

INTERFLAM 2010 MONDAY 5th July				
09.20	Welcome and Opening Stephen Grayson, Conference Chairman			
09.40	Keynote Lecture by Marc Janssens, SwRI, USA Thirty Years of Interflam: How Fire Research Has Evolved Since 1979			
10.10	Refreshments			
10.40	FIRE RESISTANCE AND STRUCTURAL FIRE PERFORMANCE Chair: Ulf Wickström, SP, Sweden	EXTINGUISHMENT /SUPPRESSION Chair: John Hall, NFPA, USA	FIRE TESTING AND MEASUREMENT TECHNIQUES Deborah Smith, BRE, UK	FIRE PERFORMANCE OF MATERIALS AND PRODUCTS Chair: Patrick van Hees, Lund Univ, Sweden
10.40	<i>Evaluating the Local Fire Response of Steel Beams by Comparison to Standard Fire Tests</i> Ann Jeffers, Univ of Michigan and E Sotelino, Virginia Tech, USA	<i>Water Flows on Vertical Surface and around Corners of Corrugated Cardboards for Sprinkler Protection of Rack Storage</i> Jaap de Vries, S D'Aniello, Y Xin, FM Global, USA	<i>Pyrolysis Combustion Flow Calorimetry: A Tool For Flame Retardant Development And Fundamental Combustion Science</i> Alexander Morgan, Univ of Dayton Research Institute, USA	<i>A Study Of Fire Performance Of Textile Membranes Used As Building Components</i> Per Blomqvist, P Andersson, SP Fire Technology, Sweden
11.00	<i>Comparison of Resultant Steel Temperatures using Travelling Fires and Traditional Methods: A Case Study of the Informatics Forum Building</i> Anna Jonsdottir, G Rein, Univ of Edinburgh and J Stern-Gottfried, Arup Fire/Univ of Edinburgh, UK	<i>A Porous Media Model for Fire Sprinkler Wetting</i> Joel Sipe and N Dembsey, WPI, USA	<i>Convective Heat Transfer in the Cone Calorimeter Revisited</i> Marc Janssens, C Gomez, SwRI, USA	<i>Use Of Fire Blocking And Barrier Systems To Comply With Fire Tests For Furnishings</i> Gordon Damant, InterCity Testing and Consulting, USA
11.20	<i>Fire Protection of Bridge Cables</i> Yaping He, Univ of Western Sydney, D Verghese, Meinhardt Australia Pty Ltd and I Bennetts, Noel Arnold & Assocs, Australia	<i>Assessment of the Effects of Air Movement Imparted by Large Diameter High Volume Low Velocity Ceiling Fans on Fire Sprinkler Operation and Effectiveness</i> Martin Pabich, Underwriters Laboratories and P Gore Willse, Global Asset Protection Services, USA	<i>Alternate Substrates For Measuring Cigarette Ignition Propensity Using ASTM E 2187</i> Richard Gann, E Hnetkovsky, W Guthrie, NIST, USA	<i>Effect of Rack Mounted PV Modules on Flammability of Roofing Assemblies</i> Mahmood Tabaddor, R Backstrom, P Gandhi, Underwriters Laboratories Inc, USA
11.40	<i>Modelling of Structural Connections in Fire using Shell Elements</i> Graeme Flint, A Jowsey, D Rini, L Lim, S Lamont, B Lane, Arup Fire, UK	<i>Spray Pattern Measurements of Selected Fire Sprinklers</i> Xiangyang Zhou, S D'Aniello, H-Z Yu, FM Global, USA	<i>Development of Tools for Smoke Residue and Deposition Analysis</i> Craig Beyler, Hughes Assocs S Riahi, Hughes Assocs/George Washington Univ, and J Hartman, United States Naval Academy, USA	<i>Multi-Scale Simulation Of The Fire Behavior Of A Sandwich Composite –Comparison Of Model Results With Experimental Data</i> Damien Marquis, E Guillaume, C Chivas-Joly, L Bustamante-Valencia, LNE and M Pavageau, EMN, France
12.00	<i>Structural Fire Performance Of Concrete-Filled Steel Hollow Structural Sections: State-of-the-art and Knowledge Gaps</i> Luke Bisby, D Rush, Univ of Edinburgh and A Jowsey, B Lane, Arup Fire, UK	<i>Flame Suppression By Water Sprays: Flame-Spray Interaction Regimes And Governing Criteria</i> Alexander Snegirev, A Lipjainen, V Talalov, St-Petersburg State Polytechnic Univ, Russia	<i>A New Rapid Analysis Method for Flame Retardants in Polymers</i> Gary Stevens, P Baird, H Herman, W Mortimore, GnoSys UK Ltd, UK	<i>Euroclass Predictions For Developing Wood Based Products With Improved Fire Performance</i> Lazaros Tsantaridis, B Östman, SP Trätec, Sweden and T Hakkarainen, VTT, Finland
