

# Biographical Data of Fokion N. Egolfopoulos

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## I. GENERAL INFORMATION

### I.1 Personal Data:

Name: Fokion N. Egolfopoulos  
Hobbies: Music, Art, History, Sports  
Business Address: Department of Aerospace & Mechanical Engineering  
University of Southern California  
3650 McClintock Avenue, Room 400B  
Los Angeles, CA 90089-1453  
Tel. No. (213) 740-0480  
Fax No. (213) 740-8071  
email: [egolfopo@usc.edu](mailto:egolfopo@usc.edu)

Webpage:

<https://ame.usc.edu/directory/faculty/profile/?lname=Egolfopoulos&fname=Fokion>

[http://poli.usc.edu/~fokionegolfopoulos/CFRL\\_USC\\_Website/F.N.\\_Egolfopoulos\\_Homepage.html](http://poli.usc.edu/~fokionegolfopoulos/CFRL_USC_Website/F.N._Egolfopoulos_Homepage.html)

### I.2 Education

Doctor of Philosophy in Mechanical Engineering  
University of California at Davis, June 1990

Visiting Graduate Student, Department of Mechanical  
and Aerospace Engineering, Princeton University, 1988-90

Master of Science in Mechanical Engineering,  
San Jose State University, December 1984

Diploma in Mechanical Engineering,  
National Technical University of Athens, Greece, February 1981

### I.3 Major Editorial Appointments

1. Editor in Chief, *Combustion and Flame*, 2009 – .
2. Associate Editor, *Combustion and Flame*, 2003 – 2009.
3. Member of the Editorial Board, *Progress in Energy and Combustion Science*, 2015-.

### I.4 Honors/Distinctions/Awards

1. Fellow of the Combustion Institute, since February 2018.
2. Elected member of the Board of Directors of the Combustion Institute, 2014-2020
3. AIAA Associate Fellow, since October 2010.
4. ASME Fellow, since December 2009.

5. *Silver Medal of Combustion*, for an outstanding paper presented at the 22<sup>nd</sup> International Combustion Symposium (1988); awarded in Orléans, France, July 26, 1990.
6. *Northrop Grumman Excellence in Teaching Award*, Andrew and Erna Viterbi School of Engineering, University of Southern California (2007).
7. *Junior Faculty Research Award in Engineering*, University of Southern California (1996).
8. *Fred W. O'Green Assistant Professorship in Engineering*, University of Southern California (1995-1997).
9. *Outstanding Teaching Award in Aerospace and Mechanical Engineering*, University of Southern California (1997).
10. *Outstanding Teaching Award in Mechanical Engineering*, University of Southern California (1996).
11. *Faculty of the Month University-Wide Award*, Mortar Board Senior Honor Society, in recognition of dedication to teaching and to students as well as academic accomplishments, University of Southern California, April 20, 1994.
12. *University of California Regent's Fellowship* as a doctoral student at UC Davis (1988).
13. *IBM Graduate Fellowship* as a doctoral student at UC Davis (1987).

## **I.5 Academic Appointments**

April 2013 –	<i>William L. Leonhard Professor in Engineering,</i> University of Southern California
June 2002 – April 2013	<i>Professor,</i> University of Southern California Department of Aerospace and Mechanical Engineering.
January 1998 – November 2002	<i>Visiting Associate and Lecturer,</i> California Institute of Technology Graduate Aeronautical Laboratories.
April 1997 – June 2002	<i>Associate Professor,</i>

	University of Southern California Department of Aerospace and Mechanical Engineering.
September 1991 - April 1997	<i>Assistant Professor</i> , University of Southern California Department of Mechanical Engineering.
July 5 - July 31, 1998	<i>Selected Participant</i> in the summer research program at the Center of Turbulence Research (CTR) of Stanford University.
June 24 - July 19, 1996	<i>Selected Participant</i> in the summer research program at the Center of Turbulence Research (CTR) of Stanford University.
July 1990 - August 1991	<i>Research Associate</i> , Princeton University, Department of Mechanical and Aerospace Engineering. Supervision of graduate students, experimental and theoretical research on alternative fuels and flame dynamics
September 1988- May 1990	<i>Postgraduate Research Engineer</i> , Princeton University, Department of Mechanical and Aerospace Engineering.

## **I.6 Research Interests**

Combustion Fundamentals at Engine-Relevant Conditions  
 Physical and Chemical Processes in Flames  
 Fuel and Pressure Effects on Turbulent Combustion  
 High-Speed Air-Breathing Propulsion  
 Plasma-Assisted Combustion  
 Conventional and Alternative Fuels  
 Mechanisms of Combustion-Generated Oxides of Nitrogen  
 Heterogeneous Reacting Flows  
 Detailed Modeling of Reacting Flows  
 Laser-Based Experimental Techniques

## **I.7 Consulting**

Consolidated Natural Gas Service Company, Inc., Pittsburgh, Pennsylvania  
"Determination of Flammability Limits of Natural Gas",  
October 1990 - May 1991

Outten Engineering Company, Long Beach, California  
"Thermodynamic Analysis of a Large-Scale Refrigeration Cycle"  
October 1992 - December 1992

Aerochem Research Laboratories, Princeton, New Jersey  
"Modeling of Ionic Processes in Combustion"  
July 1990 - present

Air Liquide, Jouy-en-Josas, Paris, France  
"Modeling of NO<sub>x</sub> in Laminar and Turbulent Diffusion Flames"  
January 1996 - present

Centre Europeen pour le Recherche et la Formation Avancee en Calcul  
Scientifique (CERFACS), Toulouse, France  
"Development of Reduced Kinetic Mechanisms Appropriate  
for Direct Numerical Simulations (DNS) of Turbulent Flames"  
May 1997 – present

PSA Peugeot-Citröen, Paris, France  
"Combustion Kinetics and Fundamental Flame Phenomena"  
September 2001 – present

American Defense International, Inc., Washington D.C.  
Member of the Board of Advisors  
June 2006 – present

## II. RESEARCH EXPERIENCE

### II.1 Grants and Contracts (Total number: 67, Total amount: \$17,133,159)

1. Agency: Lawrence Livermore National Laboratory  
Principal Investigator  
Amount: \$50,000  
Title: Experimental Studies of Flames of Ground Transportation Fuels at Engine Relevant Conditions  
Period: October 2020 – May 2021
2. Agency: National Science Foundation (NSF-EAGER)  
Principal Investigator  
Amount: \$99,592  
Title: A Novel Method for Laminar Burning Speed Measurement at Ultra High Pressures  
Period: September 2020 – August 2022
3. Agency: Air Force Office of Scientific Research (AFOSR-DURIP)  
Principal Investigator  
Amount: \$212,130  
Title: Development of a Scalar Diagnostics Facility for High-Speed Turbulent Reacting Flows of Gaseous and Pre-Vaporized Fuels  
Period: September 2019 – August 2020
4. Agency: Tai Chong Cheang Steamship Co., Hong-Kong  
Principal Investigator  
Amount: \$1,105,317  
Title: Reducing Green House Gases (GHG) and Harmful Emissions while Improving Combustion Efficiency in Marine Diesel Engines  
Period: November 2017 – March 2019
5. Agency: Shell Global Solutions (US) Inc.  
Amount: \$120,806  
Title: Experimental Studies of Flame of Ground Transportation Fuels at Engine Relevant condition  
Period: May 2018 – December 2020
6. Agency: Shell Global Solutions (US) Inc.  
Amount: \$310,875  
Title: Combustion Chemistry of Ground Transportation Fuels  
Period: January 2018 – December 2020
7. Agency: Shell Global Solutions (US) Inc.  
Amount: \$47,050  
Title: Combustion Chemistry of Ground Transportation Fuels  
Period: August 2016 – April 2017
8. Agency: National Aeronautics and Space Administration (NASA)  
Co-Principal Investigator (PI Josette Bellan, JPL)  
Amount: \$40,000  
Title: Studies of Supercritical Fluids under Venus-Ground-Like Conditions  
Period: October 2015 – September 2016

9. Agency: Department of Energy  
Co-Principal Investigator (PI William Carey, ARC Technology, LLC)  
Amount: \$45,000  
Title: ICE Ignition Using Transient Plasma Acceleration  
Period: July 2015 – February 2016
10. Agency: Air Force Office of Scientific Research (AFOSR)  
Principal Investigator  
Amount: \$421,126  
Title: Experimental and Computational Studies of Fundamental Properties of Jet Fuel Flames under Engine-Relevant Conditions  
Period: September 2015 – June 2019
11. Agency: Air Force Office of Scientific Research (AFOSR)  
Principal Investigator  
Amount: \$418,000  
Title: Spectral Energy Transfer in Turbulent Flames: From its Characterization to Subgrid Scale Models  
Period: July 2015 – June 2018
12. Agency: Solar Turbines  
Principal Investigator  
Amount: \$340,000  
Title: Studies of the Combustion Characteristics of Alternative Fuels Under Conditions of Relevance to Stationary Gas Turbines  
Period: January 2015 – December 2018
13. Agency: Air Force Office of Scientific Research (AFOSR-DURIP)  
Principal Investigator  
Amount: \$382,132  
Title: Development of High Resolution Diagnostics Facility for Studying Velocity and Scalar Fields in High-Speed Turbulent Reacting and Non-Reacting Flows  
Period: July 2014 – June 2015
14. Agency: Air Force Office of Scientific Research (AFOSR)  
Co-Principal Investigator (PI Brad Hitch Reaction Systems, LLC)  
Amount: \$40,000  
Title: An Advanced Endothermic Fuel System for Hypersonic Propulsion  
Period: December 2014 – May 2015
15. Agency: Air Force Office of Scientific Research (AFOSR)  
Co-Principal Investigator (PI Hai Wang)  
Amount: \$680,000  
Title: Potential Energy Surfaces, Reaction Kinetics, and Transport Processes  
Period: April 2012 – April 2015
16. Agency: Caterpillar Inc.  
Principal Investigator  
Amount: \$215,000  
Title: High Pressure Studies of Combustion Characteristics of Gaseous Fuels Blends  
Period: February 2012 – July 2013

- 17. Agency:** Solar Turbines  
Principal Investigator  
**Amount:** \$240,000  
**Title:** Studies of the Combustion Characteristics of Alternative Fuels Under Laminar and Turbulent Conditions at High Pressures  
**Period:** January 2012 – December 2014
- 18. Agency:** Office of Naval Research (ONR)  
Principal Investigator  
**Amount:** \$165,000  
**Title:** Experimental and Modeling Studies of Combustion Characteristics of Naval Aviation Fuels  
**Period:** September 2011 – April 2014
- 19. Agency:** United Technologies Research Center (UTRC)  
Principal Investigator  
**Amount:** \$50,000  
**Title:** Experimental and Modeling Studies of Combustion Characteristics of Naval Aviation Fuels  
**Period:** September 2011 – February 2012
- 20. Agency:** Air Force Office of Scientific Research (AFOSR)  
Principal Investigator (co-PI Hai Wang)  
**Amount:** \$692,000  
**Title:** Development of Detailed and Reduced Kinetics Mechanisms for Surrogates of Petroleum-Derived and Synthetic Jet Fuels  
**Period:** September 2011 – August 2014
- 21. Agency:** Caterpillar Inc.  
Principal Investigator  
**Amount:** \$46,393  
**Title:** Experimental Determination of Laminar Flame Speeds of Mixtures of Syngas Fuels with Air  
**Period:** July 2011 – November 2011
- 22. Agency:** Tai Chong Cheang Steamship Co., Hong-Kong  
Principal Investigator  
**Amount:** \$1,881,760  
**Title:** Reducing Green House Gases (GHG) and Harmful Emissions while Improving Combustion Efficiency in Marine Diesel Engines  
**Period:** May 2010 – August 2017
- 23. Agency:** Air Force Office of Scientific Research (AFOSR)  
Principal Investigator (co-PI Hai Wang)  
**Amount:** \$691,823  
**Title:** Experiments and Reaction Models of Fundamental Combustion Properties  
**Period:** April 2010 – April 2013
- 24. Agency:** Department of Energy  
Co-Principal Investigator (PI: Chung K. Law, Princeton University)  
**Amount:** \$965,433  
**Title:** Energy Frontier Research Center for Combustion Science  
**Period:** August 2009 – July 2014



