



Combustion

Science & Engineering, Inc.

8940 Old Annapolis Road • Suite L • Columbia • MD • 21045 -2129 • Tel: 410 / 884-3266 • Fax: 410 / 884-3267

STEPHEN M. OLENICK, MSFPE, CFEI, P.E.

Contact: solenick@csefire.com

EDUCATION:

M.S., Fire Protection Engineering, University of Maryland, College Park, MD, Dec. 1999

B.S., Fire Protection Engineering, University of Maryland, College Park, MD, May 1998

M.B.A., Loyola College, Columbia, MD, expected 2010

THESIS:

Olenick, S.M., "Validation of the Forced Flow Ignition and Flame Spread Test (FIST), A Reduced Scale Test Apparatus, to Assess Material Flammability for Micro-Gravity Environments," University of Maryland, College Park, Maryland, December 1999.

PROFESSIONAL EXPERIENCE:

Senior Engineer, Combustion Science & Engineering, Inc., Columbia, MD, 2005-Present.

Responsible for conducting fire investigations and fire hazards analysis, providing fire litigation support, and utilizing computer fire modeling including both zone models and computational fluid dynamics (CFD). Litigation experience includes both criminal and civil cases involving residential, commercial, and industrial fires. Conducted various site fire investigations that cover a wide range of structural settings including residential, commercial, and industrial facilities. Performed model validation of both zone and CFD models to determine error limits and accuracy of models in various scenarios. Participated in numerous projects funded by government grants (NASA, NIST, etc.) to determine methodologies for modeling smoke detector activation. Involved in the design of gas turbine combustors utilizing CAD as well as commercially available CFD codes. Responsible for providing leadership and managerial duties on numerous computational and experimental projects, as well as overseeing and reviewing many computational simulations.

Project Engineer, Combustion Science & Engineering, Inc., Columbia, MD, 2000-2005.

Responsible for conducting fire investigations and fire hazards analysis, providing fire litigation support, and utilizing computer fire modeling including both zone models and computational fluid dynamics (CFD). Litigation experience includes both criminal and civil cases involving residential, commercial, and industrial fires. Conducted various site fire investigations that cover a wide range of structural settings including residential, commercial, and industrial facilities. Performed model validation of both zone and CFD models to determine error limits and accuracy of models in various scenarios. Responsible for compiling and making available a comprehensive list of computer fire models for free on the internet providing background information on a wide range of computer fire models. Participated in numerous projects funded by government grants (NASA, NIST, etc.) to determine methodologies for modeling smoke detector activation. Involved in the design of gas turbine combustors utilizing CAD as well as commercially available CFD codes.

Graduate Research Assistant, University of Maryland, College Park, MD, 1998-1999.

Responsible for design, construction, and operation of the FIST apparatus to characterize the combustion of solid materials in micro-gravity. Funded by NASA. Experimental skills include infrared

thermography, use of NASA's Spacecraft Fire Safety Facility, use of NASA's KC-135 parabolic flight airplane, detailed knowledge of LABTech experimental software, as well as many other bench-scale experimental procedures. Assumed duties of lab manager May 1999. Responsible for upkeep and daily operations of the Fire Engineering and Thermal Sciences (FETS) laboratory.

Undergraduate Research Assistant, University of Maryland, College Park, MD, 1997-1998

Responsible for investigating the effect of weathering on the flash point of crude oil. Funded by NIST and conducted under the supervision of Asst. Prof. Jose Torero and graduate student Neil Wu.

PROFESSIONAL REGISTRATION:

Registered Professional Engineer (Fire Protection), State of Delaware, No. 13131
Certified Fire and Explosion Investigator (CFEI), National Association of Fire Investigators, No. 7461-4946

HONORS:

NFPA Harry C. Bigglestone Award for Excellence in Communication of Fire Protection Concepts, 2005.
4.00 GPA on 4.00 scale in graduate studies.
Dean's List, May 1998, Dec. 1998, May 1999, Dec. 1999.
Awarded Honors Citation for completion of requirements of the Honors program, May 1998.
Inducted into Salamander Fire Protection Engineering Honor Society, Nov. 1997.

PROFESSIONAL STANDING:

Memberships:

Member, Salamander Honorary Fire Protection Engineering Society, Beta Chapter
Member, Society of Fire Protection Engineers (SFPE)
Member, National Fire Protection Association (NFPA)
Member, International Association of Arson Investigators (IAAI)
Member, National Association of Fire Investigators (NAFI)
Member, International Association of Fire Safety Science (IAFSS)
Member, American Mensa

Committees:

Member, SFPE Task Group on Computer Model Evaluation, 2000-present
Member, National Fire Alarm Code (NFPA 72) Technical Committee on Single- and Multiple-Station Alarms and Household Fire Alarm Systems (SIG-HOU), 2005-present

SELECTED PRESENTATIONS AND PUBLICATIONS:

Presentations:

Olenick, S.M., Roby, R.J., Klassen, M.S., Zhang, W., Sutula, J.A., Worrell, C., Wu, D., D'Souza, V., Ashley, A., Dubois, J., Torero, J.L., and Streit, L., "The Role of Smoke Detectors in Forensic Fire Investigation and Reconstruction," presented to the International Symposium on Fire Investigation Science and Technology (ISFI), June 26-28, 2006.

