Editor, Journal of Energy Resources Technology, ASME Transactions (1994-2000)
Member: Terrestrial Energy Technical Committee, AIAA (1993-present)
Member: Honors and Awards Subcommittee of Terrestrial Energy Committee, AIAA (1994-present)
Member: Fuels and Combustion Technologies Committee, ASME Power Division, (1995-present)
Member: Technical Program Subcommittee on International Symposia on Combustion, The Combustion Institute, (1980-present)
Member: Combustion and Alternative Energy Technologies Committee, Petroleum Division, ASME (1999-2006)
Member, International Advisory Board, International Conference on “International Conference on Resource Utilization and Intelligent Systems (INCRUIS-2008), Erode, India (2007-2008).
Member, International Advisory Board, International Conference on Computational Heat and Mass Transfer, Eastern Mediterranean University, Gazimagusa, North Cyprus (1998-1999)
Member: Emerging Energy Technical Committee, Petroleum Division, ASME (1983-1999).
Symposium Organizer: Terrestrial Energy, AIAA 36th Aerospace Sciences Meeting (1996-1997)
Symposium Organizer: Combustion Fundamentals, 32nd Intersociety Energy Conversion Conference (1996-97)
Member: International Advisory Committee, International Conference on Mechanical Engineering, Indian Institute of Science, Bangalore, India (1995)
Chair: Emerging Energy Technology Committee, American Society of Mechanical Engineers, (1990-1993).
Member: Technical Committee on Propellants and Combustion, American Institute of Aeronautics and Astronautics (1982-85)

Member: Automotive Symposium Committee, American Society of Mechanical Engineers, (1986)
Member: Technical Committee on Combustion and Fuels, Gas Turbine Division, American Society of Mechanical Engineers (1977-89)
Member: Subcommittee on Alternate Fuels for Aviation - Gas Turbine Division, American Society of Mechanical Engineers, (1981-84)
Member: Information Exchange Committee, Technical Committee on Propellants and Combustion, American Institute of Aeronautics and Astronautics (1984-85)
Institutional Representative: Southwest Symposium on Thermal Sciences (1979-82).
Member: Organizing Committee - Eastern Section Meeting of the Combustion Institute, Waterloo, Canada (1970)
Member: Coal Utilization Committee, American Society of Mechanical Engineers (1977-78)

Reviewer: National Science Foundation, Environmental Protection Agency, Combustion and Flame, Combustion Science and Technology, International Symposia on Combustion, ASME Meetings and Journals, Journal of Energy Management, AIAA Meetings and Journals, Applied Mechanics Reviews. AIChE Journal, National Science and Engineering Research Council of Canada. Hong Kong Council of Scientific Research, US Civilian Research and Development Foundation for the Independent States of the Former Soviet Union, 2001, 2002.

## TEACHING/MENTORING RECORD

Professor Gollahalli teaches lecture as well as laboratory courses in thermal sciences. His teaching duties include undergraduate and graduate courses in both aerospace and mechanical engineering curricula. Student evaluations rank him consistently near the top of the faculty members in the college of engineering. He has received the **"Regents Award for Superior Teaching**" from the University of Oklahoma. Professor Gollahalli has developed several undergraduate and graduate laboratories and has actively participated in the curriculum development and accreditation processes. The details of his teaching record are given below:

### *Number of Years Taught*

| | | |
|---|---|---|
| **Full Time** | **40** | **(1965-68; 1973-present)** |
| Graduate Student Instructor | 5 | (1968-73) |

### *Courses Taught*

Undergraduate Level: Thermodynamics-I, Thermodynamics-II, IC Engines and Propulsion, Energy Conversion Systems, Principles of Measurements, Engine Laboratory.

Graduate Level: Gas Turbine Power Plants, Turbomachinery, Fuels and Lubrication, Combustion, Experimental Methods in Thermal Sciences, Rocket Propulsion, Aircraft Jet Propulsion.

### *Courses Developed*

Combustion, Experimental Methods in Thermal Sciences, Turbomachinery, Aircraft Jet Propulsion, Rocket Propulsion, IC Engines, Propulsion Lab.

### *Laboratory Development*

Engine Laboratory (Indian Institute of Science): Propulsion Laboratory, Measurements Laboratory (University of Oklahoma); Chairing Laboratory Committee of the Department since its inception in 1987 to 2001.

### *Curriculum Development*

Led the task of complete revision of graduate curriculum at the Indian Institute of Science (1965) and the University of Oklahoma (1982).

### *Accreditation*

Professor Gollahalli chaired the committee in obtaining a significant upgrading of the School's rating from the Accreditation Board.

### *Graduate Student Supervision*

Professor Gollahalli has supervised 75 graduate students to the completion of their degree programs. Currently, he is the supervisor of 2 Ph.D. and 5 M. S. students.

### *Student Evaluations*

The student evaluations place Gollahalli at or near the top of the faculty of the department consistently. The average of numerical ratings he received in the courses taught at the University of Oklahoma in comparison with the school and college of engineering averages are given below:

| | **Gollahalli/School/College** |
|---|---|
| Effort and Preparation (Q.1) or (Q.4) | 1.25/1.62/1.67 |
| Effectiveness (comparison with other instructors)(Q.12) or (Q.8) or (Q7) | 1.74/2.31/2.37 |

(Scale: 1 = Excellent, 2 = Very Good, 3 = Good, 4 = Fair, 5 = Poor)

## Graduate Student Research Program Supervision

**Ph. D. Students**

| | |
|---|---|
| 1. Huang, R. F. (1987)*: | Stability and Structure of Non -Premixed Gas Jet Flames in Cross-Flows |
| 2. Lin, C. Y. (1991): | Studies of Burning Gas Jets and Liquid Sprays |
| 3. Parvez, K. (1995): | Studies on Interacting Multiple Burning Liquid Sprays |
| 4. Kamal , A. (1995)# | Turbulent Diffusion Gas Jet Flames From Circular and Noncircular Nozzles |
| 5. Butuk, N. (1997)* | Fluid Flow Diagnostics Using Rainbow Schlieren Imaging and Computer Tomography |
| 6. Al-Ammar, K.(1998)* | Scalar Measurements and Analysis of Hydrogen Gas-Jet Diffusion Flames in Normal and Microgravity |
| 7. Qubbaj, A. (1998)# | An Experimental and Numerical Study of Gas Jet Flames Enveloped by a Cascade of Venturis |
| 8. Choudhuri, A (2000)# | An Experimental and Numerical Investigation of Hydrogen-Hydrocarbon Composite Fuel Combustion |
| 9. Goh, S. F. (2003) | Structure and Sooting in Gas Jet Flames in Cross flows |
| 10. Baird, B (2005) | Premixed Gas Flames Issued from Elliptic Burners |
| 11. Periasamy, C (2007)# | Combustion in Porous Media |
| 12. Love, N, (2009)#* | Effects of Equivalence ratio and Iodine Number on the NOx Emissions from the Flames of Biofuels and Hydrocarbons |

