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Publications

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Journal and Refereed Symposium Articles

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1. J. E. Shepherd and B. Sturtevant 1982 "Rapid Evaporation at the Superheat Limit" *J. of Fluid Mech.* **121**, 379–402. https://doi.org/10.1017/S0022112082001955

2. B. Sturtevant and J. E. Shepherd 1982 "Evaporative Instability at the Superheat Limit" *Applied Scientific Research* **38**, 85–97. https://doi.org/10.1007/BF00385940

3. M. R. Baer, S. K. Griffiths, and J. E. Shepherd 1984 "Hydrogen Combustion in Aqueous Foams" *Nuclear Science and Engineering* **88**, 436–444. https://doi.org/10.13182/NSE84-A18597

4. M. Gaug, R. Knystautas, J. H. Lee, W. B. Benedick, L. Nelson, and J. E. Shepherd 1986 "Lean Flammability Limits of Hybrid Mixtures" *Progress in Astronautics and Aeronautics* **105**, 155-168.

5. J. E. Shepherd 1986 "Chemical Kinetics of Hydrogen–Air–Diluent Detonations" in Dynamics of Explosions, Eds. J.-C. Leyer, R.I. Soloukhin, and J.R. Bowen, *Progress in Astronautics and Aeronautics* **106**, 263-293. https://doi.org/10.2514/5.9781600865800.0263.0293

6. J. E. Shepherd, A. Sulmistras, A. J. Saber, and I. O. Moen 1986 "Chemical Kinetics and Cellular Structure of Detonations in Hydrogen Sulphide and Air" in Dynamics of Explosions, Eds. J.-C. Leyer, R.I. Soloukhin, and J.R. Bowen, *Progress in Astronautics and Aeronautics* **106**, 294-320. https://doi.org/10.2514/5.9781600865800.0294.0320

7. S. R. Tieszen, M. P. Sherman, W. B. Benedick, J. E. Shepherd, R. Knystautas, and J. H. Lee 1986 "Detonation Cell Size Measurements in Hydrogen-Air-Steam Mixtures" in Dynamics of Explosions, Eds. J.-C. Leyer, R.I. Soloukhin, and J.R. Bowen, *Progress in Astronautics and Aeronautics* **106**, 205-219. https://doi.org/10.2514/5.9781600865800.0205.0219

8. J. E. Shepherd, I. O. Moen, S. B. Murray, and P. A. Thibault 1988 "Analyses of the Cellular Structure of Detonations" *21st Symposium (International) on Combustion*, The Combustion Institute, Pittsburgh, PA, 1649–1658. https://doi.org/10.1016/S0082-0784(88)80398-9

9. M. D. Pedley, C. V. Bishop, F. J. Benz, C. A. Bennett, R. D. McLenagan, D. L. Fenton, R. Knystautas, J. H. Lee, O. Peraldi, G. Dupre, and J. E. Shepherd 1988 "Hydrazine Vapor Detonations" in Dynamics of Explosions, Eds. A. Borisov, A. L. Kuhl, J. R. Bowen, and J.-C. Leyer, *Progress in Astronautics and Aeronautics* **114**, 45-63. https://doi.org/10.2514/5.9781600865886.0045.0063

10. M. Plaster, R. McClenagan, F. Benz, J. E. Shepherd and J. H. S. Lee 1991 "Detonation of Cryogenic Gaseous Hydrogen-Oxygen Mixtures" in Dynamics of Detonations and Explosions: Explosion Phenomena, Eds. A. A. Borisov, W. A. Sirignano, A. L. Kuhl, and J.-C. Leyer, *Progress in Astronautics and Aeronautics* **133**, 37–55. https://doi.org/10.2514/5.9781600866067.0037.0055

11. J. E. Shepherd, A. Teodorcyzk, R. Knystautas, J. H. Lee 1991 "Shock Waves Produced by Reflected Detonations" in Dynamics of Detonations and Explosions: Explosion Phenomena, Eds. A. A. Borisov, W. A. Sirignano, A. L. Kuhl, and J.-C. Leyer, *Progress in Astronautics and Aeronautics* **134**, 244–264. https://doi.org/10.2514/5.9781600866074.0244.0264

12. C. F. Melius, N. Bergan, and J. E. Shepherd 1991 "Effects of Water on Combustion Kinetics at High Pressure" *23rd Symposium (International) on Combustion*, The Combustion Institute, Pittsburgh, PA, 217-223. https://doi.org/10.1016/S0082-0784(06)80262-6

13. W. C. Tao, A. M. Frank, R E. Clements, and J. E. Shepherd 1991 "The Fundamentals of Metal Combustion in Composite Explosives Revealed by High Speed Microphotography" *Proceedings of the 9th Symposium (Intl.) on Detonation*, Vol. I, OCNR113291-7, 641-654.

14. W. C. Tao, A. M. Frank, E. Clements, and J. E. Shepherd 1990 "Aluminum Metal Combustion in Water Revealed by Ultrahigh-Speed Microphotography" Proc. SPIE 1346, Ultra-High and High-Speed Photography, Videography, Photonics and Velocimetry '90, The International Society of Optical Engineering, Bellingham, WA, 300-310. http://dx.doi.org/10.1117/12.23359

15. T. B. Brill, P. J. Brush, K. J. James, J. E. Shepherd, and K. J. Pfeiffer 1992 "T-Jump/FT-IR Spectroscopy: A New Entry into the Rapid, Isothermal Pyrolysis Chemistry of Solids and Liquids" *J. Applied Spectroscopy* **46**,(6) 900-911. https://doi.org/10.1366/0003702924124277

16. J. Meltzer, J. E. Shepherd, R. Akbar, and A. Sabet 1993 "Mach Reflection of Detonation Waves" in Dynamic Aspects of Detonations, Eds. A. L. Kuhl, A. A. Borisov, J.-C. Leyer, and W. A. Sirignano, *Progress in Astronautics and Aeronautics* **153**, 78–94. https://doi.org/10.2514/5.9781600866265.0078.0094

17. S. McCahan and J. E. Shepherd 1993 "Models of Rapid Evaporation in Nonequilibrium Mixtures of Tin and Water" in Dynamic Aspects of Explosion Phenomena, Eds. W. Sirignano, A.A. Borisov, J.-C. Leyer and A.L. Kuhl, *Progress in Astronautics and Aeronautics* **154**, 432-448. https://doi.org/10.2514/5.9781600866272.04

18. J. R. Simões Moreira and J.E. Shepherd 1995 "Adiabatic Evaporation Waves" *Journal of the Brazilian Society of Mechanical Sciences* **XVI** (4), 445-451.

19. M. J. Kaneshige and J. E. Shepherd 1996 "Oblique Detonation Stabilized on a Hypervelocity Projectile" *26th Symposium (International) on Combustion*, The Combustion Institute, Pittsburgh, PA, 3015–3022.
https://doi.org/10.1016/S0082-0784(96)80145-7

20. R. Knystautas, J. H. S. Lee, J. E. Shepherd, and A. Teodorcyzk 1998 "Flame Acceleration and Transition to Detonation in Benzene-Air Mixtures" *Combust. Flame* **115**. 424-436.
https://doi.org/10.1016/S0010-2180(98)00014-5

21. J. R. Simões Moreira and J. E. Shepherd 1999 "Evaporation Waves in Superheated Dodecane" *J. Fluid Mech* 382, 63-86. https://doi.org/10.1017/S0022112098003796

22. J. E. Shepherd 1998 "Learning from a Tragedy: Explosions and Flight 800" *Engineering and Science* **LXI**(2), 18-29. http://resolver.caltech.edu/CaltechES:61.2.Flight800

23. W. M. Beltman, E. N. Burcsu, J. E. Shepherd, and L. Zuhal 1999 "The Structural Response of Cylindrical Shells to Internal Shock Loading" *Journal of Pressure Vessel Technology* **121**, 315-322. http://dx.doi.org/10.1115/1.2883709

24. C. A. Eckett, J. J. Quirk, and J. E. Shepherd 2000 "The role of unsteadiness in direct initiation of gaseous detonation" *Journal of Fluid Mechanics* **421**, 147-183. https://doi.org/10.1017/S0022112000001555

25. U. J. Pfahl, M. C. Ross, J. E. Shepherd, K.O. Pasamehmetoglu, and C. Unal 2000 "Flammability limits, ignition energy and flame speeds in hydrogen-methane-ammonia-nitrous oxide-oxygen-nitrogen mixtures." *Combustion and Flame* **123**, 140-158. https://doi.org/10.1016/S0010-2180(00)00152-8

26. M. Aivazis, W. A. Goddard, D. Meiron, M. Ortiz, J. Pool, and J. E. Shepherd 2000 "A Virtual Test Facility for Simulating the Dynamic Response of Materials" *Computing in Science and Engineering* March/April 2000, 42-53. https://doi.org/10.1109/5992.825748

27. W. M. Beltman and J. E. Shepherd 2002 "Linear elastic response of tubes to internal detonation loading." *Journal of Sound and Vibration* **252**(4), 617–655. https://doi.org/10.1006/jsvi.2001.4039

28. M. Cooper, S. I. Jackson, J. M. Austin, E. Wintenberger, and J. E. Shepherd 2002 "Direct experimental impulse measurements for detonations and deflagrations" *Journal of Propulsion and Power*, **18**(5), 1033–1041. http://dx.doi.org/10.2514/2.6052

29. E. Wintenberger, J. M. Austin, M. Cooper, S. I. Jackson, and J. E. Shepherd 2003 "An analytical model for the impulse of a single-cycle pulse detonation tube" *Journal of Propulsion and Power*, **19**(1), 22–38. http://dx.doi.org/10.2514/2.6099

30. E. Wintenberger, J. M. Austin, M. Cooper, S. I. Jackson, and J. E. Shepherd 2004 Erratum for "An analytical model for the impulse of a single-cycle pulse detonation tube" *Journal of Propulsion and Power*, **20**(4), 765-767. http://dx.doi.org/10.2514/1.9442

31. E. Wintenberger, J. M. Austin, M. Cooper, S. I. Jackson, and J. E. Shepherd "Reply to Comment on: An analytical model for the impulse of a single-cycle pulse detonation tube by Heiser and Pratt" *Journal of Propulsion and Power*, **20**(1), 189–191. http://dx.doi.org/10.2514/1.B4304R2

32. E. Wintenberger, J. M. Austin, M. Cooper, S. I. Jackson, and J. E. Shepherd 2004 "Erratum for: An analytical model for the impulse of a single-cycle pulse detonation tube." *Journal of Propulsion and Power*, **20**(4), 765–767. http://dx.doi.org/10.2514/1.9442

33. E. Wintenberger, M. Cooper, F. Pintgen, and J. E. Shepherd 2004 "Reply to Comment on: An analytical model for the impulse of a single-cycle pulse detonation tube by Radulescu and Hanson" *Journal of Propulsion and Power*, **20**(5), 957-959. http://dx.doi.org/10.2514/1.9441

34. M. Arienti, P. Hung, E. Morano, and J. E. Shepherd 2003 "A level set approach to eulerian-lagrangian coupling" *Journal of Computational Physics* **185**, 213–251. https://doi.org/10.1016/S0021-9991(02)00055-4

35. J. M. Austin and J. E. Shepherd 2003 "Detonation in hydrocarbon fuel blends" *Combustion and Flame* **132**(1-2), 79-90. https://doi.org/10.1016/S0010-2180(02)00422-4

36. F. Pintgen, C. A. Eckett, J. M. Austin, and J. E. Shepherd 2003 "Direct observation of reaction zone structure in propagating detonations." *Combustion and Flame* **133**(3), 211–229. https://doi.org/10.1016/S0010-2180(02)00458-3

37. M. Cooper, J. E. Shepherd, and F. Schauer 2004 "Impulse Correlation for Partially-Filled Tubes" Technical Note, *Journal of Propulsion and Power* **20**(5), 947–950. https://doi.org/10.2514/1.4997

38. M. Cooper and J. E. Shepherd 2004 "The effect of porous thrust surface on detonation transition and detonation tube impulse" *Journal of Propulsion and Power* **20**(5), 811–819. https://doi.org/10.2514/1.4999

39. T.W. Chao and J. E. Shepherd 2004 "Comparison of Fracture Response of Preflawed Tubes under Internal Static and Detonation Loading." *Journal of Pressure Vessel Technology* **126**(3), 345-353. http://dx.doi.org/10.1115/1.1767861

40. J. M. Austin, F. Pintgen, and J. E. Shepherd 2005 "Reaction zones in highly unstable detonations" Proceedings of the 30th Combustion Symposium, Vol. 2, 1849-1857. http://dx.doi.org/10.1016/j.proci.2004.08.157

41. M. Arienti and J.E. Shepherd 2005 "A numerical study of detonation diffraction" *J. Fluid Mech.* **529**, 117-2005. http://dx.doi.org/10.1017/S0022112005003319

42. T.-W. Chao and J. E. Shepherd. 2005 "Fracture response of externally flawed aluminum cylindrical shells under internal gaseous detonation loading." *International Journal of Fracture*, **134**(1):59-90. http://dx.doi.org/10.1007/s10704-005-5462-x

43. E. Wintenberger and J. E. Shepherd "Model for the performance of air-breathing pulse detonation engines", Journal of Propulsion and Power, 22(3):593-603, 2006. https://doi.org/10.2514/1.5792

44. E. Wintenberger and J. E. Shepherd "Thermodynamic Cycle Analysis for Propagating Detonations" Journal of Propulsion and Power, 22(3):694-698, 2006. https://doi.org/10.2514/1.12775

45. E. Wintenberger and J. E. Shepherd 'The stagnation hugoniot analysis for steady combustion waves in propulsion systems." Journal of Propulsion and Power, 22(4):835-844, 2006. https://doi.org/10.2514/1.12779

46. E. Wintenberger and J. E. Shepherd. Introduction to "To the Question of Energy Use of Detonation Combustion" by Ya. B. Zel'dovich. Journal of Propulsion and Power, 22(3):586-587, 2006. https://doi.org/10.2514/1.B4997TC and http://dx.doi.org/10.2514/1.22705

47. M. Cooper and J. E. Shepherd. "Detonation tube impulse in sub-atmospheric environments." Journal of Propulsion and Power, 22(4):845-851, 2006. https://doi.org/10.2514/1.16979

48. S. Jackson, Joanna M. Austin, and J. E. Shepherd "Planar Detonation Wave Initiation in Large-Aspect-Ratio Channels", AIAA Journal, 44(10):2422-2425, 2006. https://doi.org/10.2514/1.21581

49. F. Pintgen and J. E. Shepherd, "Stereoscopic imaging of transverse detonations in diffraction " Journal of Flow Visualization and Image Processing, Vol. 14, 121-142, 2007. 10.1615/JFlowVisImageProc.v14.i1.80

50. Z. Liang, S. Browne, R. Deiterding, and J. E. Shepherd. "Detonation Front Structure and the Competition for Radicals", Proceedings of the 31rst Combustion Symposium, Vol 31, Part II, 2445-2453, 2007.
https://doi.org/10.1016/j.proci.2006.07.244

51. S. Jackson and J. E. Shepherd "Torodial imploding wave initiator for pulse detonation engines," AIAA Journal, Vol. 45, no. 1, 257-270, 2007. https://doi.org/10.2514/1.24662

52. D. Lieberman and J. E. Shepherd "Detonation interaction with a diffuse interface and subsequent chemical reaction" Shock Waves, Vol. 16, No. 6, 421-430, 2007.
http://dx.doi.org/10.1007/s00193-007-0080-3.

