## Fire Research Materials Performance Web Access Database Overview

Sean B. Crowley, <u>Carleen Y. Houston</u>, Timothy Smith Federal Aviation Administration William J. Hughes Technical Center Fire Safety Branch ANG-E21 Atlantic City International Airport, NJ 08405

The objective of the FAA's Fire Safety Branch's Fire Resistant Materials program is to eliminate burning cabin materials as a root cause of casualty in aircraft accidents. Research is basic in nature and focuses on the synthesis, modeling, processing, and characterization of new materials and materials combinations. Databasing of materials fire performance in micro-, bench-, and full-scale testing supports science-based studies of polymer combustion and identifies critical fire performance properties to guide development.

Acknowledging continuous value of this fire performance data for the public, government and industry fire research community, the FAA Fire Research Lab recently embarked on development of a new, online relational database management system contingent to an SQL server for fire test results and materials flammability performance. This web accessible research tool will initially showcase the expansive, cataloged consolidation of legacy and recent Cone Calorimeter test data generated at the FAA Fire research laboratory over the past decade. The retrievable raw file (.csv and .xls) and report (.pdf) formats evolved from cone analysis performed at various heat flux conditions on numerous samples of pedigreed, pure and fire resistant polymers including thermoplastics; thermoset resins; textile fibers and elastomers. To further facilitate this web-based system's capability to provide structured and expeditious response to the individual user's queries, Fire Research lab personnel identified preliminary, key parameter-based filters to incorporate into the SQL provider. As this initial Fire Research Lab Cone Calorimeter database is deployed to the FAA Fire Safety website, the follow-on target activity will address release of the Fire Research Lab's Microscale Combustion Calorimeter fire property database legacy stemming from an analogous quantity and quality of analyzed materials.