- 25. Agency:** Reaction Design  
Co-Principal Investigator (PI: Hai Wang)  
**Amount:** \$704,367  
**Title:** Fundamental Experiments In Support of Science-Based Soot Model Development  
**Period:** January 2009 – December 2011
- 26. Agency:** Air Force Office of Scientific Research (AFOSR)  
Principal Investigator  
**Amount:** \$130,083  
**Title:** Development of an Advanced Fluid Mechanics Measurement Facility for Flame Studies of Neat Fuels, Jet Fuels, and their Surrogates  
**Period:** May 2008 – April 2009
- 27. Agency:** Viterbi School of Engineering (VSoE), USC  
Co-Principal Investigator (co-PIs: Jessen, Zhang, Sahimi, Qin, Tsotsis)  
**Amount:** \$10,000  
**Title:** VSoE Innovative Research Fund on Carbon Management  
**Period:** March 2008 – February 2009
- 28. Agency:** Air Force Office of Scientific Research (AFOSR)  
Principal Investigator (co-PI Hai Wang)  
**Amount:** \$675,000  
**Title:** Development of Detailed and Reduced Kinetics Mechanisms for Surrogates of Petroleum-Derived and Synthetic Jet Fuels  
**Period:** March 2008 – February 2011
- 29. Agency:** Solar Turbines  
Principal Investigator  
**Amount:** \$210,000  
**Title:** Experimental and Modeling Studies of the Combustion Characteristics of Alternative Fuels  
**Period:** August 2008 – July 2011
- 30. Agency:** Defense Threat Reduction Agency (DTRA)  
Co-Principal Investigator (PI Theo Tsotsis)  
**Amount:** \$422,696  
**Title:** Membrane Contactor Reactors for Environmental Applications  
**Period:** July 2007 – June 2010
- 31. Agency:** U.S. Department of Transportation/METRANS  
Principal Investigator (co-PI Theo Tsotsis)  
**Amount:** \$130,621  
**Title:** Combustion and Emission Characteristics of Biofuels Used for Transportation  
**Period:** October 2007 – September 2008
- 32. Agency:** National Aeronautics and Space Administration (NASA)  
Principal Investigator (co-PI Theo Tsotsis)  
**Amount:** \$239,753  
**Title:** Experimental and Modeling Studies of the Combustion Characteristics of Conventional and Alternative Jet Fuels  
**Period:** January 2007 – December 2008

- 33. Agency:** Department of Energy  
Principal Investigator (co-PI Theo Tsotsis)  
**Amount:** \$240,000  
**Title:** Experimental and Modeling Studies of the Characteristics of Liquid Biofuels for Enhanced Combustion  
**Period:** January 2007 – December 2008
- 34. Agency:** Air Force Office of Scientific Research (AFOSR)  
Principal Investigator (co-PI Hai Wang)  
**Amount:** \$660,000  
**Title:** Experiments and Reaction Models of Fundamental Combustion Properties  
**Period:** November 2006 – February 2010
- 35. Agency:** University of Southern California  
Principal Investigator (co-PI Theo Tsotsis)  
**Amount:** \$25,000  
**Title:** Combustion and Emission Characteristics of Biofuels  
**Period:** August 2006 – July 2007
- 36. Agency:** Air Force Office of Scientific Research (AFOSR)  
Principal Investigator (co-PI Hai Wang)  
**Amount:** \$279,320  
**Title:** Kinetic Mechanisms for CFD – Phase II  
**Period:** May 2006 – June 2008
- 37. Agency:** Air Force Office of Scientific Research (AFOSR)  
Principal Investigator (supplement for jet-fuel research)  
**Amount:** \$53,194  
**Title:** Experimental and Detailed Numerical Studies of Fundamental Flame Properties of Gaseous and Liquid Fuels  
**Period:** April 2006 – December 2006
- 38. Agency:** SIEMENS  
co-Principal Investigator (PI Hai Wang)  
**Amount:** \$50,000  
**Title:** Semi-conducting Metal-Oxide Micro-sensors for Rapid and Continuous Emission Monitoring  
**Period:** October 2005 – September 2006
- 39. Agency:** Air Force Office of Scientific Research (AFOSR)  
Principal Investigator (co-PI Hai Wang)  
**Amount:** \$33,000  
**Title:** Kinetic Mechanisms for CFD – Phase I  
**Period:** July 2005 – January 2006
- 40. Agency:** Air Force Office of Scientific Research (AFOSR) - Equipment  
Principal Investigator  
**Amount:** \$99,266  
**Title:** Development of an Integrated Advanced Combustion Diagnostics System  
**Period:** May 2005 – April 2006

41. Agency: PSA Peugeot-Citröen, France  
Principal Investigator  
Amount: \$40,931  
Title: Fundamental Combustion Studies of Practical Fuels  
Period: April 2004- December 2005
42. Agency: Air Force Office of Scientific Research (AFOSR)  
Principal Investigator (co-PI Dan Erwin)  
Amount: \$257,213  
Title: Experimental and Detailed Numerical Studies of Fundamental Flame Properties of Gaseous and Liquid Fuels  
Period: December 2003 - November 2006
43. Agency: California Energy Commission  
Co-Principal Investigator (co-PI Theo Tsotsis)  
Amount: \$75,000  
Title: Novel Approaches to Ignition Enhancement of Natural Gas under Engine-Like Conditions  
Period: April 2003 – March 2004
44. Agency: National Aeronautics and Space Administration (NASA)  
Principal Investigator (co-PI Geoff Spedding)  
Amount: \$516,905  
Title: Quantitative Studies on the Propagation and Extinction of Near-Limit Flames Under Normal- and Micro-gravity  
Period: October 2003 - September 2007
45. Agency: Air Force Office of Scientific Research (AFOSR)  
Principal Investigator (co-PI Charles Campbell)  
Amount: \$33,000  
Title: Non-Equilibrium Pulsed Plasma Ignitor  
Period: October 1 2002 – June 30 2003
46. Agency: Air Force Office of Scientific Research (AFOSR) - Equipment  
Principal Investigator  
Amount: \$167,960  
Title: Advanced Digital Image Acquisition and Gas Chromatograph/Mass Spectrometer System for Combustion Research  
Period: April 2002 – December 2002
47. Agency: Southern California Gas Company  
Principal Investigator (co-PI Theo Tsotsis)  
Amount: \$85,000  
Title: Novel Concepts for Ultra Low Emission and High Efficiency Natural Gas Combustion  
Period: January 2003- August 2004
48. Agency: PSA Peugeot-Citröen, France  
Principal Investigator  
Amount: \$25,000  
Title: Fundamental Studies on the Auto-ignition of Practical Fuels  
Period: October 2002- September 2003

- 49. Agency:** Southern California Gas Company  
Principal Investigator (co-PI Theo Tsotsis)  
**Amount:** \$85,000  
**Title:** An Experimental Study on the Emissions Efficiency Performance of a new Generation Stirling Engine  
**Period:** January 2002- June 2003
- 50. Agency:** Air Force Office of Scientific Research (AFOSR)  
Principal Investigator  
**Amount:** \$154,370  
**Title:** Experimental and Detailed Numerical Studies of Fundamental Flame Properties of Gaseous and Liquid Fuels  
**Period:** December 2001 - November 2003
- 51. Agency:** California Energy Commission  
Co-Principal Investigator (PI Theo Tsotsis)  
**Amount:** \$75,000  
**Title:** OTM Aided Oxygen Enhanced Combustion  
**Period:** August 2001 - January 2003
- 52. Agency:** National Aeronautics and Space Administration (NASA),  
Principal Investigator (co-PI Charles Campbell)  
**Amount:** \$456,000  
**Title:** Detailed Studies on the Structure and Dynamics of Reacting Dusty Flows at Normal- and Micro-Gravity  
**Period:** November 2000 - October 2004
- 53. Agency:** California Energy Commission  
Principal Investigator (co-PI Theo Tsotsis)  
**Amount:** \$75,000  
**Title:** The Use of Solid Oxide Membranes in Power Generation Applications  
**Period:** August 2000 - January 2002
- 54. Agency:** Southern California Gas Company  
Principal Investigator (co-PI Theo Tsotsis)  
**Amount:** \$100,000  
**Title:** Novel Concepts for Ultra Low Emission and High Efficiency Natural Gas Combustion  
**Period:** January 2000 - March 2001
- 55. Agency:** IBM  
Principal Investigator  
**Amount:** \$85,000 in equipment (RS6000 Workstation)  
**Title:** Modeling of Multidimensional Reacting Flows  
**Period:** January 2000 -
- 56. Agency:** CIEE, Principal Investigator  
Principal Investigator (co-PI Theo Tsotsis)  
**Amount:** \$175,000  
**Title:** Combustion of Methane in Oxygen-Enriched Environment  
**Period:** April 1999 - July 2000

- 57.** Agency: National Aeronautics and Space Administration (NASA),  
Principal Investigator (co-PI Charles Geoff Spedding)  
Amount: \$410,000  
Title: Quantitative Studies on the Propagation and Extinction of  
Near-Limit Flames Under Normal- and Micro-gravity  
Period: December 1998 - November 2002
- 58.** Agency: National Aeronautics and Space Administration (NASA),  
Principal Investigator (co-PI Charles Campbell)  
Amount: \$372,584  
Title: Detailed Studies on the Structure and Dynamics of Reacting Dusty  
Flows at Normal- and Micro-Gravity  
Period: June 1996 - May 2000
- 59.** Agency: Southern California Gas Company  
Principal Investigator (co-PI Theo Tsotsis)  
Amount: \$80,000  
Title: Detailed Studies of Methane Reforming and  
its Applications to Power Generation  
Period: May 1998 - April 1999
- 60.** Agency: CIEE, Principal Investigator  
Principal Investigator (co-PI Theo Tsotsis)  
Amount: \$60,000  
Title: Landfill Gas as an Alternative Fuel for Pollution Prevention  
and Energy Production: Detailed Studies on its Combustion  
Characteristics  
Period: July 1997 - June 1998
- 61.** Agency: TRW, Principal Investigator  
Principal Investigator  
Amount: \$20,000  
Title: Multi-dimensional Modeling of Reacting Flows  
Period: June 1996 - May 1997
- 62.** Agency: National Aeronautics and Space Administration (NASA),  
Principal Investigator  
Amount: \$330,000  
Title: Aerodynamic, Unsteady, Kinetic and Heat Loss Effects on the  
Dynamics and Structure of Weakly-Burning Flames  
in Microgravity  
Period: June 1994 - November 1998
- 63.** Agency: University of Southern California  
Principal Investigator  
Amount: \$20,000  
Title: Fred O'Green Assistant Professorship in Engineering  
Period: July 1995 - June 1997
- 64.** Agency: National Science Foundation (NSF), Research Initiation Award  
Principal Investigator  
Amount: \$90,000  
Title: Studies on the Dynamics of Steady/Unsteady, Laminar,  
Stretched Flames  
Period: September 1992 - August 1995

- 65.** Agency: Engineering Foundation, Engineering Research Initiation Grant  
Principal Investigator  
Amount: \$23,000  
Title: Detailed Studies on Catalytic Ignition  
Period: September 1992 - August 1993 (not accepted because of conflict with the NSF Research Initiation Award)
- 66.** Agency: University of Southern California, James H. Zumberge Research Innovation Fund  
Principal Investigator  
Amount: \$20,000  
Title: Experimental and Detailed Numerical Studies of the Extinction of Laminar Stretched Flames Under Reduced and Elevated Pressures  
Period: July 1992 - June 1993
- 67.** Agency: University of Southern California  
Principal Investigator  
Amount: \$80,000  
Title: Charles Lee Powell Foundation Initiation Fund  
Period: September 1991 - August 1992

## II.2 Graduate Theses Supervision (Major Advisor)

### Master's Theses

1. Jeffrey A. Langille, "Detailed Studies of Flame Ignition," Master's Thesis, University of Southern California, Graduated in May 2005.
2. Gary Schwab, "Processing and Combustion of Biodiesel", Master's Thesis, Graduated in May 2008.
3. Adam Sifounakis, "Combustion Studies of Jet Fuels and their Surrogates", Graduated in May 2009.