53. D. Lieberman and J. E. Shepherd "Detonation interaction with an interface," Physics Fluids, Vol. 19, No. 9, 096101, 2007. http://dx.doi.org/10.1063/1.2768903

54. J. E. Shepherd and F. Perez "Kerosene Lamps and Cook stoves: the hazards of gasoline contamination," Fire Safety Journal 43(3):171-179, 2008. http://dx.doi.org/10.1016/j.firesaf.2007.08.001

55. M. Cooper, J. E. Shepherd "Single-Cycle Impulse from Detonation Tubes with Nozzles," J. Propulsion and Power, Vol. 24, No. 1, 81-87, Jan-Feb 2008. https://doi.org/10.2514/1.30192

56. S. I. Jackson and J. E. Shepherd "Detonation Initiation in a Tube via Imploding Toroidal Shock Waves", AIAA J., 46 (9):2357-2367, 2008. http://dx.doi.org/10.2514/1.35569

57. J. Kasahara, Z. Liang, S. Browne, J. E. Shepherd, "Impulse Generation by an Open Shock Tube," AIAA J., Vol. 46, No. 7, 1593-1603, July 2008. http://dx.doi.org/10.2514/1.27467

58. G. Ciccarelli, S. Hlouschko, C. Johansen, J. Karnesky, and J.E. Shepherd. "The study of geometric effects on the explosion front propagation in a horizontal channel with a layer of spherical beads" Proceedings of the Combustion Institute, Vol. 32, 2299-2306, 2009. https://doi.org/10.1016/j.proci.2008.06.107

59. J. E. Shepherd "Detonation in Gases", Proceedings of the Combustion Institute, Vol. 32, 83-98, 2009. http://dx.doi.org/10.1016/j.proci.2008.08.006

60. F. Pintgen and J. E. Shepherd "Detonation Diffraction in Gases," Combustion and Flame, 156(3):665-677, 2009. http://dx.doi.org/10.1016/j.combustflame.2008.09.008

61. J. E. Shepherd "Structural Response of Piping to Internal Gas Detonation", Journal of Pressure Vessel Technology, 131(3):031204, 2009. http://dx.doi.org/10.1115/1.3089497.

62. K. Inaba and J. E. Shepherd "Flexural Waves in Fluid-filled Tubes Subject to Axial Impact" J. Pressure Vessel Tech., April 2010, Volume 132, Issue 2, 021302. *2011 G.E.O. Widera Literature Award for the Outstanding Technical Paper in JPVT.* http://dx.doi.org/10.1115/1.4000510

63. S. Sanderson, J.Austin, Z. Liang, F. Pintgen, J. E. Shepherd, and H. Hornung. "Reactant Jetting in Unstable Detonation." Prog Aerospace Sci 46(2-3):116-131, 2010. http://dx.doi.org/10.1016/j.paerosci.2009.11.002.

64. G. B. Rawls, Jr., F. Coyne Prenger, J. E. Shepherd, and Zhe Liang "Pressure Integrity of 3013 Container under Postulated Accident Conditions," Journal of Nuclear Materials Management, XXXVIII(3), 43-53, 2010. Also available as Savannah River National Laboratories Report, SRNL-STI-2010-00053.

65. S.P.M. Bane, J.E. Shepherd, E. Kwon, A. C. Day "Statistical Analysis of Electrostatic Spark Ignition of Lean H2/O2/Ar Mixtures," International Journal of Hydrogen Energy, 36:2344-2350, 2011. http://dx.doi.org/10.1016/j.ijhydene.2010.05.082

66. K. Ando, T. Sanada, K. Inaba, J. S. Damazo, J. E. Shepherd, T. Colonius, and C. E. Brennen. "Shock propagation through a bubbly liquid in a deformable tube," Journal of Fluid Mechanics, 671:339-363, 2011. http://dx.doi.org/10.1017/S0022112010005707

67. S. P. M. Bane, R. Mével, S. Coronel, and J. E. Shepherd. "Flame burning speeds and combustion characteristics of undiluted and nitrogen-diluted hydrogen-nitrous oxide mixtures." International Journal of Hydrogen Energy, 36 (2011), pp. 10107-10116. http://dx.doi.org/10.1016/j.ijhydene.2011.04.232

68. S. P. M. Bane, R. Ziegler, S. Coronel, and J. E. Shepherd. "Experimental investigation of spark ignition energy in kerosene, hexane, and hydrogen." Journal of Loss Prevention in the Process Industries, Volume 26, Issue 2, Pages 290-294 (March 2013) http://dx.doi.org/10.1016/j.jlp.2011.03.007

69. J. L. Ziegler, R. Deiterding, J. E. Shepherd, D. I. Pullin "An adaptive high-order hybrid scheme for compressive, viscous flows with detailed chemistry" Journal of Computational Physics, 230:7598-7630, 2011. http://dx.doi.org/10.1016/j.jcp.2011.06.016

70. P. A. Boettcher, R. Mével, V. Thomas, J. E. Shepherd. "The effect of heating rates on low temperature hexane air combustion." Fuel 96:392-403 2012. http://dx.doi.org/10.1016/j.fuel.2011.12.044

71. R. Mével, P.A. Boettcher, J.E. Shepherd. "Absorption Cross Section at 3.39 μm of Alkanes, Aromatics and Substituted Hydrocarbons." Chemical Physics Letters 531:22-27, 2012. http://dx.doi.org/10.1016/j.cplett.2012.01.069

72. Erratum to "Absorption Cross Section at 3.39 μm of Alkanes, Aromatics and Substituted Hydrocarbons" Mével R., Boettcher P.A. and Shepherd J.E. Chemical Physics Letters, 2012, 539-540:531. https://doi.org/10.1016/j.cplett.2012.05.045

73. J. Karnesky, J. Damazo, K. Chow-Yee, A. Rusinek, J. E. Shepherd. "Plastic Deformation Due to Reflected Detonation" International Journal of Solids and Structures 50(1); 97-110, 2013. See http://dx.doi.org/10.1016/j.ijsolstr.2012.09.003.

74. N. J. Parziale, J. E. Shepherd, and H. G. Hornung. "Differential Interferometric Measurement of Instability in a Hypervelocity Boundary Layer", AIAA J. 51(3), 750-754, 2013. http://dx.doi.org/10.2514/1.J052013

75. N. P. Bitter and J. E. Shepherd. "Detonation and Transition to Detonation in Partially Water-Filled Pipes", J. Pressure Vessel Technol. 135(3), 031203, 2013. http://dx.doi.org/10.1115/1.4023429

76. N. P. Bitter and J. E. Shepherd. "A simple model for axial loading in a cylindrical pipe with internal shock loading." J. Applied Mechanics, 81(3), 034505 (Oct 16 2013) http://dx.doi.org/10.1115/1.402527013

77. N. J. Parziale, J. Rabinowitz, G. Blanquart, H. G. Hornung, and J. E. Shepherd. "A proposed vertical expansion tunnel" AIAA J., 51(12), 2792-2799, 2013. http://dx.doi.org/10.2514/1.J052389

78. P. A. Boettcher, S. K. Menon, B.L. Ventura, G. Blanquart, and J. E. Shepherd "Cyclic Flame Propagation in Premixed Combustion." J. Fluid Mechanics, Volume 735, November 2013, pp 176 - 202. http://dx.doi.org/10.1017/jfm.2013.495

79. R. Mével, S. Pichon, L. Catoire, N. Chaumiex, C.E. Paillard, J. E. Shepherd. "Dynamics of excited hydroxyl radicals in hydrogen-based mixtures behind reflected shock waves." Proc. Combust. Inst., 34 (2013), pp. 677-684. http://dx.doi.org/10.1016/j.proci.2012.06.151

80. L.E. Perotti, R. Deiterding, K. Inaba, J. Shepherd, and M. Ortiz. "Elastic response of water-filled fiber composite tubes under shock wave loading." International Journal of Solids and Structures, Volume 50, Issues 3-4, February 2013, Pages 473-486. http://dx.doi.org/10.1016/j.ijsolstr.2012.10.015

81. N. J. Parziale, J. E. Shepherd and H. G. Hornung. "Free-stream density perturbations in a reflected-shock tunnel." Exp Fluids (2014) 55(2):1665 http://dx.doi.org/10.1007/s00348-014-1665-0

82. R. Mével, D. Davidenko, J. M. Austin, F. Pintgen, J. E. Shepherd. "Application of a laser induced fluorescence model to the numerical simulation of detonation waves in hydrogen-oxygen-diluent mixtures." International J of Hydrogen Energy, Vol. 30, 6044-6060, 2014. http://dx.doi.org/10.1016/j.ijhydene.2014.01.182

83. R. Mével, K. Chatelain, P. A. Boettcher, G. Dayma, J.E. Shepherd. "Low Temperature Oxidation of n-Hexane in a Flow Reactor." Fuel 126:282-293, 2014. http://dx.doi.org/10.1016/j.fuel.2014.02.072

84. A. Capece, J. E. Polk, I. G. Mikellides, J.E. Shepherd. "Oxygen Transport In The Internal Xenon Plasma Of A Dispenser Hollow Cathode." Journal of Applied Physics, Volume 115, 153302, 2014. http://dx.doi.org/10.1063/1.4871755

85. K. Chatelain, R. Mével, S. Menon, G. Blanquart, J.E. Shepherd. "Ignition and Chemical Kinetics of Acrolein-Oxygen-Argon Mixtures Behind Reflected Shock Waves" Fuel, Vol. 135, 498-508, 2014. http://dx.doi.org/10.1016/j.fuel.2014.07.004

86. SPM Bane, JL Ziegler, JE Shepherd. "Investigation of the Effect of Electrode Geometry on Spark Ignition Combustion and Flame." Combustion and Flame 162:462-469, 2015. http://dx.doi.org/10.1016/j.combustflame.2014.07.017

87. AM Capece, JE Polk, JE Shepherd "X-ray Photoelectron Spectroscopy of $BaWO_4$ and Ba_2CaWO_6" Journal of Electron Spectroscopy and Related Phenomena 197, 102-105, 2014. http://dx.doi.org/10.1016/j.elspec.201

88. R. Mével, D. Davidenko, F. Lafosse, N. Chaumeix, G. Dupré, C.-E. Paillard, J.E. Shepherd "Detonation in Hydrogen-Nitrous Oxide-Diluent Mixtures: An Experimental and Numerical Study" Combustion and Flame 162:1638-1649, 2015. http://dx.doi.org/10.1016/j.combustflame.2014.11.026

89. R. Mével, J.E. Shepherd "Ignition delay-time behind reflected shock waves of small hydrocarbons-nitrous oxide(-oxygen) mixtures" Shock Waves 25(3):217-229, 2015. http://dx.doi.org/10.1007/s00193-014-0509-4

90. G. Bechon, R. Mével, D. Davidenko, J.E. Shepherd, JE "Modeling of Rayleigh scattering imaging of detonation waves: Quantum computation of Rayleigh cross-sections and real diagnostic effects" Combustion and Flame 162(5):2191-2199, 2015. http://dx.doi.org/10.1016/j.combustflame.2015.01.016

91. N. P. Bitter and J.E. Shepherd "Stability of highly-cooled hypervelocity boundary layers" Journal of Fluid Mechanics, Volume 778, September 2015, pp 586 - 620. http://dx.doi.org/10.1017/jfm.2015.358

92. N Parziale, JE Shepherd, HG Hornung "Observations of hypervelocity boundary-layer instability" Journal of Fluid Mechanics 781:87-112, 2015. http://dx.doi.org/10.1017/jfm.2015.489

93. B. E. Schmidt and J.E. Shepherd "Analysis of focused laser interferometry", Applied Optics 54(28):8459-8472, 2015. http://dx.doi.org/10.1364/AO.54.008459

94. A. M. Capece, J.E. Polk, J. E. Shepherd "Decoupling the Thermal and Plasma Effects on the Operation of a Xenon Hollow Cathode With Oxygen Poisoning Gas" IEEE Transactions on Plasma Science 43(9):3249-3255, 2015. http://dx.doi.org/10.1109/TPS.2015.2465845

95. B. E. Schmidt and J. E. Shepherd "Oscillations in cylinder wakes at Mach 4" Journal of Fluid Mechanics, Volume 785, December 2015, R3 http://dx.doi.org/10.1017/jfm.2015.668.

96. B. E. Schmidt, N. P. Bitter, H. G. Hornung, J. E. Shepherd "Injection into Supersonic Boundary Layers", AIAA Journal, Vol. 54, No. 1, pp. 161-173, 2016. http://dx.doi.org/10.2514/1.J054123

97. S. I. Jackson, B. J. Lee, J. E. Shepherd "Detonation Mode and Frequency Analysis Under High Loss Conditions for Stoichiometric Propane-Oxygen" Combustion and Flame, Vol. 167, 24-38, 2016. http://dx.doi.org/10.1016/j.combustflame.2016.02.030.

98. R. Mével, U. Niedzielska, J. Melguizo-Gavilanes, S. Coronel and J. E. Shepherd. "Chemical Kinetics of n-Hexane-air Atmospheres in the Boundary Layer of a Moving Hot Sphere" Combustion Science and Technology, 188(11-12):2267-2283, 2016. http://dx.doi.org/10.1080/00102202.2016.1211886

99. J.Melguizo-Gavilanes, A. Nové-Josserand, S. Coronel, R. Mével and J.E. Shepherd "Hot Surface Ignition of n-Hexane Mixtures using Simplified Kinetics" Combustion Science and Technology, 188(11-12):2060-2076, 2016. http://dx.doi.org/10.1080/00102202.2016.1212577

100. J.Melguizo-Gavilanes, S. Coronel, R. Mével and J.E. Shepherd "Dynamics of ignition of stoichiometric hydrogen-air mixtures by moving heated particles" International Journal of Hydrogen Energy. 42(11), 7380-7392, 2017. http://dx.doi.org/10.1016/j.ijhydene.2016.05.206.

101. J. Melguizo-Gavilanes, L.R. Boeck, R. Mével and J.E. Shepherd. "Hot surface ignition of stoichiometric hydrogen-air mixtures" International Journal of Hydrogen Energy, 42(11), 7393-7403, 2017. http://dx.doi.org/10.1016/j.ijhydene.2016.05.095.

102. S. Gallier and F. Le Palud and F. Pintgen and R. Mével and J.E. Shepherd "Detonation Wave Diffraction in H_2-O_2-Ar Mixtures" Proceedings of the Combustion Institute, Vol. 36, No. 2, 2781-2789, 2017. http://dx.doi.org/10.1016/j.proci.2016.06.090.

