

Yunyong P. Utiskul, Ph.D., P.E., CFEI
Senior Engineer

Professional Profile

Dr. Yunyong P. Utiskul is a Senior Engineer in the Thermal Sciences practice. Dr. Utiskul applies his knowledge of fire protection engineering, heat transfer, and fluid dynamics principles to the analysis of building fire and life safety systems, occupant egress analysis, smoke management designs, compartment fire modeling (zone and field model), performance-based design, and structural fire protection analysis. Dr. Utiskul has experience in applications of the various model codes, such as the International Building Code (IBC), and inspection and testing of fire protection systems, including automatic fire suppression systems and automatic fire alarm and detection systems in high-risk occupancies.

Dr. Utiskul's research focused on fully-developed compartment fires. His research was aimed at development of a model that can predict the compartment fire fuel mass loss rate, gas temperature, and specie mass fraction for any fuel, scale, and ventilation. The developed one-zone model has incorporated the fuel response to flame and its surroundings, which are essential to predict the true fuel mass loss rate in compartment fires. Dr. Utiskul performed small and mid-scale compartment fire tests to characterize the burning behavior in various ventilation conditions. Through his study, justification for a one-zone model and a near-vent mixing algorithm has been established. Dr. Utiskul also has expertise with scale modeling and generalizations of the experimental data to show the dependency of interested variables on governing factors.

Prior to joining Exponent, Dr. Utiskul served as a Fire Engineer for a large international engineering firm where he provided building code and fire engineering consulting services for domestic and international projects, including a high-rise casino resort with the area of more than 10 million sq ft in Macau SAR, a multi-use development building in Abu Dhabi, a 33-story high-rise residential condominium in Los Angeles and an 8-story office building in West Hollywood. He has been involved in the fire and life safety design of buildings with a wide range of occupancy type and project size, from a small office building to a large multi-use hotel casino resort.

Academic Credentials and Professional Honors

Ph.D., Mechanical Engineering, University of Maryland, College Park, 2006
M.S., Fire Protection Engineering, University of Maryland, College Park, 2003
B.Eng., Civil Engineering, King Mongkut's University of Technology, Thailand, 1999

Licenses and Certifications

Registered Professional Engineer, Maryland, #37473

Certified Fire and Explosion Investigator (CFEI) in accordance with the National Association of Fire Investigators (NAFI) National Certification Board per NFPA 921

Hazardous Waste Operations and Emergency Training, in accordance with OSHA 29 CFR 1910.120, 1926.65

Publications

Utiskul Y, Wu N. Residential fire sprinklers – Water usage and water meter performance study. The Fire Protection Research Foundation, February 2011.

Wu N, Utiskul Y, Sipe J. Consideration on the use of heat release data from the cone calorimeter. Proceedings, 4th International Symposium on Fire Investigation Science and Technology, National Association of Fire Investigators, pp. 629–640, September 2010.

Utiskul Y, Quintiere JG. An application of mass loss rate model with fuel response effects in fully-developed compartment fires. 9th IAFSS Symposium, Germany, 2008.

Hu Z, Utiskul Y, Quintiere JG, Trouve A. Towards large eddy simulations of flame extinction and carbon monoxide emission in compartment fires. 31st International Symposium on Combustion, 2006.

Mizukami T, Utiskul Y, Quintiere JG. Application of zone models for under-ventilated compartment fires. International Mechanical Engineering Congress & Exposition (ASME) Conference, 2006.

Utiskul Y, Quintiere JG. Generalizations on compartment fires from small-scale experiments for low ventilation conditions. 8th IAFSS Symposium, Beijing, China, 2005.

Utiskul Y, Quintiere JG, Rangwala AS, Ringwelski BA, Wakatsuki K, Naruse T. Compartment fire phenomena under limited ventilation. Fire Safety Journal 2005; 40(4):367–390.

Hu Z, Utiskul Y, Quintiere JG, Trouve AA. Comparison between observed and simulated flame structures in poorly ventilated compartment fires. 8th IAFSS Symposium, Beijing, China, 2005.

Lecoustre V, Mizukami T, Utiskul Y, Quintiere JG, Trouve A. Application of zone models for under-ventilated compartment. Fall Technical Meeting, Eastern State Section Combustion Institute, FL, 2005.

Utiskul Y, Quintiere JG, Naruse T. Wall-vent compartment fire behavior under limited ventilation. InterFlam 2004, Edinburgh, UK, 2004.

Naruse T, Rangwala AS, Ringwelski BA, Utiskul Y, Wakatsuki K, Quintiere JG. Compartment fire behavior under limited ventilation. 4th International Seminar Fire and Explosion Hazards, Londonderry, Northern Ireland, UK, 2003.

Presentations

Wu N, Utiskul Y, Sipe J. Consideration on the use of heat release data from the cone calorimeter. 4th International Symposium on Fire Investigation Science and Technology, National Association of Fire Investigators, pp. 629–640, September 2010.

Utiskul Y, Quintiere, JG. Theoretical and experimental study on fully-developed compartment fires. 7th AOFST Symposium, Hong Kong SAR, China, 2007.

Utiskul Y, Quintiere JG. Generalizations on compartment fires from small-scale experiments for low ventilation conditions. 8th IAFSS Symposium, Beijing, China, 2005.

Utiskul Y, Quintiere JG, Naruse T. Wall-vent compartment fire behavior under limited ventilation. InterFlam 2004, Edinburgh, UK, 2004.

Utiskul Y, Quintiere JG. Wall-vent compartment fire behavior under limited ventilation. Fall Technical Meeting, Eastern State Section Combustion Institute, PA, 2003.

Professional Affiliations

- Society of Fire Protection Engineers—SFPE (Affiliate)
- International Association of Fire Safety Science—IAFSS (member)
- National Fire Protection Association—NFPA (member)
- International Association of Arson Investigators—IAAI (member)
- Combustion Institute (member)