### Doctoral Theses

1. Hai Zhang, "Heat Losses Effects on the Structure and Dynamics of Strained Laminar Flames," Ph.D. Thesis, University of Southern California. Graduated in May of 1999. **(Committee Chair)**
2. Christine M. Vagelopoulos, "An Experimental and Numerical Study on the Stability and Propagation of Laminar Premixed Flames," Ph.D. Thesis, University of Southern California. Graduated in May of 1999. **(Committee Chair)**
3. Wenjun Qin, "Detailed Studies on the Combustion of Landfill Gases," Ph.D. Thesis, University of Southern California Graduated in May of 2000. **(Committee Co-Chair)**
4. J.-Y. Ren, "Structure and Dynamics of Lean-Burning of Natural Gas," Ph.D. Thesis, University of Southern California. Graduated in December 2001. **(Committee Chair)**
5. M. Gurhan Andac, "On the Structure and Dynamics of Dusty Reacting Flow in Normal- and Micro-gravity," Ph.D. Thesis, University of Southern California. Graduated in December 2001. **(Committee Chair)**
6. Adam T. Holley, "Studies on the Flame Dynamics and Kinetics of Alcohols and Liquid Hydrocarbon Fuels", Ph.D. Thesis, University of Southern California. Graduated in December 2008. **(Committee Chair)**
7. Yang Lee Wang, "An Experimental and Numerical Investigation of Fundamental Combustion Properties of Biofuels," Ph.D. Thesis, University of Southern California. Graduated in May of 2011. **(Committee Chair)**
8. Chunsheng Ji, "Flame Studies of Conventional and Alternative Jet Fuels and their Surrogates," Ph.D. Thesis, University of Southern California. Graduated in May of 2011. **(Committee Chair)**
9. Peter Surendran Veloo, "Studies of Combustion Characteristics of Alcohols, Aldehydes, and Ketones," Ph.D. Thesis, University of Southern California. Graduated in May of 2011. **(Committee Chair)**

10. Qiyao Feng, "An Experimental and Modeling Study of NO<sub>x</sub> and Soot Emissions from Biodiesel and its Surrogates," Ph.D. Thesis, University of Southern California. Graduated in December of 2011. **(Committee Co-Chair)**
11. Mirmohammadyous Motamedhashemi, "A Flow-through Membrane Reactor for Destruction of a Chemical Warfare Simulant," Ph.D. Thesis, University of Southern California. Graduated in October of 2012. **(Committee Co-Chair)**
12. Ning Liu, "Flame Ignition Studies of Conventional and Alternative Jet Fuels and Surrogate Components," Ph.D. Thesis, University of Southern California. Graduated in January of 2013. **(Committee Chair)**
13. Nitin Nair, "Novel Methods for Landfill Gas and Biogas Clean-Up," Ph.D. Thesis, University of Southern California. Graduated in June of 2013. **(Committee Co-Chair)**
14. Okjoo Park, "Experimental and Kinetic Modeling Studies of Flames of H<sub>2</sub>, CO, and C<sub>1</sub>-C<sub>4</sub> Hydrocarbons," Ph.D. Thesis, University of Southern California. Graduated in September of 2013. **(Committee Chair)**
15. Mir Aydin Jalali, "Studies of Siloxane Decomposition in Biomethane Combustion," Ph.D. Thesis, University of Southern California. Graduated in December of 2013. **(Committee Chair)**
16. Majid Monji, "The Purification of Contaminated Air Streams Via Reactive Separation Techniques," Ph.D. Thesis, University of Southern California. Graduated in May of 2015. **(Committee Co-Chair)**
17. Runhua Zhao, "Studies of Combustion Characteristics of Heavy Hydrocarbons in Simple and Complex Flows," Ph.D. Thesis, University of Southern California. Graduated in May of 2016. **(Committee Chair)**
18. Jagannath (Jagan) Jayachandran, "Modeling Investigations of Fundamental Combustion Phenomena in Low-Dimensional Configurations," Ph.D. Thesis, University of Southern California. Graduated in May of 2016. **(Committee Chair)**
19. Vyaas Gururajan, "A Theoretical Investigation in Multi-Dimensional and Non-Thermal Plasma Effects on Combustion Processes and Pollutant Remediation," Ph.D. Thesis, University of Southern California. Graduated in May of 2016. **(Committee Chair)**
20. Robert (Roe) Burrell, "Studies of Methane Counterflow Flames at Low Pressures," Ph.D. Thesis, University of Southern California. Graduated in May of 2017. **(Committee Chair)**
21. Dong Joon Lee, "Studies of Atmospheric and Subatmospheric Combustion Characteristics of Neat and Practical Fuels," Ph.D. Thesis, University of Southern California. Graduated in May of 2017. **(Committee Chair)**



22. Tailai Ye, “Determination of Laminar Flame Speeds Under Engine Relevant Conditions,” Ph.D. Thesis, University of Southern California. Graduated in May of 2017. **(Committee Chair)**
23. Jennifer Smolke, “Investigation of Fuel Effects on Turbulent Premixed Jet Flames,” Ph.D. Thesis, University of Southern California. Graduated in December of 2017. **(Committee Chair)**
24. Alireza Divsalar, “Lab-scale and Field-scale Study of Siloxane Contaminants Removal from Landfill Gas,” Ph.D. Thesis, University of Southern California. Graduated in December of 2017. **(Committee Co-Chair)**
25. Christodoulos Xiouris, “Experimental Studies of High Pressure Combustion Using Spherically Expanding Flames,” Ph.D. Thesis, University of Southern California. Graduated in December of 2017. **(Committee Chair)**
26. Hugo Burbano, “Pressure Effects on C<sub>1</sub>-C<sub>2</sub> Laminar Flames,” Ph.D. Thesis, University of Southern California. Graduated in December of 2017. **(Committee Chair)**
27. Abtin Ansari, “Accuracy and Feasibility of Combustion Studies Under Engine Relevant Conditions,” Ph.D. Thesis, University of Southern California. Graduated in June of 2018. **(Committee Chair)**
28. Laurel Paxton, “Investigations of Fuel and Hydrodynamic Effects in Highly Turbulent Premixed Jet Flames,” Ph.D. Thesis, University of Southern California. Graduated in October of 2019. **(Committee Chair)**
29. Ashkan Movaghar, “Confined Spherically Expanding Flame Method for Measuring Laminar Flame Speeds Under Engine Relevant Conditions: Revisiting Assumptions and Application to the Flames of Propulsion and Foundational Fuels,” Ph.D. Thesis, University of Southern California. Graduated in June of 2021. **(Committee Chair)**
30. Robert Lawson, “End-gas autoignition investigations using confined spherically expanding flames,” Ph.D. Thesis, University of Southern California. Graduated in June of 2021. **(Committee Chair)**
31. Steven Luna, since September 2017. **(Committee Chair)**
32. Hiba Kahouli, since September 2018. **(Committee Chair)**
33. Aaron Goldfogel, since September 2019. **(Committee Chair)**
34. Anguo Hu, since September 2019. **(Committee Chair)**
35. Weiye Wang since September 2020. **(Committee Chair)**
36. Kyu Ho Van since January 2021. **(Committee Chair)**

## II.3 Graduate Theses Committee Member

### Doctoral Students

<b>Student Name</b>	<b>Department</b>	<b>Status</b>
1. Thalys Karagiannis	Aerospace Engineering	Graduated
2. Matthew Hanson	Aerospace Engineering	Graduated
3. Marty Bradley	Aerospace Engineering	Graduated
4. Savvas Vasileiadis	Chemical Engineering	Graduated
5. Zoe Ziaka	Chemical Engineering	Graduated
6. Mike Norman	Aerospace Engineering	Graduated
7. Narayanan Raju	Aerospace Engineering	Graduated
8. Bogdan Marcu	Aerospace Engineering	Graduated
9. Chengzhen Jin	Mechanical Engineering	Graduated
10. Khurram Rahman	Mechanical Engineering	Graduated
11. Jeff Pobst	Aerospace Engineering	Graduated
12. Hany Ramez Nassef	Aerospace Engineering	Graduated
13. Frank Chandler	Aerospace Engineering	Graduated
14. Mike Voss	Chemistry Department	Graduated
15. Dave Lim	Aerospace Engineering	Graduated
16. Mohammed Abid	Aerospace Engineering	Graduated
17. Meng Zhang	Mechanical Engineering	Graduated
18. Amer Anabtavi	Aerospace Engineering	Graduated
19. Linton. Honda	Mechanical Engineering	Graduated
20. Persefoni Kechagia	Chemical Engineering	Graduated
21. Romain Lauvergne	Ecole Central, Paris, France	Graduated
22. I. Yucel Akkutlu	Chemical Engineering	Graduated
23. Spyridon Diamantis	Computer Science	Graduated
24. Chuan Lu	Chemical Engineering	Graduated
25. Diego R. Arcas	Aerospace & Mechanical Engineering	Graduated
26. Youngjin Son	Aerospace & Mechanical Engineering	Graduated
27. Sungho Lee	Aerospace & Mechanical Engineering	Graduated
28. Sakon Klongboonjit	Aerospace & Mechanical Engineering	Graduated

29. Jeongmin Ahn	Aerospace & Mechanical Engineering	Graduated
30. Channarong Asavatesanupap	Aerospace & Mechanical Engineering	Graduated
31. David Clayton	Aerospace & Mechanical Engineering	Graduated
32. Xiaoqing You	Aerospace & Mechanical Engineering	Graduated
33. Hyun Tae Hwang	Chemical Engineering	Graduated
34. Aamir Abid	Aerospace & Mechanical Engineering	Graduated
35. David Sheen	Aerospace & Mechanical Engineering	Graduated
36. Zhenshuo Liu	Chemical Engineering	Graduated
37. Chien-Hua Chen	Aerospace & Mechanical Engineering	Graduated
38. Enoch Dames	Aerospace & Mechanical Engineering	Graduated
39. Jiang Yu	Chemical Engineering	Graduated
40. Joaquin Camacho	Aerospace & Mechanical Engineering	Graduated
41. Mohammad Alhamli	Aerospace & Mechanical Engineering	Graduated
42. Ashkan Garshasbi	Chemical Engineering	Graduated
43. Alireza Divsalar	Chemical Engineering	Graduated
44. Amanda Baxter	Chemistry	Graduated
45. Ashkan Davani	Aerospace & Mechanical Engineering	Graduated
46. Eugene Kong	Aerospace & Mechanical Engineering	Graduated
47. Mingyuan Cao	Chemical Engineering	Graduated
48. Brandie Rhodes	Aerospace & Mechanical Engineering	Graduated
49. Si Shen	Aerospace & Mechanical Engineering	Graduated
50. Jakrapop Wongwiwat	Aerospace & Mechanical Engineering	Graduated
51. Sanjana Kerketta	Electrical Engineering – Electrophysics	Graduated
52. Xiangyu Gao	Aerospace & Mechanical Engineering	Graduated