103. Melguizo-Gavilanes, J., Mével, R., Coronel, S., and Shepherd, J.E. (2016) "Effects of differential diffusion on ignition of stoichiometric hydrogen-air by moving hot spheres", Proceedings of the Combustion Institute, Vol. 36, No. 1, 1155-1163, 2017. http://dx.doi.org/10.1016/j.proci.2016.06.120

104. Jewell, J.S, Parziale, N.J., Leyva, I.A., and J.E. Shepherd "Effects of Shock-Tube Cleanliness on Hypersonic Boundary Layer Transition at High Enthalpy" AIAA Journal, Vol. 55, No. 1, 332-338, January 2017. http://dx.doi.org/10.2514/1.J054897

105. Jewell, J.S., Leyva, I. A. and J.E. Shepherd "Turbulent Spots in Hypervelocity Flow" Experiments in Fluids, 58:32, 2017. http://dx.doi.org/10.1007/s00348-017-2317-y

106. Stephanie Coronel, Josue Melguizo-Gavilanes, Joseph E Shepherd. "Temperature Field Measurements of Thermal Boundary Layer and Wake of Moving Hot Spheres using Interferometry" Experimental Fluid and Thermal Science, Vol. 90, 76-83, 2018. http://dx.doi.org/10.1016/j.expthermflusci.2017.08.031

107. Lorenz Boeck, Maxime Meijers, Andreas Kink, Remy Mével, Joseph E Shepherd "Ignition of fuel-air mixtures from a hot circular cylinder" Combustion and Flame, Vol. 185, November 2017, 265-277. https://doi.org/10.1016/j.combustflame.2017.07.007

108. Damazo, J. and J.E. Shepherd "Observations on the normal reflection of gaseous detonations," Shock Waves, Vol. 27, September 2017, 795-810. http://dx.doi.org/10.1007/s00193-017-0736-6

109. R. Mével K. Chatelain, G. Blanquart, J.E. Shepherd "An Updated Reaction Model for the High-Temperature Pyrolysis and Oxidation of Acetaldehyde" Fuel 217, 226-239, 2018. https://doi.org/10.1016/j.fuel.2017

110. S. A. Coronel, J. Melguizo-Gavilanes, R. Mével, J. E. Shepherd "Experimental and Numerical Study on Moving Hot Particle Ignition," Combustion and Flame 192, 495-506, 2018. https://doi.org/10.1016/j.combustflame.2018.02.027

111. J.-C. Veilleux and J. E. Shepherd "Pressure and stress transients in autoinjector devices," Drug Delivery and Translational Research, Vol. 8, No. 5, 1238-1253, 2018. https://doi.org/10.1007/s13346-018-0568-7

112. S. Jones, J. Melguizo-Gavilanes, J.E. Shepherd "Ignition by moving hot spheres in H_2-O_2-N_2 environments," Proceedings of the Combustion Institute, Vol. 37, No. 2, 1597-1604, 2019. https://doi.org/10.1016/j.proci.2018.07.046

113. R. Mével, F. Rostand, D. Lemarié, L. Breyton, J.E. Shepherd "Oxidation of n-Hexane in the Vicinity of the Auto-Ignition Temperature." Fuel 236, 373-381, 2019. https://doi.org/10.1016/j.fuel.2018.09.009

114. J. Melguizo-Gavilanes, P.A. Boettcher, R. Mével, J.E. Shepherd "Numerical Study of the transition between slow reaction and ignition in a cylindrical vessel." Combustion and Flame 204, 116-136, 2019. https://doi.org/10.1016/j.combustflame.2018.12.036

115. R. Mével, J. Melguizo-Gavilanes, L. Boeck, J.E. Shepherd "Experimental and numerical study of the ignition of hydrogen-air mixtures by a localized stationary hot surface." Journal of Heat and Fluid Flow 76, 154-169, 2019. https://doi.org/10.1016/j.ijheatfluidflow.2019.02.005

116. J.-C. Veilleux and J. E. Shepherd "Impulsive Motion in a Cylindrical Fluid-Filled Tube Terminated by a Converging Section," Journal of Pressure Vessel Technology, Vol. 141, , 021302-1 - 021302-11, April 2019. https://doi.org/10.1115/1.4042799

117. Yizhuo He, Yingdi Wang, Claire Grégoire, Urszula Niedzielska, Remy Mével, Joseph E. Shepherd "Ignition characteristics of dual-fuel methane-n-hexane-oxygen-diluent mixtures in a rapid compression machine and a shock tube" Fuel 249, 379-391, 2019. https://doi.org/10.1016/j.fuel.2019.03.105

118. Bryan E. Schmidt and Joseph E. Shepherd "Stability of Supersonic Flow with Injection," AIAA J., Vol. 57(12), 5230-5240, 2019. https://doi.org/10.2514/1.J058080

119. L.R. Boeck, J. Melguizo-Gavilanes, J.E. Shepherd "Hot surface ignition dynamics in premixed hydrogen-air near the lean flammability limit." Combustion and Flame 210, 467-478, 2019. https://doi.org/10.1016/j.combustflame.2019.09.002

120. S.A. Coronel, J.-C. Veilleux and J.E. Shepherd "Ignition of stoichiometric hydrogen-oxygen by water hammer," Proceedings of the Combustion Institute, Vol. 38, 3537-3545, 2021. https://doi.org/10.1016/j.proci.2020.0

121. C.D. Martin and J.E. Shepherd "Low temperature autoignition of Jet A and surrogate jet fuel" Journal of Loss Prevention in the Process Industries, 71:104454, July 2021. https://doi.org/10.1016/j.jlp.2021.104454.

122. S.M. Jones and J.E. Shepherd "Thermal Ignition by Vertical Cylinders" Combustion and Flame, 232:111499, 2021. https://doi.org/10.1016/j.combustflame.2021.111499

123. M. D. Frederick, R. M. Gejji, J. E. Shepherd, and C. D. Slabaugh. Time-resolved imaging of the cellular structure of methane and natural gas detonations. Shock Waves 32, 337-351, 2022. https://link.springer.com/10.1007/s00193-022-01080-8.

124. Yunliang Qi, Joseph E. Shepherd "Ignition of hexane-air mixtures by highly under-expanded hot jets" Proceedings of the Combustion Institute 39(3), 2979-2990, 2023. https://doi.org/10.1016/j.proci.2022.07.116

125. Mark D. Frederick, Rohan Gejji, Joseph E. Shepherd, and Carson D. Slabaugh "Statistical analysis of detonation wave structure" Proceedings of the Combustion Institute 39 (3), 2847-2854, 2023. https://doi.org/10.1016/j.proci.2022.08.054

126. D. T. Schoeffler, J. E. Shepherd. "Analysis of shock wave acceleration from normal detonation reflection", Shock Waves 33, 205-222, 2023. https://doi.org/10.1007/s00193-023-01126-5

127. Mark D. Frederick, Rohan Gejji, Joseph E. Shepherd, and Carson D. Slabaugh "Reactive processes following transverse wave interaction" Proceedings of the Combustion Institute 40, 105552, 2024. https://doi.org/10.1016/j.proci.2024.105552

128. B. Davis, C. Fouchier and J.E. Shepherd, Fluid motion and heat transfer in an ASTM-E659 apparatus. Journal of Loss Prevention in the Process Industries, 94:105558, April 2025. https://doi.org/10.1016/j.jlp.2025.10555

129. C. Fouchier and J. Shepherd, ASTM-E659 standardized test analysis and results for Synthetic Paraffinic Kerosene. Journal of Loss Prevention in the Process Industries, 94:105568, April 2025. https://doi.org/10.1016/j.jlp.

130. D. T. Schoeffler and J. E. Shepherd, Decay of plane shock waves in equilibrium flows, Journal of Fluid Mechanics, 1015, A41, 2025. https://doi:10.1017/jfm.2025.10355

131. M. D. Frederick1, R. M. Gejji, J. E. Shepherd and C. D. Slabaugh, Reactive transverse waves in a near-limit detonation, Journal of Fluid Mechanics, 1017, A10, 2025. https://doi:10.1017//jfm.2025.10426

132. D. T. Schoeffler and J. E. Shepherd, Ultra-Sensitive Focused Laser Differential Interferometer Using Balanced Detection, Optics Letters, 50(16), 5030-5032, 2025. https://doi:10.1364/OL.569353

133. B. Davis, J.E. Shepherd and R. Mével, Numerical modeling of gaseous n-hexane autoignition in an ASTM-E659 apparatus. Fuel 405 (2026) 136691. https://doi.org/10.1016/j.fuel.2025.136691

134. Y. Zhang, S. A. Coronel, S. Lapointe, V. I. Thomas, R. Mével, A. Comandini, N. Chaumeix, and J. E. Shepherd. A comprehensive experimental and kinetic modeling study of flame speed and ignition delay time in n-hexane-based mixtures. Fuel 406 (2026) 136714. https://doi.org/10.1016/j.fuel.2025.136714

Book Chapters

1. J. E. Shepherd, S. McCahan, and Junhee Cho 1990 "Evaporation Wave Model for Superheated Liquids" **Adiabatic Waves in Liquid-Vapor Systems**, edited by G. E. A. Meier and P. A. Thompson, Springer-Verlag Publishers, 3-12.

2. J. E. Shepherd 1992 "Compressible Flows" major article for the *Encyclopedia of Applied Physics* **4**, Edited by George L. Trigg, VCH Publishers, Inc., 43-69.

3. J. E. Shepherd and J. H. S. Lee 1992 "On the Transition from Deflagration to Detonation" **Major Research Topics in Combustion**, Edited by M. Y. Hussaini, A. Kumar, and R. G. Voigt, Springer-Verlag Publishers, 439-487.

4. J. E. Shepherd 1994 "Detonation Waves and Propulsion" in **Combustion in High-Speed Flows**, Edited by J. Buckmaster et al., Kluwer Publishers, 373-420.

5. F. Pintgen, J. M. Austin, and J. E. Shepherd 2002 "Detonation front structure: Variety and characterization" in G.D. Roy, S.M. Frolov, R.J. Santoro, and S.A. Tsyganov, editors, *Advances in Confined Detonations*, pages 68–72. Torus Press, Moscow.

6. F. Pintgen and J. E. Shepherd. "Quantitative analysis of reaction front geometry in detonation" In G.D. Roy, A.A. Berlin, S.M. Frolov, J.E. Shepherd, and S.A. Tsyganov, editors, International colloquium on application of detonation for propulsion, pages 23-28. Torus Press, Moscow, 2004.

7. J. E. Shepherd and K. Inaba. "Shock loading and Failure of fluid-filled tubes." pages 153-190 in A. Shukla, G. Ravichandran, and Y. Rajapakse, editors, Dynamic Failure of Materials and Structures. Springer, NY, 2010. http://dx.doi.org/10.1007/978-1-4419-0446-1_6

8. N. P. Bitter and J. E. Shepherd "Dynamic Buckling and Fluid-Structure Interaction of Submerged Tubular Structures" pages 189-227 in Blast Mitigation: Experimental and Numerical Studies, Editors: A. Shukla, Y. Rajapakse, M. E. Hynes, Springer, NY 2014. http://dx.doi.org/10.1007/978-1-4614-7267-4_7

Books Edited

1. Proceedings of the 20th International Symposium on Shock Waves, USA, July 1995. Two Volumes. Editors: B. Sturtevant, JE Shepherd, and HG Hornung, World Scientific, Singapore, River Edge, NJ, January 1997. 1676 pages.

2. Proceedings of the International Colloquium on Application of Detonation for Propulsion, Editors: G.D. Roy, A.A. Berlin, S.M. Frolov, J.E. Shepherd, and S.A. Tsyganov. Torus Press, Moscow, 2004. 328 pages.

National Academy Reports

1. Countering the Threat of Improvised Explosive Devices: Basic Research Opportunities (2007). Washington, DC. The National Academies Press. Available at http://www.nap.edu/catalog/11953/countering-the-threat-of-improvised-explosive-devices-basic-research-opportunities

2. Lessons Learned from the Fukushima Nuclear Accident for Improving Safety of U.S. Nuclear Plants (2014). Washington, DC. The National Academies Press. Available at http://www.nap.edu/catalog/18294/lessons-learned-from-the-fukushima-nuclear-accident-for-improving-safety-of-us-nuclear-plants

3. Lessons Learned from the Fukushima Nuclear Accident for Improving Safety of U.S. Nuclear Plants - Phase 2 (2016). Washington, DC. The National Academies Press. Available at http://www.nap.edu/catalog/21874/ learned-from-the-fukushima-nuclear-accident-for-improving-safety-and-security-of-us-nuclear-plants

Conference Proceedings

1. Lee A, Gleman S, Jones WD, Oleson NL, Shepherd J, Zaidman E 1975 "Observation of Spherical Solitons" Bulletin of the American Physical Society 20 (10): 1255-1255.

2. Sturtevant B, Shepherd J 1977 "Dynamics of Vapor Explosions" Bulletin of the American Physical Society 22 (10): 1274-1274.

3. Shepherd J 1978 "Rapid Evaporation of Superheated Liquids" Bulletin of the American Physical Society 23 (8): 1006-1006.

4. J. H. S. Lee, R. Knystautas, C. Guirao, W. B. Benedick, and J. E. Shepherd 1982 "Hydrogen–Air Detonations," in *Proc. of the 2nd Intl. Conference on the Impact of Hydrogen on Water Reactor Safety*, (Edited by M. Berman and L. Thompson), available as Sandia National Laboratories Report SAND82–2456, 961–1006.

5. S. F. Roller and J. E. Shepherd 1982 "The Effect of Steam on the Detonability of Hydrogen–Air Mixtures," in *Proc. of the 2nd Intl. Conference on the Impact of Hydrogen on Water Reactor Safety*, (Eds. M. Berman and L. Thompson), available as Sandia National Laboratories Report SAND82–2456, 1007–1026.

6. J. E. Shepherd and O. B. Crump 1982 "Hydrogen–Steam Flame–Jets," in *Proc. of the 2nd Intl. Conference on the Impact of Hydrogen on Water Reactor Safety*, (Eds. M. Berman and L. Thompson), available as Sandia National Laboratories Report SAND82–2456, 843–869.

7. M. R. Baer, S. K. Griffiths, and J. E. Shepherd 1982 "Hydrogen Combustion in Aqueous Foams," in *Proc. of the 2nd Intl. Conference on the Impact of Hydrogen on Water Reactor Safety*, (Eds. M. Berman and L. Thompson), available as Sandia National Laboratories Report SAND82–2456, 1089–1108.

8. S. N. Kempka, A. C. Ratzel, A. W. Reed, and J. E. Shepherd 1984 "Postcombustion Convection in an Intermediate Scale Vessel," in *Trans. ANS* **46**, Supplement 1, 125-127.

9. J. E. Shepherd 1985 "Stagnation–Point Heat Transfer from Jet Flames," in *Heat Transfer in Fire and Combustion Systems*, (Edited by C. K. Law, Y. Jaluria, W. W. Yuen, and K. Miyasaka), Publication HTD-45 of the ASME, New York, NY, 173–180.

10. A. C. Ratzel and J. E. Shepherd 1985 "Heat Transfer Resulting from Premixed Combustion," in *Heat Transfer in Fire and Combustion Systems*, (Edited by C. K. Law, Y. Jaluria, W. W. Yuen and K. Miyasaka), Publication HTD-45 of the ASME, New York, NY, 191–201.

11. P. A. Thibault, J. D. Penrose, J. E. Shepherd, W. B. Benedick, and D. V. Ritzel 1988 "Blast Waves Generated by Planar Detonations," *16th Intl. Symp. Shock Tubes and Waves*, Ed. H. Grönig, VCH Publishers Inc, NY, 765-771.

12. M. Plaster, R. D. McClenagan, F. J. Benz, J. E. Shepherd, and J. H. S. Lee 1991 "Detonation of Cyrogenic Gaseous Hydrogen-Oxygen Mixtures, *Dynamics of Explosions and Reactive Systems - Detonations*, Progress in Astronautics and Aeronautics, Vol. 133, AIAA, 37-55. https://doi.org/10.2514/5.9781600866067.0

13. J. E. Shepherd, P. A. Thompson, and H.-J. Cho 1990 "Alternating Stability and Instability of Liquefaction Shockfronts in 2,2,4-Trimethylpentane," in **Current Topics in Shock Waves**, edited by Yong W. Kim, AIP Conference Proceedings 208, 17th International Symposium on Shock Tubes and Waves, American Institute of Physics, NY, pp. 790-795.

14. J. E. Shepherd, G. A. Melhem, and P. Athens 1991 "Unconfined Vapor Cloud Explosions: A New Perspective," *Proceedings of International Conference and Workshop on Modeling and Mitigating the Consequences of Accidental Releases of Hazardous Materials*, New Orleans, LA, May 20-24, AIChE Publications, NY, pp. 613-635.

15. J. E. Shepherd and J. C. Krok 1992 "Hydrogen Combustion Research at RPI" *Proceedings of the 20th Water Reactor Safety Meeting*, Bethesda, MD, October 21-23.

16. A. F. Varone, J. M. Corliss, and J. E. Shepherd "Development of a Burner for High-Efficiency Commercial Fryers Using High–Pressure Natural Gas," *Proceedings of the 43rd Annual International Appliance Technical Conference*, Purdue University, West Lafayette, IN, 1992, pp. 41–56.

17. J. R. Simões Moreira, S. McCahan, and J. E. Shepherd 1993 "Complete Evaporation Waves," ASME Fluids Engineering Conference, Washington, DC, June 20-23, paper 93-FE-7.

18. S. McCahan and J.E. Shepherd 1993 "Reactive Metal and Water Interactions Modeled with a Geometric Constraint,"29th National Heat Transfer Conference, *ANS Proceedings*, **7**, p. 287-293, American Nuclear Society, Inc.

19. S. McCahan and J. E. Shepherd 1993 "Thermodynamics of Detonation Products," *10th International Detonation Symposium*, ONR 33395-12, 596-600.

20. J. E. Shepherd and T. B. Brill 1993 "Interpretation of Time-to-Explosion Tests," *10th International Detonation Symposium*, ONR 33395-12, 849-855.