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#Kamal: Winner of the Best Paper Award: ASME Design /FACT Conference, Las Vegas, 1999
#Qubbaj: Winner -Best Student Paper award-ASME Coal Combustion Conference, Clear Water Beach, FL (1998)
#Choudhuri: Outstanding Research Assistant Award: University of Oklahoma, 2000
#Periasamy: Outstanding Graduate Assistant Award: University of Oklahoma, 2007
# Love**:** GAANN Fellow , Best Poster Award, University of Oklahoma (2008)

**Masters Students**
**(At the Indian Institute of Science-Bangalore, India)**

| | |
|---|---|
| 1. Satyanarayana, K. (1966): | Development of Thrust Chambers of Model Rockets, |
| 2. Rao, S. P. (1967): | Combustion in Liquid Propellant Rocket Models |
| 3. Rao, N. (1967) | Power Boosting of Diesel Engines |
| 4. Nayar, K. S. (1968) | Studies on Rocket Models |

**(At the University of Oklahoma, Norman, Oklahoma)**

| | |
|---|---|
| 5. Pinto, A. (1978) | Combustion of Pulverized Coal |
| 6. Jahani, H. (1979) | Flame Structure of Burning Jet-A Fuel and Jet-A Fuel-Water Emulsion Sprays |
| 7. Nasrulla, M. (1979) | Combustion of Residual Oil and Residual-Oil-Water Emulsion Sprays |
| 8. Moussavi, S. J. (1979) | Combustion of Single Drops and Sprays of No. 2 Diesel Oil and Its Emulsions with Water and Methanol |
| 9. Ghasrachmi, K. B. (1979) | Combustion of Oil-Coal and Oil-Coal-Water Slurries |
| 10. Javadi, S.H. (1979) | Temperature and Concentration Structure of Burning Sprays of Jet-A Fuel with Water and Methanol |
| 11. Hajzargarbhashi, J. (1980) | Combustion of Heavy-Oil Water Emulsion and Oil-Coal Water Slurries |
| 12. Lin, J. D. (1980) | A Comparative Study of the Combustion Characteristics of Petroleum and Coal-Derived Fuels |
| 13. Khan, N. (1981) | Performance and Emission Characteristics of CI Engines Fueled with Diesel Oil and Unstabilized Emulsions with Water, Methanol, and Ethanol |

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| 14. Salek, M. (1981) | Combustion of Drops and Sprays of Heavy Fuel Oils and Their Emulsions with Water and Methanol |
| 15. Khosravanizadhe, R. (1982) | Flame-Structure of Diluent-Caused Lifted Flames |
| 16. Bhatti, B. (1982) | Combustion of Low-Calorific Value Gas Jets In Cross-Wind |
| 17. Sehgal, L. B. (1982) | Composition Structure of Low-Momentum Gas Jet Flames In Cross-Flow |
| 18. Atluri, G. K. (1983) | Combustion of No. 2 Oil and Its Emulsions with Propanol and Butanol in CI Engines. |
| 19. Siddiqui, N. (1984) | Emissions of SOx and NOx from Burning Sprays of Synthetic Fuels and Their Emulsions |
| 20. Menon, R. (1984) | Multiple Gas Diffusion Flames |
| 21. Solanki, D. (1984) | Fumigation and Emulsification of Methanol in CI Engines |
| 22. Cooley, T. (1984)* | Feasibility Study of a Tube Drive Mechanism |
| 23. Parameswaran, K. (1985) | Characteristics of Matrix Gas Jet Flames |
| 24. Malychuk, M. (1985) | Radiant Heating Ignition of Liquid Fuel Pools |
| 25. Satyanarayana, G. (1985) | Effect of Emulsification of Methanol and Diesel Fuel on the Performance of a Multi-Cylinder CI Engine. |
| 26. Burke, D. (1985) | Effects of surrounding Jets on Gas Diffusion Flames |
| 27. Beach, V. (1986) | Combustion of Synthetic Fuel Sprays |
| 28. Shekarchi, S.(1986) | Structure of a Split Flame |
| 29. Puri, R. (1987) | Diluent Effects on the Thermal Structure and Emissions of a Spray Flame |
| 30. Prasad, A. (1988) | Combustion of Pulverized Coal Blends |
| 31. Prabhu, N. (1989) | Combustion of Elliptic Gas Jets |
| 32. Madanahalli, A. (1989) | Effects of Nozzle Orientation Burning Sprays |
| 33. Gundavelli, S. (1989) | Stability and Structure of Pulverized Coal Flames |
| 34. Ahamad, I. (1990) | Combustion of Microemulsion Sprays |
| 35. Khanna, T. (1990) | Flow Structure of Jets and Flames over Circular and Elliptic Nozzles |
| 36. Varshney, D. (1990) | Ferrous Metal Fires |
| 37. Vincent, J. (1990) | Multiple Liquid Pool Fires |
| 38. Sathyaraj, S. (1991) | Sulfur-Dioxide Emission from Combustion of Pulverized Coal Blends |
| 39. Kopparthi, V. (1992) | Experimental Studies on the Emission of Nitric Oxide from the Flames of Pulverized Coal Blends |
| 40. Nanjundappa, B. (1992) | Combustion Characteristics of Turbulent Gas Flames in Cross-Wind at Low Jet /Wind Momentum Flux Ratios |
| 41. Kolluri, P (1992) | A Study of the Interaction of Noncircular Venturi Inlets with Circular Fuel Jets in the Inshot Burners of Residential Gas Furnace Systems |
| 42. Kumashi, R. (1993) | A Comparative Study of the Spray Flame Characteristics of Pure jet-A Fuel and Its Microemulsion and Macro-emulsions with Water. |
| 43. Hubbard, M. (1993) | Radiation Enhancement of A Laminar Natural Gas Flame |
| 44. Rao, A. (1994) | Effects of Venturi Inlet Geometry on Combustion Characteristics of Inshot Burners |
| 45. Subba, S. (1995) | Effects of Burner Exit Geometry on Combustion Characteristics of Inshot Burners in Residential Gas Furnaces |
| 46. Thenappan, S (1995) | Turbulent Flame Velocity in Solid-Particle Gas Mixtures |
| 47. Babb, M. (1996) | Exitniguishment Characteristics of Liquid heptane and Gaseous Propane Flames |
| 48. Pardiwalla, D. (1996) | Elliptic Gas Jet Flames in A Cross-Flow. |
| 49. Cherry, S. (1997)* | Scaling of Buoyancy Effects in Hydrogen Gas-Jet Diffusion Flames Using Rainbow Schlieren Deflectometry |
| 50. Choudhuri, A. (1997) | Experimental Studies on Hybrid Fuel Combustion |
| 51. Shenoy, A. (1998)* | Effects of Non-Unity Lewis Number and Buoyancy in Hydrogen Jet Diffusion Flames |
| 52. Tinnetti, A. (1998)* | Flow Experiments in the Annular Diffuser and Contraction Passages of an Intercooler System for Gas Turbines |
| 53. Kusadome, S. (1999) | Structure of Gas Diffusion Flames Near Smoke Point |

