Rolf D. Reitz

Wisconsin Distinguished Professor

Engine Research Center
Mechanical Engineering Department
Room 1018A Engineering Research Building
1500 Engineering Drive
University of Wisconsin, Madison 53706

Friday May 26th, 2017

Contents:

ROLF DENEYS REITZ

Personal:

Birth: Nov. 1, 1948 Place: Pietermaritzburg, South Africa
Naturalized US Citizen October 4, 1979 Married: 2 Children

Formal Education:

Ph.D. in Mechanical and Aerospace Engineering, Princeton University, 5/78
M.A. in Mechanical and Aerospace Engineering, Princeton University, 6/75
M.S. in Mechanics, State University of New York, Stony Brook, 12/73
M.Sc. (Eng) in Mechanical Engineering, University of Cape Town, RSA, 6/72
B.Sc. (Eng) in Mechanical Engineering, University of Cape Town, RSA, 12/70

Positions Held:

8/15 - Present	Emeritus Professor	Mechanical Engineering, University of Wisconsin-Madison
1/99 - 8/15	Wisconsin Distinguished Professor	Mechanical Engineering, University of Wisconsin-Madison
1/12 – 8/15	Director, Engine Research Center	University of Wisconsin-Madison
9/01 – 9/04	Director, Engine Research Center	University of Wisconsin-Madison
7/93 – 1/99	Professor	Mechanical Engineering, University of Wisconsin-Madison
9/89 - 7/93	Associate Professor	Mechanical Engineering, University of Wisconsin-Madison
2/85 - 8/89	Staff Research Engineer	General Motors Research Laboratories, Warren, MI
6/83 - 2/85	Senior Research Engineer	General Motors Research Laboratories, Warren, MI
9/80 - 6/83	Research Staff Member	Princeton University, Princeton, New Jersey
9/78 - 9/80	Associate Research Scientist	Courant Institute of Mathematical Sciences, New York University
2/74 - 9/78	Research Assistant	Princeton University, New Jersey

Honors and Awards:

ETH Zurich Aurel Stodola Medal Laureate	Nov 09, 2016
SAE Myers award: Wissink, M., and Reitz, R.D., â€œDirect Dual Fuel Stratification, a Path to Combine the Benefits of RCCI and PPC,â€• SAE Int. J. Engines 8(2):2015.	Apr 12, 2016
SAE John H. Johnson award for â€œOutstanding leadership in research in diesel enginesâ€•	Apr 12, 2016
Best paper: Investigating Fuel Condensation Processes in Low Temperature Combustion Engines (ICEF2014-5458), by Qiu. L. and Reitz, R.D.	Oct 11, 2015

2014 SAE John Johnson (ERC - PhD ME 64) Award: Outstanding Research in Diesel Engines: Hessel, R., Reitz, R.D., Musculus, M., OConnor, J.,and Flowers, D., "A CFD Study of Post Injection Influences on Soot Formation and Oxidation under Diesel-Like Operating Conditions," SAE paper 2014-01-1256.	Apr 11, 2015
SAE Myers award: Splitter, D., Wissink, M., DelVescovo, D., and Reitz, R.D., "Improving the understanding of Intake and Charge effects for increasing RCCI engine efficiency," SAE Int. J. Engines 7(2):2014	Apr 11, 2015
2013 SAE Horning memorial award (co-author of SAE 2011-01-1182, but ineligible since also received award in 2012)	Jun 18, 2013
DOE Vehicle Technologies R&D Program Award	2012
ASME Internal Combustion Engine Award	2011
Institute for Liquid Atomization and Spray Systems (ILASS-Americas) William Robert Marshall Award (with student N. Abani)	May 18, 2010
SAE Horning Memorial Award (with students D.A. Splitter, R. Hanson)	2010
Best Paper Award, ASME ICE Fall Conf. (with T. Lachaux, M. Musculus, S. Singh)	2009
UW-Madison, College of Engineering, Byron Bird Award for Excellence in Research Publication	2008
ASME Fellow	2006
SAE Arch T. Colwell Award (with student M. Subramaniam and sponsor M. Ruman)	2005
ASME Soichiro Honda Medal	2004
Wisconsin Idea Fellow, University of Wisconsin System	2004
SAE Forest R. McFarland Awards	2004
Best Paper Award, ASME ICE Fall Conference (with students P. Senecal, D. Montgomery)	2000
Appointed Wisconsin Distinguished Professor	1999
Society of Automotive Engineers (SAE) Fellow	1998
SAE Forest R. McFarland Awards	1998
SAE Horning Memorial Award (with students Z. Han, G. Hampson, A. Uludogan)	1997
Institute for Liquid Atomization and Spray Systems (ILASS-Americas) William Robert Marshall Award (with student M. Patterson)	1995
Myers-Uyehara Fund Meritorious Paper Award (with student S.-C. Kong)	1994
SAE Distinguished Speaker Award	1992
SAE Excellence in oral presentation award	1991
SAE Horning Memorial Award (with student J. Naber)	1989
SAE Excellence in oral presentation award	1988
Daniel and Florence Guggenheim Fellowships	1974
MSc(Eng) awarded with Distinction, BSc(Eng) with Honors and Class Medal in Fluids	

Other Awards:

Nelson Institute for Environmental Studies' Climate Leadership Challenge - http://www.sage.wisc.edu/clc/ (Students: S. Kokjohn, R. Hanson, D. Splitter)	Apr 21, 2010
SAE Outstanding Speaker Award (Student Yu Shi)	2009
SAE Outstanding Speaker Award (Student Neerav Abani)	2008
ILASS best student paper (student H. Snyder)	1998
SAE Outstanding Speaker Award (student A. Lippert)	1997

Professional Activities:

Review committee, Argonne National Labs, Energy and Global Security Directorate	December 01, 2014 - December 03, 2014
Editor-in-Chief, Frontiers Journal of Engines and Automotive Engineering	2014
Editorial Board Member International Journal of Powertrains	2012 - present
Argonne National Lab EESA review committee	November 06, 2011
Wayne State University, Mechanical Engineering Department Review Committee	February 14, 2011
Editorial Board Member, FUEL journal	2011 - present
Editorial Board member, Journal of Combustion	2010 - 2011
Honorary Editor, Journal of Automotive Safety and Energy	2010 - present
Director, Diesel Engine Research Consortium, University of Wisconsin-Madison	2009 - present
Member Board of Directors, Reaction Design	2006 - 2013
Scientific subcommittee, 19th Int. Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems (ECOS-2006) Greece	2006
Colloquium co-chair, 31st International Symposium on Combustion, Univ. Heidelberg, Germany	2006
Advisory Committee, Conference on Thermodynamic Processes in Diesel Engines, Spain	2006 - present
Member Intnl. Scientific Committee, Spray-05 Symposium on Heat and Mass Transfer in Spray Systems, Turkey	2005
Director, Diesel Emission Reduction Consortium, University of Wisconsin-Madison	2004 - 2009
Advisory Committee Int. Conference on Vehicles, Alternative Fuel Systems and Environmental Protection, Ireland	2004 - 2006
Advisory Committee, Conference on Thermodynamic Processes in Diesel Engines, Spain	2004
Live sound engineer for Oremus	2004 - present
Organizing Committee 8th ICLASS Conference, Sorento, Italy	2003
Advisory Board Member, JSME Intnl. Journal: Series B - Fluids and Thermal Engineering	2002 - 2010
Advisory Committee, Conference on Thermodynamic Processes in Diesel Engines, Spain	2002
Advisory Committee, Conference on Thermodynamic Processes in Diesel Engines, Spain	2000

Organizing Committee 7th ICLASS Conference, Pasadena, USA	2000
SAE Arch T. Colwell best paper award selection committee member	1999 - 2001
Editor (American continent) and co-founder International Journal of Engine Research, IMechE	1999 - present
Co-Founder, Partner, Wisconsin Engine Research Consultants, LLC (W-ERC)	1999 - present
Organizing Committee 7th ICLASS Conference, Seoul, Korea	1997
SAE Annual Congress Technical Session co-Organizer 'Diesel Fuel Injection and Sprays'	1994 - 2006
Organizing Committee 6th ICLASS Conference, Rouen, France	1994
Editorial Board Member, Atomization and Sprays Journal, Acting Editor	1994 - present
Co-organizer KIVA and Engine Modeling User's Group Meetings	1991 - present
Founding Editor and Co-editor of KIVA User's Group Newsletters Vols.1-17	1990 - present
Past-Chairman, ILASS-Americas, Chairman, Vice Chair, Treasurer, Secretary	1989 - 2005

Research Interests:

Combustion, gas dynamics, heat transfer, fluid dynamics, sprays, chemical kinetics, pollutant emissions, engine performance, computer modeling of engines and sprays.

Consulting Activities:

Dow Chemical	2011
Procter & Gamble	2009
Engine Simulation Partners	2008 - 2014
Thomas Magnete	2007
Reaction Design, Board of Directors	2006 - 2013
Finnegan, Henderson, Farabow, Garrett & Dunner, LLP, Expert	2006 - 2007
US Navy Research Advisory Committee, Arlington, VA	2005
Johnson Outdoors, Inc.	2005
S.C. Johnson Wax	2004 - 2007
Catalytica Energy Systems, Inc., Diesel Board of Directors	2003 - 2009
Ford Motor Company	2002 - 2003
Columbian Chemicals	2002
Wisconsin Engine Research Consultants, LLC , co-founder	2002 - present
OMC Outboard Marine Corporation, IL	1998 - 1999
Combustion Research and Flow Technology (CRAFT), PA	1997 - 1998
ThoughtVentions, CT	1997
AVL, Graz, Austria	1997
General Motors Research Laboratories, Warren, MI	1996 - 1997
Detroit Diesel Corp	1996
FIAT Central Research, Turin, Italy	1996
Cummins Engine Co., Columbus, IN	1995 - 1996

Exxon Research Corp, Anandale, N.J.,	1995
National Institute of Standards and Technology (NIST), Gaithersburg, MD	1993
Nissan Motor Co., Yokosuka, Japan	1992
General Motors Research Laboratories, Warren, MI	1992
Southwest Research Institute, San Antonio, TX	1991 - 1992
Advanced Fuel Research, Hartford, CT	1991 - 1992
Caterpillar, Inc., Peoria, Ill.	1989 - 1993
Komatsu Ltd., Oyama, Japan	1981 - 1982
Physics International, San Leandro, California	1978

Review Activities (partial list):

Communications on Pure and Applied Mathematics, The Combustion Institute, Combustion Science and Technology, Combustion and Flame, American Institute of Aeronautics and Astronautics Journals, National Science Foundation, Society of Automotive Engineers Transactions, American Society of Mechanical Engineers Journals, Physics of Fluids, Army Research Office, Journal of Aerosol Science, Applied Optics, Atomization and Sprays, Journal of Fluid Mechanics, Computers & Fluids, DOE/SBIR, National Research Council, Journal of Multiphase Flows, Journal of Computational Physics, International Journal of Heat and Mass Transfer.