21. S. McCahan and J. E. Shepherd 1994 "A Thermodynamic Model of Aluminum Water Interactions," Proc CSNI Specialist Meeting on Fuel Coolant Interactions, NUREG/CP-0127, Washington, DC, p. 134

22. R. Akbar, D. W. Schewendeman, J. E. Shepherd, R. L. Williams and G. O. Thomas 1994 "Wave Shaping Channels for Gaseous Detonations," **Shock Waves @ Marseille IV**, R. Brun and L. Z. Dumitrescu, Springer-Verlag Publishers, 465-470.

23. J. R. Travis, R. K. Fujita, M. C. Ross, J. N. Edwards, and J. E. Shepherd 1994 "Evaluating Detonation Possibilities in a Hanford Radioactive Waste Tank," American Nuclear Society 1994 Winter Meeting, Nov. 13-17, Washington, DC. Los Alamos Report LA-UR-94-2019 (revised).

24. A. Teodorcyzk, J. E. Shepherd 1995 "Interaction of a Shock Wave and Shock-Induced Air Flow with a Water Layer", Bulletin of the American Physical Society, Division of Fluid Dynamics, Abstract Ii.02.

25. J. Belanger, M. Kaneshige, and J. E. Shepherd 1996 "Detonation Initiation by Hypervelocity Projectiles"**Shock Waves**, Proceedings of 20th International Symposium on Shock Waves, World Scientific, 1119-1124.

26. J. C. Krok and J. E. Shepherd 1996 "Hydrogen Combustion Experiments at Caltech," Western States Section/The Combustion Institute, 1996 Fall Meeting, The University of Southern California, 29 October 1996.

27. M. Kaneshige and J. E. Shepherd 1997 "Hydrocarbon-Air-Nitrous Oxide Detonations" Western States Section/The Combustion Institute, Spring Meeting, April 14 and 15, Sandia National Laboratories, Livermore, CA.

28. C. Eckett, J.J. Quirk, and J.E. Shepherd 1998 "An analytical model for direct initiation of gaseous detonations" *Proceedings of the 21st International Symposium on Shock Waves*, Edited by AFP Houwing, RR Boyce, PM Danehy, M Hannemann, JJ Kurtz, TJ McIntyre, SJ McMahon, DJ Mee, A Paull, RJ Sandeman, H Tanno, Vol I, 383-388.

29. U. Pfahl and J. E. Shepherd 1997 "Nitrous Oxide Consumption and Flammability Limits of H_2-N_2O-Air and CH_4-N_2O-O_2-N_2 Mixtures" Western States Section/The Combustion Institute, October 1997 Fall Meeting. Also GALCIT Report FM 97-16.

30. W. M. Beltman, J. E. Shepherd, E. Burcsu, and L. Zuhal 1998 "The Structural Response of Cylindrical Shells to Internal Shock Loading," Proceedings of the International Symposium on Computational Technologies for Fluid/Thermal/Chemical Systems with Industrial Applications. Joint ASME/JSME Meeting, San Diego, July 26-30, 1998.

31. E. Schultz, E. Wintenberger, J. E. Shepherd 1999 "Investigation of Deflagration to Detonation Transition for Application to Pulse Detonation Engine Ignition Systems," Proceedings of 16th JANNAF Propulsion Symposium, Cocoa Beach, FL October 8, 1999.

32. M. Kaneshige, E. Schultz, U. J. Pfahl, J. E. Shepherd, and R. Akbar, "Detonations in mixtures containing nitrous oxide," *Proceedings of 22nd International Symposium on Shock Waves*, Imperial College, London, UK, pp. 251-256, 2000.

33. E. Schultz and J. E. Shepherd, "Detonation analysis using detailed reaction mechanisms," *Proceedings of 22nd International Symposium on Shock Waves*, Imperial College, London, UK, pp. 273-278, 2000.

34. J. E. Shepherd, E. Schultz and R. Akbar, "Detonation Diffraction," *Proceedings of 22nd International Symposium on Shock Waves*, Imperial College, London, UK, pp. 41-48, 2000.

35. J. E. Shepherd, J. Austin, T. Chao, E. Schultz, E. Wintenberger, S. Jackson, M. Cooper 1999 "Detonation Initiation, Diffraction, and Impulse," Proceedings of 13th Annual ONR Propulsion Program review meeting, Minneapolis, Minnesota, August 11, 2000

36. M Cooper, SI Jackson, JM Austin, E Wintenberger, and J. E. Shepherd. "Direct experimental impulse measurements for detonations and deflagrations." 37th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 8-11, 2001, Salt Lake City ,Utah, AIAA 2001-3812.

37. J. M. Austin, E. Wintenberger, M. Cooper, S. I. Jackson, and J. E. Shepherd. "An analytical model for the impulse of a single-cycle pulse detonation engine." 37th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 8-11, 2001, Salt Lake City, Utah, AIAA 2001-3811.

38. E. O. Morano and J. E. Shepherd. "Effect of reaction rate periodicity on detonation propagation." 12th APS Topical Group Conference on Shock Compression of Condensed Matter, Atlanta, GA, June 24-29, 2001.

39. M. Arienti and J. E. Shepherd. "Superseismic loading and shock polars: An example of fluid-solid coupling." 12th APS Topical Group Conference on Shock Compression of Condensed Matter, Atlanta, GA, June 24-29, 2001.

40. J. E. Shepherd, J. M. Austin, T. Chao, F. Pintgen, E. Wintenberger, S. Jackson, and M. Cooper. Detonation initiation, propagation, and structural response. 14th ONR Propulsion Conference, Chicago, IL, August 2001.

41. J. E. Shepherd, F. Pintgen, J. M. Austin, and C. A. Eckett. "The structure of the detonation front in gases." 30th AIAA Aerospace Sciences Meeting and Exhibit, January 14-17, 2002, Reno, NV, AIAA 2002-0773.

42. M. Cooper and J. E. Shepherd. "The effect of nozzles and extensions on detonation tube performance., 38th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 7-10, 2002, Indianapolis, IN, AIAA 2002-2628.

43. D. H. Lieberman and J. E. Shepherd. "Detonation initiation by a hot turbulent jet for use in pulse detonation engines., 38th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 7-10, 2002, Indianapolis, IN, AIAA 2002-3909.

44. S. I. Jackson and J. E. Shepherd. "Initiation systems for pulse detonation engines." 38th AIAA/-ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 7-10, 2002, Indianapolis, IN, AIAA 2002-2627.

45. P. Hung and J. E. Shepherd. "Reduction of detailed chemical reaction networks for detonation simulations." 12th International Detonation Symposium, August 11-16, San Diego, CA 2002.

46. T.-W. Chao and J. E. Shepherd. "Fracture response of externally-flawed cylindrical shells to internal gaseous detonation loading., 2002 ASME Pressure Vessels and Piping Conference, VANCOUVER, BRITISH COLUMBIA, CANADA, August 4 - 8, 2002.

47. J. E. Shepherd, J. M. Austin, T. Chao, F. Pintgen, E. Wintenberger, S. Jackson, and M. Cooper. "Detonation initiation and propagation." 15th ONR Propulsion Conference, Washington, DC, August 2002.

48. E. Wintenberger and J. E. Shepherd. "The performance of steady detonation engines." AIAA 41th Aerospace Sciences Meeting, Reno, NV, January 2003. AIAA-2003-0714.

49. M Cooper, J Jewell, and J. E. Shepherd "Effect of a porous thrust surface on detonation tube impulse" 39th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 20-23, 2003, Huntsville, AL. AIAA2003-4822.

50. M Cooper and J. E. Shepherd "Experiments studying thermal cracking, catalytic cracking, and premixed partial oxidation of JP-10" 39th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 20-23, 2003, Huntsville, AL. AIAA2003-4867.

51. S. I. Jackson, M. Grunthaner, and J. E.Shepherd "Wave implosion as an initiation mechanism for pulse detonation engines" 39th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 20-23, 2003, Huntsville, AL. AIAA2003-4820.

52. E Wintenberger and J. E. Shepherd "A model for the performance of air-breathing pulse detonation engines" 39th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 20-23, 2003, Huntsville, AL. AIAA2003-4511.

53. T.-W. Chao and J. E. Shepherd "Comparison of Fracture Response of Preflawed under Internal Static and Detonation Loading." 2003 AMSE Pressure Vessels and Piping Conference, Cleveland, OH, July 20-24, 2003. Published in PVP Vol. 460, 7th International Symposium on Emerging Technologies in Fluids, Structures, and Fluid-Structure Interactions - 2003

54. J. E. Shepherd "Detonation: A look behind the front" Extended abstract for plenary talk presented at 19th International Colloquium on the Dynamics of Explosions and Reactive Systems (ICDERS), Hakone, Japan, July 28-August 1, 2003.

55. S. Singh, D. Lieberman, and J. E. Shepherd. "Combustion behind shock waves" Paper 03F-29 Western States Section/Combustion Institute, October 2003.

56. E. Wintenberger and J. E. Shepherd "Thermodynamic Analysis of Combustion Processes for Propulsion Systems" 42nd AIAA Aerospace Sciences Meeting and Exhibit, Jan 5-8, Reno NV 2004. AIAA2004-1033.

57. A. M. Khokhlov, J. M. Austin, F. Pintgen, and J. E. Shepherd. "Numerical study of the detonation wave structure in ethylene-oxygen mixtures" 42nd AIAA Aerospace Sciences Meeting and Exhibit, January 5-8, 2004, Reno, NV, AIAA 2004-0792.

58. P. Hung and J. E. Shepherd. "Initiation of a stabilized detonation by a projectile" In Proceedings of the 24th International Symposium on Shock Waves. Paper 1643, 24th ISSW, Beijing, China, July 11-16, 2004.

59. T.-W. Chao and J. E. Shepherd. Detonation loading of tubes in the modified shear wave regime. In Proceedings of the 24th International Symposium on Shock Waves. Paper 1642, 24th ISSW, Beijing, China, July 11-16, 2004.

60. J.E. Shepherd and H. Hornung. "Sound generation by explosive decompression of an airplane" In Proceedings of the 24th International Symposium on Shock Waves. Paper 1641, 24th ISSW, Beijing, China, July 11-16, 2004.

61. M. Cooper and J. E. Shepherd "Effect of Transient Nozzle Flow on Detonation Tube Impulse" 40th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 11-14, 2004, Ft. Lauderdale, FL. AIAA2004-3914.

62. S. Jackson and J. E. Shepherd "Detonation Initiation via Imploding Shock Waves" 40th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 11-14, 2004, Ft. Lauderdale, FL. AIAA2004-3919.

63. D. L. Lieberman, J. E. Shepherd, F. Wang, J. Liu, and M. A. Gundersen "Characterization of a Corona Discharge Initiator Using Detonation Tube Impulse Measurements" 43nd AIAA Aerospace Sciences Meeting and Exhibit, January 10-13, 2005, Reno, NV, AIAA 2005-24455

64. J. M. Austin, F. Pintgen, and J. E. Shepherd. "Lead shock oscillation and decoupling in propagating detonations." 43nd AIAA Aerospace Sciences Meeting and Exhibit, January 10-13, 2005, Reno, NV, AIAA 2005-1170, 2005.

65. M. Arienti and J.E. Shepherd "The role of diffusion in irregular detonations" The 4th Joint Meeting of the US Sections of the Combustion Institute, Philadelphia, PA, March 20-23, 2005.

66. F. Pintgen and J. E. Shepherd "Detonation Diffraction in Regular and Irregular Mixtures" 20th International Colloquium on the Dynamics of Explosions and Reactive Systems (ICDERS), July 31-August 5, 2005, Montreal Canada. (extended abstract)

67. D. L. Lieberman and J. E. Shepherd "Detonation Refraction and Induced Chemical Reaction." 20th International Colloquium on the Dynamics of Explosions and Reactive Systems, Montreal, CA, August 4, 2005 (extended abstract)

68. K. Inaba, JE Shepherd et al. "Soot Track Formation by Shock Waves and Detonations" (20th International Colloquium on the Dynamics of Explosions and Reactive Systems (ICDERS), July 31-August 5, 2005, Montreal Canada. (extended abstract)

69. S.I. Jackson, P.M. Buraczewski, and J.E. Shepherd. "Initiation of Deflagration and Detonations by Shock Reflection and Focusing," 20th International Colloquium on the Dynamics of Explosions and Reactive Systems, Montreal, CA, August 4, 2005 (extended abstract)

70. J. M. Austin and J. E. Shepherd "Characterizing the Fluctuations in Gaseous Detonation Fronts" 20th International Colloquium on the Dynamics of Explosions and Reactive Systems, Montreal, CA, August 2, 2005. (extended abstract)

71. J. E. Shepherd "Detonation as a Self-Sustained or 'Living' Phenomenon" 20th International Colloquium on the Dynamics of Explosions and Reactive Systems (ICDERS), July 31-August 5, 2005, Montreal Canada. (Extended Abstract)

72. F. Pintgen and J. E. Shepherd "Secondary PressureWaves from Rich Fireballs" 20th International Colloquium on the Dynamics of Explosions and Reactive Systems (ICDERS), July 31-August 5, 2005, Montreal Canada. (Extended Abstract)

73. F. Pintgen and J. E. Shepherd. "Pulse detonation engine impulse and detonation sensitivity analysis for partially oxidized jet fuel." 17th International Symposium on Airbreathing Engines, Munich, 4-9 September 2005. ISABE-2005-1304, 2005.

74. F. Pintgen, J.E. Shepherd. "Stereoscopic Imaging of Transverse Detonations in Diffraction." Proceedings of PSFVIP-5 5th Pacific Symposium on Flow Visualisation and Image Processing 27-29th September, 2005, Australia (paper PSFVIP-5-250)

75. S. Browne, Z. Liang, and J. E. Shepherd. Detailed and simplified chemical reaction mechanisms for detonation simulation. Paper 05F-21 - Presented at the Fall 2005 Western States Section of the Combustion Institute, Stanford University, Oct. 17-18, 2005, 2005.

76. Z. Liang, R. Deiterding, S.. Browne, and J. E. Shepherd "Analysis of Unsteady 2D Detonation with Regular and Irregular Instability Structures" in book of Abstracts for 11th International Conference on Numerical Combustion Granada, Spain, April 23-26, 2006.

77. J. E. Shepherd. "Structural response of piping to internal gas detonation." In ASME Pressure Vessels and Piping Conference. ASME, 2006. PVP2006-ICPVT11-93670, July 23-27 2006 Vancouver BC Canada. *Outstanding conference paper award from ASME PVP Division.*

78. B. J. Lee, W. Huang, S. Jackson, F. Pintgen, J. Karnesky, Z. Liang, and J. E. Shepherd "Detonation Propagation over Long Distances in Small Tubes" Abstract and Work-in-Progress poster at the 31rst Combustion Symposium, Heidelberg, Germany, August 2006.

79. J. E. Shepherd "Visualizing Detonation Waves", Proceedings of the 33rd Korean Society of Combustion (KOSCO) Symposium, Jeju Island, Korea, October 19-21, 2006.

80. J. E. Shepherd "The Science of Detonation Waves – The Role of Fluctuations," Proceedings of the 44th Japanese Symposium on Combustion, Hiroshima, Japan, Dec 6-9, 2006.

81. C. Sauvelet, A. Rusinek, J.E. Shepherd, Z. Liang, J. Karnesky. 2007. Elastic and plastic deformation waves in tubes with internal gas explosion. In: ASME Applied Mechanics and Materials Conference. ASME, mCMAT2007-30024, presented June 3-7 2007 University of Texas at Austin.

82. "Detonações e Explosões," Mini Curso de Combustão, I Escola de Combustão, Florianópolis, SC, Brazil, 25 to 29 June, 2007. Lecture notes published on-line by UFSC.

83. Z. Liang, T. Curran, and J. E. Shepherd "Structural Response to Detonation Loading in a 90° bend", Paper 3210,Proceedings of the 26th International Symposium on Shock Waves, Göttingen, Germany, July 15-20, 2007.

84. F. Pintgen, Z. Liang, and J. E. Shepherd "Structural Response of tubes to Deflagration-to-detonation transition", extended abstract for the 21rst International Colloquium on the Dynamics of Explosions and Reactive Systems, ENSMA, Poitiers, France, July 22-27, 2007.