#### **II.4 Postdoctoral Fellows Advisor**

1. Bikau Shukla, July 2010 – May 2016
2. Kian Eisazadeh-Far, August 2010 – July 2013
3. Bret Windom, May 2011 – May 2012
4. Francesco Carbone, August 2012 – April 2014
5. Shyam Menon, September 2013 – November 2014

6. Jagannath Jayachandran, May 2016 – May 2018
7. Vyaas Gururajan, May 2016 – December 2018

## II.5 Visiting Research Scholars Advisor

1. Chun Zou, March 2012 – June 2013

## III. TEACHING EXPERIENCE

### III.1 Graduate Courses Taught

#### University of Southern California

ME 512a	Advanced Thermodynamics Spring 1994, 1995
ME 513	Principles of Combustion Spring 1992, 1993, 1994, 1995, 1996, 1999, 2000, 2001, 2002, 2003
AME 513	Principles of Combustion Spring 2004, 2005, 2006, 2007, 2008, 2009, 2010 Fall 2011, 2013, 2014, 2015, 2016, 2018
AME 513a	Fundamentals and Applications of Combustion Fall 2019, 2020, 2021
AME 514	Applications of Combustion Spring 2018, 2019
ME 526	Engineering Analytical Methods Summer 1994, 1999, 2003
AME 526	Engineering Analytical Methods Summer 2004, 2020, 2021 Fall 2005

#### III.1.1 Graduate Courses Teaching Evaluations Summary

Course	Semester	Students #	Instructor (5.0 max)	Course (5.0 max)
ME 513.....	Spring 1992.....	12.....	4.78.....	4.44
ME 513.....	Spring 1993.....	8.....	4.14.....	3.86
ME 512a.....	Spring 1994.....	4.....	5.00.....	5.00

ME 513.....	Spring 1994.....	5.....	5.00.....	4.80
ME 526.....	Summer 1994.....	3.....	4.50.....	4.50
ME 526.....	Summer 1994.....	12.....	4.80.....	4.20
ME 513.....	Spring 1995.....	13.....	4.85.....	4.62
ME 512a.....	Spring 1995.....	4.....	5.00.....	5.00
ME 513.....	Spring 1996.....	12.....	5.00.....	4.73
ME 513.....	Spring 1999.....	8.....	4.86.....	4.71
ME 526.....	Summer 1999.....	13.....	4.63.....	4.00
ME 513.....	Spring 2000.....	7.....	4.57.....	4.57
ME 513.....	Spring 2001.....	13.....	4.45.....	4.18
ME 513.....	Spring 2002.....	17.....	4.47.....	4.43
ME 513.....	Spring 2003.....	24.....	4.70.....	4.74
AME 513.....	Spring 2004.....	25.....	4.42.....	4.67
AME 513.....	Spring 2005.....	20.....	4.64.....	4.57
AME 513.....	Spring 2005 (DEN)	6.....	5.00.....	5.00
AME 526.....	Fall 2005.....	32.....	4.33.....	4.17
AME 526.....	Fall 2005 (DEN).....	28.....	3.89.....	3.56
AME 513.....	Spring 2006.....	21.....	4.79.....	4.47
AME 513.....	Spring 2006 (DEN)..	13.....	3.75.....	3.50
AME 513.....	Spring 2007.....	27.....	4.50.....	4.56
AME 513.....	Spring 2007 (DEN)..	10.....	3.80.....	3.80
AME 513.....	Spring 2008.....	19.....	4.79.....	4.50
AME 513.....	Spring 2008 (DEN)..	16.....	4.00.....	3.85
AME 513.....	Spring 2009.....	19.....	4.58.....	4.53
AME 513.....	Spring 2009 (DEN)..	8.....	4.67.....	4.00
AME 513.....	Spring 2010.....	27.....	4.84.....	4.47
AME 513.....	Spring 2010 (DEN)..	17.....	3.75.....	3.25
AME 513.....	Fall 2011.....	34.....	4.48.....	4.43
AME 513.....	Fall 2011 (DEN)..	19.....	3.75.....	4.00
AME 513.....	Fall 2013.....	30.....	4.57.....	4.27
AME 513.....	Fall 2013 (DEN)..	11.....	3.71.....	3.86
AME 513.....	Fall 2014.....	28.....	4.55.....	N/A
AME 513.....	Fall 2014 (DEN)..	9.....	4.50.....	N/A
AME 513.....	Fall 2015.....	32.....	4.68.....	4.50
AME 513.....	Fall 2015 (DEN)..	12.....	4.00.....	4.50
AME 513.....	Fall 2016.....	11.....	4.50.....	4.50
AME 513.....	Fall 2016 (DEN)..	6.....	4.00.....	4.00
AME 514.....	Spring 2018.....	7.....	5.00.....	5.00

AME 513..... Fall 2018.....	12.....	4.91.....	4.55
AME 513..... Fall 2018 (DEN)..	6.....	3.60.....	3.40
AME 514..... Spring 2019.....	7.....	4.71.....	4.71
AME 514..... Spring 2019 (DEN)..	1.....	N/A.....	N/A
AME 513a..... Fall 2019.....	17.....	4.47.....	4.40
AME 513a..... Fall 2019 (DEN)..	7.....	4.00.....	3.60
AME 513a..... Fall 2020 (29044)	10.....	4.75.....	4.50
AME 513a..... Fall 2020 (28873)	7.....	4.00.....	3.50
AME 513a..... Fall 2020 (28794)	8.....	3.60.....	3.20
AME 513a..... Fall 2021 (29044)	4.....	3.00.....	3.33
AME 513a..... Fall 2021 (28873)	7.....	5.00.....	5.00

### **Graduate Aeronautical Laboratories, California Institute of Technology**

AE240            Fundamentals of Combustion  
Winter and Spring quarters of 2000, 2001

### **III.2 Undergraduate Courses Taught, University of Southern California**

ME 310            Engineering Thermodynamics  
Fall 1991, 1992, 1993, 1994, 1995, 1996, 1998, 1999, 2000,  
2001, 2002  
Spring 1996, 1997

AME 310            Engineering Thermodynamics  
Fall 2003, 2005, 2007, 2008, 2009, 2010, 2011  
Spring 2005, 2006, 2008, 2010, 2013, 2014, 2015, 2016  
Summer 2005

AME 312            Engineering Thermodynamics II  
Spring 2019

AME 414            Engineering Thermodynamics II  
Spring 2020, 2021

AME 331            Heat Transfer  
Spring 2007

ME 436            Energy and Propulsion  
Fall 1997

ME 430            Thermal Systems Design  
Fall 1998, 1999, 2000, 2002

AME 430            Thermal Systems Design  
Fall 2003

#### **III.2.1 Undergraduate Courses Teaching Evaluations Summary**

<b>Course</b>	<b>Semester</b>	<b>Students #</b>	<b>Instructor (5.0 max)</b>	<b>Course (5.0 max)</b>
ME 310.....	Fall 1991.....	35.....	3.96.....	3.52
ME 310.....	Fall 1992.....	42.....	3.29.....	3.13
ME 310.....	Fall 1992.....	58.....	3.63.....	3.53
ME 310.....	Fall 1993.....	73.....	4.66.....	4.19
ME 310.....	Fall 1994.....	60.....	4.50.....	4.28
ME 310.....	Fall 1995.....	24.....	4.62.....	4.08
ME 310.....	Spring 1996.....	46.....	4.63.....	4.10
ME 310.....	Fall 1996.....	29.....	4.40.....	4.10
ME 310.....	Spring 1997.....	50.....	4.61.....	4.32
ME 436.....	Fall 1997.....	19.....	4.50.....	3.86
ME 310.....	Fall 1998.....	22.....	4.56.....	4.31
ME 430.....	Fall 1998.....	12.....	4.27.....	4.00
ME 310.....	Fall 1999.....	41.....	4.42.....	4.05
ME 430.....	Fall 1999.....	30.....	4.00.....	3.70
ME 310.....	Fall 2000.....	41.....	4.68.....	4.32
ME 430.....	Fall 2000.....	13.....	4.55.....	4.45
ME 310.....	Fall 2001.....	27.....	4.83.....	4.39
ME 310.....	Fall 2002.....	37.....	4.81.....	4.62
ME 430.....	Fall 2002.....	5.....	4.75.....	4.50
AME 310.....	Fall 2003.....	34.....	4.56.....	4.19
AME 430.....	Fall 2003.....	7.....	4.83.....	4.17
AME 310.....	Spring 2005.....	56.....	4.69.....	4.38
AME 310.....	Fall 2005.....	73.....	4.44.....	4.17
AME 310.....	Spring 2006.....	48.....	4.60.....	4.27
AME 331.....	Spring 2007.....	87.....	4.43.....	4.04
AME 310.....	Fall 2007.....	44.....	4.54.....	4.14
AME 310.....	Spring 2008.....	29.....	4.71.....	4.42
AME 310.....	Fall 2008.....	45.....	4.68.....	4.61
AME 310.....	Spring 2009.....	49.....	4.79.....	4.62
AME 310.....	Fall 2009.....	47.....	4.77.....	4.50
AME 310.....	Spring 2010.....	47.....	4.86.....	4.62
AME 310.....	Fall 2010.....	48.....	4.67.....	4.42
AME 310.....	Fall 2011.....	51.....	4.73.....	4.53
AME 310.....	Spring 2013.....	50.....	4.49.....	4.41
AME 310.....	Spring 2014.....	48.....	4.62.....	4.31
AME 310.....	Spring 2015.....	48.....	4.62.....	4.34

AME 310.....	Spring 2016.....	48.....	4.21.....	4.07
AME 310.....	Spring 2017.....	50.....	4.48.....	4.30
AME 312.....	Spring 2019.....	11.....	4.90.....	4.60
AME 414.....	Spring 2020.....	9.....	4.86.....	4.71
AME 414.....	Spring 2021.....	10.....	5.00.....	5.00

## IV. PROFESSIONAL ACTIVITIES

### IV.1 Other Editorial Activities

Subcommittee Member:	<i>Symposium (International) on Combustion</i> 1990 - present.
Publication Committee Member:	<i>25<sup>th</sup> Symposium (International) on Combustion</i> , 1994.
Publication Committee Member:	<i>26<sup>th</sup> Symposium (International) on Combustion</i> , 1996.
Publication Committee Member:	<i>27<sup>th</sup> Symposium (International) on Combustion</i> , 1998.
Publication Committee Member:	<i>28<sup>th</sup> Symposium (International) on Combustion</i> , 2000.
Colloquium Co-Chair “Laminar Flames”	<i>29<sup>th</sup> Symposium (International) on Combustion (2001-2002)</i> .
Silver Medal Committee Member	<i>29<sup>th</sup> Symposium (International) on Combustion</i> , 2002.
Colloquium Co-Chair “Laminar Flames”	<i>30<sup>th</sup> Symposium (International) on Combustion (2003-2004)</i> .
Program Chair	<i>Western States Section of the Combustion Institute</i> , 2003 – 2005.
Gold Medal Committee Member	<i>36<sup>th</sup> Symposium (International) on Combustion</i> , 2016.