Sutula, J.A., Klassen, M.S., Roby, R.J., Olenick, S.M., Gaines, G., Chakraborty, A., and Torero, J.L., "Development of an Engineering Tool for Determination of Suppression Device Placement in Reduced Gravity Environments" Habitation 2006 Conference, Orlando, February, 2006.

Gaines, G., Roby, R., Klassen, M., Zhang, W., Olenick, S., and Torero, J., "An Algorithm to Predict Smoke Detector Activation in a Forced Flow Microgravity Environment" Habitation 2006 Conference, Orlando, February, 2006.

Ma. T., Olenick, S.M., Klassen, M.S., Roby, R.J., and Torero, J.L., "Carpet Under Fire: A Forensic View on the Role of Carpet (Porous Media) in Liquid Spill Fires", Harry C. Bigglestone Award Presentation, NFPA World Safety Conference and Exposition, Las Vegas, June, 2005.

Olenick, S.M., Zhang, W., Carpenter, D. J., Roby, R. J., and Klassen, S. M., "Verification and Validation of a Smoke Detector Activation Algorithm for the Fire Dynamics Simulator (FDS)", presented to the NFPA Fire Protection Research Foundation Fire Suppression and Detection Research Application Symposium, Orlando, January, 2005.

Stephen M. Olenick, Noah L. Ryder, and Jason A. Sutula, "Computer Modeling of a Controlled Full Scale House Burn with Fire Dynamics Simulator: Construction of a Complex Geometry and Comparison of Predictions with Experimental Data," presented to the NFPA World Safety Conference and Exposition, Dallas, May, 2003.

Stephen M. Olenick, Jason A. Sutula, Richard J. Roby, and Vijay T. D'Souza, "Modeling of Smoke Detector and Sprinkler Activation," presented to the NFPA Fire Protection Research Foundation's Fire Suppression and Detection Research Application Symposium; January, 2003.

Vijay T. D'Souza, Jason A. Sutula, Stephen M. Olenick, Wei Zhang, and Richard J. Roby, "Predicting Smoke Detector Activation using the Fire Dynamics Simulator," presented to the IAFSS 7th International Symposium on Fire Safety Science, June, 2002.

Maclain M. Holton, Stephen M. Olenick, Michael S. Klassen, and Richard J. Roby, "A Study of the Effectiveness of Passive Infrared Burglar Alarms to Detect Fires and Smoke," presented to The NFPA Fire Protection Research Foundation: Fire Suppression and Detection Research Application Symposium, Tampa, FL, January, 2002.

Stephen M. Olenick, Michael S. Klassen, and Richard J. Roby, "Validation Study of FDS for a High-Rack Storage Fire Involving Pool Chemicals," presented to the NFPA 430 (Storage of Liquid and Solid Oxidizers) Technical Task Group, January, 2002.

Vijay T. D'Souza, Jason A. Sutula, Stephen M. Olenick, Wei Zhang, and Richard J. Roby, "Use of the Fire Dynamics Simulator to Predict Smoke Detector Activation," presented to the Fall Technical Meeting of the Eastern States Section of the Combustion Institute, December, 2001.

Sutula, J. A., and Olenick, S. M., "The Fire Protection Engineering Consultant," presented to the University of Maryland College Park Department of Fire Protection Engineering Course "ENFP 108: Hot Topics in Fire" as guest lecturers, October, 2001.

Stephen M. Olenick, Michael S. Klassen, and Richard J. Roby, "Validation Study of FDS for a High-Rack Storage Fire Involving Pool Chemicals," presented to the SFPE 3rd Technical Symposium on Computer Applications in Fire Protection Engineering, September, 2001.

S. Olenick, J. Sutula, and J. DuBois, "Practical Applications of Computer Modeling in Combustion Engineering Consulting," presented to the Chesapeake Chapter of the Society of Fire Protection Engineers (SFPE), February 2001.

S. Olenick, J. Sutula, and J. DuBois, "Practical Applications of Computer Modeling in Combustion Engineering Consulting," presented to the University of Maryland Student Chapter of the Society of Fire Protection Engineers (SFPE), October 2000.

T. Steinhaus, S. M. Olenick, A. Sifuentes, R. T. Long and J. L. Torero, "A Method for Assessing Material Flammability for Micro-Gravity Environments," presented to the Joint Meeting of the United States Sections, The Combustion Institute, Washington, D.C., March 1999.