85. S. I. Jackson and J. E. Shepherd "Initiation of Detonation by Imploding Shock Waves" extended abstract for the 21rst International Colloquium on the Dynamics of Explosions and Reactive Systems, ENSMA, Poitiers, France, July 22-27, 2007.

86. K. Inaba, J. E. Shepherd, M. Yamamoto, and A. Matsuo "Soot motion in smoked foils" extended abstract for the 21rst International Colloquium on the Dynamics of Explosions and Reactive Systems, ENSMA, Poitiers, France, July 22-27, 2007.

87. S. Browne and J. E. Shepherd "Linear Stability of Detonations with Reversible Chemical Reactions" extended abstract and work-in-progress poster for the 21rst International Colloquium on the Dynamics of Explosions and Reactive Systems, ENSMA, Poitiers, France, July 22-27, 2007.

88. E. Kwon, S.P. Moffett, JE Shepherd, A. Day "Combustion Characteristics of Hydrogen used as a Flammable Test Gas" proceedings of ICOLSE, Paris, France, Aug 28-31, 2007, paper PPR-48.

89. JoHanna N. Przybylowski, James E. Polk, Joseph E. Shepherd and Angela M. Capece "Effects of Varied Propellant Compositions on the Ion Energy Distributions in Hollow Cathodes" 30th International Electric Propulsion Conference, Florence, Italy, September 17-20, 2007. Paper IEPC-2007-174

90. S. T. Browne and J. E. Shepherd "Linear stability of detonations with reversible chemical reactions," 2007 Fall Meeting of the Western States Section of the Combustion Institute, Livermore, CA, Oct 16-17, 2007. Paper 07F-70.

91. J.Karnesky, W. J. Pitz, and J. E. Shepherd "Detonation in Gaseous Isopropyl Nitrate Mixtures," 2007 Fall Meeting of the Western States Section of the Combustion Institute, Livermore, CA, Oct 16-17, 2007. Paper 07F-40.

92. S. P. Moffett, S. G. Bhanderi, J. E. Shepherd and E. Kwon "Investigation of Statistical Nature of Spark Ignition," 2007 Fall Meeting of the Western States Section of the Combustion Institute, Livermore, CA, Oct 16-17, 2007. Paper 07F-42.

93. Yasuhiro Takashima, Jiro Kasahara, Joseph E. Shepherd, and Ikko Funaki. Impulse generated by a shock tube in a vacuum. 46nd AIAA Aerospace Sciences Meeting and Exhibit, January 7-10, 2008, Reno, NV, AIAA 2008-987, 2008.

94. K. Inaba and J. E. Shepherd "Impact generated stress waves and coupled fluid-structure responses," Proceedings of the SEM XI International Congress & Exposition on Experimental and Applied Mechanics. June 2-5, Orlando, FL USA 2008. Paper 136.

95. K. Inaba and J. E. Shepherd "Flexural Waves in Fluid-Filled Tubes Subject to Axial Impact." Proceedings of PVP2008, 2008 ASME Pressure Vessels and Piping Division Conference, July 27-31, 2008, Chicago, Illinois, USA. Paper PVP2008-61672.

96. C. Marrese-Reading, J. St. Vaughn, J. Corliss, S. Gayle, P. Zell, K. Hamm, R. Pain, D. Rooney, A. Ramos, D. Lewis, J. E. Shepherd, and K. Inaba. "Retro rocket plume actuated heat shield exhaust ports." Paper 1488. Presented at the 2009 IEEE Aerospace Conference, Big Sky, Montana., March 7-14 2009.

97. K. Inaba and J. E. Shepherd. "Fluid-structure interaction in liquid-filled composite tubes under impulsive loading." In Proceedings of the SEM International Congress & Exposition on Experimental and Applied Mechanics. June 1-4, Albuquerque, NM, USA, 2009. Paper 413.

98. S. Sanderson, J.Austin, Z. Liang, F. Pintgen, J. E. Shepherd, and H. Hornung. "Reactant Jetting in Unstable Detonation." AIAA-2009-4325, 39th AIAA Fluid Mechanics Conference, San Antonio, Texas, 22-25 June 2009. *Voted 2010 Best Paper by the AIAA Fluid Dynamics Technical Committee.*

99. K. Inaba and J. E. Shepherd. Failure of liquid-filled filament-wound composite tubes subjected to axial impact. In Proceedings of the 17th International Conference on Composite Materials, July 27-31, Edinburgh, UK, 2009.

100. K. Inaba and J. E. Shepherd. Plastic deformation and vibration in a fluid-filled tube subject to axial impact. In Proceedings of the ASME Pressure Vessels and Piping Conference. July 26-30, Prague, Czech Republic, 2009. PVP2009-77821.

101. J. E. Shepherd, R. Akbar, and E. A. Rodriguez. Gaseous detonation in piping systems partially filled with liquid. In Proceedings of the ASME Pressure Vessels and Piping Conference. July 26-30, Prague, Czech Republic, 2009. PVP2009-77734. *Outstanding conference paper award, ASME PVP Division.*

102. Sally P. M. Bane, Jack Ziegler, Joseph E. Shepherd, Sergey Dorofeev, Carl R. Bauwens. "Modeling Ignition Using One-Step Chemistry." 22nd ICDERS July 27-31, 2009 Minsk, Belarus.

103. Philipp A. Boettcher, Joseph E. Shepherd, Raza Akbar. "Low Temperature Oxidation of Hexane with In-Situ Fuel and Oxygen Concentration Measurements" 22nd ICDERS July 27-31, 2009 Minsk, Belarus.

104. James A. Karnesky, Jason S. Damazo, Joseph E. Shepherd. "Plastic Deformation of Tubes due to Detonation" 22nd ICDERS July 27-31, 2009 Minsk, Belarus.

105. Bane, S.P.M., Shepherd, J.E., Kwon, E. and Day, A.C. "Statistical Analysis Of Electrostatic Spark Ignition Of Lean H2-O2-Ar Mixtures." 3rd International Conference on Hydrogen Safety. Ajaccio, Corsica, Sept 16-18, 2009.

106. S.P.M. Bane, E. Kwon, J.E. Shepherd, A.C. Day (2009). Application of Statistics to Spark Ignition Threshold Evaluation. International Conference on Lightning and Static Electricity, Pittsfield, MA September 15-17, 2009. Paper AAT-3.

107. I. Leyva, J. Jewell, S. Laurence, H. Hornung, J. E. Shepherd, "On the impact of injection schemes on transition in hypersonic boundary layers." California Institute of Technology, Pasadena, CA AIAA-2009-7204 presented at 16th AIAA/DLR/DGLR International Space Planes and Hypersonic Systems and Technologies Conference, Bremen, Germany, Oct. 19-22, 2009

108. Boettcher, P. A., Akbar, R., and Shepherd, J.E. "Low Temperature Oxidation of Hexane." 2009 Fall Meeting of the Western States Section of the Combustion Institute University of California at Irvine October 26 & 27, 2009. Paper 09F-81.

109. Bane, S.P.M. and Shepherd, J.E. "Statistical Analysis of Electrostatic Ignition." 2009 Fall Meeting of the Western States Section of the Combustion Institute University of California at Irvine October 26 & 27, 2009. Paper 09F-64.

110. Karnesky, J., Damazo, J., and Shepherd, J. E. "A Model for the Spatial and Temporal Distribution of Pressure During Ideal Detonation Reflection" 2009 Fall Meeting of the Western States Section of the Combustion Institute University of California at Irvine October 26 & 27, 2009. Paper 09F-42.

111. Ioannis G. Mikellides, David A. Vaughan, Joseph E. Shepherd, Jason Damazo, Philipp Boettcher. "Visualization of transverse annular jets" 62nd Annual Meeting of APS Division of Fluid Dynamics, November 22-24, 2009, Bulletin of the American Physical Society, 54(19), Abstract BAPS.2009.DFD.MM.8.

112. Rafal Porowski, Jason S. Damazo. Joseph E. Shepherd, "Wave Propagation In Granular Suspensions Within Tubes" Proceedings of USNCTAM2010, 16th US National Congress of Theoretical and Applied Mechanics, June 27-July 2, 2010, State College, Pennsylvania, USA. Paper USNCTAM2010-1295.

113. Jason S. Damazo, Rafal Porowski, Joseph E. Shepherd and K. Inaba. Fluid-Structure Interaction Of Submerged Tubes Subjected To Impact Generated Stress Waves" Proceedings of USNCTAM2010 16th US National Congress of Theoretical and Applied Mechanics, June 27-July 2, 2010, State College, Pennsylvania, USA. Paper USNCTAM2010-1279

114. K. Inaba and J. E. Shepherd. "Dynamics of cavitating flow and flexural waves in fluid-filled tubes subject to structural impact." In Proceedings of the ASME Pressure Vessels and Piping Conference. July 18-22, Bellevue, WA, 2010. Paper PVP2010-25989.

115. J. Karnesky, J. Damazo, J. E. Shepherd, and A. Rusinek. "Plastic response of thin-wall tubes to detonation." In Proceedings of the ASME Pressure Vessels and Piping Conference. July 18-22, Bellevue, WA, 2010. PVP2010-25749.

116. S. P. M. Bane, J. L. Ziegler, P. A. Boettcher, S. A. Coronel and J. E. Shepherd. "Investigation of Spark Ignition in Hydrogen, Hexane, and Kerosene: Experiment and Simulation" 8th ISHPMIE September 5-10, 2010, Yokohama, Japan, Paper No.ISH075.

117. J. Karnesky, J. Damazo, J. Ziegler and J. E. Shepherd "Investigating Shock Wave Boundary Layer Interaction Caused by Reflecting Detonations" 8th ISHPMIE September 5-10, 2010, Yokohama, Japan, Paper No.ISH117.

118. P. A. Boettcher, B. Ventura, G. Blanquart, and J. E. Shepherd "Hot Surface Ignition of Hydrocarbons in Air - A Comparison of Experimental and Computational Results" 8th ISHPMIE September 5-10, 2010, Yokohama, Japan, Paper No.ISH076.

119. J. Damazo, K. Chow-Yee, J. Karnesky, and J. E. Shepherd "Mitigating Effect of Polymer Coating on Deformation From Non-Ideal Explosions" presented at IMPLAST 2010, SEM Fall Conference, University of Rhode Island, Oct 14-21, 2010, Providence, RI.

120. J. Damazo, J. Ziegler, J, Karnesky, and J. E. Shepherd, "Shock Wave-Boundary Layer Interaction in Reflecting Detonations" 63nd Annual Meeting of APS Division of Fluid Dynamics, November 21-23, 2010, Bulletin of the American Physical Society, 55(16), Abstract BAPS.2010.DFD.HX.2.

121. N.J. Parziale, H.G. Hornunug, J. E. Shepherd, and S.J. Laurence "Experimental Investigation of Shock Wave Surfing" 63nd Annual Meeting of APS Division of Fluid Dynamics, November 21-23, 2010, Bulletin of the American Physical Society, 55(16), Abstract BAPS.2010.DFD.MR.6.

122. J.L. Zeigler, R. Deiterding, J. E. Shepherd, and D.I. Pullin "Compressible, diffusive, reactive flow simulations of the double Mach reflection phenomenon" 63nd Annual Meeting of APS Division of Fluid Dynamics, November 21-23, 2010, Bulletin of the American Physical Society, 55(16), Abstract BAPS.2010.DFD.MU.8.

123. J.S. Jewell, I.A. Leyva, N.J. Parziale, H.G. Hornunug, and J. E. Shepherd "Transition delay in hypervelocity boundary layers via CO2 injection" 63nd Annual Meeting of APS Division of Fluid Dynamics, November 21-23, 2010, Bulletin of the American Physical Society, 55(16), Abstract BAPS.2010.DFD.QR.6.

124. P. Boettcher, B. Ventura, G. Blanquart, and J. E. Shepherd "Hot Surface Ignition and Flame Propagation of Hydrocarbon Air Mixtures" 63nd Annual Meeting of APS Division of Fluid Dynamics, November 21-23, 2010, Bulletin of the American Physical Society, 55(16), Abstract BAPS.2010.DFD.MU.10.

125. S. Bane, J. Zeigler, and J. E. Shepherd "Spark Ignition: Effects of Fluid Dynamics and Electrode Geometry" 63nd Annual Meeting of APS Division of Fluid Dynamics, November 21-23, 2010, Bulletin of the American Physical Society, 55(16), Abstract BAPS.2010.DFD.LU.2.

126. B. Ventura, K. Chow-Yee, J. Damazo, P. Boettcher, J. E. Shepherd, I. Mikellides, and D. Vaughan "Quantitative Visualization of transverse annular jets" 63nd Annual Meeting of APS Division of Fluid Dynamics, November 21-23, 2010, Bulletin of the American Physical Society, 55(16), Abstract BAPS.2010.DFD.HV.7.

127. S. Bane, R. Mével and J. E. Shepherd "Instability of a Flame Front in a Lean H_2-N_2O Mixture" 63nd Annual Meeting of APS Division of Fluid Dynamics, November 21-23, 2010, Bulletin of the American Physical Society, Gallery of Fluid Motion submission, manuscript https://doi.org/10.48550/arXiv.1010.3255.

128. P. Boettcher, B. Ventura, G. Blanquart, S. K. Menon, J. E. Shepherd "Experimental Investigation of Hot Surface Ignition of Hydrocarbon-Air Mixtures" 7th US National Technical Meeting of the Combustion Institute, Georgia Institute of Technology, Atlanta, GA Mar 20 - 23, 2011. Paper 2D-09

129. S. K. Menon, P. Boettcher, B. Ventura, J. E. Shepherd, G. Blanquart "Modeling Hot-Surface Ignition of Hydrocarbon-Air Mixtures" 7th US National Technical Meeting of the Combustion Institute, Georgia Institute of Technology, Atlanta, GA Mar 20 - 23, 2011. Paper 2D-10

130. S. P. M. Bane, R. Mével, S. A. Coronel, and J. E. Shepherd "Flame Speeds and Combustion Characteristics of Undiluted and Nitrogen-Diluted Hydrogen-Nitrous Oxide Mixtures" 7th US National Technical Meeting of the Combustion Institute, Georgia Institute of Technology, Atlanta, GA Mar 20 - 23, 2011. Paper 1E-11

131. J. Damazo, J. Ziegler, J. Karnesky, and J. E. Shepherd "Shock Wave-Boundary Layer Interaction from Reflecting Detonations" Proceedings of the 28th International Symposium on Shock Waves, University of Manchester, July 17-22, 2011.

132. N. J. Parziale, J. S. Jewell, J. E. Shepherd and H. G. Hornung "Shock tunnel noise measurement with resonantly enhanced focused schlieren deflectometry" Proceedings of the 28th International Symposium on Shock Waves, University of Manchester, July 17-22, 2011. Paper 2817.

133. J.S. Jewell, I.A. Leyva, N.J. Parziale, and J.E. Shepherd "Effect of gas injection on transition in hypervelocity boundary layers" Proceedings of the 28th International Symposium on Shock Waves, University of Manchester, July 17-22, 2011. Paper 2767.

134. S. P. M. Bane, S. A. Coronel, P. Boettcher, J. E. Shepherd "Spark Ignition of Kerosene-Air Mixtures" 23nd International Colloquium on the Dynamics of Explosions and Reactive Systems, July 24-29, 2011, Irvine, USA. Extended Abstract 60.

135. J. Damazo, J. E. Shepherd, K. Chow-Yee, J. Karnesky "Deformation of Coated Stainless Steel Tubes from Reflected Detonation" 23nd International Colloquium on the Dynamics of Explosions and Reactive Systems, July 24-29, 2011, Irvine, USA. Extended Abstract 257.

136. R. Mével, J. E. Shepherd, D. Davidenko, F. Pintgen, J. Austin "Application of a Laser Induced Fluorescence Model to the Numerical Simulation of Detonation Waves" 23nd International Colloquium on the Dynamics of Explosions and Reactive Systems, July 24-29, 2011, Irvine, USA. Extended Abstract 280.