### IV.2 Conference Organizational Activities

Chairperson:	Technical Meeting, <i>Eastern Section of The Combustion Institute</i> , Session B-5 "Coal and Coke Combustion, and Combustion Processing," Orlando, Florida, December 5, 1990.
Chairperson:	Joint Technical Meeting, <i>Central and Eastern States Sections of The Combustion Institute</i> , Session A-5 "Ignition," New Orleans, Louisiana, March 17, 1993.
Chairperson:	<i>25<sup>th</sup> Symposium (International) on Combustion</i> Session 08 C "Laminar Flames" Irvine, California, August 4, 1994.
Chairperson:	<i>26<sup>th</sup> Symposium (International) on Combustion</i> Session 34 "Laminar Flames" Naples, Italy, August 2, 1996.



Conference Organizer: Fall Technical Meeting,  
*Western States Section/Combustion Institute*  
University of Southern California  
Los Angeles, California, October 28-29, 1996.

Chairperson: *27<sup>th</sup> Symposium (International) on Combustion*  
Session 4F "Laminar Flames"  
Boulder, Colorado, August 6, 1998.

Chairperson: *28<sup>th</sup> Symposium (International) on Combustion*  
Session 1D "Combustion Dynamics"  
Edinburgh, Scotland, July 31, 2000.

Conference Organizer: 2001 Contractors' Meeting in Chemical Propulsion  
Army Research Office/Air Force Office of Scientific Research  
University of Southern California,  
Los Angeles, California, June 18-19, 2001.

Workshop Organizer: Workshop on Surrogate Fuels Development  
Army Research Office/Air Force Office of Scientific Research /  
NSF /NIST  
University of Southern California,  
Los Angeles, California, February 13, 2006.

Conference Organizer: Multi Agency Coordination Committee for Combustion  
Research (MACCCR) Fuels Research Review  
University of Southern California  
Los Angeles, California, September 15-17, 2009.

Chairperson: *33<sup>rd</sup> Symposium (International) on Combustion*  
Session "Laminar Flames"  
Beijing, China, August 4, 2010.

Chairperson: *7<sup>th</sup> National Combustion Meeting*  
Session "Laminar Flames"  
Georgia Institute of Technology  
Atlanta, Georgia, March 21, 2011

Chairperson: Fall Technical Meeting,  
*Western States Section/Combustion Institute*  
Session "Laminar Flames"  
University of California, Riverside  
Riverside, California, October 17, 2011

Chairperson: *34<sup>th</sup> Symposium (International) on Combustion*  
Session "Laminar Flames"  
Warsaw, Poland, July 30, 2012.

Chairperson: Spring Technical Meeting,  
*Western States Section/Combustion Institute*  
Session "Turbulent Flames/Detonations"  
California Institute of Technology  
Pasadena, California, March 24, 2014

Chairperson: *35<sup>th</sup> Symposium (International) on Combustion*  
Session "Laminar Flames"  
San Francisco, California, August 4, 2014.

- Chairperson: *Ninth Mediterranean Combustion Symposium*  
Session "Laminar Flames"  
Rhodes, Greece, June 11, 2015.
- Chairperson: *36<sup>th</sup> Symposium (International) on Combustion*  
Session "Laminar Flames,"  
Seoul, Korea, August 1, 2016.
- Chairperson: *38<sup>th</sup> Symposium (International) on Combustion* (virtual)  
Session "Turbulent Flames"  
Adelaide, Australia, January 27, 2021.

### **IV.3 Professional Societies Membership and Service**

*The Combustion Institute*, member of the 2016 Board of Directors Selection Committee (2015-2016)

*The Combustion Institute*, member of the 2016 Gold Medal Selection Committee (2015-2016)

*The Combustion Institute*, member of the Board of Directors (2014-2020)

*AIAA*, member (2007 - present)

*Western States Section/The Combustion Institute*, member of the Executive Committee (1997-2005)

*ASME* member (1992 - present)

*The Combustion Institute*, member (1989 - present)

*Tau Beta Pi*, member (1984 - present)

*The Hellenic Society of Engineers*, member (1981 - present)

*The Hellenic Society of Mechanical Engineers*, member (1981 - present)

### **IV.4 Reviewing Service**

American Institute of Aeronautics and Astronautics

American Society of Mechanical Engineers

Army Research Office (ARO)

California Energy Commission

Combustion and Flame

Combustion Science and Technology

Combustion Theory and Modeling

Computer Physics Communications

Department of Defense

Department of Energy

Experimental Thermal and Fluid Sciences

Experiments in Fluids

Flow, Turbulence and Combustion

International Journal of Chemical Kinetics

Journal of Aerospace Engineering

Journal of Fluid Mechanics

Journal of the Air and Waste Management Association

National Academies of Sciences, Engineering, and Medicine

National Aeronautics and Space Administration (NASA) – Research Concept Panel (SCR)

National Science Foundation (NSF)

Physics of Fluids

Qatar National Research Fund  
Symposium (International) on Combustion  
Symposium (International) on Transport Phenomena  
University of California Energy Institute

#### **IV.5 University-Related Service**

Member of merit review committees for 1998, 1999, 2000, and 2005 calendar years,  
Department of Aerospace and Mechanical Engineering

Member of merit review committees for 1992, 1993, and 1995 calendar years, Department of  
Mechanical Engineering

Seminar coordinator for the 1993-1994 academic year,  
Department of Mechanical Engineering

Screening exam coordinator September 1994-96  
Department of Mechanical Engineering

Member of Strategic Planning Committee 1998-1999,  
School of Engineering

Member of Strategic Planning Committee 2002,  
Department of Aerospace and Mechanical Engineering

Member of Appointments, Promotions, and Tenure (APT) Committee 2002-2004,  
School of Engineering

Member of Chairman Search Committee 2002-2003,  
Department of Aerospace and Mechanical Engineering

Member of a joint APT/EFC Committee for reviewing merit review procedures of the School of  
Engineering, 2004

Chairman of Departmental Committee for reviewing merit review procedures of the Department  
of Aerospace and Mechanical Engineering, 2004

Member of merit review committees for 2004 calendar year,  
Department of Aerospace and Mechanical Engineering, 2005

Member of Appointments, Promotions, and Tenure (APT) Committee, Spring 2006,  
School of Engineering

Member of Dept. committee for overseeing Faculty position applications  
Department of Aerospace and Mechanical Engineering, 2006 - date

Screening exam coordinator January 2006 – December 2010  
Department of Aerospace and Mechanical Engineering

Member of the Engineering Faculty Council (EFC) Research Committee 2006 - 2008

Member of a VSoE Subcommittee for Teaching Load Best Practices 2006 - date

Member of the EFC Research Committee 2006 - 2008

Member of a VSoE energy strategy committee 2007 – to date

Member of the USC Provost's Future Fuels and Energy Committee 2006 – to date

Member of the USC Provost's sub-committee for hiring in the areas of future fuels and energy  
2006 – to date

University Committee on Appointment, Promotion, and Tenure (UCAPT), Natural  
Sciences/Engineering Panel, University of Southern California

Member of the Committee: 2006 – 2010

Chairman of the Committee: 2010 – 2013

Chairman of the committee to re-examine the Ph.D. screening exam, Department of Aerospace  
and Mechanical Engineering

September 2010 – to date

Member of the VSoE Research Committee

September 2010 – 2012

Member of the AME Faculty Search Committee

September 2013 – 2014

Member of the AME Chair Search Committee

September 2013 – 2014

Member of the VSoE Teaching Award Committee

April 2014

Member of the AME Chair Search Committee

September 2014 – 2015

Member of AME Annual Merit Review Committee, Spring 2015

Member of AME Space Committee, Spring 2015

Member of VSoE Transformative Faculty Committee, 2015-2016

Member of AME Space Committee, Spring 2016

Member of AME Space Committee, Spring 2017

Adviser, Undergraduate Research Education Connect, University of Southern California,  
September 2016 –

Member of AME Faculty-Student Group Committee, Fall 2018-

Member of AME Faculty Awards Committee, Fall 2018-

#### **IV.6 Media Appearances/Interviews**

1. Interview, “ERT Television” Athens, Greece, November 16, 2016
2. Interview, “ERT Radio” Athens, Greece, November 15, 2016
3. Interview, “Dimokratia News” newspaper, Athens, Greece, August 27, 2012
4. Interview, “Espresso News” newspaper, Athens, Greece, July 24, 2011
5. Interview, “Epikaira” newspaper/magazine, Athens, Greece, December 31, 2010
6. Interview with ABC Channel 7 on the San Bruno natural gas explosion, September 10, 2010
7. Interview, “Kathimerini” newspaper, Athens, Greece, November 22, 2009
8. Modern Marvels: Fire, History Channel, January 11, 2006
9. Interview with Channel 13 on wildfires, October 15, 2001
10. Interviews with Los Angeles Times and USA Today on explosions, November 2000
11. Invited guest on FM 92.3 in Los Angeles to express views on global warming and air pollution, November 2, 1997.

## V. INVITED SCHOLARLY PRESENTATIONS

### Summary Number: 69

- [1] "An Experimental and Computational Study on the Propagation and Kinetic Structure of Laminar Premixed Flames," Invited Lecture, Department of Mechanical Engineering, *Massachusetts Institute of Technology*, Cambridge, Massachusetts, May 8, 1990.
- [2] "Chain Mechanisms in Laminar Flame Propagation and the Prediction of Fundamental Flammability Limits," Invited Lecture, Department of Mechanical Engineering, *The University of Texas at Austin*, Austin, Texas, November 5, 1990.
- [3] "Chain Mechanisms in Laminar Flame Propagation and the Prediction of Fundamental Flammability Limits," Invited Lecture, Department of Mechanical and Industrial Engineering, *University of Illinois at Urbana-Champaign*, Urbana, Illinois, February 11, 1991.
- [4] "Chain Mechanisms in Laminar Flame Propagation and the Prediction of Fundamental Flammability Limits," Invited Lecture, Department of Mechanical Engineering, *The Johns Hopkins University*, Baltimore, Maryland, February 26, 1991.
- [5] "Chain Mechanisms in Laminar Flame Propagation and the Prediction of Fundamental Flammability Limits," Invited Lecture, Department of Mechanical Engineering, *University of California at Berkeley*, Berkeley, California, March 11, 1991.
- [6] "Chain Mechanisms in Laminar Flame Propagation and the Prediction of Fundamental Flammability Limits," Invited Lecture, Department of Mechanical Engineering, *University of Southern California*, Los Angeles, California, April 1, 1991.
- [7] "Chain Mechanisms in Laminar Flame Propagation and the Prediction of Fundamental Flammability Limits," Invited Lecture, Graduate Aeronautical Laboratories, *California Institute of Technology*, Pasadena, California, May 21, 1991.
- [8] "A Unified Chain-Loss Theory of Fundamental Flammability Limits," Invited Lecture, Department of Mechanical Engineering, *San Diego State University*, San Diego, California, April 2, 1992.
- [9] "A Unified Chain-Loss Theory of Fundamental Flammability Limits," Department of Mechanical Engineering, Invited Lecture, Department of Mechanical Engineering, *Massachusetts Institute of Technology*, Cambridge, Massachusetts, February 11, 1993.
- [10] "On the Structure and Dynamics of Unsteady, Strained, Flames," Invited Lecture, Department of Mechanical Engineering, *California Institute of Technology*, Pasadena, California, November 30, 1993.
- [11] "On the Structure and Dynamics of Unsteady, Counterflowing, Strained Diffusion Flames," Invited Lecture, Department of Mechanical Engineering, *University of Southern California*, Los Angeles, California, February 24, 1994.
- [12] "Combustion-Generated Nitrogen Oxides: Sources, Science, and Control," Invited Lecture, Center for Research on Environmental Sciences, Policy, and Engineering