Summary of Research Program:

Professor Reitz's major research interest is in the area of internal combustion engines. He oversees several engine laboratories. In addition, he develops advanced computer models for predicting engine performance. His heavy-duty diesel engine laboratory features a Caterpillar 3401E single-cylinder test engine that is equipped with prototype fuel injection systems. His research was the first to demonstrate that the use of multiple injections can give significant emissions reductions in these engines. Multiple injections are now being implemented by all major diesel engine manufacturers. His recent work on diesel/gasoline dual fuel compression ignition has attracted much interest since it has demonstrated significant improvements in fuel economy while meeting stringent emissions mandates, without the need for exhaust after-treatment.

His high-speed engine laboratory features an automotive-size diesel engine with advanced electronically controlled fuel injection systems capable of multiple injections. His experimental spray research focuses on fuel drop breakup and atomization phenomena, and has revealed new understandings about the mechanisms of high-speed drop breakup. His research has pioneered the use of computational fluid dynamics to understand basic physical processes and he has developed practical methods for reducing engine pollutant emissions and improving fuel economy.

Professor Reitz's sponsored research funding currently is about $1M/year, with major sponsorship from the DOE/Sandia laboratories, Caterpillar, GM and Ford. He is former Director of the Engine Research Center and is co-director of the ERC's Diesel Engine Research Consortium (DERC), which currently has ~35 industrial members and government

labs. His research group currently includes 1 Staff members, 1 post-doctoral student and 1 MS and 5 Ph.D. graduate students. He also supervises international visiting scientists.

Prof. Reitz has received many awards for his research. His Byron Bird award citation from the College of Engineering states: 'Professor Reitz's spray modeling approach has quickly gained a worldwide acceptance as a robust modeling approach for atomization and sprays. A testimony of the quality of his work is demonstrated by the fact that all commercial computational fluid dynamics software, as well as all open-source computational fluid dynamics software used for modeling two-phase, chemically reactive flows have incorporated Professor Reitz's spray modeling approach.' Professor Reitz's engine spray and combustion computer models are now used routinely at virtually all major engine companies, as well at government labs and universities internationally. In addition, he has working relationships with leading code vendors for the use of his models in commercial codes.

Professor Reitz's modeling work includes the pioneering use of genetic algorithms for engine design optimization. This work has been featured in the mainstream press, including: The New York Times, Business Week, The London Times, Dallas Morning News, The Financial Times, National Public Radio, Discovery Headline News, MSNBC, and CNN. His recent dual-fuel (Gasoline-diesel 'Cocktail') experimental work has been featured by USA Today, Times of India, Milwaukee Journal Sentinel, Wisconsin Radio Network, WKOW Channel 27 TV Madison, WI, CBC Canadian Broadcast Co. News, Hart Energy Publishing, Designfax, Science Daily, Eurekalert, Physics Today Magazine, Chemistry Times, and a host of other online forums and blogs.

In 1998 Professor Reitz was appointed Fellow of the Society of Automotive Engineers, and he was appointed Wisconsin Distinguished Professor in 1999. He was appointed ASME Fellow in 2006. He served as Chairman of the Institute of Liquid Atomization and Spraying Systems (ILASS-Americas) from 1999-2002. In 1999, he co-founded and serves as Editor (American continent) of the International Journal of Engine Research, which is published in association with the Institution of Mechanical Engineers in cooperation with JASME. He is also the Specialty Editor-in-Chief of the new open access Frontiers Journal of Engine and Automotive Engineering. Professor Reitz has also served on the Editorial Board of the Atomization and Sprays Journal and the Journal FUEL. He served on the SAE Colwell Award Committee and as an SAE Session-Organizer at the annual Congress Diesel Fuel Spray Technology session. He is consultant to many industries, has lectured widely and has won major research awards, including the Soichiro Honda Medal and the University of Wisconsin Byron Bird Award for excellence in research publication (2008).

The SOICHIRO HONDA MEDAL recognizes an individual for an outstanding achievement or a series of significant engineering contributions in developing improvements in the field of personal transportation. This medal was established in 1983 in recognition of Soichiro Honda's exemplary achievements in the field of personal transportation. The citation reads: 'awarded to Prof. R.D. Reitz for seminal contributions to the understanding and modeling of turbulence, sprays and combustion chemistry relative to the performance and emissions from diesel, spark-ignition and HCCI engines; for technological innovations in fuel injection systems; and for computation methods defining future diesel combustion systems and advanced engine controls for low emissions.'

In 2011 Prof. Reitz was awarded the The ASME INTERNAL COMBUSTION ENGINE

AWARD, which is given in recognition of eminent achievement or distinguished contribution over a substantial period of time, which may result from research, innovation or education in advancing the art of engineering in the field of internal combustion engines. The citation reads 'awarded to ROLF D. REITZ, Ph.D., Wisconsin Distinguished Professor of mechanical engineering, University of Wisconsin-Madison, for long-term contributions to the physics of liquid fuel spray atomization, 3-D numerical modeling of combustion, and combustion system optimization; for demonstrating that multiple injectors reduce emissions in diesel engines; and for the discovery of the reactivity controlled compression ignition strategy for high-efficiency, low-emissions engine combustion.'

In 2012 Prof. Reitz received the 2012 DOE VEHICLE TECHNOLOGIES R&D AWARD whose citation states: 'In recognition of innovative combustion strategies leading to significant improvements in engine efficiency.'

In 2016 Prof. Reitz was awarded the SAE John H. Johnson award for 'outstanding leadership in research in diesel engines.'

In 2016 Prof. Reitz was named the Aurel Stodola Medal Laureate at ETH Zurich, Switzerland with citation 'His research foundations have led to cleaner, more efficient engines.'

Teaching:

Courses Taught:

Date	Title	# Students	Student Eval. (Max. 5.0)
Spring 90	ME 363 Fluid Dynamics	35	3.41
Fall 90	ME 361 Thermodynamics I	33	3.63
Spring 91	ME 362 Thermodynamics II	22	4.29
Spring 91	ME 363 Fluid Dynamics	31	3.73
Fall 91	ME 364 Heat Transfer	43	4.23
Fall 91	ME 491 Mech Eng Projects 1	1	-
Spring 92	ME 563 Intermediate Fluid Mechanics	16	4.64
Fall 92	ME 572 Intermediate Gas Dynamics	12	4.82
Spring 93	ME 563 Intermediate Fluid Mechanics	25	4.14
Fall 93	ME 572 Intermediate Gas Dynamics	18	4.67
Fall 93	ME 999 Advanced Independent Study	1	-
Spring 94	ME 563 Intermediate Fluid Mechanics	38	4.41
Fall 94	ME 572 Intermediate Gas Dynamics	17	4.41
Fall 94	ME 699 Independent Study	1	-
Spring 95	ME 769 Combustion Processes	17	4.59
Fall 94 ME 572 Intermediate Gas Dynamics	17	4.81	
Spring 96	ME 563 Intermediate Fluid Mechanics	29	4.25
Fall 96	ME 572 Intermediate Gas Dynamics	8	5.00
Spring 97	ME 563 Intermediate Fluid Mechanics	21	4.74

Spring 97	ME 769 Combustion Processes (Team taught: Foster, Ghandhi, Reitz, Rutland)	14	4.58
Fall 97	ME 572 Intermediate Gas Dynamics	18	4.41
Spring 98	ME 563 Intermediate Fluid Mechanics	27	4.09
Fall 98	ME 572 Intermediate Gas Dynamics	12	4.25
Spring 99	ME 769 Combustion Processes	21	4.50
Fall 08	ME 572 Intermediate Gas Dynamics	10	4.23
Spring 09	ME769 Combustion Processes	19	4.47
Fall 09	ME 572 Intermediate Gas Dynamics	14	4.31
Fall 10	ME 572 Intermediate Gas Dynamics	14	4.31
Fall 10	EPD 348-690 Engine Fluid Dynamics	18	4.6
Spring 11	ME769 Combustion Processes	17	4.53
Fall 11	ME 572 Intermediate Gas Dynamics	16	4.13
Fall 99	ME 572 Intermediate Gas Dynamics	12	4.70
Spring 00	NEEP520 2-Phase Flow and Heat Transfer (Team taught with Corradini)	14	4.64
Fall 00	ME 572 Intermediate Gas Dynamics	2	5.00
Spring 01	ME769 Combustion Processes	15	4.29
Fall 01	ME 572 Intermediate Gas Dynamics	14	4.64
Spring 02	ME 520 2-Phase Flow & Heat Transfer (Team taught with Corradini and Shedd)	14	4.25
Fall 02	ME 572 Intermediate Gas Dynamics	16	4.69
Spring 03	ME769 Combustion Processes	26	4.65
Fall 03	ME 572 Intermediate Gas Dynamics	22	4.23
Spring 04	ME 520 2-Phase Flow & Heat Transfer (Team taught with Corradini and Shedd)	11	-
Fall 04	ME 572 Intermediate Gas Dynamics (Team taught with Bonazza)	13	4.23
Fall 04	EPD 690 Engine Fluid Dynamics (Team taught with Rutland)	13	4.25
Spring 05	ME769 Combustion Processes	17	4.47
Fall 05	EPD 690 Engine Fluid Dynamics (Team taught with Rutland)	31	3.61
Fall 05	ME 572 Intermediate Gas Dynamics (Team taught with Bonazza)	6	4.17
Spring 06	ME563 Intermediate Fluid Dynamics	14	4.07
Fall 06	ME 572 Intermediate Gas Dynamics (Team taught with Bonazza)	15	4.53
Spring 07	ME769 Combustion Processes	25	4.16
Fall 07	ME572 Intermediate Gas Dynamics (Team taught with Bonazza)	12	4.08
Fall 07	EPD 690 Engine Fluid Dynamics	26	4.70
Fall 08	ME 572 Intermediate Gas Dynamics	10	4.23
Spring 09	ME769 Combustion Processes	19	4.47
Fall 09	ME 572 Intermediate Gas Dynamics	14	4.31
Fall 10	ME 572 Intermediate Gas Dynamics	14	4.31
Fall 10	EPD 348-690 Engine Fluid Dynamics	18	4.6
Spring 11	ME769 Combustion Processes	17	4.53
Fall 11	ME 572 Intermediate Gas Dynamics	16	4.13
Fall 12	ME 572 Intermediate Gas Dynamics	26	4.12
Spring 13	ME769 Combustion Processes	25	4.36
Fall 13	ME 572 Intermediate Gas Dynamics	24	4.10