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|---|---|
| 54. Goh, S. (1999) | Experimental Studies of Diffusion Flame Smoke Point In Quiescent and Cross-Flow Environments |
| 55. Sayela, P. L (2001) | Effects of Nonaxisymmetric co-flow on Diffusion Flames |
| 56. Thomas, R (2002) | A Study of the Effects of Nozzle Geometry, Propellant Characteristics and Injector Arrangement on Flow Behavior and Mixing in a Two-Dimensional Microthruster |
| 57. Carrera, J (2002)* | Bubble Generation and Dispersion Processes in Microgravity |
| 58. Koepp, R. (2003)* | Bubble Generation in Microgravity |
| 59. Hariharan, P (2004) | Characteristics of Elliptic Premixed Flame Jets in Co-Flow |
| 60. Smith, T. (2004) | Relative Effects Buoyancy and Momentum in Elliptic and Circular Burner Flames |
| 61. Sankara-Chintamoni (2005) | Combustion of elliptic jets in elliptic co-flow |
| 62. Habib, Zehra (2008)* | Effects of Biodiesel on the Performance and Emission Characteristics of a Small Scale Gas Turbine Engine |
| 63. Axczel Sequra (2008)* | Effects of Fuel Injection Timing on the Combustion of Various Biofuels in a Diesel Engine |
| 64. Erazo, Jaime (2008)* | Effects of Droplet Size and Fuel Iodine Number on Biodiesel Spray Flames |
| 65. Barrajas, Pablo (2009)* | Combustion Characteristics of Biodiesel with Porous Media Burners |
| 66. Singh, Vinay (2009)* | Frequency Based Material Characterization Using Thermal Scanning Microscopy |

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*co-supervision

NonThesis-ME Project Supervision:

1. Marin Meas (2007)
2. Kavitha Meherwade (2009)

**Students with Awards of Undergraduate Research Opportunities Program and other Scholarships-OU**

1. Eric Wright*
2. Sean Peters*
3. Sien Goh
4. Benny Foreman
5. Amy Walker
6. Courtney Pankop
7. Matt Simon*#
8. Jason Watkins#

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* Award Winners in Undergraduate Research Day Celebrations.
# ASME-FACT Scholarship Awardee

Dr. Gollahalli has involved several undergraduate students in his research, some of whom have continued for grad studies. In addition, Dr. Gollahalli was the advisor of four international visiting Research Associateship award recipients from China, and Egypt.

## RESEARCH RECORD

Professor Gollahalli's research interests encompass fundamental as well as applied topics in Energy and Combustion fields. The projects directed by him include combustion of liquid drops and sprays, flame characteristics of pulverized coal and synthetic fuels, combustion of hybrid fuels such as emulsions and slurries, internal combustion engine and gas turbine combustors, turbulent diffusion flames in cross-flow streams, and microgravity combustion.

His research projects have been sponsored by the government agencies (U. S. Department of Transportation, U. S. Coast Guard, U. S. Department of Energy, U. S. Air Force, U. S. Department of Interior, National Science Foundation, the Oklahoma Center for the Advancement of Science and Technology, Oklahoma Bioenergy Center, Oklahoma State Department of Energy, Advanced Turbine Systems Consortium, National Aeronautics and Space Administration, U. S. Aid Program, U.S. Army, and the National Science and Engineering Research Council of Canada) as well as by industry (Gas Research Institute, York International, John Zink Co.) He has also received major equipment grants from the National Science Foundation, U. S. Department of Energy, the State of Oklahoma Commerce Department, and the University of Oklahoma Associates. Professor Gollahalli has served as a consultant for industries on several research topics. The cumulative funding in the form of grants and contracts (total 50, of which Gollahalli was the PI for 40 and CO-PI for 10) is 8.7 million dollars, and Gollahalli's share of which is about 2.5 million dollars.

Professor Gollahalli's research career began at the Indian Institute of Science, Bangalore, where he supervised 4 graduate thesis projects. His research work at the University of Waterloo in Canada earned him the Robert Angus Best Paper Award. Professor Gollahalli founded the Combustion Research Program at the University of Oklahoma in 1976 and has developed it to its current nationally reputable status. He has supervised 78 graduate thesis/dissertation projects. Four of his graduate students have attained the tenured faculty status in Universities and continuing their research in combustion; one of them is the president of a university and three others are deans. Three are in tenure track faculty status, others are working in industry. A few of them are chief executive officers in companies. In addition, three post-doctoral research associates obtained training in his laboratory and hold senior positions in university and government laboratories. Over 20 undergraduate students have been involved in his research. Currently, he is the supervisor or co-supervisor for 2 Ph. D. and 5 M. S. students. Two of his students received "outstanding Graduate student award" in the university.

Recently, an undergraduate student and a graduate student won the "BEST PAPER AWARD" at the university and national level respectively for the research work produced under Professor Gollahalli's guidance. Also, a paper he co-authored with another student won the BEST PAPER AWARD in September 1999 in the ASME CIE Conference. Together with the ROBERT ANGUS MEDAL he received earlier, Professor Gollahalli's research has won the National Recognition four times for the superior quality. In August 2001 Professor Gollahalli was honored by AIAA for his distinguished contributions to education, research, professional service, and advancement of energy and combustion science with ENERGY SYSTEMS AWARD. In April 2005, the ASME awarded him the GEORGE WESTINGHOUSE GOLD MEDAL for his outstanding contributions as an educator, researcher, and consultant to power and combustion industry. With Professor Gollahalli's lead, four faculty members in the School of Aerospace and Mechanical Engineering were involved in Combustion/Energy related research. He has served as a mentor for two junior faculty members involving them in his research.