Publications:

Olenick, S.M., Roby, R.J., Klassen, M.S., Zhang, W., Sutula, J.A., Worrell, C., Wu, D., D'Souza, V., Ashley, A., Dubois, J., Torero, J.L., and Streit, L., "The Role of Smoke Detectors in Forensic Fire Investigation and Reconstruction," Proceedings of the International Symposium on Fire Investigation Science and Technology (ISFI), 2006.

Spearpoint, M., Olenick, S. M., Torero, J. L., and Steinhaus, T., "Ignition Performance of New and Used Motor Vehicle Upholstery Fabrics", *Fire and Materials*, v. 29, n. 5, 2005.

Ma, T., Olenick, S. M., Klassen, M. S., Roby, R. J., and Torero, J. L., "Burning Rate of Liquid Fuel on Carpet (Porous Media)", *Fire Technology*, 40, 2004. (2005 Bigglestone Award)

Roby, R.J., W. Zhang, G.C. Gaines, S.M. Olenick, M.S. Klassen, and J.L. Torero, "The Integration of a Smoke Detector Model with Large Eddy Simulation Fire Modeling for Predicting Smoke Detector Activation in Microgravity," Proceedings of Strategic Research to Enable NASA's Exploration Missions Conference and Workshop Poster Session, June, 2004.

J.L. Torero, S.M. Olenick, J.P. Garo and J.P. Vantelon, "Determination of the Burning Characteristics of a Slick of Oil on Water", *Spill Science and Technology Bulletin*, v.8, 4, 2003.

Stephen M Olenick and Douglas J. Carpenter, "An Updated International Survey of Computer Models for Fire and Smoke," *SFPE Journal of Fire Protection Engineering*, v. 13, n. 2, 2003.

Vijay T. D'Souza, Jason A. Sutula, Stephen M. Olenick, Wei Zhang, and Richard J. Roby, "Predicting Smoke Detector Activation using the Fire Dynamics Simulator," *Proceedings of the IAFSS 7th International Symposium on Fire Safety Science*, 2002.

Maclain M. Holton, Stephen M. Olenick, Michael S. Klassen, and Richard J. Roby, "A Study of the Effectiveness of Passive Infrared Burglar Alarms to Detect Fires and Smoke," *Proceedings of The Fire Protection Research Foundation: The Fire Suppression and Detection Research Application Symposium*, Tampa, FL, January, 2002.

Vijay T. D'Souza, Jason A. Sutula, Stephen M. Olenick, Wei Zhang, and Richard J. Roby, "Use of the Fire Dynamics Simulator to Predict Smoke Detector Activation," *Proceedings of the Fall Technical Meeting of the Eastern States Section of the Combustion Institute*, December, 2001.

M. Roslon, S. Olenick, Y. Y. Zhou, D. C. Walther, J.L. Torero, A.C. Fernandez-Pello and H. D. Ross, "Micro-Gravity Ignition Delay of Solid Fuels in Low Velocity Flows," *AIAA-Journal*, v. 39, n. 12, December, 2001.

Stephen M. Olenick, Michael S. Klassen, and Richard J. Roby, "Validation Study of FDS for a High-Rack Storage Fire Involving Pool Chemicals," *Final Proceedings, SFPE 3^d Technical Symposium on Computer Applications in Fire Protection Engineering*, September, 2001.

N. Wu, T. Mosman, S. M. Olenick and J. L. Torero, "The Effect of Weathering on Piloted Ignition and Flash Point of a Slick of Oil," *Spill Science and Technology Bulletin*, (submitted).

M. Roslon, S. Olenick, D. Walther, J.L. Torero, A.C. Fernandez-Pello and H. Ross "Microgravity Ignition Delay of Solid Fuels in Low Velocity Flows," *Proceedings of the Spring Meeting of the Western States Sections*, The Combustion Institute, Boulder, Colorado, March 2000.

M. Roslon, S. Olenick, D. C. Walther, J. L. Torero, A. C. Fernandez-Pello and H. D. Ross, "Flow Effects on the Micro-Gravity Ignition Delay of Solid Fuels," *38th AIAA Aerospace Science Meeting*, Reno, Nevada, January, 2000.

S. Olenick, M. Roslon, D. Walther, J. L. Torero, A.C. Fernandez-Pello and H. Ross, "Flow Effects on the Microgravity Piloted Ignition Delay of Solid Fuels" *Proceedings of the International Seminar on*

Microgravity Combustion, Institute of Fluid Science, Tohoku University, Sendai, Japan, August, pp 172-181, 1999.

T. Steinhaus, S. M. Olenick, A. Sifuentes, R. T. Long and J. L. Torero, "A Method for Assessing Material Flammability for Micro-Gravity Environments," *Proceedings of the Joint Meeting of the United States Sections*, The Combustion Institute, Washington, D.C., March 1999.

N. Wu, T. Mosman, S. M. Olenick and J. L. Torero, "Piloted Ignition of a Slick of Oil on a Water Sublayer: The Effect of Weathering and Flash Point," *21st Arctic and Marine Oil Spill Program (AMOP) Technical Seminar*, Edmonton, Canada, vol.2, June 1998.