Fall 13	EPD 348-690 Engine Fluid Dynamics	25	4.2
Spring 15	ME769 Combustion Processes	20	4.2

Outreach Courses:

Reciprocating Internal Combustion Engines, 2014 Princeton Combustion Energy Frontiers Research Center (CEFRC), Summer Program on Combustion, 15 hr. Course , June 23, 2014 - June 27, 2014

Reciprocating Internal Combustion Engines, 2012 Princeton Combustion Energy Frontiers Research Center (CEFRC), Summer Program on Combustion, 9 hr. Course, June 27, 2012 - June 29, 2012

Short Course 'Spray Systems Technology - Computer Modeling of Sprays', Co-Taught annually at Carnegie Mellon University with N. Chigier and W. Bachalo, 2004

Short course 'Engine Spray Modeling', Michigan State University, June 10, 2003 - June 13, 2003

Short Course 'Multidimensional Modeling of IC Engines', UW - Madison, Co-taught with Prof. C. Rutland, S.-C. Kong, R. Hessel, 2000 - 2005

Video Course NTU/ME572 Intermediate Gas Dynamics, National Technological University, 1997 - present

Short Course 'Spray Systems Technology - Computer Modeling of Sprays', Co-Taught annually at Carnegie Mellon University with N. Chigier and W. Bachalo, 1992 - 2002

University/Departmental Committees:

Ad-hoc committee to nominate COE Research Associate Dean, 2014

ME Department Prof. Krupenkin, Suresh, Pfefferkorn post tenure review committees, 2014

COE Associate to Full Professor Promotion Advisory Committee (Chair), 2013 - 2015

College of Engineering 10 year Review Committee for ECE Department, 2008

ME department Post Tenure Review Committee - Ghandhi, 2006

College of Engineering Equity and Diversity Committee, 2005 - 2009

ME department Hiring Committee member, 2002 - 2003

ME department Post Tenure Review Committee - Englestad, 2001

ME department Hiring Committee Chair, 2000 - 2001

ME department Planning Committee member, 2000

Elected member of College of Engineering Academic Planning Committee, 1998 - 2001

ME department Post Tenure Review Committee - Foster, 1998

ME department ad hoc committee for new student evaluation form (Chair), 1997

Campus Faculty Senate Ad Hoc committee on use of student evaluations, 1996 - 1997

ME department Post Tenure Review Committee (Chair) - Martin, 1996

ME department Graduate Committee member, 1995 - 2001

ME department Energy Group Co-ordinator (Chair), 1995 - 1997

ME department Planning Committee member, 1995 - 1997

Assistant Professor Mentor Committees - Member (R. Gadh, N. Ferrier, X. Li), 1993 - 2005

ME departmental Ad Hoc Committee on Post Tenure Review, 1993

ME department Executive Committee member, 1993 - present

ME departmental Merit Review Committee, 1992 - 1993

ME department Undergraduate Student Advisor, 1991 - present

Reviewed Publications and Book Chapters:

1. McGee, R.S. ; Reitz, R.D., "Extinguishment of Radiantly Augmented Fires with Water Sprays," 15th (International) Symposium Volume on Combustion, The Combustion Institute, Pittsburgh, PA. , 1974
2. Reitz, R.D.; Bracco, F.V., "Studies Toward Optimal Charge Stratification in a Rotary Engine," Combustion Science and Technology, Vol. 12, p. 63, 1976
3. Reitz, R.D.; Bracco, F.V., "On the Dependence of the Spray Angle and Other Spray Parameters on Nozzle Design and Operating Conditions," Society of Automotive Engineers Technical Paper 790494 , 1979
4. Reitz, R.D.; Bracco, F.V., "Ultra-High-Speed Filming of Atomizing Jets," The Physics of Fluids, Vol. 22, p. 1054 , 1979
5. Reitz. R.D., "Computations of Laminar Flame Propagation Using an Explicit Numerical Method," 18th (International) Symposium Volume on Combustion, The Combustion Institute, Pittsburgh, PA. , 1980
6. Reitz, R.D., "A Study of Numerical Methods for Reaction-Diffusion Equations," SIAM Journal on Scientific and Statistical Computing, Vol. 2, p. 95, 1981
7. Reitz, R.D., "One-dimensional Compressible Gas Dynamics Calculations Using the Boltzmann Equation," Journal of Computational Physics, Vol. 42, p. 108, 1981
8. Reitz, R.D.; Bracco, F.V., "Mechanism of Atomization of Liquid Jets," The Physics of Fluids, Vol. 25, p. 1730, and Erratum: Vol. 26, (5), pp. 1376 May 1983., 1982
9. Reitz, R.D.; Bracco, F.V., "Toward the Formulation of a Global Local Equilibrium Kinetics Model for Hydrocarbon Flames," Numerical Methods in Laminar Flame Propagation, Notes on Numerical Fluid Mechanics, N. Peters and J. Warnatz, Eds., Friedr. Vieweg & Sohn, Braunschweig/Wiesbaden, Vol. 6, p. 13, 1982
10. Martinelli, L.; Reitz, R.D.; Bracco, F.V., "Comparisons of Computed and Measured Dense Spray Jets," Book Chapter Dynamics of Flames and Reactive Systems, Progress in Astronautics and Aeronautics, M. Summerfield, Ed., Chapter 5, Vol. 95, p. 484, 1983
11. Reitz, R.D.; Bracco, F.V., "Global Kinetics and Lack of Thermodynamic Equilibrium," Combustion and Flame, Vol. 53, p. 141, 1983

12. Abraham, J.; Reitz, R.D.; Bracco, F.V., "Comparisons of Computed and Measured Pre-mixed Charge Engine Combustion," Combustion and Flame, Vol. 60, p. 309, 1985
13. Reitz, R.D.; Bracco, F.V., "Mechanisms of Breakup of Round Liquid Jets," Book Chapter The Encyclopedia of Fluid Mechanics, N. Cheremisnoff, Ed., Gulf Publishing, Houston, Texas, Vol. 3, Chapter 10, pp. 233-249, 1986
14. Wu, K.-J.; Reitz, R.D.; Bracco, F.V., "Measurements of Drop Size at the Spray Edge near the Nozzle in Atomizing Liquid Jets," The Physics of Fluids, Vol. 29, pp. 941-951, 1986
15. Reitz, R.D.; Diwakar, R., "The Effect of Drop Breakup on Fuel Sprays," Society of Automotive Engineers Technical Paper 860469, SAE Transactions , Vol. 95, Sect. 3, pp. 218-227, 1986
16. Reitz, R.D.; Diwakar, R., "Structure of High-Pressure Fuel Sprays," Society of Automotive Engineers Technical Paper 870598, SAE Transactions Vol. 96, Sect. 5, pp. 492-509, 1987
17. Dodge, L.G.; Rhodes, D.J.; Reitz, R.D., "Comparison of Drop-Size Measurement Techniques in Fuel Sprays: Malvern Laser-Diffraction and Aerometrics Phase/Doppler," Applied Optics, Vol. 26, pp. 2144-2154, 1987
18. Reitz, R.D., "Modeling Atomization Processes in High-Pressure Vaporizing Sprays," Atomisation and Spray Technology, Vol. 3, pp. 309-337 - OpenAccess link: https://uwmadison.box.com/AandS , 1988
19. Naber, J.D.; Reitz, R.D., "Modeling Engine Spray/Wall Impingement," Society of Automotive Engineers Technical Paper 880107, SAE Transactions, Vol. 97, Also Horning Memorial Volume, pp. 847-869, 1989., 1988
20. Kuo, T.-W.; Reitz, R.D., "Computation of Premixed-Charge Combustion in Pancake and Pent-roof Engines," Society of Automotive Engineers Technical Paper 890670, SAE Transactions, Vol. 98, 1989
21. Reitz, R.D.; Kuo, T.-W., "Modeling of HC Emissions due to Crevice Flows in Premixed-Charge Engines," Society of Automotive Engineers Technical Paper 892085, SAE Transactions, Vol. 98, 1989
22. Reitz, R.D., "Effect of Vaporization and Turbulence on Spray Drop Size and Velocity Distributions," Liquid Particle Size Measurement Techniques: 2nd Volume, ASTM STP1083, E.D. Hirleman, W.D. Bachalo and P.G. Felton, Eds., American Society for Testing and Materials, Philadelphia, pp. 225-237, 1990
23. Reitz, R.D., "A Photographic Study of Flash-boiling Atomization," Journal of Aerosol Science, Vol. 12, pp. 561-569, 1990
24. Reitz, R.D., "Assessment of Wall Heat Transfer Models for Premixed-Charge Engine Combustion Computations," SAE Paper 910267, SAE Transactions , Vol. 100, Section 3, Journal of Engines, p. 397, 1991
25. Epstein, P.; Reitz, R.D.; Foster, D., "Computations of Two-Stroke Engine Cylinder and Port Scavenging Flows," SAE Paper 910672, SAE Transactions, Vol. 100, Section 3, Journal of Engines, p. 1014, 1991
26. Gonzalez D., M.A.; Borman, G.L.; Reitz, R.D., "A Study of Diesel Cold Starting using both Cycle Analysis and Multidimensional Calculations," SAE Paper 910180, SAE Transactions, Vol. 100, Section 3, Journal of Engines, p. 189, 1991
27. Reitz, R.D.; Rutland, C.J., "3-D Modeling of Diesel Engine Intake Flow Combustion and Emissions," SAE Paper 911789, SAE Transactions, Vol. 100, Section 3, Journal of Engines, pp. 1513-1520, 1991
28. Reitz, R.D.; Ayoub, N.; Gonzalez, M.; Hessel, R.; Kong, S.; Lian, J.; Pieper, C.; Rutland, C.J., "Improvements in 3-D Modeling of Diesel Engine Intake Flow and Combustion," SAE Paper 920463, SAE Transactions, Vol. 101, Section 3, Journal of Engines, pp. 1624-1633, 1992

29. Kuo, T.-W.; Reitz, R.D., "Three-Dimensional Computations of Combustion in Premixed-Charge and Fuel-Injected Two-Stroke Engines," SAE Paper 920425, SAE Transactions, Vol. 101, Section 3, Journal of Engines, pp. 679-695, 1992