Professor Gollahalli's research has been published widely. His publications include 79 journal papers, 143 refereed articles in international symposium proceedings, 26 other retrievable publications, 34 research reports, 23 book reviews, and 40 other reviews and discussions. He has delivered invited-key-note lectures in several universities and research laboratories in U. S. A., Taiwan, Egypt, and India. He has served as a visiting consultant to the universities and government laboratories in India under the invitation of the United Nations Development Program. His contributions on the structure of flames in the liquid drop wakes, emulsion combustion, near-nozzle structure and stability of gas jet flames, effects of cross-wind on flames, and noncircular jet combustion are cited frequently in the literature.

### *Grants and Contracts*

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|---|---|---|
| Total External Funding | $8,729,702 | Gollahalli's share $ 2,508,070 |
| Total Internal Funding | $ 912,321 | Gollahalli's share $ 350,868 |

(If co-PI is not mentioned Gollahalli is the sole-investigator)

Combustion of Liquid Drops and Sprays, National Research Council of Canada, May 1975-October 1976.

Equipment for Combustion Research: National Research Council of Canada, May 1975- May 1976

Equipment Grant – Gas Chromatograph: The Research Council, University of Oklahoma, May 1977.

Combustion of Oil-Water Emulsions in Diesel Engines: U. S. Department of Transportation, July 1978-August 1979 (PI: S. R. Gollahalli, Co-PI: M. L. Rasmussen).

Theoretical Modeling of Processes in Internal Combustion Engines: The Energy Technology Center, Bartlesville, OK (U. S. Department of Energy), April 1978- Sept. 1979 (PI: S. R. Gollahalli, Co-PI: M.L. Rasmussen)

Equipment Grant – Pressure Transducer: The Research Council, University of Oklahoma, January 1979.

Combustion of Coal-Oil Slurries: Energy Resources Center, University of Oklahoma, January-June 1979.

Combustion of Heavy Oil-Water Emulsions: U. S. Coast Guard, September 1979-December 1980 (PI: S. R. Gollahalli, Co-PI: M.L. Rasmussen.

A Comparative Study of the Combustion Characteristics of Petroleum Fuels and Coal Derived Liquids: Energy Resources Center, University of Oklahoma, July 1979-June 1980 (PI: S. R. Gollahalli, Co-PI: M. L. Rasmussen)

Combustion of Low-Btu Gas Jets: Energy Resources Center, University of Oklahoma, July 1980-June 1981.

Equipment Grant – Eddy Current Dynamometer: The Research Council, University of Oklahoma, 1980.

Equipment Grant – Diesel Engine Dynamometer: College of Engineering Research Fund, University of Oklahoma, 1980.

Equipment Grant – Flow Meters: The Research Council, University of Oklahoma, 1980.

Instrumentation for Research on Coal and its Derivatives: University of Oklahoma Associates Fund, 1981.

Computer Video Terminal: The Research Council, University of Oklahoma, 1981.

High-Speed Photography System: National science Foundation, 1981-82.

Feasibility Demonstration of New Aerodynamic Condensation: University of Oklahoma Research Council and the College of Engineering Research Fund, 1982 (PI: S. R.Gollahalli, Co-PI: G.Emanuel).

Sulfur Oxide Formation in Heavy Fuel Oil and Coal Flames. Energy Resources Center of Oklahoma, 1982-83.

Stability and Structure of Turbulent Gas Jet Flames in Cross Flow: National science Foundation, 1984-87 (PI: O.Savas Co-PI: S. R.Gollahalli)

Ignition of Synthetic Liquids: Research Council of The University of Oklahoma, 1984-85.

Abnormal Combustion of Cartridge Starters: (co-PI with D. M. Egle and G. Emanuel), U. S. Department of Defense, 1984-86.

Structure and Stabilization of Pulverized Coal Flames: U. S. Department of Energy, 1986-88.

Particle Velocity and Size Analyzer: U. S. DOE through the Corporation Commission of the State of Oklahoma, 1987-88.

Combustion and Flyash Characteristics of Blended Coal: U. S. Bureau of Mines through OMMRRI, University of Oklahoma, 1987-90 (PI: S. R.Gollahalli, Co-PI: G.Laguros)

Ferrous Metal Fires: Research Council – University of Oklahoma, 1988-89 (PI: S. R. Gollahalli, Co-PI: J. E.Francis)

Mechanism of Diluent Gas Effects on Soot Formation: Research Council – University of Oklahoma, 1988-89.

In-situ Combustion Processes in Energy Resources Development: U. S. Bureau of Mines (OMMRRI), 1991-92.

Noncircular Burners for HVAC Systems: Gas Research Institute, 1991-94.

Novel Burners for HVAC Systems: Oklahoma Center for the Advancement of Science and Technology, 1991-93.

Flammability in Mine-Galleries: U. S. Bureau of Interior through OMMRRI, 1993.

Swirl Flame and Coal Combustion: Supplement towards the experimental expenses of Visiting Peace Fellowship Recipient Dr. Attia Aref, U. S. Aid Program, 1993-94.

Combustion of Pulverized Coal in Vortex Structures: U. S. Department of Energy, Pittsburgh Energy Technology Center, 1993-95.

Instructional Lab Instrumentation: University of Oklahoma Associates Program, 1994.

Aerodynamics of Intercooler Performance of Gas Turbines, Advanced Turbine Systems Consortium: U. S. Department of Energy, Co-PI with A. K. Agrawal, 1994-96.

Combustion Instrumentation: Continental Oil Company, Ponca City, Oklahoma, 1994.

Microgravity Combustion of Diffusion Flames: (Co-PI with A. K. Agrawal), National Aeronautics and Space Administration, 1993-97.

Liquid Natural Gas Combustion Research with Application to Heavy Truck Engines: (Co-PI with W. H. Sutton, A. K. Agrawal, F. Lai and Chem. Eng. Faculty) U. S. Department of Energy, 1993-96.

Laser Equipment for Combustion Research: National Science Foundation, 1995-96.

Research Travel Grant: Gas Research Institute, Chicago, Illinois, 1995.

Laser Doppler Velocimeter Upgrading: University of Oklahoma Research Council (Co-PI with R. Parthasarathy), 1995.

Fire Extinguishing Agents for Halon Replacement: Subtask of a Project sponsored by US Navy: (Pis: S. Christian and C.M. Sliepcevich), 1996.

Charge Intensified Camera for Planar Laser-Induced Fluorescence Studies of Combustion Systems, OU Research Council, and College of Engineering 1997.
Combustion of Hybrid CNG-Propane Fuels: Inst. Of Gas Utilization Technology (OU) 1997.