137. J. Ziegler, J. E. Shepherd, R. Deiterding, D. Pullin, G. Blanquart "Verification and Direct Numerical Simulation of Irregular Hydrocarbon Detonations" 23nd International Colloquium on the Dynamics of Explosions and Reactive Systems, July 24-29, 2011, Irvine, USA. Extended Abstract 293.

138. P. Boettcher, R. Mével, V. Thomas, J. E. Shepherd "The Effect of Heating Rates on Low Temperature Hexane-Air Combustion" 23nd International Colloquium on the Dynamics of Explosions and Reactive Systems, July 24-29, 2011, Irvine, USA. WIP Abstract 364.

139. R. Mével, J. Regele, S. P. M. Bane, J. E. Shepherd, G. Blanquart "Prediction of Markstein Lengths for Hydrogen-Air and Hydrogen-Nitrous oxide Mixtures" 23nd International Colloquium on the Dynamics of Explosions and Reactive Systems, July 24-29, 2011, Irvine, USA. WIP Abstract 367.

140. R. Mével, N. Chaumeix, J. E. Shepherd "Measurement of Detonation Cell Size in Ammonia Based Mixtures" 23nd International Colloquium on the Dynamics of Explosions and Reactive Systems, July 24-29, 2011, Irvine, USA. WIP Abstract 368.

141. T. C. Ligon, D. J. Gross, and J. E. Shepherd "Forces On Piping Bends Due To Propagating Detonations" Proceedings of 2011 ASME Pressure Vessels and Piping Division Conference PVP2011 July 17-21, 2011, Baltimore, Maryland, USA. Paper PVP2011-57278.

142. S. P. M. Bane, S. A. Coronel, P. A. Boettcher, J. E. Shepherd "Statistical Analysis of Spark Ignition of Kerosene-Air Mixtures" Fall Technical Meeting of the Western States Section of the Combustion Institute Hosted by the University of California, Riverside, CA Oct 17 & 18, 2011. Paper # 027IC-0201

143. S. Menon, G. Blanquart, P. Boettcher, J.E. Shepherd "Puffing flame instability - Part I: Numerical Investigation and Analysis" 64th Annual Meeting of APS Division of Fluid Dynamics, November 20-22, 2011, Bulletin of the American Physical Society, 56(18), Abstract BAPS.2011.DFD.S17.4.

144. P. Boettcher, J.E. Shepherd, S. Menon, G. Blanquart "Puffing flame instability - Part II: Predicting the onset and frequency" 64th Annual Meeting of APS Division of Fluid Dynamics, November 20-22, 2011, Bulletin of the American Physical Society, 56(18), Abstract BAPS.2011.DFD.S17.5.

145. A. Mitrea, N. J. Parziale, J.S. Jewell, H. G. Hornung, J. E. Shepherd. "Time resolved heat-flux measurements on a CEV candidate shape at high enthalpy." presentation at RTO Specialists Meeting AVT-200/RSM-030 on Hypersonic Laminar-Turbulent Transition, San Diego, CA 16-19 April 2012.

146. N. J. Parziale, H. G. Hornung, J. E. Shepherd. "Optical Detection of Transitional Phenomena in Hypervelocity Flow Over Slender Bodies." presentation at RTO Specialists Meeting AVT-200/RSM-030 on Hypersonic Laminar-Turbulent Transition, San Diego, CA 16-19 April 2012

147. N. J. Parziale, H. G. Hornung, J.E. Shepherd. "Reflected Shock Tunnel Noise Measurement by Focused Differential Interferometry." presentation at 42nd AIAA Fluid Dynamics Conference and Exhibit, 25-28 June 2012, New Orleans, Louisiana. AIAA 2012-3261 DOI: 10.2514/6.2012-3261

148. J.S. Jewell, N.J. Parziale, I.A. Leyva, J.E. Shepherd. "Turbulent Spot Observations within a Hypervelocity Boundary Layer on a Thin Cone" presentation at 42nd AIAA Fluid Dynamics Conference and Exhibit, 25-28 June 2012, New Orleans, Louisiana. AIAA 2012-3036 DOI: 10.2514/6.2012-3062

149. J. Damazo, J. Shepherd, J. Odell. "Boundary Layer Profile Behind Gaseous Detonation as it Affects Reflected Shock Wave Bifurcation" presentation at 42nd AIAA Fluid Dynamics Conference and Exhibit, 25-28 June 2012, New Orleans, Louisiana. AIAA 2012-2975

150. N. J. Parziale, J. Rabinovitch, G. Blanquart, H. G. Hornung, J. E. Shepherd. "A Proposed Vertical Expansion Tunnel." presentation at 42nd AIAA Fluid Dynamics Conference and Exhibit, 25-28 June 2012, New Orleans, Louisiana. AIAA 2012-3263 DOI: 10.2514/6.2012-3263

151. N. P. Bitter and J. E. Shepherd "Detonation and Transition to Detonation in Partially Water-filled Pipes" to be presented at the ASME 2012 Pressure Vessels & Piping Division / HP-2 Conference ASME/PVP 2012 July 15-19, 2012, Toronto, Ontario, Canada.

152. R. Mével, S. Pichon, L. Catoire, N. Chaumeix, C-E. Paillard, J. E Shepherd "Dynamics of Excited Hydroxyl Radicals in Hydrogen-Based Mixtures Behind Reflected Shock Waves" presentation, 34th International Symposium on Combustion, 29 July - 3 August 2012, Warsaw, Poland.

153. S. Coronel, R. Mével, S.P.M. Bane, J.E. Shepherd. "Experimental Study of Minimum Ignition Energy of Lean H_2-N_2O Mixtures" presentation, 34th International Symposium on Combustion, 29 July - 3 August 2012, Warsaw, Poland.

154. N.J. Parziale, J. E. Shepherd, H.G. Hornung "Geometric Acoustics in a Hypervelocity Boundary Layer" International Workshop on Hypersonic Stability and Transition, October 2-4, 2012, Sedona, Arizona

155. H.G. Hornung, J. S. Jewell, N. J. Parziale, J.E. Shepherd, and B. Valiferdowsi, "Recent Research on Transition at the T5 Hypervelocity Shock Tunnel" International Workshop on Hypersonic Stability and Transition, October 2-4, 2012, Sedona, Arizona

156. Jewell, J., Wagnild, R., Leyva, I., Candler, G., and J.E. Shepherd "Transition within a hypervelocity boundary layer on a 5-degree half-angle cone in freestream air/CO_2 mixtures" 65th Annual Meeting of APS Division of Fluid Dynamics, November 18-20, 2012, Bulletin of the American Physical Society, 57(17), Abstract BAPS.2012.DFD.D27.10.

157. Bitter, N. and J.E. Shepherd "Detonation and Transition to Detonation in Horizontal Water-Filled Pipes" 65th Annual Meeting of APS Division of Fluid Dynamics, November 18-20, 2012, Bulletin of the American Physical Society, 57(17), Abstract BAPS.2012.DFD.G26.02.

158. Damazo, J. and J.E. Shepherd "Planar Reflection of Detonation Waves" 65th Annual Meeting of APS Division of Fluid Dynamics, November 18-20, 2012, Bulletin of the American Physical Society, 57(17), Abstract BAPS.2012.DFD.R24.01.

159. J. S. Jewell, R. M. Wagnild, I. A. Leyva, G. V. Candler, J. E. Shepherd. "Transition within a Hypervelocity Boundary Layer on a 5-Degree Half-Angle Cone in Air/CO_2 mixtures" presentation at 51st AIAA Aerospace Sciences Meeting, 7-10 January 2013, Dallas, Texas. AIAA 2013-0523 DOI: 10.2514/6.2013-523

160. N. J. Parziale, J. E. Shepherd, H. G. Hornung. "Differential Interferometric Measurement of Instability at Two Points in a Hypervelocity Boundary Layer" presentation at 51st AIAA Aerospace Sciences Meeting, 7-10 January 2013, Dallas, Texas. AIAA 2013-0521 doi: 10.2514/6.2013-521

161. S. Coronel, R. Mével, P. Vervish, P. A. Boettcher, V. Thomas, N. Chaumeix, N. Darabiha, J. E. Shepherd. "Laminar Burning Speed of n-Hexane-Air Mixtures" 8th US National Combustion Meeting. University of Utah, May 19-22, 2013. Paper 070LT-0383

162. R. Mével, K. Chatelain, P.A. Boettcher, J.E. Shepherd "Low Temperature Oxidation of n-Hexane in a Flow Reactor" 8th US National Combustion Meeting. University of Utah, May 19-22, 2013. Paper 070RK-0399

163. N. P. Bitter and J. E. Shepherd. "Dynamic buckling of submerged tubes due to impulsive external pressure." Dynamic Behavior of Materials, Volume I: Proceedings of 2013 SEM Annual Conference and Exposition on Experimental and Applied Mechanics, June 3-5, 2013, Lombard, IL, 2013. The Society of Experimental Mechanics, 2014. http://dx.doi.org/10.1007/978-3-319-00771-7_28

164. N. P. Bitter and J. E. Shepherd. "On the adequacy of shell models for predicting stresses and strains in thick-wall tubes subjected to detonation loading." Proceedings of ASME 2013 Pressure Vessels and Piping Division, Conference ASME/PVP, July 14-18, 2013, Paris, France, 2013. PVP2013-97148.

165. T. C. Ligon, D. J. Gross and J. E. Shepherd. "Responses of piping tees to propagating detonations." Proceedings of ASME 2013 Pressure Vessels and Piping Division, Conference ASME/PVP, July 14-18, 2013, Paris, France, 2013. PVP2013-97115.

166. J. Damazo and J. E. Shepherd. "Reflected detonation waves: Comparing theory to measured reflected shock speed." Proceedings of the 29th Symposium on Shock Waves, July 14-19, 2013, Madison, WI, 2013.

167. N. J. Parziale, J. E. Shepherd, and H. G. Hornung. "Geometric Acoustics in High-Speed Boundary Layers." Proceedings of the 29th Symposium on Shock Waves, July 14-19, 2013, Madison, WI, 2013.

168. B. E. Schmidt, B. Bobbitt, N. J. Parziale, and J. E. Shepherd. "Experiments in a Combustion-Driven Shock Tube with Area Change." Proceedings of the 29th Symposium on Shock Waves, July 14-19, 2013, Madison, WI, 2013.

169. J. S. Jewell, J. E. Shepherd, and I. A. Leyva. "Shock tunnel operation and correlation of boundary layer transition on a cone in hypervelocity flow." Proceedings of the 29th Symposium on Shock Waves, July 14-19, 2013, Madison, WI, 2013.

170. Mével R. and Shepherd J.E. "Ignition delay time of small hydrocarbons-nitrous oxide(-oxygen) mixtures." Proceedings of the Twenty-fourth International Colloquium on the Dynamics of Explosion and Reactive Systems, Taipei, Taiwan, July 28-August 2, 2013.

171. Vervish-Kljakic P., Mével R., Chaumeix N., Dupré G., Paillard C.-E., Allix M., Darabiha N. and Shepherd J.E. "Spherical expanding flame in silane-hydrogen-nitrous oxide mixtures." Proceedings of the Twenty-fourth International Colloquium on the Dynamics of Explosion and Reactive Systems, Taipei, Taiwan, July 28-August 2, 2013.

172. Gallier S., Mével R., Davidenko D., Pintgen F. and Shepherd J.E."Numerical study of detonation wave diffraction in hydrogen based mixtures." Proceedings of the Twenty-fourth International Colloquium on the Dynamics of Explosion and Reactive Systems, Taipei, Taiwan, July 28-August 2, 2013.

173. Coronel S.A., Menon S., Mével R., Blanquart G. and Shepherd J.E. "Ignition of nitrogen diluted hexane-oxygen mixtures by moving heated particles." Proceedings of the Twenty-fourth International Colloquium on the Dynamics of Explosion and Reactive Systems, Taipei, Taiwan, July 28-August 2, 2013.

174. S. Coronel, N. Bitter, V. Thomas, R. Mével, J. E. Shepherd "Non-linear extrapolation of laminar flame properties from spherically expanding flames" Paper 087LF-0020, Spring Meeting, Western States Section of the Combustion Institute, March 24-25 2014.

175. N. P. Bitter and J. E. Shepherd "Transient Growth in Hypervelocity Boundary Layers" 7th AIAA Theoretical Fluid Mechanics Conference, Atlanta, GA, 16-20 June, 2014. Paper AIAA 2014-2497 http://dx.doi.org/10.2514/6.2014-2497

176. B. E. Schmidt, N. P. Bitter, H. G. Hornung, J. E. Shepherd "Experimental Investigation of Gas Injection into the Boundary Layer on a Slender Body in Supersonic Flow" 7th AIAA Theoretical Fluid Mechanics Conference, Atlanta, GA, 16-20 June, 2014. Paper AIAA 2014-2496 http://dx.doi.org/10.2514/6.2014-2496

177. N. J. Parziale, B. E. Schmidt, J. S. Damazo, P. S. Wang, H. G. Hornung, and J. E. Shepherd. "Pulsed Laser Diode for use as a Light Source for Short-Exposure, High-Frame-Rate Flow Visualization" 53rd AIAA Aerospace Sciences Meeting, 5-9 January 2015, Kissimmee, FL. AIAA-2015-0530.

178. N. J. Parziale, J. S. Jewell, I. A. Leyva, and J. E. Shepherd. "Effects of Shock-Tube Cleanliness on Slender-Body Hypersonic Instability and Transition Studies at High Enthalpy." 53rd AIAA Aerospace Sciences Meeting, 5-9 January 2015, Kissimmee, FL. AIAA-2015-1786.

179. J. Melguizo-Gavilanes and J. E. Shepherd "Numerical investigation of ignition over heated spheres" presented in the Mini-Symposium on Safety-Related Ignition Processes, 15th International Conference on Numerical Combustion, Avignon, FR, April 19-22, 2015.

180. R. Mével, K. Chatelain, L. Catorie, W.H. Green, J.E. Shepherd "Chemical kinetics of acetaldehyde pyrolysis and oxidation" 9th U.S. National Combustion Meeting, 17-20 May 2015, Cincinnati OH. Abstract 114RK-0165.

181. D. Lemarié, R. Mével, J.E. Shepherd "Oxidation of n-hexane in the vicinity of the auto-ignition temperature" 9th U.S. National Combustion Meeting, 17-20 May 2015, Cincinnati OH. Abstract 114RK-0112.

182. S. A. Coronel, J. Melguizo-Gavilanes, J. E. Shepherd "Ignition of n-Hexane-Air by Moving Hot Particles: Effect of Particle Diameter" 9th U.S. National Combustion Meeting, 17-20 May 2015, Cincinnati OH. Abstract 114RK-0452.

183. B. E. Schmidt and J. E. Shepherd "Analysis of Focused Laser Differential Interferometry" 31st AIAA Aerodynamic Measurement Technology and Ground Testing Conference, 22 - 26 June 2015, Dallas, Texas. Paper AIAA 2015-2246 http://dx.doi.org/10.2514/6.2015-2246 Outstanding Paper Award by AIAA Ground Testing Technical Committee.

184. G. Ciccarelli, J. Melguizo-Gavilanes, J.E. Shepherd "Pressure-field Produced by the Rapid Vaporization of a CO_2 Liquid Column" 30th International Symposium on Shock Waves, 19-24 July, Tel Aviv, Israel, 2015.

185. R. Mével, J. Melguizo-Gavilanes, S. A. Coronel, J. E. Shepherd "Chemical Kinetics of Ignition of n-Hexane by a Moving Hot Sphere" 25th International Colloquium on the Dynamics of Explosions and Reactive Systems (ICDERS 2015), Leeds, UK 2-7 August 2015.

186. S. A. Coronel and J. E. Shepherd "Effect of Equivalence Ratio on Ignition and Flame Propagation of n-Hexane-Air Mixtures using Moving Hot Particles" 25th International Colloquium on the Dynamics of Explosions and Reactive Systems (ICDERS 2015), Leeds, UK 2-7 August 2015.