- Member Retreat, *University of Southern California*, Los Angeles, California, April 13, 1994
- [13] "On the Structure and Dynamics of Unsteady, Counterflowing, Strained Diffusion Flames," Invited Lecture, Department of Mechanical Engineering, *University of California at Irvine*, Irvine, California, April 22, 1994.
- [14] "On the Structure and Dynamics of Unsteady, Counterflowing, Strained Flames," Invited Lecture, Department of Chemical Engineering, *University of California at Los Angeles*, Los Angeles, California, January 27, 1995.
- [15] "Fundamentals of Air Pollution," Invited Lecture, Department of Biological Sciences, *University of Southern California*, Los Angeles, California, April 8, 1996.
- [16] "On the Structure and Dynamics of Unsteady, Counterflowing, Strained Flames," Invited Lecture, Department of Aerospace Engineering, *University of Southern California*, Los Angeles, California, April 24, 1996.
- [17] "On the Effects of Detailed and Reduced Kinetics on Combustion," Invited Lecture, Center for Turbulence Research, *Stanford University*, Stanford, California, July 19, 1996.
- [18] "Chemistry and Combustion," Invited Lecture, Centre Europeen pour la Recherche et la Formation Avancee en Calcul Scientifique (CERFACS), Toulouse, France, June 4, 1997.
- [19] "Construction of Kinetic Schemes Appropriate for DNS," Invited Lecture, Institut Francais du Petrole (IFP), Paris, France, June 10, 1997.
- [20] "Non-Premixed Hydrocarbon Ignition at High Strain Rates," Invited Lecture, Graduate Aeronautical Laboratories, *California Institute of Technology*, Pasadena, California, May 18, 1998.
- [21] "Strained Laminar Flames: Fundamentals and Relevance to Turbulent Combustion," Invited Lecture, Graduate Aeronautical Laboratories, *California Institute of Technology*, Pasadena, California, October 2, 1998.
- [22] "Detailed Studies Under Normal- and Micro-Gravity," Invited Lecture, Eighth International Space Conference of Pacific-basin Societies, Xi'an, China, June 26, 1999.
- [23] "A Comparative Study of Ethylene Kinetics in Flames," Invited Lecture, Graduate Aeronautical Laboratories, *California Institute of Technology*, Pasadena, California, May 23, 2000.
- [24] "Validation of Detailed and Reduced Chemical Kinetics Schemes in Flames and the Current Status of Flame Database," Invited Lecture, AFOSR Hydrocarbon Combustion Kinetics Workshop Sandia National Laboratories, Livermore CA, March 19, 2001
- [25] "Combustion Fundamentals and Relevance to Applications: The Examples of Flame Propagation and Unsteady Flamelet Combustion," Invited Lecture, Eidgenössische Technische Hochschule Zürich (ETHZ), Zürich, Switzerland, April 27, 2001.

- [26] "Chemical Kinetics and Combustion Phenomena," Invited Lecture, PSA Peugeot-Citroën, Paris, France, September 11, 2001.
- [27] "Structure and Dynamics of Reacting Dusty Flows in Normal- and Micro-Gravity," Invited Lecture, Department of Mechanical Engineering, *Yale University*, New Haven, Connecticut, February 4, 2002.
- [28] "Particles and Flames: Dynamic, Thermal, and Chemical Interactions," Invited Lecture, Department of Mechanical and Aerospace Engineering, *University of California, San Diego*, San Diego, California, November 17, 2003.
- [29] "Physical and Chemical Processes in Homogeneous and Heterogeneous Reacting Flows," Invited Lecture, Department of Thermal Engineering, *Tsinghua University*, Beijing, China, April 18, 2006.
- [30] "Physical and Chemical Processes in Homogeneous and Heterogeneous Reacting Flows," Invited Lecture, Membrane Science & Technology Research Center, *Nanjing University of Technology*, Nanjing, China, April 21, 2006.
- [31] "Flame Research of Jet and Related Fuels," Invited Lecture, Workshop on Future and Alternative Fuels for Propulsion System Design, *JANNAF Meeting*, San Diego, California, December 5, 2006.
- [32] "Combustion Characteristics of Practical Fuels," Invited Lecture, Department of Thermal Engineering, *Tsinghua University*, Beijing, China, October 6, 2008.
- [33] "Combustion Characteristics of Practical Fuels," Invited Lecture, *Solar Turbines Inc.*, San Diego, California, November 3, 2008.
- [34] "Fundamentals of Combustion Science in Transient Plasma Assisted Combustion in Marine Engines," Invited Lecture, *Hong Kong Ship Owners Association*, Hong Kong, October 29, 2010.
- [35] "Recent Advances in the Science of Practical Fuel Combustion: Experiments and Theory," Invited Lecture, *King Abdullah University of Science and Technology (KAUST)*, Saudi Arabia, February 13, 2011.
- [36] "Conventional and Alternative Fuels Utilization," Invited Lecture, 5<sup>th</sup> THU-USC Joint Faculty Forum on Green and Smart for a Sustainable Future, *Tsinghua University*, Beijing, China, May 24, 2011.
- [37] "Laminar Flame Propagation: Theory, Experiments, and Modeling," Invited Lecture, Department of Thermal Engineering, *Tsinghua University*, Beijing, China, May 25, 2011.
- [38] "Recent Advances in Liquid Fuels Research," Invited Lecture, Department of Thermal Engineering, *Tsinghua University*, Beijing, China, May 26, 2011.
- [39] "Combustion Science and its Relevance to the Energy Needs of the 21<sup>st</sup> Century," Indo US Collaboration for Engineering Education (IUCEE), Webinar, October 31, 2011.



- [40] "Fundamental Aspects of Transient Plasma Assisted Combustion in Marine Engines," *California Maritime Academy*, Vallejo, CA, November 14, 2011.
- [41] "Fundamental Aspects of Transient Plasma Assisted Combustion in Marine Engines," Invited Lecture, *The Society of Port Engineers Los Angeles/Long Beach*, San Pedro, CA, February 2, 2012.
- [42] "Fundamentals of Combustion Science in Transient Plasma Assisted Combustion in Marine Engines," Invited Lecture, *China Maritime Expo*, Hong Kong, March 1, 2012.
- [43] "Combustion Science and its Relevance to the Energy Needs of the 21<sup>st</sup> Century," Keynote Lecture, *The 22<sup>nd</sup> National Conference on Combustion Science and Technology*, Kao Yuan University, Kaohsiung Science Park, Taiwan, April 21, 2012.
- [44] "Laminar Flame Speed: What do we Measure? What do we Report? What do we Learn? How do we Use it?," Invited Lecture, *Workshop on New Perspectives for Laminar Burning Velocity*, Rouen, France, May 21, 2012.
- [45] "Laminar Flames and Combustion Chemistry," Invited Lecture, *National Meeting of the American Chemical Society, Combustion Symposium*, New Orleans, LA, April 7, 2013.
- [46] "Laminar Flames and Combustion Chemistry; Current Status and Challenges," Plenary Lecture, *2<sup>nd</sup> Topical Workshop: Kinetic Studies Using Laminar Flames, European Cooperation in Science and Technology*, Lund University, Lund Sweden, June 25, 2013.
- [47] "Advances and Challenges in Laminar Flame Experiments and Implications for Combustion Chemistry," Invited Lecture, Department of Mechanical Engineering, *Eindhoven University of Technology*, Eindhoven, Netherlands, April 7, 2014.
- [48] "Fuel Chemistry Effects on Turbulent Premixed Flames," Invited Lecture, 14<sup>th</sup> International Workshop on Premixed Turbulent Flames, San Francisco, August 1, 2014.
- [49] "Effects of Fuel Composition and Chemistry on Turbulent Combustion at High Re Numbers," Invited Lecture, Department of Thermal Engineering, *Tsinghua University*, Beijing, China, November 24, 2014.
- [50] "Advances and Challenges in Laminar Flame Experiments and Implications for Combustion Chemistry," Invited Lecture, Department of Energy and Power, *Huazhong University of Science and Technology of China*, Wuhan, China, November 26, 2014.
- [51] "Advances and Challenges in Laminar Flame Experiments and Implications for Combustion Chemistry," Invited Lecture, Fire Research Laboratory, *University of Science and Technology of China*, Hefei, China, November 27, 2014.
- [52] "Laminar Burning Velocity: Towards Eliminating Apparatus Dependence and Approaching Engine-Like Conditions," Invited Lecture, *Workshop on Laminar Burning Velocity*, Rouen, France, March 24, 2015.
- [53] "Revisiting Fluid-Flame Interactions in Simple and Complex Flows: Implications for Modeling of Reacting Flows under Realistic Conditions," Invited Lecture, Department

of Mechanical and Aerospace Engineering, *University of California*, San Diego, California, April 6, 2015.

- [54] "Review of Laminar Flame Experiments," Invited Lecture, *Workshop on Jet/Rocket Fuel Kinetics Experiments and Model Development*, Arlington, Virginia, May 1, 2015.
- [55] "Revisiting Fluid-Flame Interactions in Simple and Complex Flows," Invited Lecture, Department of Mechanical Engineering, *Stanford University*, Stanford, California, May 6, 2015.
- [56] "Revisiting Fluid-Flame Interactions in Simple and Complex Flows: Implications for Modeling of Reacting Flows under Realistic Conditions," Invited Lecture, Department of Mechanical, *Massachusetts Institute of Technology*, Cambridge, Massachusetts, May 13, 2015.
- [57] "Energy form Renewable Sources," Invited Lecture, Greek Economic Forum, *Harvard University*, Cambridge, Massachusetts, May 14, 2015.
- [58] "Revisiting Fluid-Flame Interactions in Simple and Complex Flows: Implications for Modeling of Reacting Flows under Realistic Conditions," Plenary Lecture, *Ninth Mediterranean Combustion Symposium*, Rhodes, Greece, June 9, 2015.
- [59] "What Constitutes Publication and How to Prepare a Viable Manuscript in Science and Technology," Invited Lecture, *Tenth Asian Pacific Conference on Combustion*, Beijing, China, July 19, 2015.
- [60] "Investigating Combustion Chemistry in Flames: Advances, Uncertainties, and Relevance to Applications," Invited Topical Review Lecture, *Tenth Asian Pacific Conference on Combustion*, Beijing, China, July 21, 2015.
- [61] "Transport-Chemistry Interactions in Simple and Complex Flows: Reassessing Assumptions, Practices, and Relevance to Applications," Plenary Lecture, Fall Technical Meeting, *Western States Section/Combustion Institute*, Brigham Young University, Provo, Utah, October 5, 2015.
- [62] "Fuel and Hydrodynamic Effects on Turbulent Premixed Jet Flames," Invited Lecture, 15<sup>th</sup> International Workshop on Premixed Turbulent Flames, Seoul, Korea, July 29, 2016.
- [63] "Fundamental Combustion Research under Application-Relevant Conditions Current State, Needs, and Recent Developments," Invited Lecture, Department of Engineering, *Cambridge University*, Cambridge, United Kingdom, September 6, 2016.
- [64] "Understanding Reacting Flows under Engine-Relevant Conditions: Historical Trends and Some Recent Developments," Invited Lecture, School of Aerospace Engineering, *Georgia Institute of Technology*, Atlanta, Georgia, October 5, 2017.
- [65] "Combustion Fundamentals at Engine-Relevant Conditions," Invited Lecture, Department of Mechanical and Aerospace Engineering, *University of California*, San Diego, California, May 21, 2018.