Mass Spectrometer, PI: R. Mallinson, Co-pIs: L. Lobban, and S. R. Gollahalli, University Research Council, 1997.

Monochroamtor for LIF studies, PI: S. R. Gollahalli, University Research Council, 1997.

Flare Stack Burners: OCAST; Total Cost, PI: S.R.Gollahalli (60%), Co-PI: R.Parthasarathy (40%), 1998-2000.

Smoke Point Measurements in Turbulent Diffusion Flames in Cross-Wind: PI: S.R.Gollahalli, Co-PI: R. Parthasarathy, John Zink Co. of Tulsa, 1998-2000.

Research Expenses for the Fellowship Awardee (Dr.Attia Aref) from Egypt: Egyptian Embassy, 1998.

Extension of the Grant on Microgravity Combustion of Diffusion Flames: (Co-PI with A. K. Agrawal), National Aeronautics and Space Administration, July-Nov, 1998 (SRG Share 40%).

Camera-upgrade for LIF system: PI: S. R. Gollahalli, OU Research Council, 1999

Travel Grant to visit NASA Glenn Research Center: Oklahoma NASA EPSCOR, 1999

Research Initiation Grant, NASA EPSCoR, $27,000, February 2000

Travel Grant to Deliver Key-note Address, VPRA, $750, 2000

Extension of Research Initiation Grant, NASA EPSCoR, $ 14,000, July 2000

Instability and Breakup of Gas Jets Injected into co-flowing Liquids: Submitted to NASA, $295,000, PI: R. Parthasarathy, Co-PI: S. R. Gollahalli (40%) share, April 2,000-March 2,004.

VPRA Matching for the NASA grant: $25,000 K SRG Share: 40%, 2000-2004.

Porous Media Combustor Concepts for Propulsion Gas Turbines, A. K. Agrawal and S. R. Gollahalli: DEPSCoR, US Army, $450,000. Gollahalli's share (40%), 2002-05.

Doctoral fellowships in Environmentally Benign Energy Utilization Systems (GAANN), A. K. Agrawal, F. Lai, S. R. Gollahalli, L. Fink, R. Parthasarathy, $ 491,940, 2003-2006, SRG share (15%)-OU Cost sharing additional 25%.

Green Processing of Plant Oils to Bio diesel and /or Chemicals, L. Lobban, D. Resasco, R. Parthasarathy, R. Mallinson, S. R. Gollahalli (17%), J. Harwell, Oklahoma State Energy Secretary, $458,00, July 1, 2006-June 30, 2008.

Optimization of Combustion Properties of Biofuels Produced Using Various Conversion Technologies, S. R. Gollahalli (50%) and R. Parthasarathy (50%), Oklahoma Bioenergy Center, $141,909 (2007-2010)

Biofuels Refining Engineering, Several Investigators, Phase 1: $738,000, S. R. Gollahalli (20%) (2008-2010), Phase 2: $713,000 (2009-2011)—SRG share 17%., Phase 3: $500,000 (2011-2012)—SRG Share 17%.

Oklahoma EPSCoR Research Infrastructure Improvement Plan, Several Investigators, S. R. Gollahalli (10%), 4,233154—University Match $395,639 (2008-2013)

Graduate Fellowship Supplements for Combustion Lab Students: John Zink Co (2008-2010)-30,000, PI: S. R. Gollahalli (100%).

# LIST OF PUBLICATIONS

## of

## Professor S. R. Gollahalli

## I. *Theses*

1. Studies on the Flame Structure in the Wakes of Burning Liquid Drops: S. R. Gollahalli, Ph.D. Dissertation, Department of Mechanical Engineering, University of Waterloo, Waterloo, Ontario, Canada, 1973.

2. Water Tank Studies on Buoyant Plumes: S. R. Gollahalli, M. A. Sc. Thesis, Department of Mechanical Engineering, University of Waterloo, Waterloo, Ontario, Canada, 1970.

3. Studies on Rocket Models: S. R. Gollahalli, M. E. Thesis, Department of I. C. Engineering, Indian Institute of Science, Bangalore, India, 1965.

## II. *Edited Books*

1. S. R. Gollahalli, Co-Editor, "Emerging Energy Technology Symposium," ASME PD Vol. 36, 57 pages, 1992.

2. S. R. Gollahalli, Editor, "Emerging Energy Technology Symposium," ASME PD Vol. 41, 119 pages, 1992.

3. S. R. Gollahalli, Editor, "Emerging Energy Technology Symposium," ASME PD Vol. 50, 191 pages, 1993.

4. S. R. Gollahalli, Co-Editor, “Proceeding of the Heat Transfer Division,” ASME HTD. Vol. 352, 49 pages, 1997.

## III. *Refereed Journal Articles/Book Chapters:*

(* Papers published in the International Symposia on Combustion are regarded as at least equivalent to those published in the journal “Combustion and Flame” by the Combustion Institute as the review process is more rigorous in the former)

1. Recent Developments in Diesel Combustion Chambers: S. R. Gollahalli, J. of Inst. of Chartered Engineers (India) 7, 5 (1967).

2. Evaporation Characteristics of Liquid Films: S. R. Gollahalli, Eng. News of India, 14, 77 (1967).

3. Theoretical Modeling of Combustion Processes in CI Engines Employing Film Evaporation: S. R. Gollahalli, J. of Sci. & Ind. Research, 29, 436 (1970).

4. Evaporation Rates of Liquid Films: S. R. Gollahalli and K. Narayanaswami, Ind. Journal of Technology, 9, 149 (1971).

5. Heat Transfer in Spherical Chambers: S. R. Gollahalli and K. Narayanaswami, Ind. Journal of Technology, 10, 394 (1972).

6*. Experimental Studies on the Flame Structure in the Wake of a Burning Droplet: S. R. Gollahalli and T. A. Brzustowski, Fourteenth Symposium (Int) on Combustion, The Combustion Institute, Pittsburgh, PA, 1333 (1973).

7. Flame Length in the Wake of a Burning Hydrocarbon Drop: S. R. Gollahalli and T. A. Brzustowski, Combustion and Flame, 24, 272 (1975).

8. The Turbulent Hydrogen Diffusion Flame in a Cross Wind: T. A. Brzustowski, S. R. Gollahalli, and H. F. Sullivan, Combustion Science and Technology, 11, 29 (1975).

9*. The Effect of Pressure on the Flame Structure in the Wake of a Burning Hydrocarbon Droplet: S. R. Gollahalli and T. A. Brzustowski, Fifteenth Symposium (Int) on Combustion, The Combustion Institute, Pittsburgh, PA, p. 409 (1975).