30. Kong, S.-C.; Ayoub, N.; Reitz, R.D., "Modeling Combustion in Compression Ignition Homogeneous Charge Engines," SAE Paper 920512, SAE Transactions, Vol. 101, Section 3, Journal of Engines, pp. 896-911, 1992

31. Gonzalez D., M. A.; Lian, Z. W.; Reitz, R. D., "Modeling Diesel Engine Spray Vaporization and Combustion," SAE Paper 920579, SAE Transactions, Vol. 101, Section 3, Journal of Engines, pp. 1064-1076, 1992

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9. R. Amirante, E. Distaso, S. Di Iorio, M. Napolitano, P. Sementa, B. M. Vaglieco and R. D. Reitz , “Effects of Lubrication Oil on Particulate Emissions from PFI and DI Spark-Ignited Engines,” IJER Special Issue on "Soot Dynamics in Internal Combustion Engines", 2016.
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2. Reitz, R.D,; Rutland, C.J., '3-D Modeling of Diesel Engine Intake Flow, Combustion and Emissions', Proceedings of the Annual Automotive Development Contractors' Coordination Meeting, Dearborn, MI, SAE Publication P-243, pp. 397-404, October 22, 1990 - October 25, 1990
3. M. A. Gonzalez D.; Reitz, R.D., 'Modeling Diesel Engine Spray Vaporization and Combustion', Proceedings of the 1st International KIVA Users Group Meeting, Detroit, MI, February 22, 1991
4. M. A. Gonzalez D.; R. D. Reitz, 'Modeling Diesel Engine Spray Vaporization and Combustion', Proceedings of ICLASS-91, NIST Special Publication 813, pp. 291-298, H. Semerjian, Ed., Gaithersburg, MD. , July 01, 1991
5. Reitz, R.D., 'Prospects and Challenges for Fuel Spray Research in the Automotive Industry', Atomization and Sprays 2000, Invited Paper, NSF Workshop Proceedings, pp. 89-95, N. Chigier, Ed., Gaithersburg, MD, July 19, 1991
6. Reitz, R. D.; Rutland, C.J., 'Three-dimensional Modeling of Diesel Engine Intake Flow, Combustion and Emissions', Proceedings of the Annual Automotive Development Contractors' Coordination Meeting, Dearborn, MI, SAE Publication P-256, pp. 725-734, October 28, 1991 - October 31, 1991
7. Lian, Z.W.; Reitz, R.D., 'Influence of Grid Resolution on Diesel Engine Combustion Predictions', Proceedings of the 2nd International KIVA Users Group Meeting, Detroit, MI, February 23, 1992
8. Liu, A.B.; Reitz, R.D., 'Mechanisms of Air-Assisted Liquid Atomization', Proceedings of ILASS-92, pp. 59-63, San Ramon, CA, May 21, 1992 - May 23, 1992
9. Mather, D., Liu, A.B., and Reitz, R.D., 'Effect of Drop Breakup and Drop Drag Coefficient on Spray Penetration,', Proceedings of ILASS-92, pp. 142-146, San Ramon, CA, May 21, 1992 - May 23, 1992
10. Lian, Z.W.; Reitz, R.D., 'The Effect of Vaporization and Gas Compressibility on Liquid Jet Atomization', Proceedings of ILASS-92, pp. 147-154, San Ramon, CA, May 21, 1992 - May 23, 1992
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12. Kong, S.-C.; Patterson, M.; Reitz, R.D., 'Modeling of Diesel Ignition Using A Multistep Kinetics Model', Proceedings of Third International KIVA Users Meeting, Detroit, MI, February 28, 1993
13. Reitz, R.D., 'Advances in Internal Combustion Engine Modeling', Invited Keynote Lecture for Presentation and Conference Proceedings at the 6th Annual Conference on Liquid Atomization and Spray Systems (ILASS-93), Worcester, MA, May 17, 1993 - May 19, 1993
14. Nehmer, D.A; Tow, T.; Reitz, R.D., 'Measurements of the Effect of Injection Rate and Split Injections on Diesel Engine Soot and NOx Emissions', Proceedings of the 6th Annual Conference on Liquid Atomization and Spray Systems (ILASS-93), Worcester, MA, May 17, 1993 - May 19, 1993
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16. Kong, S.-C.; Hampson, G.J.; Reitz, R.D., 'Influence of Spray and Combustion Models on Diesel Predictions', 4th International KIVA User's Meeting, Detroit, MI, February 27, 1994

17. Ayoub, N.S.; Reitz, R.D., 'Multi-Dimensional Computation of Multi-Component Fuel Spray Vaporization', 4th International KIVA User's Meeting, Detroit, MI, February 27, 1994
18. Patterson, M.A.; Reitz, R.D., 'The Effect of Fuel Injection Parameters on Diesel Emissions', Conference Proceedings at the 7th Annual Conference on Liquid Atomization and Spray Systems (ILASS-94), Bellvue, Washington, May 31, 1994 - June 03, 1994
19. Eckhause, J.E.; Reitz, R.D., 'Modeling Heat Transfer to Impinging Fuel Sprays in Direct Injection Engines', Central States Section Meeting of the Combustion Institute, Madison, WI, June 06, 1994
20. Kong, S.-C.; Hampson, G.J.; Reitz, R.D., 'Effect of Spray and Combustion Models on Diesel Predictions', Central States Section Meeting of the Combustion Institute, Madison, WI, June 06, 1994
21. Ayoub, N.S.; Reitz, R.D., 'Computation of Multi-Component Fuel Spray Vaporization', Central States Section Meeting of the Combustion Institute, Madison, WI, June 06, 1994
22. Kong, S.-C.; Hampson, G.J.; Reitz, R.D., 'Modeling Diesel Spray, Combustion, Soot and NOx Emissions', 6th International Conference on Liquid Atomization and Spray Systems, Rouen, France, July 18, 1994 - July 22, 1994
23. Reitz, R.D.; Rutland, C.J., '3-D Modeling of Diesel Engine Intake Flow, Combustion and Emissions', Proceedings of the Annual Automotive Development Contractors' Coordination Meeting, Dearborn, MI., October 24, 1994 - October 25, 1994
24. Kong, S.-C.; Reitz, R.D., 'Diesel Combustion Modeling with Comparisons to In-Cylinder Flame Images', Proceedings IUTAM Symposium, Mechanics and Combustion of Droplets and Sprays, Tainan, Taiwan, December 06, 1994 - December 10, 1994
25. Mather, D.A.; Reitz, R.D., 'Investigation on the use of Air-cells to reduce diesel emissions', 5th International KIVA User's Meeting, Detroit, MI, February 26, 1995
26. Hampson, G.J.; Reitz, R.D., 'Development of NOx and Soot Models for Multidimenaional Diesel Combustion', 5th International KIVA User's Meeting, Detroit, MI, February 26, 1995
27. Curtis, E.; Ayoub, N.; Reitz, R.D., 'Improvements in Drop Vaporization and Combustion Modeling', 5th International KIVA User's Meeting, Detroit, MI, February 26, 1995
28. Rutland, C.J.; Ayoub, N.; Han, Z.; Hampson, G.; Kong, S.-C.; Mather, D.; Montgomery, D.; Musculus, M.; Patterson, M.; Pierpont, D.; Ricart, L.; Stephenson, P.; Reitz, R.D., 'Diesel Engine Model Development and Experiments', SAE Earthmoving Industry Conference, April 04, 1995 - April 05, 1995
29. Hwang, S.S.; Reitz, R.D., 'A Photographic Study of the Breakup of High Speed Vaporizing Drops', Conference Proceedings 8th Annual Conference on Liquid Atomization and Spray Systems (ILASS-95), Troy, Michigan, May 21, 1995 - May 24, 1995
30. Snyder, H.E.; Reitz, R.D., 'Photographic Investigation of Gas Efficient Liquid Atomization (GELA)', Conference Proceedings 8th Annual Conference on Liquid Atomization and Spray Systems (ILASS-95), Troy, Michigan, May 21, 1995 - May 24, 1995
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33. Hampson, G.J.; Reitz, R.D., 'Development of NOx and Soot Models for Multidimensional Diesel Combustion', ASME International Joint Power Conference, Minneapolis, October 08, 1995 - October 12, 1995

34. Xin, J.; Montgomery, D.; Han, Z.; Reitz, R.D., 'Modeling Diesel Engine NOx and Particulate over a Six-Mode Emissions Cycle', 6th International KIVA User's Meeting, Detroit, MI, February 25, 1996
35. Han, Z.; Reitz, R.D.; Corcione, F.E.; Valentino, G., 'Interpretation of k-e Computed Turbulence Length Scale Predictions For Engine Flows', 6th International KIVA User's Meeting, Detroit, MI, February 25, 1996
36. Xin, J.; Montgomery, D.; Han, Z.; Reitz, R.D., 'Modeling Diesel Engine NOx and Particulate over a Six-Mode Emissions Cycle', 9th Annual Conference on Liquid Atomization and Spray Systems, San Francisco, May 19, 1996 - May 22, 1996
37. Snyder, H.; Reitz, R.D., 'Gas Efficient Liquid Atomization Film Break-up Mechanism', 9th Annual Conference on Liquid Atomization and Spray Systems, San Francisco, May 19, 1996 - May 22, 1996
38. Ricart, L.M.; Reitz, R.D.; Dec, J.E., 'Comparison of Predicted Diesel Spray Liquid Penetration and Vapor Fuel Distributions with In-Cylinder Optical Measurements', 7th International KIVA User's Meeting, Detroit, MI, February 23, 1997
39. Fan, Li; Reitz, R.D., 'Grid Generation Using ICEM CFD', 7th International KIVA User's Meeting, Detroit, MI, February 23, 1997
40. Anderson, W.W.; Yang, J.; Brehob, D.D.; Yi, J.; Han, Z.; Reitz, R.D., 'Challenges of Stratified Charge Combustion', Direkteinspritzung im Ottomotor, Institut fur Kolbenmaschinen, Universitat Karlsruhe (TH), March 12, 1997 - March 13, 1997
41. Liu, Z.; Reitz, R.D., 'Experimental Assessment of 'Shear' or 'Boundary Layer Stripping' Theories of High Speed Liquid Drops', 10th Annual Conference on Liquid Atomization and Spray Systems, Ottawa, Canada, May 18, 1997 - May 21, 1997
42. Han, Z.; Reitz, R.D., 'Multidimensional Modeling of DI Gasoline Engine Sprays', 10th Annual Conference on Liquid Atomization and Spray Systems, Ottawa, Canada, May 18, 1997 - May 21, 1997
43. Snyder, H.; Reitz, R.D., '20/20 Atomization - Using MEMS to Obtain 20 micron Sprays with Low Pressure Air (20 psig.)', 10th Annual Conference on Liquid Atomization and Spray Systems, Ottawa, Canada, 1997 (Winner of Best Student Paper Award), May 18, 1997 - May 21, 1997
44. Reitz, R.D., 'Using Advanced Spray Combustion and Emissions CFD Models to Improve Diesel Engine Performance', Invited Keynote Lecture, (won AVL Superior Paper Award), Third International FIRE User Meeting, Graz, Austria, June 16, 1997 - June 18, 1997
45. Liu, Z.; Liu, Y.; Arai, M.; Obokata, T.; Reitz, R.D., 'Effects of the MDD Model on Spray Impingement Characteristics', Proceedings of ILASS-Europe, Florence, July 09, 1997 - July 11, 1997
46. Liu, Z.; Liu, Y.; Arai, M.; Obokata, T.; Reitz, R.D., 'Numerical Study of Liquid Fuel Spray Characteristics', 7th International Conference on Liquid Atomization and Spray Systems, ICLASS-97, Seoul, Korea, August 18, 1997 - August 22, 1997
47. Han, Z.; Reitz, R.D., 'Internal Structure of Vaporizing Pressure-Swirl Fuel Sprays', 7th International Conference on Liquid Atomization and Spray Systems, ICLASS-97, Seoul, Korea, August 18, 1997 - August 22, 1997
48. Ricart, L.M.; Reitz, R.D.; Dec, J.E., 'Comparisons of Predicted Diesel Spray Liquid Penetration and Vapor Fuel Distributions with In-Cylinder Optical Measurements', Paper No. 97-ICE-52, Proceedings 19th ASME ICE Fall Technical Conference, Madison, WI, September 29, 1997 - September 30, 1997
49. Senecal, P.K.; Uludogan, A.; Reitz, R.D., 'Exploring Alternatives to Conventional DI Diesel Combustion Systems using Multi-Dimensional Spray and Combustion Modeling', Paper No. 97-ICE-55, Proceedings 19th ASME ICE Fall Technical Conference, Madison, WI, September 29, 1997 - September 30, 1997
50. Choi, C.Y.; Reitz, R.D., 'A Numerical Analysis of the Emissions Characteristics of Biodiesel

