

Maclain Holton

Combustion Science & Engineering, Inc.
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EDUCATION:

M.S., Mechanical Engineering, University of Maryland, College Park, MD, December 2008
B.S., Chemical Engineering, University of Maryland, College Park, MD, 2001

THESIS:

Holton, M.M., "Autoignition Delay Time Measurements for Natural Gas Fuel Components and their Mixtures," University of Maryland, College Park, Maryland, December 2008.

PROFESSIONAL EXPERIENCE:

Project Engineer, Combustion Science & Engineering, Inc., Columbia, MD, 2006 to Present (Staff Engineer, 2001-2006).

Responsible for designing and executing experimental and analytical projects in fire and combustion research. Experience with measurement and instrumentation techniques related to combustion and fire experiments including development and operation of data acquisition and control. Projects include characterizing combustion properties of various liquid and gaseous fuels at various conditions. Experience using gas sampling systems and FT-IR to collect and analyze combustion gas samples. Experience with chemical kinetic modeling to predict performance characteristics and emissions of gas turbine engines. Solid modeling and mesh development of gas turbine engine components for use in computational fluid dynamics. Provide engineering support for litigation involving fire and carbon monoxide incidents. Solid modeling and mesh development of residential and commercial buildings for use in Fire Dynamics Simulator (FDS). Product development and testing experience involving the development of an electronic device to respond to an audible smoke alarm to alert sleeping individuals to an emergency.

Engineering Technician, Combustion Science & Engineering, Inc., Columbia, MD, 1999-2001.

Responsible for designing data acquisition programs and assisting in the design and execution of fire and combustion laboratory testing. Assist in the investigation of residential, commercial, and industrial fires. Conduct laboratory experiments for the purposes of fire modeling validation and post-fire reconstruction analysis. Development of fluid and transport property software tool based on JANAF tables. Assisted in small-, medium- and large-scale testing of the transmission of radiation and breakage properties of glazing materials.

Computer & Software Skills: LabView, SolidWorks, FDS, ProSTAR, EES, Chemkin, Cantera, MATLAB, Visual BASIC, Python.

PROFESSIONAL AFFILIATIONS:

Member, American Institute of Chemical Engineers, AIChE
Member, National Fire Protection Association, NFPA

HONORS:

National Fire Protection Research Foundation's 2007 Harry Bigglestone Award for Excellence in Communication of Fire Protection Concepts

PATENTS:

Roby, R., Klassen, M., Eskin, L., Holton, M., and Straus, A., "Smoke alarm detector", U.S. Patent D545229, 2006.

Roby, R., Klassen, M., Schemel C., Vashishat, D., Holton, M., and Flint, K., "Method and apparatus for indicating activation of a smoke detector alarm", U.S. Patent 7015807, 2006.

PRESENTATIONS & PUBLICATIONS:

Holton, M.M., Gokulakrishnan, P., Klassen, M.S., Roby, R.J., Jackson, G.S., "Autoignition Delay Time Measurements of Methane, Ethane, and Propane Pure Fuels and Methane-Based Fuel Blends," submitted to ASME Turbo Expo 2009, Orlando, FL, GT2009-59309.

Klassen, M. S.; Sutula, J. A.; Holton, M. M.; Roby, R. J.; Izbicki, T. Transmission Through and Breakage of Multi-Pane Glazing Due to Radiant Exposure, *Fire Tech.*, Vol. 42, No. 2, 79-107, 2006 .

Holton, M.M., Ashley, E.M., "SafeAwake – An Innovative Device for Alerting Sleeping Individuals to an Emergency," Proceedings of the *International Conference on Aging, Disability and Independence*, February 1-5, 2006.

Klassen, M., Sutula, J., Holton, M., Roby, R., Izbicki, T., "The Evaluation of Life Safety Hazards Posed by Large Fires Outside Heavily Glazed Buildings," presented at the 2003 NFPA World Safety Conference & Exposition, Dallas, Texas, May 20, 2003.

Holton, M.M., S.M. Olenick, M.S. Klassen, and R.J. Roby, "A Study of the Effectiveness of Passive Infrared Burglar Alarms to Detect Fires and Smoke," presented at NFPA's 6th *Fire Suppression & Detection Research Application Symposium*, Tampa, FL, January 2002.

Klassen, M. S., Sutula, J. A., Holton, M. M., Roby, R. J., and Izbicki, T., "Window Breakage of Multi-Pane Glazing due to Radiant Exposure," Proceedings of the *Fall Technical Meeting of the Eastern States Section of the Combustion Institute*, October 10-13, 1999.