10. Characteristics of a Turbulent Propane Diffusion Flame in a Cross-Wind: S. R. Gollahalli, T. A. Brzustowski, and H. F. Sullivan, C. S. M. E. Transactions, 3, 205 (1975).

11. Flame Oscillations in the Wake of a Burning Liquid Drop: S. R. Gollahalli, Canadian Journal of Chemical Engineering, 53, 459 (1975).

12. Buoyancy Effects on the Flame Structure in the Wakes of Burning Liquid Drops: S. R. Gollahalli, Combustion and Flame, 29, 21 (1977).

13. Effects of Diluents on the Flame Structure and Radiation of Propane Jet Flames in a Concentric Stream: S. R. Gollahalli, Combustion Science and Technology, 115, 147 (1977).

14. Aerodynamic and Diluent Effects on the Emissions of Nitrogen Oxides from Hydrocarbon Diffusion Flames: S. R. Gollahalli, Canadian Journal of Chemical Engineering, 56, 510-514 (1978).

15. Characteristics of Burning Liquid Sprays with Additional Diluents in the Primary Air Stream: S. R. Gollahalli, Combustion and Flame, 24, 141-151 (1979).

16. An Experimental Study of the Combustion of Unsupported Drops of Residual Oils and Emulsions: S. R. Gollahalli, Combustion Science and Technology, 19, 245-250 (1979).

17. Characteristics of Burning Jet A Fuel and Jet A Fuel-Water Emulsions: H. Jahani and S. R. Gollahalli, Combustion and Flame, 37, 145 (1980).

18*. Combustion of Drops and Sprays of No. 2 Diesel Oil and its Emulsions with Water: S. R. Gollahalli, M. L. Rasmussen, and S. J. Moussavi, Eighteenth Symposium (Int) on Combustion, The Combustion Institute, Pittsburgh, PA, p. 349 (1981).

19. A Comparative Study of the Flame Structure of Burning Sprays of No. 2 Oil and SRC-II Fuel Oils: S. R. Gollahalli and J. D. Lin, Combustion and Flame, 44, 125-135 (1982).

20. Combustion and Emission Characteristics of Burning Sprays of Steady Residual Oil Sprays: M. K. Nasrullah, J. H. Bhashi, and S. R. Gollahalli, Combustion and Flame, 55, 93-103 (1984).

21. Effect of Atomizing Gas on Some Pollutant Concentrations in a Burning Liquid Spray: N. Siddiqui, S. R. Gollahalli, and Z. Zhang, Combustion Science and Technology, 38, p. 105 (1984).

22. Flame Structure of Attached and Lifted Jet Flames of Low Calorific Value Gases: S. R. Gollahalli, G. K. Zadeh, Energy Sources Journal, 8, pp. 43-65 (1985).

23. Stability of Lifted Round Gas Jet Flame: O. Savas and S. R. Gollahalli, Journal of Fluid Mech., 165, pp. 297-318 (1986).

24. Flow Structure in Near-Nozzle Region of Gas Jet Flames: O. Savas and S. R. Gollahalli, AIAA Journal, Vol. 24, pp. 1137-1140 (1986)

25*. Structure of Attached and Lifted Gas Jet Flames in Hysterisis Region: S. R. Gollahalli, O. Savas, R. Huang, and J. Rodriguez Azara: Twenty-First Symposium (Int) on Combustion, The Combustion Institute, Pittsburgh, pp. 1463-1471 (1986).

26. Ignition Characteristics of Petroleum and Synthetic Fuel Pools Exposed to External Radiation: M. Malychuk and S. R. Gollahalli, Combustion Science and Technology, 53, pp. 225-232 (1987).

27. Structure of Split Gas Flame: S. Shekarchi, O. Savas, and S. R. Gollahalli, Combustion and Flame, 73, pp. 221-232 (1988).

28. Studies on the Combustion of Kerosene-Water Emulsions in a Gas Turbine Combustor: Z. Zhang and S. R. Gollahalli, International Journal of Turbo and Jet Engines, Vol. 5, pp. 39-49 (1988).

29. Combustion Characteristics of Interacting Multiple Jets in Cross Flow: R. Menon and S. R. Gollahalli, Combustion Science and Technology, Vol. 60, pp. 375-390 (1988).

30. Effects of Location and Direction of Diluent Injection on Radiation and Pollutant, Emissions of a Burning Spray: R. Puri and S. R. Gollahalli, Journal of Energy Resources Technology, ASME Transactions, Vol. 111, pp. 16-21 (1989).

31. Characteristics of Diluent-Caused Lifted Gas Jet Flames: A. Prasad, S. Gundavelli and S. R. Gollahalli, Journal of Propulsion and Power, Vol. 7, No. 4, July-Aug. (1991).

32. Diffusion Flames of Gas Jets Issued from Circular and Elliptic Nozzles: S. R. Gollahalli, T. Khanna, and N. Prabhu, Combustion Science and Technology, Vol. 86, pp. 267-288 (1992).

33. Flame Structure and Pollutant Emission Characteristics of a Burning Kerosene Spray with Injection of Diluents, S. R. Gollahalli and R. Puri, Journal of Energy Resources and Technology, ASME Transactions, Vol. 114, pp. 209-215 (1992).

34. Heat Generation in Ferrous Metal Piles: S. R. Gollahalli, J-E. Francis, and D. Varshney, Emerging Energy Technology Symposium Proceedings, ASME, Houston, TX, January 1992. Published in ASME Transactions, Journal of Energy Resources Technology, Vol. 115, pp. 168-176 (1993).

35. Effect of Nozzle Orientation on the Structure and Emissions of Spray Flames: A. V. Madanahalli and S. R. Gollahalli, Emerging Energy Technology Symposium Proceedings, ASME, Houston, TX, January 1992. Published in ASME Transactions, Journal of Energy Resources Technology, Vol. 115, pp. 183-189 (1993).

36. A Laboratory-Scale Experimental Study of In-Situ Combustion Processes: M. Hubbard, D. K. Krehbiel and S. R. Gollahalli, Emerging Technology Symposium, published by ASME, Vol. PD-50, pp. 177-182, 1993. Published in ASME Transactions, Journal of Energy Resources Technology, Vol. 116, pp. 169-174 (1994).

37. Combustion of Microemulsion Sprays: I. Ahmad and S. R. Gollahalli, Paper No. 93-0131, Thirty-first Aerospace Sciences Meeting, Reno, NV, January, 1993. Journal of Propulsion and Power, Vol. 10. pp. 744-745 (1994).