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51. Reitz, R.D., 'The Use of Multiple Injections and EGR for Emissions Control in D.I. Diesel Engines', Invited Keynote Lecture, in Proceedings Common Rail Conference, ETH Zurich, November 07, 1997
52. Richards, K.; Reitz, R.D., 'CFD Modeling of HSDI Diesel Engine Intake Flows', Engine Modeling International Meeting, Detroit, MI, February 22, 1998
53. Senecal, P.K.; Stanton, D.W.; Reitz, R.D.; Rutland, C.J., 'Modeling the Effects of Lift and Drag Forces on Liquid Drops in Impinging Sprays', Engine Modeling International Meeting, Detroit, MI, February 22, 1998
54. Georjon, T.L.; Reitz, R.D., 'A Drop Shattering Collision Model for Multidimensional Spray Computations', Submitted 11th Annual Conference on Liquid Atomization and Spray Systems, Sacramento, Ca., May 17, 1998 - May 20, 1998
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57. Kong, S.-C.; Senecal, P.K.; Reitz, R.D., 'Developments in Spray Modeling in Diesel and Direct-Injection Gasoline Engines', Multidimensional simulation of Engine internal flows IFP, Rueil-Malmaison, France, December 03, 1998 - December 04, 1998
58. Kong, S.-C.; Reitz, R.D., 'Modeling Homogeneous-Charge Compression-Ignition Engines Using Coupled KIVA and CHEMKIN Code', Proceedings Engine Modeling International Meeting, Detroit, MI, February 28, 1999
59. Kong, S.-C.; Rutland, C.J.; Reitz, R.D., 'UW-ERC Spray and Combustion User Library for Engine Computations', STAR-CD Users Conference, Detroit, MI, April 26, 1999
60. Das, S.; Houtz, P. J.; Reitz, R..D., 'Effect of Injection Spray Angle and Combustion Chamber Geometry on Engine Performance and Emissions Characteristics of a Large Bore Diesel Engine', ASME Spring Technical Conference, IC Engine Division, Columbus, IN., April 26, 1999 - April 28, 1999
61. Kang, K.Y.; Reitz, R..D., 'Intake Flow Structure and Swirl Generation in a Four-Valve Diesel Engine', ASME Spring Technical Conference, IC Engine Division, Columbus, IN., April 26, 1999 - April 28, 1999
62. Reitz, R.D., 'Experimentalists are from Mars, Modelers are from Venus', Invited presentation, ILASS-99 Panel Discussion 12th Annual Conference on Liquid Atomization and Spray-Systems, Indianapolis, IN, May 17, 1999 - May 20, 1999
63. Beale, J.C.; Kong, S.-C.; Reitz, R.D., 'Modeling Fuel Injection Using the Kelvin-Helmholtz/Rayleigh-Taylor Hybrid Atomization Model', ILASS Americas, 12th Annual Conference on Liquid Atomization and Spray-Systems, Indianapolis, IN, May 17, 1999 - May 20, 1999
64. Fan, Li.; Reitz, R.D., 'Modeling the Effects of Injector Orientations and Tumble Ratios on Fuel Stratification and Combustion in a Direct Injection Spark Ignition Engine', ILASS Americas, 12th Annual Conference on Liquid Atomization and Spray-Systems, Indianapolis, IN, May 17, 1999 - May 20, 1999
65. Montgomery, D.T.; Reitz, R.D., 'Optimization of Heavy-Duty Diesel Engine Operating Parameters Using Design of Experiments', ILASS Americas, 12th Annual Conference on Liquid Atomization and

Spray-Systems, Indianapolis, IN, May 17, 1999 - May 20, 1999

66. Tanner, F. X.; Reitz, R.D., 'The Influence of the Spray-Induced Flow on the Scaling of the Turbulent Characteristic Combustion Time', ILASS-Europe '99, Toulouse, France, July 05, 1999 - July 07, 1999
67. Tennison, P.J.; Reitz, R.D., 'The effects of Common Rail Injection parameters on Emissions and Performance of a HSDI diesel engine', ASME Fall IC Engines Conference, Ann Arbor, October 16, 1999 - October 20, 1999
68. Bianchi, G.M.; Michelassi, V.; Reitz, R.D., 'Modeling the Isotropic Dissipation in Engine Flows by Using the Linear k-e model', ASME Fall IC Engines Conference, Ann Arbor, October 16, 1999 - October 20, 1999
69. Senecal, P.K.; Reitz, R.D., 'Simultaneous Reduction of Emissions and Fuel Consumption using Genetic Algorithms and Multidimensional Spray and Combustion Modeling', Proceedings Engine Modeling International Meeting, Detroit, MI, March 05, 2000
70. Kong, S.-C.; Rutland, C.J.; Reitz, R.D., 'Implementation of a Spray and Combustion Model Library in Engine CFD Codes', Proceedings Engine Modeling International Meeting, Detroit, MI, March 05, 2000
71. Zhu, G.; Reitz, R.D., 'Multi-Component Fuel Droplet Transient Sub- and Super-Critical Vaporization Using Continuous Thermodynamics', ASME Spring Technical Conference, San Antonio, Texas, U.S.A., April 09, 2000 - April 12, 2000
72. Senecal, P.K.; Reitz, R.D., 'Diesel Engine Design Optimization using Multi-dimensional Modeling and Genetic Algorithms', 3rd International Symposium, Invited Paper, 'Towards Clean Diesel Engines', IFP, Rueil-Malmaison, France, June 15, 2000 - June 16, 2000
73. Senecal, P.K.; Reitz, R.D., 'Simultaneous Reduction of Emissions and Fuel Consumption using Genetic Algorithms and Multi-dimensional Spray and Combustion Modeling', SAE Spring Fuels and Lubricants Meeting, Paris, June 19, 2000 - June 22, 2000
74. Montgomery, D.T.; Reitz, R.D., 'Optimization of Heavy-Duty Diesel Engine Operating Parameters Using A Response Surface Method', SAE Spring Fuels and Lubricants Meeting, Paris, June 19, 2000 - June 22, 2000
75. Fan, Li; Reitz, R.D., 'Spray and Combustion Modeling in Gasoline Direct Injection Engines', Invited Paper, 8th International Conference on Liquid Atomization and Spraying Systems, ICLASS-2000, Pasadena, CA., July 16, 2000 - July 20, 2000
76. Senecal, P.K.; Reitz, R.D., 'Optimization of Diesel Engine Emissions and Fuel Efficiency using Genetic Algorithms and Computational Fluid Dynamics', 8th International Conference on Liquid Atomization and Spraying Systems, ICLASS-2000, Pasadena, CA., July 16, 2000 - July 20, 2000
77. Lee, C.S.; Reitz, R.D., 'Effect of Liquid Properties on the Distortion and Breakup Mechanisms of Liquid Drops in a High Speed Gas Stream', 8th International Conference on Liquid Atomization and Spraying Systems, ICLASS-2000, Pasadena, CA., July 16, 2000 - July 20, 2000
78. Tanner, F.X.; Zhu, G.; Reitz, R.D., 'A Non-Equilibrium Turbulence Dissipation Correction of the K-E-Model Applied to Combustion Simulations of DI Diesel Engines', 8th International Conference on Liquid Atomization and Spraying Systems, ICLASS-2000, Pasadena, CA., July 16, 2000 - July 20, 2000
79. Kong, S.-C.; Rutland, C.J.; Reitz, R.D., 'Development of an Integrated Spray and Combustion Model for Diesel Simulations', Invited Paper, Conference on Thermofluidynamic Processes in Diesel Engines, THIESEL, 2000, Valencia, Spain, September 14, 2000 - September 15, 2000
80. Senecal, P. K.; Montgomery, D. T.; Reitz, R. D., 'Diesel Engine Optimization using Multi-Dimensional Modeling and Genetic Algorithms Applied to a Medium Speed, High Load Operating Condition', ASME Fall Technical Conference, Peoria, Illinois, U.S.A. Winner of best paper award.,