- [66] "Fuel and Pressure Effects on Turbulent Premixed Flames," Invited Lecture, 16<sup>th</sup> International Workshop on Premixed Turbulent Flames, Dublin, Ireland, July 27, 2018.
- [67] "Combustion Fundamentals at Engine-Relevant Conditions," Invited Lecture, College of Aerospace Engineering, *Texas A&M University*, College Station, Texas, October 18, 2018.
- [68] "100+ Years of Combustion Research and Relevance to Applications," Invited Lecture, Combustion Webinar Series, *Georgia Institute of Technology*, Atlanta, Georgia, October 10, 2020.
- [69] "100+ Years of Combustion Research and Relevance to Applications and Next Frontiers," Invited Webinar Lecture, *University of Patras*, Greece, May 18, 2021.

## VI. CONTRIBUTED SCHOLARLY PRESENTATIONS

### Summary Number: 95

- [1] "Experimental and Numerical Determination of Laminar Flame Speeds of Hydrocarbon/Air Mixtures Under Elevated Pressures," Technical Meeting, *Eastern Section of the Combustion Institute*, San Juan, Puerto Rico, December 17, 1986.
- [2] "Experimental and Numerical Determination of Laminar Flame Speeds of Methane/(Ar, N<sub>2</sub>, CO<sub>2</sub>)-Air Mixtures as Function of Stoichiometry, Pressure, and Flame Temperature," *22<sup>nd</sup> Symposium (International) on Combustion*, Seattle, Washington, August 18, 1988.
- [3] "A Kinetic Criterion of Flammability Limits: Limits of (C-H-O-Br)/Inert Systems," Technical Meeting, *Eastern Section of the Combustion Institute*, Clearwater Beach, Florida, December 6, 1988.
- [4] "Chain Mechanisms in the Overall Reaction Orders in Laminar Flame Propagation," Technical Meeting, *Central Section of the Combustion Institute*, Dearborn, Michigan, May 1, 1989.
- [5] "An Experimental and Computational Study of the Burning Rates of Ultra-Lean to Moderately-Rich H<sub>2</sub>/O<sub>2</sub>/N<sub>2</sub> Laminar Flames with Pressure Variations," *23<sup>rd</sup> Symposium (International) on Combustion*, Orléans, France, July 23, 1990.
- [6] "Experimental and Numerical Determination of Laminar Flame Speeds: Mixtures of C<sub>2</sub>-Hydrocarbons with Oxygen and Nitrogen," *23<sup>rd</sup> Symposium (International) on Combustion*, Orléans, France, July 26, 1990.
- [7] "A Comprehensive Study on Methanol Kinetics in Freely-Propagating and Burner-Stabilized Flames, Flow and Static Reactors, and Shock Tubes," 1991 Spring Meeting, *Western States Section/The Combustion Institute*, Boulder, Colorado, March 19, 1991.

- [8] "Determination of Lean Flammability Limits of Methane/Air Mixtures," 1991 Fall Meeting, *Western States Section/Combustion Institute*, University of California at Los Angeles, Los Angeles, California, October 14, 1991.
- [9] "A Study on Ethanol Oxidation Kinetics in Laminar Premixed Flames, Flow Reactors, and Shock Tubes," *24<sup>th</sup> Symposium (International) on Combustion*, Sydney, Australia, July 10, 1992.
- [10] "A Computational Study on the Determination of Laminar Flame Speeds with the Counterflow, Twin-Flame Technique," Joint Technical Meeting, *Central and Eastern States Sections of The Combustion Institute*, New Orleans, Louisiana, March 16, 1993.
- [11] "On the Structure and Dynamics of Unsteady, Counterflowing, Strained Diffusion Flames," Technical Meeting, *Western States Section/Combustion Institute*, SRI International, Menlo Park, California, October 19, 1993.
- [12] "On the Structure and Dynamics of Unsteady, Counterflowing, Strained Diffusion Flames," Technical Meeting, *Eastern Section of the Combustion Institute*, Princeton University, Princeton, New Jersey, October 26 1993.
- [13] "Dynamics and Structure of Unsteady, Strained, Laminar, Premixed Flames *25<sup>th</sup> Symposium (International) on Combustion*, Irvine, California, August 1, 1994.
- [14] "Geometric and Radiation Effects on Steady and Unsteady Strained Laminar Flames," *25<sup>th</sup> Symposium (International) on Combustion*, Irvine, California, August 2, 1994.
- [15] "Further Considerations on the Determination of Laminar Flame Speeds With the Counterflow Twin Flame Technique," *25<sup>th</sup> Symposium (International) on Combustion*, Irvine, California, August 2, 1994.
- [16] "Wall Effects on the Propagation and Extinction of Strained, Laminar, Premixed Flames," Technical Meeting, *Eastern Section of the Combustion Institute*, Clearwater Beach, Florida, December 5, 1994.
- [17] "Flame Dynamics and Nitrogen Kinetics," Technical Meeting, *Eastern Section of the Combustion Institute*, Clearwater Beach, Florida, December 6, 1994.
- [18] "Aerodynamic, Unsteady, Kinetic and Heat Loss Effects on the Dynamics and Structure of Weakly-Burning Flames," *Third International Microgravity Combustion Workshop*, Cleveland, Ohio, April 13, 1995.
- [19] "Wall Effects on the Propagation and Extinction of Strained, Laminar, Premixed Flames," Technical Meeting, *Western States Section/Combustion Institute*, Stanford University, Palo Alto, California, October 31, 1995.
- [20] "A Detailed Study on the Interaction Between Carbon Surfaces and Strained Laminar Premixed Methane/Air Flames," Technical Meeting, *Western States Section/Combustion Institute*, Arizona State University, Tempe, Arizona, March 11, 1996.

- [21] "On Strained Flames with Hypergolic Reactants: The  $H_2/NO/F_2$  System in High-Speed, Supersonic and Subsonic, Turbulent Shear-Layer Combustion," *26<sup>th</sup> Symposium (International) on Combustion*, Naples, Italy, July 29, 1996.
- [22] "On the Dynamics and Thermal Response of Particles in Strained Reacting Flows," Technical Meeting, *Western States Section/Combustion Institute*, University of Southern California, Los Angeles, California, October 28, 1996.
- [23] "Dynamics and Structure of Weakly-Strained Flames at Normal and Microgravity," *Fourth International Microgravity Combustion Workshop*, Cleveland, Ohio, May 20, 1997.
- [24] "Detailed Studies on the Structure and Dynamics of Reacting Dusty Flows at Normal and Microgravity," *Fourth International Microgravity Combustion Workshop*, Cleveland, Ohio, May 21, 1997.
- [25] "Integrated Combustion Chemistry (ICC) for Direct Numerical Simulations: Application to Premixed and Non-Premixed Combustion," Technical Meeting, *Western States Section/Combustion Institute*, Diamond Bar, California, October 23, 1997.
- [26] "Non-Premixed Hydrocarbon Ignition at High Strain Rates," *27<sup>th</sup> Symposium (International) on Combustion*, Boulder, Colorado, August 7, 1998.
- [27] "Dynamics and Structure of Weakly-Strained Flames at Normal and Microgravity," *Fifth International Microgravity Combustion Workshop*, Cleveland, Ohio, May 18, 1999.
- [28] "A Detailed Numerical Simulation of Reacting Stagnation Flows," Technical Meeting, *Western States Section/Combustion Institute*, University of California at Irvine, Irvine, CA, October 25-, 1999.
- [29] "An Unsteady Flamelet Model for Non-Premixed Combustion," Technical Meeting, *Western States Section/Combustion Institute*, University of California at Irvine, Irvine, CA, October 25, 1999.
- [30] "Effects of Additives on the Non-premixed Ignition of Ethylene in Air," Technical Meeting, *Western States Section/Combustion Institute*, University of California at Irvine, Irvine, CA, October 26, 1999.
- [31] "Dynamics and Structure of Dusty Reacting Flows: Inert Particles in Strained, Laminar, Premixed Flames," 2nd Meeting *of the Greek Section of the Combustion Institute*, Themi, Thessaloniki, Greece, November 26, 1999.
- [32] "Direct Experimental Determination of Laminar Flame Speeds," 2nd Meeting *of the Greek Section of the Combustion Institute*, Themi, Thessaloniki, Greece, November 26, 1999.

- [33] "On the Structure and Dynamics of Unsteady Counterflowing, Strained Flames," 2nd Meeting of the Greek Section of the Combustion Institute, Thermi, Thessaloniki, Greece, November 26, 1999.
- [34] "Near-Limit Premixed Flame Extinction in Normal- and Micro-Gravity and the Concept of Flammability," 2nd Meeting of the Greek Section of the Combustion Institute, Thermi, Thessaloniki, Greece, November 27, 1999.
- [35] "Non-Premixed Hydrocarbon Ignition at SCRAMJET Conditions," 2nd Meeting of the Greek Section of the Combustion Institute, Thermi, Thessaloniki, Greece, November 27, 1999.
- [36] "A Detailed Study on the Combustion Stability and Pollutant Emissions of Landfill Gas," 2nd Meeting of the Greek Section of the Combustion Institute, Thermi, Thessaloniki, Greece, November 27, 1999.
- [37] "Geometric and Radiation Effects on Steady and Unsteady Strained Laminar Flames," 2nd Meeting of the Greek Section of the Combustion Institute, Thermi, Thessaloniki, Greece, November 27, 1999.
- [38] "Oxygen Composition Modulation Effects on Flame Propagation and NO<sub>x</sub> Formation in Methane-Air Premixed Flames," 28<sup>th</sup> Symposium (International) on Combustion, University of Edinburgh, Edinburgh, Scotland, August 1, 2000.
- [39] "Extinction of Near-Limit Premixed Flames in Microgravity," 28<sup>th</sup> Symposium (International) on Combustion, University of Edinburgh, Edinburgh, Scotland, August 3, 2000.
- [40] "A Detailed Numerical Study on the Ignition of Strained Flames by Inert Particles," II International Workshop on Combustion Modeling, Veracruz, Mexico, February 22, 2001.
- [41] "Direct Numerical Simulation of Stagnation-Flow Premixed Flames: Transition from Planar to Bunsen Flames," II International Workshop on Combustion Modeling, Veracruz, Mexico, February 23, 2001.
- [42] "A Comparative Study of Ethylene Kinetics in Premixed and Non-Premixed Flames," II International Workshop on Combustion Modeling, Veracruz, Mexico, February 23, 2001.
- [43] "Direct Numerical Simulation of Stagnation-Flow Premixed Flames: Transition from Planar to Bunsen Flames," Second Joint Meeting of the US Sections of the Combustion Institute, Oakland, California, March 27, 2001.
- [44] "A Comparative Study of Ethylene Kinetics in Premixed and Non-Premixed Flames," Second Joint Meeting of the US Sections of the Combustion Institute, Oakland, California, March 28, 2001.