38. Interaction of Multiple Liquid Pool Fires, J. R. Vincent and S. R. Gollahalli, National Heat Transfer Conference, San Diego, CA, published by ASME HTD, Vol. 199, pp. 107-114, 1992. Journal of Energy Resources Technology, Vol. 117, pp. 37-42 (1995).

39. Nitric Oxide Emission From Pulverized Coal Blends: V. Kopparthi and S. R. Gollahalli, ETCE, New Orleans, Emerging Technology Symposium, published by ASME, Vol. PD-57, pp. 107-116, 1994. Journal of Energy Resources Technology, Vol. 117, pp. 228-234, (1995).

40. Burner Wake Stabilized Gas Jet Flames in Cross-Flow: S. R. Gollahalli and B. Nanjundappa, Combustion Science and Technology, Vol. 109, pp. 327-346, (1995).

41. Application of Elliptical Primary-Air Inlet Geometries in the Inshot Burners of Residential Gas Furnaces, P. Kolluri, A. Kamal, and S. R. Gollahalli, Emerging Technology Symposium, published by ASME, Vol. PD-50, pp. 55-64, 1993. Journal of Energy Resources Technology, Vol. 118, pp. 58-64, (1996).

42. Lift-off Characteristics and Flame Base Structure of Coal-Seeded Gas Jet Flames: S. R. Gollahalli, A. Prasad, and S. Gundavelli, Journal of Power and Energy ,U.K. Institution of Mechanical Engineers, Vol. 210, pp. 373-382, (1996).

43. Partially premixed Laminar Gas Flames from Triangular Burners: S. R. Gollahalli and Samir Subba, Paper No. AIAA 96-0285, 34th Aerospace Sciences Meeting, Reno, NV, 1996 Journal of Propulsion and Power , Vol. 13, pp. 226-232, (1997).

44. The Effect of Injection Rate of Gaseous Additives into the Flame on the Characteristics of Liquid Sprays: R. Puri and S. R. Gollahalli, International Symposium on Advanced Energy Conversion System and Related Technologies, Nagoya University, Japan, December 1995, Proceedings pp. 739-746, Journal of Energy Conversion and Management **,** Vol. 38, No. 10-13, pp. 1073-1081, (1997).

45. Turbulence Characteristics in the Flow Field of a Nonpremixed Gas Jet Flame in Cross- Flow: O. Savas, R. F. Huang, , and S. R. Gollahalli, Emerging Energy Technology Symposium, Journal of Energy Resources Technology , Vol. 119, pp. 137-144 (1997).

46. Effects of Heating on Two-Dimensional Mixing Layers: N. Butuk and S. R. Gollahalli, ETCE/Energy Week-1996, Houston, TX, Pennwell Publications, Vol. VII, pp. 135-139, (1996)., Journal of Energy Resources Technology**,** Vol. 119, pp. 180-183 (1997).

47. Jet Flames from Noncircular Burners: S. R. Gollahalli, Sadhana, Journal of Indian Academy of Sciences, Vol. 22, part 3, pp. 369-382, (1997).

48**.** Three-Dimensional Rainbow Schlieren Tomography for Measurements of Temperature in an Inclined heated Air jet: A.K.Agrawal, N.K.Butuk, S.R.Gollahalli, and D.Griffin, Applied Optics, Vol. 37, pp. 479-485, (1998)

49. Application of Rainbow Schlieren Imaging Technique for Concentration Measurements in an Axisymmetric Helium Jet, K. Al-Ammar, A.K.Agrawal, S.R.Gollahalli, and D.Griffin, Experiments in Fluids, Vol. 25, pp. 89-95, (1998).

50. Effect of Flame Lift-off on the Differences Between the Diffusion Flames From Circular and Elliptic Burners: S.R.Gollahalli**,** Journal of Energy Resources Technology**,** Vol. 120, pp. 161-166, (1998).

51. Quantitative Evaluation of Flow Computations by Rainbow Schlieren Deflectometry: A.K. Shenoy, A.K.Agrawal, and S.R.Gollahalli, AIAA Journal**,** Vol. 36, No. 11, pp. 1953-1960, (1998)

52. Extinguishment Characteristics of Liquid Heptane and Gaseous Propane Diffusion Flames: M. Babb, S.R.Gollahalli, and C.M.Sliepcevich, Journal of Propulsion and Power Vol. 15, NO. 2, pp 260-265 (1999)

53. Effects of Buoyancy on Steady Hydrogen Gas-Jet Diffusion Flames: A. K. Agrawal, S. M. Cherry, and S. R.Gollahalli, Combustion Science and Technology, Vol. 140, pp. 51-68, 1998, Printed in May (1999).

54. Combustion Characteristics of Gas Jet Diffusion Flames Enveloped by A Cascade of Venturis: A. Qubbaj and S.R. Gollahalli, Combustion Science and Technology**,** Vol. 143, pp. 1-23(1999)

55. Flow Measurements in a Curved-Wall Annular Contraction: A. K. Agrawal, A. Tinnetti, and S. R. Gollahalli, J. of Engineering for Gas Turbines and Power; Vol. 121 October (1999)

56. Combustion Characteristics of Hydrogen-Hydrocarbon Hybrid Fuels: A. Choudhuri and S. R. Gollahalli , International Journal of Hydrogen Energy, Vol., pp. 1--11 (2000)

57. Laser Induced Fluorescence Measurements of Radical Concentrations in Hydrogen-Hydrocarbon hybrid Gas Fuel Flames, A. R. Choudhuri and S. R. Gollahalli, International Journal of Hydrogen Energy, Vol. 25, pp. 1119-1127 (2000)

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59. Quantitative Measurements of Laminar Hydrogen Gas-Jet Diffusion Flames in 2.2s Drop Tower, K. N. Al Ammar, A.K. Agrawal, and S. R. Gollahalli **;** 28th Symposium (International) on Combustion, Edinburgh, Scotland, August 1-4, 2000 (*Considered as a journal publication b the International Combustion Institute)* Vol. 28, pp. 1997-2004 (2000)

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62. Laser Induced Fluorescence Measurements in Venturi-Cascaded Propane Gas Jet Flames: A. R. Qubbaj and S. R. Gollahalli, J. Energy Resources Technology, Vol. 123, pp. 158-166 (2001)

63. Effect of Inter-Jet Spacing on Burning Multiple Sprays :K. Parvez and S. R. Gollahalli, J. Propulsion and Power Vol. 17, N0. 1, pp. 169-175 (2001)

64. Effects of Elliptic Co-Flow on the Structure of A Turbulent Diffusion Flame, Luna Parveen Sayela, Ahsan R. Choudhuri, and S. R. Gollahalli, J. Propulsion and Power , Volume 18, No. 3, pp. 686-695 May-June (2002)

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66. Application of Rainbow Schlieren Deflectometry to Measure Temperature and Oxygen Concentration in a Laminar Gas-Jet Diffusion Flame, K. N. Alammar, A.K. Agrawal, and S. R. Gollahalli, Experiments in Fluids, Volume 32, pp. 689-691, 2002.