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81. Kong, S.-C.; Reitz, R. D., 'Use of Detailed Chemical Kinetics to Study HCCI Engine Combustion with Consideration of Turbulent Mixing Effects', ASME Fall Technical Conference, Peoria, Illinois, U.S.A., September 24, 2000 - September 27, 2000
82. He, M.,; Rutland, C.J.; Hessel, R.; Reitz, R.D., 'Coarse Mesh CFD: Trend Analysis in a Fraction of the Time', Proceedings of the Eleventh International Multidimensional Modeling User's Group meeting, Detroit, MI, March 04, 2001
83. Tanner, F.X.; Zhu, G.-S.; Reitz, R.D., 'A Turbulence Dissipation Correction to the k-epsilon Model and Its Effect on Turbulence Length Scales in Engine Flows', Proceedings of the Eleventh International Multidimensional Modeling User's Group meeting, Detroit, MI, March 04, 2001
84. Stiesch, G.; Tan, Z.; Merker, G.P.; Reitz, R.D., 'Anwendung einer mehrdimensionalen Motorsimulation zur Untersuchung von Einspritzung und Verbrennung in einem kleinen DISI 2-Takt Motor', International Congress on Engine Combustion Processes, Tagung Motorische Verbrennung, Haus der Technik, Essen, LTT Erlangen, March 13, 2001 - March 14, 2001
85. Tanner, R.X.; Zhu, G.-S.; Reitz, R.D., 'A Non-equilibrium Turbulence Dissipation Correction and its Influence on Pollution Predictions for DI Diesel Engines', Proceedings of ICES'01, ASME Spring Technical Conference, Philadelphia, PA, April 29, 2001 - May 02, 2001
86. Kong, S.-C.; Reitz, R.D., 'Modeling Direct Injection HCCI Engine Combustion Using Detailed Chemistry with CFD', 14th Annual Conference on Liquid Atomization and Spray Systems, ILASS-01, Dearborn, MI, May 20, 2001 - May 23, 2001
87. Senecal, P.K.; Richards, K.J.; Reitz, R. D., 'Diesel Engine Injection Rate-Shape Optimization Using Genetic Algorithms and Multi-Dimensional Modeling', 14th Annual Conference on Liquid Atomization and Spray Systems, ILASS-01, Dearborn, MI, May 20, 2001 - May 23, 2001
88. Yi, Y.; Reitz, R.D., 'A New Approach of Modeling Atomization Processes in High-Pressure Sprays', Poster paper, 14th Annual Conference on Liquid Atomization and Spray Systems, ILASS-01, Dearborn, MI, May 20, 2001 - May 23, 2001
89. Subramaniam,M.; Stiesch, G.; Reitz, Rolf D., 'Simulation Of A 2-Stroke GDI Engine In KIVA 3-V', Poster paper, 14th Annual Conference on Liquid Atomization and Spray Systems, ILASS-01, Dearborn, MI, May 20, 2001 - May 23, 2001
90. Tan, Z.; Fan, L.; Reitz, R.D., 'Modeling Ignition, Multicomponent Fuel vaporization and Spray Breakup in a DISI Engine', 14th Annual Conference on Liquid Atomization and Spray Systems, ILASS-01, Dearborn, MI, May 20, 2001 - May 23, 2001
91. Marriott, C.D.; Reitz, R.D., 'An Experimental Investigation of Direct Injection Systems for Homogeneous and Fuel-Stratified Compression Ignited Combustion', 14th Annual Conference on Liquid Atomization and Spray Systems, ILASS-01, Dearborn, MI, May 20, 2001 - May 23, 2001
92. Senecal, P.K.; Reitz, R.D., 'CFD Modeling Applied to Internal Combustion Engine Optimization and Design', Proceedings of the First MIT Conference on Computational Fluid and Solid Mechanics, Elsevier Science Ltd., K.J. Bathe (Ed.), Vol. 1, pp. 729-732, June 12, 2001 - June 14, 2001
93. Miles, P.; Megerle, M.; Sick, V.; Richards, K.; Nagel, Z.; Reitz, R.D., 'Measurement and Modeling of Large-Scale Flow Structures and Turbulence in a High-Speed Direct-Injection Diesel Engine', Proceedings of COMODIA 2001, Japan., July 10, 2001 - July 12, 2001
94. Reitz, R.D., 'Optimization of IC Engine Design for Reduced Emissions using Automated Engine Experiments and CFD Modeling', Proceedings of 7th DOE Diesel Engine Emissions Reduction Workshop (DEER-2001), Portsmouth, VA, August 05, 2001 - August 09, 2001
95. Reitz, R.D., 'Current Status of Engine Combustion Modeling with Application to Optimization of IC Engine Design', Invited Keynote paper, Proceedings, International Energy Agency Joint

International Combustion Symposium, Kauai, Hawaii, September 10, 2001 - September 12, 2001

96. Kong, S.-C.; Reitz, R.D., 'Modeling Direct-Injection Gasoline HCCI Combustion using Detailed Chemistry and CFD', ASME ICE Fall Technical Meeting, Argonne Labs, Chicago, Ill., September 23, 2001 - September 26, 2001
97. Lee, T.; Reitz. R.D., 'Response Surface Method Optimization of a HSDI Diesel Engine Equipped with a Common Rail Injection System', ASME ICE Fall Technical Meeting, Argonne Labs, Chicago, Ill., September 23, 2001 - September 26, 2001
98. Hessel, R.P.; Reitz. R.D., 'Diesel Engine Injection Rate-Shape Optimization Using Genetic Algorithms and Multi-Dimensional Modeling for a Range of Operating Modes', 11th International Multidimensional Engine Modeling User's Group Meeting, Detroit, MI, March 03, 2002
99. Tanner, F.X.; Zhu, G.-S.; Reitz, R.D., 'Emission Predictions in Diesel Engines Using a Non-Equilibrium Turbulence Dissipation Correction for the k-epsilon Model', 11th International Multidimensional Engine Modeling User's Group Meeting, Detroit, MI, March 03, 2002
100. Hamosfakidis, V.; Reitz, R.D., 'Optimization of a Hydrocarbon Fuel Ignition Model using Genetic Algorithms', 11th International Multidimensional Engine Modeling User's Group Meeting, Detroit, MI, March 03, 2002
101. Subramanian, M., N.; Reitz, R.D., 'Optimization of Operating Parameters for a 2-Stroke DI Engine with KIVA-3V and a Genetic Algorithm Search Technique', 11th International Multidimensional Engine Modeling User's Group Meeting, Detroit, MI, March 03, 2002
102. Zhu, G.-S.; Reitz, R.D.; Xin, J.; Takabayashi, T., 'Modeling Characteristics of Gasoline Wall Films in the Intake Port of Port Fuel Injected Engines', Oral presentation at 2002 SAE International Congress and Exposition, Detroit, MI, March 07, 2002
103. Canakci, M.; Hruby, E.; Reitz, R.D., 'Assessing Double Injection and Intake Air Temperature Effects on Gasoline HCCI Engine Performance and Emissions Using Fully-Automated Experiments and Micro-Genetic Algorithms', Proceedings of ICEC'02, ASME Spring Technical Conference, Rockford, Ill., April 14, 2002 - April 17, 2002
104. Ra, Y.; Reitz, R.D., 'A Model for Droplet Vaporization for Use in Gasoline and HCCI Engine Applications', Proceedings of ICEC'02, ASME Spring Technical Conference, Rockford, Ill., April 14, 2002 - April 17, 2002
105. Reitz, R.D., 'Atomization and Droplet Breakup, Collision/Coalescence and Wall Impingement', DOE Multiphase Flow Workshop, University of Illinois, Urbana-Champaign, May 07, 2002 - May 09, 2002
106. Hessel, R.P.; Reitz. R.D., 'Diesel Engine Injection Rate-Shape Optimization Using Genetic Algorithms and Multi-Dimensional Modeling for a Range of Operating Modes', 15th Annual Conference on Liquid Atomization and Spray Systems, ILASS-02, Madison, WI, May 14, 2002 - May 17, 2002
107. Yi, Y.; Reitz, R.D., 'A Numerical Model for Jet Primary Breakup', 15th Annual Conference on Liquid Atomization and Spray Systems, 15th Annual Conference on Liquid Atomization and Spray Systems, ILASS-02, Madison, WI, May 14, 2002 - May 17, 2002
108. Subramanian, M., N.; Reitz, R.D., 'Optimization of Operating Parameters for a 2-Stroke DI Engine with KIVA-3V and a Genetic Algorithm Search Technique', 15th Annual Conference on Liquid Atomization and Spray Systems, ILASS-02, Madison, WI, May 14, 2002 - May 17, 2002
109. Kong, S.-C.; Marriott, C.D.; Rutland, C.J.; Reitz, R.D., 'Experiments and CFD Modeling of Direct Injection gasoline HCCI Engine Combustion', 2002 SAE Future Car Meeting, Washington, DC, June 05, 2002
110. Kong, S.-C.; Ra, Y.; Marriott, C.D.; Reitz, R.D., 'CFD Modeling and Experiments of Direct

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Patents:

Fuel reactivity stratification in rotary diesel engines, Reitz, R.D., and Kokjohn, S.L., US Patent 9,057,321, Jun 16, 2015

Engine Combustion Control at Low Loads via Fuel Reactivity Stratification, R. D. Reitz, R. M. Hanson, D. A. Splitter and S. L. Kokjohn, US Patent US20120247421, 2014

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Adaptive Injection Strategy (AIS) for Diesel Engines , Sun, Y., and Reitz, R.D. , US Patent No 7,464,690, Dec 16, 2008

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Patent Applications:

Improved Compression Ignition Combustion in Rotary Engines for Higher Efficiency and Lower Pollutant Emissions, Reitz, R.D., and Kokjohn, S.L., WARF Patent application P110320US01, Jan 12, 2012

Engine Combustion Control at Low Loads via Fuel Reactivity Stratification, Reitz, R.D., Hanson, R., Splitter, D. and Kokjohn, S.L., WARF Patent application P11092US01, Mar 01, 2011

Methods for Controlling Reactivity Controlled Compression Ignition (RCCI) Combustion," , Reitz, R.D., Hanson, R., Splitter, D. and Kokjohn, S.L., University of Wisconsin WARF Patent Application P110092US01, Dec 01, 2010

Engine Combustion Control via Fuel Reactivity Stratification, Reitz, R.D., Hanson, R., Splitter, D. and Kokjohn, S.L, University of Wisconsin WARF Patent Application P100054US, Feb 01, 2010

Interacting Fuel Sprays to Reduce Pollutant Formation in Direct Injection Engines, Bergin, M., Hessel, R., and Reitz, R.D., P05054US, 2004

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Invited Lectures: (1996 - present)