187. G. Bechon, R. Mével, D. Davidenko, J. E. Shepherd "Modeling of Rayleigh Scattering Imaging of Detonation Waves" 25th International Colloquium on the Dynamics of Explosions and Reactive Systems (ICDERS 2015), Leeds, UK 2-7 August 2015.

188. J. Melguizo-Gavilanes and J. E. Shepherd "Hot Surface Ignition and Flow Separation" 25th International Colloquium on the Dynamics of Explosions and Reactive Systems (ICDERS 2015), Leeds, UK 2-7 August 2015.

189. S. I. Jackson, B.J. Lee and J. E. Shepherd "Detonation Mode and Frequency Variation Under High Loss Conditions" 25th International Colloquium on the Dynamics of Explosions and Reactive Systems (ICDERS 2015), Leeds, UK 2-7 August 2015.

190. Melguizo-Gavilanes, J., Coronel, S., Mével, R., and Shepherd, J.E. "Ignition of Hydrogen-Air Mixtures by Moving Heated Particles" International Conference on Hydrogen Safety, October, 19-21 2015 - YOKOHAMA (JAPAN).

191. Melguizo-Gavilanes, J., Mével, R., and Shepherd, J.E. "Hot Surface Ignition of Hydrogen-Air Mixtures" International Conference on Hydrogen Safety, October, 19-21 2015 - YOKOHAMA (JAPAN).

192. Bryan E. Schmidt and Joseph E Shepherd "Measurements of Instability in Supersonic Flow with Injection by Time-Resolved Flow Visualization" 54th AIAA Aerospace Sciences Meeting, 4-7 January 2016, San Diego, CA. Paper AIAA 2016-0599, http://dx.doi.org/10.2514/6.2016-0599

193. Nové-Josserand, A., Kishita, Y., Melguizo-Gavilanes, J., Coronel, S., Boeck, L., Mével, R. and Shepherd, J.E. (2016) "Ignition of hydrogen-air mixtures by a concentrated stationary hot surface", 11th International Symposium on Hazards, Prevention, and Mitigation of Industrial Explosion (ISHPMIE), July 24-29 2016, Dalian, China.

194. R. Mével, J. Melguizo-Gavilanes, L.R. Boeck, J.E. Shepherd. "Hot Surface Ignition of Ethylene-Air mixtures. Selection of Reaction Models for CFD Simulations" Paper # 2RK-0098. 10th US National Combustion Meeting, Organized by the Eastern States Section of the Combustion Institute, April 23-26, 2017, College Park, Maryland.

195. Jean-Christophe Veilleux and Joseph E. Shepherd "Impulsively-Generated Pressure Transients And Strains In A Cylindrical Fluid-Filled Tube Terminated By A Converging Section." Paper # PVP2017-65471, Proceedings of the ASME 2017 Pressure Vessels and Piping Conference, PVP2017, July 16-20, 2017, Waikoloa, Hawaii, United States.

196. Lorenz Boeck, Josue Melguizo-Gavilanes, Joseph E. Shepherd "Hot surface ignition dynamics in hydrogen-air mixtures near the flammability limits" Paper No. 1100, 26th International Colloquium on the Dynamics of Explosions and Reactive Systems, Boston, MA, 30 July - 4 August 2017.

197. Josue Melguizo-Gavilanes, Joseph E.Shepherd "Effect of Orientation on the Ignition of Stoichiometric Ethylene Mixtures by Stationary Hot Surfaces" Paper No. 981, 26th International Colloquium on the Dynamics of Explosions and Reactive Systems, Boston, MA, 30 July - 4 August 2017.

198. J. Melguizo-Gavilanes and J.E. Shepherd "Effect Of Rotation On Ignition Thresholds Of Stoichiometric Hydrogen-Air Mixtures" 7th International Conference on Hydrogen Safety, Hamburg, Germany, September 11-13, 2017.

199. Jean-Christophe Veilleux, Julian Jazayeri, Bruce Eu, Joseph E. Shepherd "Primary Packaging & Delivery Systems Interaction" Parenteral Drug Association 10th Workshop on Monoclonal Antibodies September 26-27, 2017, Berlin, Germany

200. S. Coronel, J. Melguizo-Gavilanes, D. Davidenko, R. Mevel, J. E. Shepherd "Reduction Methodology for Detailed Kinetic Mechanisms: Application to n-Hexane-Air Hot Surface Ignition" 11th Asia-Pacific Conference on Combustion, The University of Sydney, NSW Australia, 10-14 December 2017.

201. Jean-Christophe Veilleux, Kazuki Maeda, Tim Colonius, Joseph E. Shepherd. "Transient Cavitation in Pre-Filled Syringes During Autoinjector Actuation" Proceedings of the 10th International Symposium on Cavitation (CAV2018). Baltimore, MD, May 14-16, 2018. doi:10.1115/1.861851_ch203

202. S.A. Coronel, S. Lapointe, J.E. Shepherd "Boundary layer ignition modeling" 11th U.S. National Combustion Meeting, Pasadena, CA, March 24-27, 2019. Paper 1H11.

203. S.A. Coronel, R. Mével, J.E. Shepherd "Analysis of Synthetic Flames." 27th International Colloquium on Dynamics of Explosions and Reactive Systems, Beijing, China, July 28-August 2, 2019. Paper 365.

204. S.A. Coronel, S. Lapointe, R. Mével, N. Chaumeix, J.E. Shepherd "Experimental n-Hexane-Air Expanding Spherical Flames." 27th International Colloquium on Dynamics of Explosions and Reactive Systems, Beijing, China, July 28-August 2, 2019. Paper 368.

205. Mark D. Frederick, Rohan Gejji, Joseph E. Shepherd, and Carson D. Slabaugh "Preliminary Results from Narrow Channel Facility Experiments at Purdue University" AIAA Propulsion and Energy 2019 Forum. Indianapolis, IN, 19-22 August, 2019. AIAA 2019-4218 https://doi.org/10.2514/6.2019-4218

206. S.M. Jones and J.E. Shepherd. "Thermal ignition of n-hexane air mixtures by vertical cylinders." 13th International Symposium on Hazards, Prevention, and Mitigation of Industrial Hazards, (ISHPMIE), Braunschweig, Germany, July 27 – 31, 2020.

207. C.D. Martin and J.E. Shepherd. Low Temperature Autoignition of Jet A and Surrogate Jet Fuels. 13th International Symposium on Hazards, Prevention, and Mitigation of Industrial Hazards, (ISHPMIE), Braunschweig, Germany, July 27 – 31, 2020.

208. Mark D. Frederick, Rohan Gejji, Joseph E. Shepherd, and Carson D. Slabaugh "Statistical Analysis of Methane Detonation Wave Structure in a Narrow Channel" AIAA SciTech 2021 Forum. Virtual Event, 19-21 January, 2021. AIAA 2021-0800 https://doi.org/10.2514/6.2021-0800

209. Conor D. Martin and Joseph E. Shepherd "Thermal Ignition: Effects of Fuel, Ambient Pressure and Nitrogen Dilution", 14th International Symposium on Hazards, Prevention and Mitigation of Industrial Explosions, Physikalisch-Technische Bundesanstalt (PTB), Braunschweig, Germany, July 11-15, 2022.

210. Donner T. Schoeffler and Joseph E. Shepherd "Modeling Detonation Reflection with Nonsteady Shock Change Equation" 28th International Colloquium on Dynamics of Explosions and Reactive Systems (ICDERS), Napoli, Italy, July 19-24, 2022.

211. Mark D. Frederick, Rohan Gejji, Joseph E. Shepherd, and Carson D. Slabaugh "Statistical analysis of detonation wave structure" 39th International Symposium on Combustion, Vancouver, Canada, July 24-29, 2022

212. Yunliang Qi, Joseph E. Shepherd "Ignition of hexane-air mixtures by highly under-expanded hot jets" 39th International Symposium on Combustion, Vancouver, Canada, July 24-29, 2022

213. Mark D. Frederick, Rohan Gejji, Joseph E. Shepherd, and Carson D. Slabaugh "Transverse Waves in Near-Limit Detonations", AIAA SciTech 2023 Forum. National Harbor, MD. 23-27 January, 2023. AIAA 2023-1874 https://doi.org/10.2514/6.2023-1874

214. Donner T. Schoeffler and Joseph E. Shepherd. Decay of shock waves in detonation-driven shock tubes. 34th International Symposium on Shock Waves (ISSW34), Daegu, Korea , 16-21 July 2023.

215. Charline Fouchier and Joseph E. Shepherd. Modeling of explosively driven dispersion: Application to the Fukushima Daiichi accident. 29th International Colloquium on Dynamics of Explosions and Reactive Systems (ICDERS), Siheung, South Korea, July 23-28, 2023.

216. Donner T. Schoeffler and Joseph E. Shepherd. Thermal ignition by millimeter-scale surface hot spots. 29th International Colloquium on Dynamics of Explosions and Reactive Systems (ICDERS), Siheung, South Korea, July 23-28, 2023.

217. Mark D. Frederick, Ryan M. Strehlau, Rohan Gejji, Joseph E. Shepherd, and Carson D. Slabaugh "300 kHz OH PLIF of Detonation Structure" AIAA SciTech Forum, 8-12 January 2024, Orlando, FL.

218. Branson Davis, Charline Fouchier, and Joseph Shepherd "Fluid Motion and Heat Transfer in Autoignition Testing" 15th International Symposium on Hazards, Prevention and Mitigation of Explosions, Naples, Italy, June 10-14, 2024.

219. Charline Fouchier and Joseph Shepherd "ASTM E659 Standardized Test Analysis and Results for Synthetic Paraffinic Kerosene" 15th International Symposium on Hazards, Prevention and Mitigation of Explosions, Naples, Italy, June 10-14, 2024.

220. Mark D. Frederick, Rohan Gejji, Joseph E. Shepherd, and Carson D. Slabaugh "Reactive processes following transverse wave interaction" 40th International Symposium on Combustion, Milan, Italy, July 21-26, 2024

221. C. Fouchier, J. E. Shepherd, Experimental Investigation of Liquid Fuel Autoignition: Insights from Advanced Optical Diagnostics, 30th International Colloquium on the Dynamics of Explosions and Reactive Systems, Ottawa, CA, July 27-Aug 1, 2025.

222. Mark D. Frederick, Carson D. Slabaugh, and Joseph E. Shepherd "Experimental Observations on the Reaction of Unburned Pockets" 30th International Colloquium on the Dynamics of Explosions and Reactive Systems, Ottawa, CA, July 27-Aug 1, 2025.

Laboratory and University Reports

1. J. E. Shepherd 1980 "Dynamics of Vapor Explosions: Rapid Evaporation and Instability of Butane Droplets Exploding at the Superheat Limit." Ph.D. Thesis, California Institute of Technology. 182 pp.

2. M. R. Baer, S. K. Griffiths, and J. E. Shepherd 1982 "Hydrogen Combustion in Aqueous Foams," Sandia National Laboratories Report SAND82-0917. 71 pp.

3. M. R. Baer and J. E. Shepherd 1983 "A Thin–Flame Model for Reactive Flow in Porous Materials," Sandia National Laboratories Report SAND83–2576. 53 pp.

4. J. E. Shepherd 1985 "Hydrogen–Steam Jet–Flame Facility and Experiments," Sandia National Laboratories Report SAND84-0060. 117 pp.

5. A. C. Ratzel, S. N. Kempka, J. E. Shepherd, and A. W. Reed 1985 "SMOKE: A Data Reduction Package for Analysis of Combustion Experiments," Sandia National Laboratories Report SAND83–2657. 117 pp.

6. J. E. Shepherd and S. R. Tieszen 1986 "Detonation Cellular Structure and Image Processing," Sandia National Laboratories Report SAND86-0033. 25 pp.

7. J. E. Shepherd 1987 "Analysis of Diffusion Flame Tests," Sandia National Laboratories Report SAND86-0419. 71 pp.

8. J. E. Shepherd and D. R. Begeal 1988 "Transient Compressible Flow in Porous Materials," Sandia National Laboratories Report SAND83-1788. 59 pp.

9. J. E. Shepherd 1988 "Hydrazine-Oxidizer-Diluent Detonation Modeling," RPI Report, July 17, 1988. 162 pp.

10. J. E. Shepherd 1988 "Interface Effects in Underwater Explosions," in **Conventional Weapons Underwater Explosions**, Office of Naval Research Workshop Report, Dec. 15, 1988, ONR Contract No. N00014-88-J-1150, pp. 43-83.

11. J. E. Shepherd 1991 "Numerical Computation of Blast Waves in the NASA LaRC 8' HTT Combustor," Explosion Dynamics Consulting report to Arthur D. Little, March 4, 1991. 65 pp.

12. J. E. Shepherd 1991 "Numerical Computation of Blast Waves in the NASA LaRC 8' HTT Combustor. Part II Evaluation of Accident Sequences," Explosion Dynamics Consulting report to Arthur D. Little, March 21, 1991. 70 pp.

13. J. E. Shepherd 1991 "Flow Visualization in a 1/6-Scale model of the NASA LaRC 8' HTT Combustor," Explosion Dynamics Consulting report to Arthur D. Little, April 6, 1991. 48 pp.

14. J. E. Shepherd 1991 "Accidental Explosion and Detonation in the NASA LaRC 8' HTT Combustor," Explosion Dynamics Consulting report to Arthur D. Little, May 1, 1991. 64 pp.

15. J. E. Shepherd 1992 "Pressure Loads and Structural Response of the BNL High-Temperature Detonation Tube," Brookhaven National Laboratory Technical Report A-3991, January 21, 1992. 72 pp.

16. R. Akbar and J. E. Shepherd 1993 "Detonations in N_2O-H_2-N_2-Air Mixtures" Explosion Dynamics Report to Los Alamos National Laboratory, June 18, 1993. 43 pp.

17. J. E. Shepherd 1993 "Reaction Zone Length Computations for N_2O-H_2-N_2-Air Mixtures" Explosion Dynamics Report to Los Alamos National Laboratory, March 31, 1993. 32 pp.

18. J. Chris Krok and J. E. Shepherd 1993 "Electrical and Frictional Spark Ignition of H_2-N_2O-N_2-O_2 Mixtures" Explosion Dynamics Report to Los Alamos National Laboratory, June 8, 1993. 26 pp.

19. Rupert Klein, J. Chris Krok, and J. E. Shepherd. "Curved quasi-steady detonations. Asymptotic analysis and detailed chemical kinetics" Explosion Dynamics Laboratory Report FM95-04, California Institute of Technology, May 1995.

20. J. E. Shepherd and A. Teodorczyk 1995 "Benzene Detonation Modeling," Explosion Dynamics Report to Westinghouse Savannah River Co., July 16, 1995. 31 pp.

21. J. E. Shepherd 1995 "Detonation Probability for Combustion Events in SRAT Vessel at DWPF," Explosion Dynamics Report to Westinghouse Savannah River Co., Sept 12, 1995. 14 pp.

22. M. C. Ross and J. E. Shepherd 1996 "Lean Combustion Characteristics of Hydrogen-Nitrous-Oxide-Ammonia Mixtures in Air," Graduate Aeronautical Laboratories Report to Los Alamos National Laboratory, Parts I and II, GALCIT Report FM96-4, July 1996. 440 pp.

23. M. Kaneshige and J. E. Shepherd 1997 "Detonation Database," California Institute of Technology, GALCIT Report FM97-8, July 1997. 170 pp. See also the electronic hypertext version at http://www.galcit.caltech.edu/~jeshep/detn_db.html.

24. J. E. Shepherd, J. C. Krok, and J. J. Lee 1997 "Jet A Explosions - Field Test Plan 1/4-scale Experiments," California Institute of Technology, GALCIT Report FM97-17, June 27, 1997 (Revised December 1997) 59 pp.

25. J. E. Shepherd, J. C. Krok, and J. J. Lee 1997 "Jet A Explosion Experiments: Laboratory Testing" California Institute of Technology, GALCIT Report FM97-5, June 26, 1997 (Revised November 21, 1997) 68 pp.

26. R. Akbar, M. Kaneshige, E. Schultz, and J. E. Shepherd 1996 "Detonations in H_2-N_2O-CH_4-NH_3-O_2-N_2 Mixtures," California Institute of Technology, GALCIT Report FM97-3, July 24, 1997. 194 pp.