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69. Stability of Hydrogen-Hydrocarbon Blended Fuel Diffusion Flames, A. R. Choudhuri and S. R. Gollahalli, J. Propulsion and Power, Vol. 19, No. 2, March-April, 2003.

70. Effects of Jet Dilution and Co-Flow on Sooting and Emission Characteristics of Hydrocarbon Fuels, S. F. Goh, S. Kusadome, and S. R. Gollahalli, International Journal on Energy for a Clean Environment, Vol. 4, Issue 4, pp- 285-302., 2003.

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2. Prediction of Flame Length in the Wakes of Burning Drops (with T. A. Brzustowski), Eastern States (Comb. Inst.) Section Meeting, Montreal (1973).

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7. Combustion of Water-Fuel Emulsions in Jet Engines, Sixth AIAA Mini-Symposium at Arlington, TX, Feb. 25, 1978. Abstract published.

8. Combustion of Emulsion Drops (with M. L. Rasmussen), Second Symposium on Emulsified Fuels in Combustion, sponsored by U. S. Department of Transportation at Transportation Systems Center, Cambridge, MA, Sept. 12-13, 1978. Abstract and Discussion appeared in Proceedings.

9. Flame Structure of Burning Jet A Fuel and Jet A Fuel-Water Emulsion Sprays (with H. Jahani), First AIAA Mini-Symposium at the University of Oklahoma, Norman, OK, Feb. 24, 1979.

10. Combustion of Sprays of Residual Oil and its Emulsion with Water (with M. Nasrullah), Canadian Combustion Conference, Kingston, Ontario, May 2-3, 1979.

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13. A Comparative Study of the Flame Structure of the Burning Sprays of the Emulsions of Jet A Fuel with Water and Methanol: S. R. Gollahalli and S. H. Javadi, Nineteenth Aerospace Sciences Meeting, St. Louis, MO, AIAA paper 81-0326 1981.

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16. Flame Structure of Diluent Caused Lift-Off Flames (with R. Khosrvanizadeh), AIAA-ASME Mini-Symposium, University of Oklahoma, Feb. 1982.

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19. Ignition Characteristics of Petroleum and Synthetic Liquids (with M. Malychuk), ASME/AIAA Mini-Symposium VII, University of Oklahoma, Feb. 1985.

20. Performance of a Multicylinder Diesel Engine Fuel into No. 2 Diesel Oil and its Emulsions with Methanol (with G. Satyanarayana), ASME/AIAA Mini-Symposium VII, University of Oklahoma, Feb. 1985.

21. Lift Characteristics of Gas Jet Flames (with R. Huang and O. Savas), ASME/AIAA Mini-Symposium VII, University of Oklahoma, Feb. 1985.

22. Flow Visualizations of the Lift Off Region of Gas Jet Flames (with J. Rodriguez and O. Savas), ASME/AIAA Mini-Symposium VII, University of Oklahoma, Feb. 1985.

23. An Assessment of k-e-g and m-l-h Models for the Analysis of an Evaporating Spray (with C. Y. Lin), ASME/AIAA Oklahoma Symposium, University of Oklahoma, February 1990.

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29. Effects of Noncircular Gas Jet Nozzles on the Flame Characteristics of Inshot Gas Burners in Residential Furnaces (with A. Kamal), ASME/AIAA Oklahoma Symposium, University of Oklahoma, February 1993.

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37. Nonsooting Diffusion Flames at Normal and Low Gravity (with A. K. Agrawal and DeVon Griffin), Joint Meeting of the Western and Central States Sections and Mexican Section of the Combustion Institute, San Antonio, TX, April, 1995 (poster session).

38. Combustion of LNG Sprays, (withS. Peters), ASME/AIAA Oklahoma Symposium, University of Tulsa, Tulsa, Ok, February, 1996.

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37. Combustion in Ventiri-Cascade Flames, (with A. R. Qubbaj), ASME/AIAA Oklahoma Symposium Oral Roberts University, Tulsa, Ok, February, 1997.

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40. Hybrid Fuel Gas Laminar Flames, (with A. R.Coudhuri), ASME/AIAA Oklahoma Symposium, Oklahoma Christian College, Oklahoma City, February 1999.

41. Comparison of Natural Gas and Propane In Spark-Ignition Engine, ASME/AIAA Oklahoma Symposium, Oklahoma Christian College, Oklahoma City, February 1999.

42. Gas Jet Break-up in Liquids, (with J. Carrera and R. Parthasarathy), ASME/AIAA Oklahoma Symposium, University of Tulsa, Tulsa, OK, February 2001.

43. Evaporation of Liquid Spray in Porous Media, (with C.Periasamy), XXIII ASME/AIAA Oklahoma Symposium, University of Oklahoma, Norman, OK, March 2003.

44. Flame Characteristics Along the Minor Axis of an Elliptic Fuel Jet in an Elliptic Co-Flow, (with S. Sankara-Chintamony), XXIII ASME/AIAA Oklahoma Symposium, University of Oklahoma, Norman, OK, March 2003.

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51. Laminar Flame Speed Measurements of Synthetic Gas Near Extinction Conditions Using Planar Laser Induced Fluorescence Technique, Norman Love, C. Periasamy, and S. R. Gollahalli, XXVI Oklahoma AIAA/ASME Symposium, University Of Oklahoma, Norman, OK April 15, 2006.

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53. N. D. Love, B. Goepfort, R. N. Parthasarathy, S. R. Gollahalli, "A Quick Method for Characterization of Combustion Properties of Liquid Fuels," Oklahoma AIAA/ASME Symposium XXVII, Tulsa, OK March 31, 2007

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55. P. Barrajas and S. R. Gollahalli,Temperature and Concentration Measurments in Gas Diffusion Flames fromSquare and Triangular Burners, Oklahoma AIAA/ASME Symposium XXVIII, Tulsa,OK, March 8, 2008

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65. V. N. Singh, S. R.Gollahalli, R. N. Parthasarathy: Effects of Equivalence ratio on Emissions and Radiation from Flames of a Biofuel, a Petroleum Fuel, and Their Blends, Oklahoma EPSCoR Annual State Conference, Norman, OK, April 29, 2010