1. "Reactivity Controlled Compression Ignition (RCCI) for high-efficiency clean IC engines", Aurel Stodola Lecture, ETH Zurich, https://www.mavt.ethz.ch/content/dam/ethz/special-interest/mavt/department-dam/news/documents/ETH-Reitz-11-09-2016.pdf, November 09, 2016
2. "Reciprocating Internal Combustion Engines", 2014 Princeton Combustion Energy Frontiers Research Center (CEFRC), Summer Program on Combustion, 15 hr. Course, June 23, 2014 - June 27, 2014
3. "Reitz, R.D., "Reactivity Controlled Compression Ignition (RCCI) for ultra-high efficiency IC engine operation with low NOx and PM emissions plus transient control", SAE High Efficiency IC Engine Symposium, Westin Book Cadillac Hotel, Detroit, MI, April 14, 2013 - April 15, 2013
4. "Fuel Reactivity Controlled Compression Ignition (RCCI) for High-Efficiency Internal Combustion Engines ", Princeton University, Department of Mechanical & Aerospace Engineering (MAE) Spring Seminar Series, March 08, 2013
5. "Advanced CI Combustion Technologies for Improved Light Duty Automotive Emissions and Fuel Economy", SAE Emissions Control for Light Duty Automotive Vehicles Symposium, Combustion Engine Technologies and CO2 and Emissions Challenges, Detroit, MI., January 16, 2013
6. "Advanced Combustion Strategies: A Pathway to High-Efficiency, Clean Internal Combustion Engines", 2012 Energy Summit Panel Session: Efficient Buildings and Vehicles, Madison, WI, October 20, 2012

7. "Reciprocating Internal Combustion Engines", 2012 Princeton Combustion Energy Frontiers Research Center (CEFRC), Summer Program on Combustion: http://www.princeton.edu/cefrc/combustion-summer-school/archived-programs/2012-session/lecture-notes/ , June 27, 2012 - June 29, 2012
8. "Dual Fuel Reactivity Controlled Compression Ignition (RCCI) for In-cylinder NOx and Soot Reduction ", CTI 4th International Conference on NOx Reduction Current and Future Solutions for On- and Off-Road Applications, Detroit, MI, June 19, 2012
9. "Reactivity Controlled Compression Ignition (RCCI) for cleaner, more efficient engines ", North American Association of Chinese Engine Engineers (NAACEE) 2012 Annual Conference, Detroit, MI, April 24, 2012
10. "A Review of the Development and Application of Spray Combustion Models in the Automotive Industry", Invited Lectures, Imperial College, London , April 16, 2012
11. "Reactivity Controlled Combustion", Invited lecture, Engineering Professional Development short course, Madison, WI, November 08, 2011
12. "Gasoline-diesel “cocktail” — a potent recipe for cleaner, more efficient engines", SAE ICE 2011 10th International Conference on Engines and Vehicles, Capri (Napoli), Italy, September 12, 2011
13. "Fuel Flexibility and Reactivity Controlled Compression Ignition (RCCI)", Argonne National Laboratory - Workshop on Techniques for High-Pressure Combustion, August 29, 2011 - September 01, 2011
14. "Future Fuels and Reactivity Controlled Compression Ignition (RCCI)", ERC Symposium - Future Engine and their Fuels, Madison, WI, June 08, 2011 - June 09, 2011
15. "Reactivity Controlled Compression Ignition: A Pathway to High-Efficiency, Clean Internal Combustion Engines ", 5th Annual Nelson Institute Earth Day Panel Session: Innovation in Clean Technology, Madison, WI, April 20, 2011
16. "Fuel Reactivity Controlled Compression Ignition (RCCI) - A practical Path to High-Efficiency, Ultra-low Emission Internal Combustion Engines ", SAE High efficiency Engine Symposium Invited presentation, Detroit, MI, April 10, 2011
17. " RCCI and Other Highly Efficient Engine Concepts; Spray Modeling for Fuel Efficiency; Combustion Modeling and Simulation ", Reaction Design Distinguished Speaker Video Series, http://www.reactiondesign.com/events/open/distinguished_speaker_series.html, March 01, 2011
18. "Fuel Reactivity Controlled Compression Ignition: A Pathway to High-Efficiency, Clean Combustion ", SAE Government/Industry Meeting, Washington, DC, January 28, 2011
19. "Fuel Reactivity Controlled Compression Ignition (RCCI) for High-Efficiency, Ultra-Low Emission Internal Combustion Engines", William C. Reynolds Memorial Seminar, Stanford University, October 27, 2010
20. "High Efficiency Fuel Reactivity Controlled Compression Ignition (RCCI) Combustion", 16th Directions in Engine-Efficiency and Emissions Research (DEER) Conference Detroit, Michigan, Invited Panelist, September 28, 2010
21. "The Reactivity Controlled Compression Ignition Engine: Simulating Performance in a Changing Fuel Environment", 3rd Multi-Agency Coordinating Committee (MACCCR) Fuel

Summit Review, Invited Presentation, September 20, 2010

22. "High-Efficiency, Ultra-Low Emission Combustion via Fuel Reactivity Controlled Compression Ignition (RCCI)", Ford Research and Innovation Center, Invited Presentation, August 23, 2010
23. "Toward the 60+% Thermal Efficiency IC Engine", Invited panel presentation, SAE Congress, Detroit, MI [watch video of presentation], April 13, 2010
24. "High-Efficiency, Ultra-Low Emission Combustion in a Compression Ignition Engine via Fuel Reactivity Control, or, Blending gasoline and diesel to create the most efficient and cleanest engine ", Invited presentation, Mechanical Engineering Departmental Seminar Series, University of Michigan, Ann Arbor, November 06, 2009
25. "Blending gasoline and diesel to create the most efficient and cleanest engine", First Look Forum for early Stage Investors, UW Partnership Training Center, Madison, WI, September 03, 2009
26. "High-Efficiency, Ultra-Low Emission Combustion in a Heavy-Duty Engine via Fuel Reactivity Control", Invited presentation, 15th Diesel Engine-Efficiency and Emissions Research (DEER) Conference, Dearborn, MI, August 03, 2009 - August 06, 2009
27. "Improving Fuel Efficiency with Fuel-Reactivity-Controlled Combustion", Engine Research Center Symposium - Reducing Fuel Consumption: Solutions and Prospects, Madison, WI, June 10, 2009 - June 11, 2009
28. "Study of Diesel Spray Primary Breakup", Invited Presentation, Argonne National Labs , May 06, 2009
29. "State of the Art in Spray Modeling", Invited Presentation, Procter & Gamble, Cincinnati, OH , April 01, 2009
30. "“Multi-dimensional Modeling of IC Engines with Advanced Spray and Chemistry Models,”", Invited Presentation, Bridging the Gap Seminar Series, Argonne National Labs, June 11, 2008
31. "“Internal Combustion Engine Modeling and Design Optimization,"", Invited Plenary lecture, ILASS Americas, 21st Annual Conference on Liquid Atomization and Spray Systems, Orlando, Florida, May 18, 2008 - May 21, 2008
32. "Engine Design Optimization Using CFD", Plenary lecture, 12th SIAM International Conference on Numerical Combustion (NC08) , Monterey, CA, March 31, 2008 - April 02, 2008
33. "Internal Combustion Engine Design Optimization using CFD", Invited plenary lecture, ICE2007 8th Intnl. Conf. on Engines for Automobiles, Capri, Naples. http://www.sae-na.it/ICE2007lectures.html , September 17, 2007
34. "Advanced CDF Modeling for Internal Combustion Engine Design Optimization", Plenary Lecture, CD Adapco Japan CAE Solutions Conference, Yokohama, Japan, May 31, 2007
35. "CFD Modeling of Diesel Combustion", Invited Presentation, Reaction Design Model Fuel Consortium Meeting, San Francisco, November 19, 2006 - November 21, 2006
36. "Status of Diesel Combustion Modeling", Invited presentation, DOE BES Basic Research Needs Workshop, Arlington, VA, October 30, 2006

37. "CFD Modeling of Low Emissions Diesel Engine Combustion Processes", Invited Seminar, Mechanical Science and Engineering Department, University of Illinois Urbana-Champaign, October 24, 2006
38. "Low Temperature Combustion and Diesel Emission Reduction Research", 12th Diesel Engine Emission Reduction Conference, Detroit, MI, August 24, 2006
39. "Modeling of Diesel Combustion", Invited Presentation, Cummins Worldwide TSFE Conference, Cummins, Columbus, IN, May 18, 2006
40. "CFD Modeling of Diesel HCCI", SAE Homogeneous Charge Compression Ignition Combustion Symposium, Grand Hotel, Lund, Sweden, September 18, 2005 - September 20, 2005
41. "Computational Fluid Dynamics Modeling of Diesel Engine Combustion and Emissions", 11th Department of Energy Diesel Engine Emissions Reduction Conference, Palmer House Hilton, Chicago, Illinois, August 21, 2005 - August 25, 2005
42. "Interaction of Engines and Fuels", Naval Research Advisory Committee Panel Meeting, Arlington, VA, June 15, 2005
43. "Modeling Liquid Jet Atomization with Application to Engines", Science & Engineering Council Invited Seminar, S.C. Johnson & Sons, Inc., Racine, WI, January 15, 2004
44. "Recent Developments in IC Engine CFD Modeling with Application to Engine Design Optimization", Pennsylvania State University Mechanical Engineering Department invited seminar, November 20, 2003
45. "Overview of IC Engine CFD Modeling with Application to Engine Design Optimization", SAE Powertrain and Fluid Systems Conference and Exhibition, Pittsburgh, Pa, Keynote lecture: Thursday, October 30, 2003
46. "Diesel HCCI Research Directions", SAE Powertrain and Fluid Systems Conference and Exhibition, Pittsburgh, Pa, HCCI Panel presentation, Thursday, October 30, 2003
47. "Engine Fuel Droplet High Pressure Vaporization Modeling", Invited Presentation at Topical Workshop on Gas Turbine/Rocket/Engine Sprays, ILASS-2003, Monterey, CA, May 18, 2003 - May 21, 2003
48. "Optimization of IC Engine Design for Reduced Emissions using CFD Modeling", Invited Keynote Lecture, THIESEL 2002 Conference on Thermo- and Fluid-Dynamic Processes in Diesel Engines, University of Valencia, Spain, September 10, 2002 - September 13, 2002
49. "Current Status of Engine Combustion Modeling with Application to Optimization of IC Engine Design", Invited Keynote Lecture, Joint International Combustion Symposium, Kauai, Hawaii, September 10, 2001 - September 12, 2001
50. "Spray and Combustion Modeling in Gasoline Direct Injection Engines", Invited Keynote Lecture, 8th International Conference on Liquid Atomization and Spraying Systems, ICLASS-2000, Pasadena, CA., July 16, 2000 - July 20, 2000
51. "Optimization of Diesel Engine Performance using Genetic Algorithms and CFD", Princeton University, Combustion Seminar Series, December 16, 1999
52. "Controlling D.I. Diesel Engine Emissions Using Multiple Injections and EGR", UIC Mechanical Engineering Seminar Series, University of Illinois at Chicago, November 12, 1999
53. "Sources of PM in Diesel Combustion and the NOx/PM Tradeoff", Corning's Diesel