- [45] "Quantitative Studies on the Propagation and Extinction of Near-Limit Premixed Flames Under Normal- and Micro-Gravity," Sixth International Microgravity Combustion Workshop, Cleveland, Ohio, May 22, 2001.
- [46] "Hot Particle Ignition of Methane Flames," by F. N. Egolfopoulos, Spring Technical Meeting, *Western States Section/Combustion Institute*, University of California San Diego, San Diego, CA, March 25, 2002.
- [47] "Oxygen-Lancing Effects in Methane-Air Premixed Flames: Pollutant Aspects," Spring Technical Meeting, *Western States Section/Combustion Institute*, University of California San Diego, San Diego, CA, March 26, 2002.
- [48] "Measurement of Laminar Flame Speeds through Digital Particle Image Velocimetry: Mixtures of Methane and Ethane with Hydrogen, Oxygen, Nitrogen, and Helium," Spring Technical Meeting, *Western States Section/Combustion Institute*, University of California San Diego, San Diego, CA, March 26, 2002.
- [49] "Experimental and Detailed Numerical Studies of Fundamental Flame Properties of Gaseous and Liquid Fuels," 2002 Contractors Meeting in Chemical Propulsion, *Army Research Office and Air Force Office of Scientific Research*, Dayton, Ohio, June 14, 2002.
- [50] "Measurement of Laminar Flame Speeds through Digital Particle Image Velocimetry: Mixtures of Methane and Ethane with Hydrogen, Oxygen, Nitrogen, and Helium," 30<sup>th</sup> Symposium (International) on Combustion, Hokkaido University, Sapporo, Japan, July 22, 2002.
- [51] "Hot Particle Ignition of Methane Flames," 30<sup>th</sup> Symposium (International) on Combustion, Hokkaido University, Sapporo, Japan, July 25, 2002.
- [52] "Particle Effects on the Extinction and Ignition of Flames in Normal- and Micro-Gravity," Seventh International Microgravity Combustion Workshop, Cleveland, Ohio, June 3, 2003.
- [53] "Quantitative Studies on the Propagation and Extinction of Near-Limit Premixed Flames Under Normal- and Micro-Gravity," Seventh International Microgravity Combustion Workshop, Cleveland, Ohio, June 4, 2003.
- [54] "Experimental and Detailed Numerical Studies of Fundamental Flame Properties of Gaseous and Liquid Fuels," 2004 Contractors Meeting in Chemical Propulsion, *Army Research Office and Air Force Office of Scientific Research*, Tucson, Arizona, June 7, 2004.
- [55] "Pressure and Temperature Effects on the Flammability Limits of CH<sub>4</sub>/air and C<sub>3</sub>H<sub>8</sub>/air Flames," Fall Technical Meeting, *Western States Section/Combustion Institute*, Stanford University, California, California, October 17, 2005.
- [56] "Experimental and Detailed Numerical Studies of Fundamental Flame Properties of Gaseous and Liquid Fuels," 2004 Contractors Meeting in Chemical Propulsion, *Army*

*Research Office and Air Force Office of Scientific Research*, Washington, D.C., June 13, 2006.

- [57] "An Assessment of the Lean Flammability Limits of CH<sub>4</sub>/Air and C<sub>3</sub>H<sub>8</sub>/Air Mixtures at Engine-Like Conditions," 31<sup>st</sup> Symposium (International) on Combustion, University of Heidelberg, Heidelberg, Germany, August 8, 2006.
- [58] "Propagation and Extinction of Mixtures of Air with *n*-Dodecane, JP-7, and JP-8 Jet Fuels," 36<sup>th</sup> AIAA Aerospace Science Meeting and Exhibit, Reno, Nevada, January 8, 2008.
- [59] "Propagation and Extinction of Premixed Dimethyl-Ether/Air Flames," 32<sup>nd</sup> Symposium (International) on Combustion, McGill University, Montreal, Canada, August 8, 2008.
- [60] "Development of Detailed and Reduced Kinetic Mechanisms for Surrogates of Petroleum-Derived and Synthetic Jet Fuels," *Multi Agency Coordination Committee for Combustion Research (MACCCR) Fuels Research Review*, Gaithersburg, Maryland. September 8, 2008.
- [61] "Flame Studies of Jet Fuels and Surrogate-Related Neat Hydrocarbons," *Multi Agency Coordination Committee for Combustion Research (MACCCR) Fuels Research Review*, Gaithersburg, Maryland. September 8, 2008.
- [62] "Experimental and Detailed Numerical Studies of Fundamental Flame Properties of Gaseous and Liquid Fuels," *Multi Agency Coordination Committee for Combustion Research (MACCCR) Fuels Research Review*, Gaithersburg, Maryland, September 8, 2008.
- [63] "Development of Detailed and Reduced Kinetic Mechanisms for Surrogates of Petroleum-Derived and Synthetic Jet Fuels," *Multi Agency Coordination Committee for Combustion Research (MACCCR) Fuels Research Review*, Los Angeles, California, September 16, 2009.
- [64] "Flame Studies of Jet Fuels and Surrogate-Related Neat Hydrocarbons," *Multi Agency Coordination Committee for Combustion Research (MACCCR) Fuels Research Review*, Sandia National Laboratories, Princeton, Los Angeles, California, September 16, 2009.
- [65] "Experimental and Detailed Numerical Studies of Fundamental Flame Properties of Gaseous and Liquid Fuels," *Multi Agency Coordination Committee for Combustion Research (MACCCR) Fuels Research Review*, Los Angeles, California. September 16, 2009.
- [66] "Development of Detailed and Reduced Kinetic Mechanisms for Surrogates of Petroleum-Derived and Synthetic Jet Fuels," *Multi Agency Coordination Committee for Combustion Research (MACCCR) Fuels Research Review*, Princeton, New Jersey, September 21, 2010.



- [67] "Flame Studies of Jet Fuels and Surrogate-Related Neat Hydrocarbons," *Multi Agency Coordination Committee for Combustion Research (MACCCR) Fuels Research Review*, Sandia National Laboratories, Princeton, New Jersey, September 21, 2010.
- [68] "Experimental and Detailed Numerical Studies of Fundamental Flame Properties of Gaseous and Liquid Fuels," *Multi Agency Coordination Committee for Combustion Research (MACCCR) Fuels Research Review*, Princeton, New Jersey, September 21, 2010.
- [69] "Flame Studies of Small Hydrocarbons and Oxygenated Fuels," *Multi Agency Coordination Committee for Combustion Research (MACCCR) Fuels Research Review*, Princeton, New Jersey, September 23, 2010.
- [70] "Flame Studies of Small Hydrocarbons and Oxygenated Fuels," *Second Annual EFRC Review Conference*, Princeton, New Jersey, August 17, 2011.
- [71] "Development of Detailed and Reduced Kinetic Mechanisms for Surrogates of Petroleum-Derived and Synthetic Jet Fuels," *Multi Agency Coordination Committee for Combustion Research (MACCCR) Fuels Research Review*, Argonne National Laboratory, Argonne, Illinois, September 22, 2011.
- [72] "Flame Studies of Jet Fuels and Surrogate-Related Neat Hydrocarbons," *Multi Agency Coordination Committee for Combustion Research (MACCCR) Fuels Research Review*, Sandia National Laboratories, Livermore, California, Argonne National Laboratory, Argonne, Illinois, September 22, 2011.
- [73] "Experimental and Detailed Numerical Studies of Fundamental Flame Properties of Gaseous and Liquid Fuels," *Multi Agency Coordination Committee for Combustion Research (MACCCR) Fuels Research Review*, Argonne National Laboratory, Argonne, Illinois, September 22, 2011.
- [74] "Propagation and Blow-Off Limits of Flames of Naval Aviation Fuels," *Office of Naval Research Alternative Fuels Program Review*, Washington, D.C., November 16, 2011.
- [75] "Propagation and Extinction of Cyclopentadiene Flames," 34<sup>th</sup> Symposium (International) on Combustion, Warsaw University of Technology, Warsaw, Poland, July 30, 2012.
- [76] "Propagation and Blow-Off Limits of Flames of Naval Aviation and Diesel Fuels," *Office of Naval Research Alternative Fuels Program Review*, Washington, D.C., August 8, 2012.
- [77] "Development of Detailed and Reduced Kinetic Mechanisms for Surrogates of Petroleum-Derived and Synthetic Jet Fuels," *Multi Agency Coordination Committee for Combustion Research (MACCCR) Fuels Research Review*, Sandia National Laboratories, Livermore, California, September 19, 2012.

- [78] "Flame Studies of Jet Fuels and Surrogate-Related Neat Hydrocarbons," *Multi Agency Coordination Committee for Combustion Research (MACCCR) Fuels Research Review*, Sandia National Laboratories, Livermore, California, September 19, 2012.
- [79] "Flame Chemistry, Modeling & Applications," *Third Annual EFRC Review Conference*, Sandia National Laboratories, Livermore, California, November 14, 2012.
- [80] "Turbulent Jet Flames: Effects of Fuel Molecular Structure, Formulation, and Chemistry," *AFOSR-ARO Basic Combustion Research Reviews*, Washington, D.C., June 3, 2013.
- [81] "Experimental Methods in Combustion Kinetics Research: Advances and Challenges," *Multi Agency Coordination Committee for Combustion Research (MACCCR) Fuels Research Review*, Arlington, Virginia, September 23, 2013.
- [82] "Development of Detailed and Reduced Kinetic Mechanisms for Surrogates of Petroleum-Derived and Synthetic Jet Fuels," *Multi Agency Coordination Committee for Combustion Research (MACCCR) Fuels Research Review*, Arlington, Virginia, September 24, 2013.
- [83] "High Reynolds Number Studies of Flames of Jet Fuels and Surrogate-Related Neat Hydrocarbons," *Multi Agency Coordination Committee for Combustion Research (MACCCR) Fuels Research Review*, Arlington, Virginia, September 24, 2013.
- [84] "Studies of Flames of Neat and Complex Large Molecular Weight Fuels," *Office of Naval Research Alternative Fuels Program Review*, Arlington, Virginia, September 26, 2013.
- [85] "Turbulent Jet Flames: Effects of Fuel Molecular Structure, Formulation, and Chemistry," *AFOSR-ARO Basic Combustion Research Review*, Arlington, Virginia, June 2, 2014.
- [86] "Report on Workshop on Jet/Rocket Fuel Kinetics Experiments and Model Development," *National Jet Fuels Combustion Program Meeting*, Cincinnati, Ohio, May 21, 2015.
- [87] "Report on Workshop on Jet/Rocket Fuel Kinetics Experiments and Model Development," *AFOSR/ARO/NSF Basic Combustion Research Review*, Arlington, Virginia, June 3, 2015.
- [88] "Turbulent Jet Flames: Effects of Fuel Molecular Structure, Formulation, and Chemistry," *AFOSR/ARO/NSF Basic Combustion Research Review*, Arlington, Virginia, June 4, 2015.
- [89] "Spectral Energy Transfer in Turbulent Flames: from its Characterization to Subgrid Scale Models," *Multi Agency Coordination Committee for Combustion Research (MACCCR) Fuels Research Review*, Sandia National Laboratories, Livermore, California, October 19, 2015.

- [90] "Report on the Outcomes of the 2<sup>nd</sup> Workshop on Jet/Rocket Fuel Kinetics Experiments and Model Development," *AFOSR/ARO/NSF Basic Combustion Research Review*, Arlington, Virginia, June 6, 2016.
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## VII. PUBLICATIONS

### Summary Numbers

A. Refereed Archival Publications:	147
B. Editorials Comments:	11
C. Book Chapters:	2
D. Conference Papers and Reports:	160

#### A. Refereed Archival Publications

- [1] "Experimental and Numerical Determination of Laminar Flame Speeds of Methane/(Ar, N<sub>2</sub>, CO<sub>2</sub>)-Air Mixtures as Function of Stoichiometry, Pressure, and Flame Temperature," by D.L. Zhu, F.N. Egolfopoulos, and C.K. Law, *Proceedings of the Combustion Institute* **22**, pp. 1537-1545 (1988).  
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- [115] "Propagation and Extinction of Cyclohexane/air, *methyl*-Cyclohexane/Air, and *n-butyl*-Cyclohexane/Air Mixtures," by C. Ji and F.N. Egolfopoulos, paper No. 09F-016, 2009 Fall Technical Meeting, *Western States Section/Combustion Institute*, University of California at Irvine, Irvine, California, October 26-27, 2009.
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## **E. Research Output Metrics**

### ***Web of Science:***

Number of Citations: 6,416

H-Index: 40

### ***Google Scholar:***

Number of Citations: 16,229

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## **VIII. PATENTS**

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