27. U. Pfahl and J. E. Shepherd 1997 "Flammability, Ignition Energy and Flame Speeds in NH_3-H_2-CH_4-N_2O-O_2-N_2 Mixtures," California Institute of Technology, GALCIT Report FM97-4R1, July 15, 1997. 59 pp.

28. U. Pfahl, J. E. Shepherd, and C. Unal 1998 "Combustion within Porous Waste," Explosion Dynamics Laboratory Report to Los Alamos National Laboratory, February 23, 1998, FM 97-18. 19 pp.

29. U. Pfahl, E. Schultz, and J. E. Shepherd 1998 "Detonation Cell Width Measurements for H_2-N_2O-N_2-O_2-CH_4-NH_3 Mixtures," GALCIT Report FM 98-5, April 10, 1998, 22 pp.

30. J. E. Shepherd, J. C. Krok, and J. J. Lee 1997 "Spark Ignition Energy Measurements in Jet A" California Institute of Technology, GALCIT Report FM97-9, August 4, 1997, 76 pp.

31. J. E. Shepherd, J. C. Krok, J. J. Lee, L. L. Brown, Robert T. Lynch, T. M. Samara, M. M. Birky, "Results of 1/4-Scale Experiments, Vapor Simulant and Liquid Jet A Tests." California Institute of Technology, GALCIT Report FM98-6, July 4, 1998, 351 pp + Appendices.

32. W.M. Beltman and J.E. Shepherd. "Structural response of shells to shock and detonation loading." Technical Report FM98-3, GALCIT, April 1998.

33. R. Akbar, P. Svitek, C. Nuyt, J. E. Shepherd "Infrared Imaging and Temperature Measurement under a Boeing 747 Center Wing Tank" California Institute of Technology, GALCIT Report FM9-3, March 9, 1999, 12 pp.

34. J. J. Lee and J. E. Shepherd 2000 "Spark Ignition Energy Measurements in Jet A: Part II" California Institute of Technology, GALCIT Report FM99-7, January 22, 2000. 70 pp.

35. J. E. Shepherd, C. D. Nuyt, and J. J. Lee 2000 "Flashpoint and Chemical Composition of Aviation Kerosene," California Institute of Technology, GALCIT Report FM99-4, May 26, 2000. 32 pp.

36. M. Arienti, E. Morano, J. E. Shepherd "Nonreactive Euler flows with Mie-Gruniesen equation of state for High Explosives" California Institute of Technology, GALCIT Report FM99-8, October 25, 1999.

37. U. Pfahl and J.E. Shepherd. Jet initiation of deflagration and detonation in stoichiometric H_2O–O_2–N_2 mixtures. Technical Report FM99-1, GALCIT, November 1999.

38. E. Schultz and J. E. Shepherd. Detonation diffraction through a mixture gradient. Technical Report FM00-1, GALCIT, February 2000.

39. E. Schultz and J. E. Shepherd. Validation of detailed reaction mechanisms for detonation simulation. Technical Report FM99-5, GALCIT, February 2000.

40. J. M. Austin, M. Cooper, S. Jackson, E. Wintenberger, J. E. Shepherd, and B. Sturtevant. Small scale detonation studies: Direct impulse measurements for detonations and deflagrations. Technical Report FM00-5, GALCIT, July 2000.

41. J. M. Austin and J. E. Shepherd. Detonation in hydrocarbon fuel blends. Technical Report FM99-6, GALCIT, July 2000.

42. M. Cooper, S. Jackson, and J. E. Shepherd. Effect of deflagration-to-detonation transition on pulse detonation engine impulse. Technical Report FM00-3, GALCIT, July 2000.

43. **OECD Report** Flame Acceleration and Deflagration to Detonation Transition in Nuclear Safety State-of-the-Art Report by a Group of Experts, W. Breitung, C. Chan, S. Dorofeev, A. Eder, B. Gelfand, M. Heitsch, R. Klein, A. Malliakos, J. E. Shepherd, E. Studer, P.Thibault, OECD Nuclear Energy Agency, NEA/CSNI/R(2000)7 August 2000. Available as http://www.oecd-nea.org/nsd/docs/2000/csni-r2000-7.pdf

44. J.-P. Hébral and J. E. Shepherd. User guide for detonation cell size measurement using photoshop and matlab. Technical Report FM00-6, California Institute of Technology, December 2000. Explosion Dynamics Laboratory Report.

45. T. Chao, E. Wintenberger, and J. E. Shepherd. On the Design of Pulse Detonation Engines. Explosion Dynamics Laboratory Report FM00-7, California Institute of Technology, January 2001.

46. M. Grunthaner, S. I. Jackson, and J. E. Shepherd. Design and Construction of an Annular Detonation Initiator. Explosion Dynamics Laboratory Report FM01-5, California Institute of Technology, September 2001.

47. A. Leny and J.E. Shepherd. Detonation in syngas mixtures. Technical Report FM2002-001, Graduate Aeronautical Laboratories California Institute of Technology, April 2002.

48. D. Lieberman, S. Jackson, and J.E. Shepherd. Determination of flammability limits and flame speeds in syngas mixtures. Technical Report FM2002-003, Graduate Aeronautical Laboratories California Institute of Technology, May 2002.

49. L. Smith, A. Winthrop, and J.E. Shepherd. Combustion of rich methane-oxygen mixtures. Technical Report FM2002-004, Graduate Aeronautical Laboratories California Institute of Technology, June 2002.

50. E. Wintenberger, J. M. Austin, M. Cooper, S. I. Jackson, and J. E. Shepherd. Impulse of a single pulse detonation tube. Explosion Dynamics Laboratory Report FM00-8, California Institute of Technology, August 2002.

51. J.E. Shepherd and D. Lieberman. High pressure and high-temperature combustion tests for syngas production hazard evaluation. Technical Report FM2002-005, Graduate Aeronautical Laboratories California Institute of Technology, October 2002.

52. M. Cooper and J. E. Shepherd. Thermal and catalytic cracking of JP-10 for pulse detonation engine applications. Explosion Dynamics Laboratory Report FM2002.002, California Institute of Technology, December 2002.

53. S. I. Jackson and J. E. Shepherd. The development of a pulse detonation engine simulator facility. Explosion Dynamics Laboratory Report FM2002.006, California Institute of Technology, December 2002

54. J. E. Shepherd and D. Lieberman Limiting Oxygen Concentration in Hexane-Air Combustion, Explosion Dynamics Laboratory Letter Report, February 1, 2003.

55. F. Pintgen and J. E. Shepherd. Pulse detonation engine impulse analysis for partially-oxidized jet fuel. Explosion Dynamics Laboratory Report FM2003.001, California Institute of Technology, April 2003.

56. F. Pintgen and J.E. Shepherd. Mixing and combustion in rich fireballs. Technical Report FM2003-004, GALCIT, October 2003. Explosion Dynamics Laboratory Report to Sandia National Laboratory.

57. GALCIT 75, Program of the 75th Anniversary of the Founding of the Graduate Aeronautical Laboratories, Nov. 14-15, 2003. Joint project with Marionne Epalle and the Communications Office of the EAS Division with contributions by the GALCIT faculty.

58. D. Lieberman and J. E. Shepherd. Ignition and flame propagation in natural gas-ethane-oxygen mixtures at 1 MPa and 200°C. Technical Report FM2003-002, Graduate Aeronautical Laboratories California Institute of Technology, December 2003.

59. F. Pintgen and J. E. Shepherd. Deflagration-to-detonation transition (DDT) in rich methane-oxygen mixtures. Technical Report FM2003-006, Graduate Aeronautical Laboratories California Institute of Technology, December 2003.

60. F. Pintgen and J. E. Shepherd. Detonation sensitivity of partially-oxidized aviation kerosene. Explosion Dynamics Laboratory Report FM2003.007, California Institute of Technology, January 2004.

61. D. Lieberman and J. E. Shepherd. Effect of ethane on burning speed of natural gas-oxygen mixtures at 0.1 MPa and 20°C. Technical Report FM2003-005, Graduate Aeronautical Laboratories California Institute of Technology, February 2004. (DRAFT)

62. J. Karnesky, E. Koos, and J. E. Shepherd. Transmission of hexane-air explosions. Explosion Dynamics Laboratory Report FM2004.003, California Institute of Technology, August 2004.

63. J. E. Shepherd. JDAM explosive atmosphere evaluation: Technical background. September 2004.

64. P. M. Buraczewski and J. E. Shepherd. Initiation of detonation by shock focusing. Technical Report FM2004.004, GALCIT, October 2004. Revised in 2021.

65. F. Pintgen and J. E. Shepherd. Structural response to deflagration-to-detonation transition events in a tube. Technical Report FM2005-005, Graduate Aeronautical Laboratories California Institute of Technology, August 2005.

66. M.L. Wolf, D.H. Lieberman, and J.E. Shepherd. Characterization of gravity current formation for the use in detonation refraction experiments. Technical Report FM2005-006, GALCIT, August 2005.

67. J. Karnesky, S. Moffett, and J. E. Shepherd. Explosion transmission through foam metal breather plugs. EDL report LMCO-1, Explosion Dynamics Laboratories, California Institute of Technology, December 2005.

68. G. Ogg, S. Hardesty, S. White, M. Reisner, B. Broad, J. C. Krok, F. Pintgen, and J. E. Shepherd. Deflagration-to-detonation tests in methane-oxygen at 15 atm and 300°C. Technical Report FM2005-007, Graduate Aeronautical Laboratories California Institute of Technology, January 2006.

69. F. Pintgen and J. E. Shepherd. Elastic and plastic structural response of thin tubes to deflagration-to-detonation transition events. Technical Report FM2005-008, Graduate Aeronautical Laboratories California Institute of Technology, March 2006.

70. Z. Liang, J. Karnesky, and J. E. Shepherd. Deflagration-to-detonation transition tests in a tube with obstacles and porous media. Technical Report FM2006-001, Graduate Aeronautical Laboratories California Institute of Technology, March 2006.

71. Z. Liang, J. Karnesky, and J.E. Shepherd. Structural response to reflected detonations and deflagration-to-detonation transition in H_2-N_2O mixtures. Technical Report FM2006-003, GALCIT, August 2006.

72. Z. Liang, J. Karnesky, and J.E. Shepherd. Delflagration-to-detonation transition tests in H_2-O_2-N_2-He mixtures. Technical report FM2006-004, Graduate Aeronautical Laboratories, California Institute of Technology, August 2006.

73. F. Pintgen and J. E. Shepherd. Elastic and plastic structural response of tubes to deflagration-to-detonation transition events. Technical Report FM2006-005, Graduate Aeronautical Laboratories California Institute of Technology, August 2006.

74. Z. Liang and J. E. Shepherd. Explosion Testing of the Nested Can Containment System. Part I: Planar Gap. Part II. Thick-Walled Tube. Part III. 3013 Outer Can. Technical Report FM2007-001, Graduate Aeronautical Laboratories California Institute of Technology, May 9, 2007.

75. S.P.M. Bane, J.E. Shepherd, E. Kwon, A.C. Day (2010). Edge glow: experimental investigation of composite sparks caused by lightning strikes. Report submitted The Boeing Company. Graduate Aeronautical Laboratories California Institute of Technology, October 2007 (Revised January 2010), GACLIT Report FM2010.001.

76. S. T. Browne, J. Zeigler, and J. E. Shepherd "Numerical Solution Methods for Shock and Detonation Jump Conditions" Technical Report FM2006-006, Graduate Aeronautical Laboratories California Institute of Technology, February, 2008. No longer available, superceded by FM2018.001 and Shock and Detonation Toolbox Website.

77. Z. Liang, J. Karnesky and J. E. Shepherd. Detonations in C_2H_4-O_2. Experimental Measurements and Validation of Numerical Simulation for Incident and Reflected Waves. Technical Report FM2006-009, Graduate Aeronautical Laboratories California Institute of Technology, June 21, 2008.

78. J. E. Shepherd, J. Karnesky, F. Pintgen, and J.C. Krok. Experimental Measurements of Strains and Blast Waves Resulting From Detonations in Tubes. Technical Report FM2006-010, Graduate Aeronautical Laboratories California Institute of Technology, June 22, 2008.

79. Z. Liang, T. Curran, and J. E. Shepherd. Structural response of piping components to detonation loading. Technical Report FM2006-008, California Institute of Technology, October 2008.

80. J.E. Shepherd and R. Akbar. Forces Due to Detonation Propagation in a Bend. Technical Report FM2008-002, California Institute of Technology, February 24, 2009.

81. S.P.M. Bane, J.L. Ziegler, and J.E. Shepherd. Development of One-Step Chemistry Models for Flame and Ignition Simulation. Technical Report GALCIT FM2010.002, California Institute of Technology, March 30, 2010.

82. J.E. Shepherd and R. Akbar. Piping system response to detonations. results of ES1, TS1 and SS1 testing. Technical Report FM2009-001, California Institute of Technology, August 22, 2010.

83. R. Akbar and J.E. Shepherd. Detonation Initiation and Propagation within Gas Layers in Water-Filled Piping. Technical Report FM2010-003, California Institute of Technology, August 22, 2010.

84. J. L. Ziegler, R. Deiterding, J. E. Shepherd, and D. I. Pullin. An adaptive high-order hybrid scheme for compressive, viscous flows with detailed chemistry. Technical Report FM2011-001, Graduate Aeronautical Laboratories, California Institute of Technology, February 2011.

85. N. P. Bitter and J.E. Shepherd. Detonation and DDT in partially water-filled pipes. Technical Report FM2012.001, Graduate Aeronautical Laboratories, California Institute of Technology, May 2012.

86. A. Teodorczyk and J.E. Shepherd. Interaction of a shock wave with a water layer. Technical Report FM2012.002, Graduate Aeronautical Laboratories, California Institute of Technology, May 2012.

87. J.S. Jewell and J.E. Shepherd "T5 Conditions Report - Shots 2526–2823" Technical Report FM2014.002, Graduate Aeronautical Laboratories, California Institute of Technology, June 3, 2014.

88. N. P. Bitter and J.E. Shepherd. "On the adequacy of shell models for predicting stresses and strains in thick-wall tubes subjected to detonation loading." Technical Report FM2015.001, Graduate Aeronautical Laboratories, California Institute of Technology, December 2015.

89. J.E. Shepherd and J. Kasahara. "Analytical Models for the Thrust of a Rotating Detonation Engine." Technical Report FM2017.001, Graduate Aeronautical Laboratories, California Institute of Technology, September 23, 2017.

90. J.-C. Veilleux, S.A. Coronel, J.E. Shepherd. "Ignition by Water Hammer." Technical Report EDL2019.001, Graduate Aeronautical Laboratories, California Institute of Technology, December 2019.

91. Explosion Dynamics Laboratory. "SDToolbox: Numerical tools for shock and detonation wave modeling." GALCIT Report FM2018.001, California Institute of Technology, Pasadena, CA, January 2020. Contributors: Browne, S. T. and Ziegler, J. L. and Bitter, N. P. and Schmidt, B. E. and Lawson, J. and Shepherd, J. E.. See the Shock and Detonation Toolbox Website `http://shepherd.caltech.edu/EDL/PublicResources/sdt/` for related software packages and updates.

92. J.E. Shepherd. "Ignition Modeling and the Critical Decay Rate Concept." Technical Report EDL2019.002, Graduate Aeronautical Laboratories, California Institute of Technology, January 2020.

93. C.D. Martin and J.E. Shepherd, "Autoignition Testing of Hydrocarbon Fuels Using the ASTM-E659 Method." Technical Report EDL2020.001, Graduate Aeronautical Laboratories, California Institute of Technology, March 2020.

94. C. Fouchier and J. E. Shepherd. ASTM Apparatus at EDL. Technical Report EDL2023.001, Graduate Aeronautical Laboratories, California Institute of Technology, 2023.

Patents

1. Dampers and Methods for Performing Measurements in an Autoinjector. Inventors: Jean-Christophe Veilleux and Joseph E. Shepherd. US Patent Application No. 15/649,329. Publication Number US-2018-0015224-A1, Published 01/18/2018.