Workshop, Corning, N.Y., September 27, 1999 - September 29, 1999

54. "Developments in Spray Modeling in Diesel and Direct-Injection Gasoline Engines", Keynote Lecture, Multidimensional simulation of Engine internal flows Conference, IFP, Rueil-Malmaison, Paris, France, December 03, 1998
55. "CFD Modeling of Improve Diesel Engines", ERCOFTAC-Seminar series, RWTH University, Aachen, Germany, December 02, 1998
56. "Using Spray, Combustion and Emissions CFD Models to Improve Diesel Engine Performance", Princeton University, MAE Combustion Seminar Series, September 18, 1998
57. "Use of Multiple Injections and EGR for Emissions Control in D.I. Diesel Engines", ME903 Seminar, University of Wisconsin-Madison, January 21, 1998
58. "The Use of Multiple Injections and EGR for Emissions Control in D.I. Diesel Engines", Keynote Lecture Common-Rail Einspritzsysteme - Gegenwart und Zukunftspotential, International Conference, ETH Zurich, November 07, 1997
59. "Emissions and CFD Models for Diesel Engines", Chrysler Technical Center, Auburn Hills, MI, August 18, 1997
60. "Using Advanced Spray Combustion and Emissions CFD Models to Improve Diesel Engine Performance", Keynote lecture Third International FIRE User Meeting. (Received best paper award at the meeting)., June 17, 1997
61. "Modeling of Internal Combustion Engines", FIAT Central Research Laboratories, Turin, Italy, March 13, 1996
62. "Recent Advances in 3-D Calculations for Internal Combustion Engines", Invited 2-hour Keynote lecture Workshop on Modeling of Internal Combustion Engines, Naples, Italy., March 12, 1996

Student Theses Supervised

1. Abani, , Neerav, Ph.D., Aug 30, 2009, "Improvements in Multi-dimensional Modeling of Unsteady Turbulent Diesel Sprays and Engine Combustion"
2. Adhikary, Bishwadipa Das, PhD, Nov 21, 2014, "Low Load Operation in a Light-Duty Diesel Engine using High Octane Fuels and Additives"
3. Ayoub, Nabil S., PhD, Aug 28, 1995, "Modeling Multicomponent Fuel Sprays in Engines with Application to Diesel Cold-Starting"
4. Bakenhus, Marco, MS, 1998, "2-Color Combustion Visualization in a Single-Cylinder D.I. Heavy-Duty Diesel Engine Using an Endoscope-based Imaging System"
5. Beale, Jennifer C., MS, Jan 31, 1999, "Modeling Fuel Injection Using the Kelvin-Helmholtz/Rayleigh-Taylor Hybrid Atomization Model in KIVA-3V"
6. Bergin, Michael, MS, Nov 08, 2005, "Optimization of a Large Diesel Engine via Spin Spray Combustion "
7. Bergin, Michael, PhD, May 27, 2010, "Optimization and Analysis of Mixing Strategies in Diesel Engines"
8. Bharath, Anand, PhD, May 31, 2016, "Optimization of the Air Handling System of a

Multicylinder Light-duty Engine running on Reactivity Controlled Compression Ignition â€“ A Simulation Study"

9. Boyarski, Nicholas, MS, Dec 14, 2004, "Experimental Investigation of the Effects of Piston Bowl Geometry, Nozzle Spray Angle, and Engine Control Parameters on Early Injection Premixed Compression Ignition (PCI) Combustion in a HSDI Diesel Engine"
10. Brakora, Jessica, MS, Nov 27, 2007, "Development and Validation of a Reduced Reaction Mechanism for Biodiesel-fueled Engine Simulations"
11. Brakora, Jessica, PhD, Aug 22, 2012, "A Comprehensive Combustion Model for Biodiesel-fueled Engine Simulations"
12. Cantrell, Benjamin, MS, May 14, 2010, "Validation of Advanced Combustion Models Applied to Multiple Injections in Heavy-Duty Diesel Engines"
13. Chan, Michael, MS, May 05, 1997, "Modeling Multiple Injection, EGR, and Nozzle Hole Effects on D.I. Diesel Engine Emissions"
14. Choi, Cathy, PhD, Dec 11, 1998, "Experiments and Modeling of Fuel Composition Effects on Diesel Engine Performance and Emissions"
15. Corgard, Daniel D., MS, Jun 09, 2000, "Effects of Alternative Fuels and Intake Port Geometry on High-Speed, Direct-Injection, Diesel Engine Performance and Emissions"
16. DelVescovo, Daniel A., PhD, Jun 01, 2016, "The Effects of Fuel Stratification and Heat Release Rate Shaping in Reactivity Controlled Compression Ignition (RCCI) Combustion"
17. Dempsey, Adam B., PhD, Aug 07, 2013, "Reactivity Controlled Compression Ignition (RCCI) with Alternative Fuels"
18. Dolak, Jonathan, MS, May 04, 2010, "Combustion Chamber Optimization of a Light Duty Diesel Engine"
19. Dunbeck, Patrick B., MS, Aug 28, 2009, "An Experimental Study of Dual Fueling with Port Injection in a Single Cylinder Air Cooled HSDI Diesel Engine"
20. Eckhause, Joel E., MS, Jan 24, 1995, "Modeling Spray Wall Impingement Heat Transfer in Direct Injection Engines"
21. Fan, L., PhD, Jan 18, 2000, "Multidimensional Modeling of Mixing and Combustion of Direct Injection Spark Ignition Engines"
22. Galligan, D.T., PhD, Mar 31, 2001, "Effect of Ignition and Combustion on Diesel Engine Emissions"
23. Genzale, Caroline L., Ph.D., Dec 17, 2008, "Optimizing Combustion Chamber Design for Low-Temperature Diesel Combustion"
24. Giangregorio, Roberto P., MS, 1992, "Optoacoustic Temperature and Turbulent Diffusivity Measurements in a Diesel Engine"
25. Gross, Christopher Wolfgang, PhD, Jun 22, 2016, "Investigation of RCCI Operation with Customized Pistons in a Light-Duty Multi-Cylinder Engine Using Dieseline"
26. Hamosfakidis, B., MS, Aug 03, 2001, "Using Genetic Algorithm Optimization to Improve Ignition Prediction for Multidimensional Diesel Engine Modeling"
27. Hampson, Gregory James, PhD, 1997, "A Theoretical and Experimental Study of Emissions Modeling for Diesel Engines with Comparisons to In-Cylinder Imaging"

28. Han, Zhiyu, PhD, Jul 02, 1996, "Numerical Study of Air-Fuel Mixing in Direct-Injection Spark-Ignition and Diesel Engines"
29. Hanson, Reed M., MS, Oct 13, 2009, "Experimental Investigation of Fuel Effects on Low Temperature Combustion in a Heavy-Duty Compression-Ignition Engine"
30. Hanson, Reed M., PhD, Nov 27, 2013, "Experimental Investigation of Transient RCCI Combustion in a Light Duty Diesel Engine "
31. Hardy, W.L., MS, May 09, 2005, "An Experimental Investigation of Advanced Diesel Combustion Strategies for Emissions Reductions in a Heavy-Duty Diesel Engine at High Speed and Medium Load"
32. Hruby, Eric, MS, Aug 29, 2003, "An Experimental Investigation of a Homogeneous Charge Compression Ignition Engine Using Low Pressure Injection and Diesel Fuel"
33. Jiao, Qi, MS, Jun 04, 2010, "Influence of Molecular Interactions on the Vaporization of Multi-Component Fuel Sprays"
34. Jiao, Qi, PhD, May 28, 2014, "Soot Formation in GDI/GTDI Engines"
35. Juneja, Harmit, MS, Aug 25, 2003, "Injection Rate-shape Optimization as a Means of Controlling Combustion of Diesel Sprays"
36. Kaddatz, John, MS, Aug 26, 2011, "Experimental Investigation of Dual-Fuel RCCI Operation in a Light-Duty Engine"
37. Kim, Junghwan, PhD, Dec 08, 2009, "Experimental Investigation of Effects of Intake Pressure and Advanced Concept Nozzles on Stoichiometric Diesel Combustion with a Three-Way Catalyst for Emissions Reduction"
38. Klingbeil, Adam, MS, May 20, 2002, "Particulate and NOx Reduction in a Heavy-Duty Diesel Engine Using High Levels of Exhaust Gas Recirculation and Very Early or Very Late Start of Injection"
39. Kokjohn, Sage, PhD , Apr 11, 2012, "Reactivity Controlled Compression Ignition (RCCI) Combustion"
40. Kokjohn, S.L., , MS , Dec 15, 2008, "Investigations of Advanced Injection and Combustion Strategies in Low-Emissions Diesel Engines"
41. Kong, Song-Charng, MS, 1992, "Modeling Ignition and Combustion Processes in Compression Ignited Engines"
42. Kong, Song-Charng, PhD, Aug 18, 1994, "Diesel Ignition and Combustion Modeling with Comparisons to In-Cylinder Flame Imaging"
43. Labaza, Matthew, MS, Aug 13, 2012, "Demonstration of Reactivity Controlled Compression Ignition (RCCI) Combustion in a Two-Stroke Cycle Engine"
44. Lee, Taewon, PhD, Aug 31, 2002, "An Experimental Study of Emissions Reduction Mechanisms in a High Speed Direct Injection Diesel Engine with Multiple Injections and EGR"
45. Lee, Sangsuk, PhD, Nov 01, 2006, "Investigation of Two Low Emissions Strategies for Diesel Engines; Premixed Charge Compression Ignition (PCCI) and Stoichiometric Combustion"
46. Liang, Long, PhD, Sep 01, 2006, "Modeling Knock in Spark-Ignition Engines Using a G-equation Combustion Model Incorporating Detailed Chemical Kinetics"

47. Liechty, Michael, MS, Aug 20, 2004, "Optimization of Heavy-Duty Diesel Engine Operating Parameters at High Speed and Medium Load Using Micro-Genetic Algorithms"
48. Lim, Jae, PhD, Feb 06, 2015, "High Power Output Operation of RCCI Combustion"
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