12.20	Discussion	Discussion	Discussion	Discussion
12.45	Lunch	Lunch	Lunch	Lunch
	FIRE RESISTANCE AND STRUCTURAL FIRE PERFORMANCE Chair: Birgit Östman, SP Trätec, Sweden	EXTINGUISHMENT /SUPPRESSION Chair: Robert Bill Jnr, FM Global, USA	FIRE TESTING AND MEASUREMENT TECHNIQUES Chair: Marc Janssens, SwRI, USA	FIRE PERFORMANCE OF MATERIALS AND PRODUCTS Chair: Marcelo Hirschler, GBH Intl, USA
13.50	<i>Fire Protection Ability Of Wood Products</i> Birgit Östman, SP Trätec, Sweden	<i>The Costs And Benefits Of Sprinklers In Schools</i> Jeremy Fraser-Mitchell, BRE Global, UK	<i>Incident radiant heat flux vs. adiabatic surface temperature as a measure for thermal exposure</i> Ulf Wickström, SP Technical Research Inst of Sweden and A Häggkvist, Luleå Technical Univ, Sweden	<i>Electrical Cable Failure- Experiments and simulation</i> Jason Dreisbach, US Nuclear Regulatory Commission and S Nowlen, Sandia National Labs, USA, S Hostikka, VTT, Finland
14.10	<i>On the Fire Performance of Wood-Wood-Wood and Wood-Steel-Wood Connections Using Bolts and Dowels</i> Lei Peng, G Hadjisophocleous, Carleton Univ and J Mehaffey, M Mohammad, FPInnovations – Forintek, Canada	<i>Quantitative Assessment of Sprinklers on Sustainable Development</i> Christopher Wiczorek, B Ditch, L Gritzko, R Bill, FM Global, USA	<i>Comparisons of Furnace Temperature and Incident Heat Flux in Wall and Floor Furnaces Controlled by Six Different Temperature Sensors</i> Mohamed Sultan, NRCC/IRC, Canada	<i>Electrical Circuit and Cable Testing</i> Gabriel Taylor, U.S. Nuclear Regulatory Commission, K McGrattan, NIST and S Nowlen, Sandia National Labs, USA
14.30	<i>Modelling the fire resistance of structural insulated panels: Heat transfer</i> Danny Hopkins, T Lennon, BRE Global Limited and V Silberschmidt, J El-Rimawi, Loughborough Univ, UK	<i>Assessment of the Gas Cooling Capabilities of Compressed Air Foam Systems in Fuel- and Ventilation-Controlled Compartment Fires</i> Michael Delichatsios, A O'Neil, J Zhang, FireSERT, Univ of Ulster, UK	<i>Repeatability of Instrument Measurements in Large-Scale Fire Reconstruction Experiments</i> David Sheppard, US Bureau of Alcohol Tobacco Firearms and Explosives, USA	<i>Prediction Of Fire Properties Of Cables - Extended Application Of Test Data</i> Bjorn Sundström, P Johansson, M Försth, SP Fire Technology, Sweden and S Grayson, Interscience Communications, T Journeaux, Prysmian, UK

14.50	<i>Thermal And Stress Analysis Of Glazing Systems Under Fire Conditions</i> Siaka Dembele, R Rosario, J Wen, Kingston Univ and I Williams, P Warren, Pilkington European Technical Centre, UK	<i>Simplified Models Of Interactions Of Foam Jets With Hot Smoke Layers In Under Ventilated Fire Conditions According To Full-Scale Experiments</i> Paul Jourda, J Hattenberger, P Lamuth, D You, CEA, JP Vantelon, CNRS and G Mitanchez, GIMAEX, France	<i>Chemical Species and Temperature Mapping in Full Scale Underventilated Compartment Fires</i> Andrew Lock, M Bundy, E Johnsson, C Hwang, K Yong Lee, A Hamins, NIST, USA	MATERIALS FLAMMABILITY Chair: Joe Urbas, Univ of North Carolina, USA
				<i>Nondimensional Commodity Classification and an Analysis of Upward Spread</i> Michael Gollner, FA Williams, Univ of California, San Diego, K Overholt, AS Rangwala, Worcester Polytechnic Instit. and J Perricone, Creative FPE Solutions, Inc.
15.10	Discussion	Discussion	Discussion	Discussion
15.30	Refreshments	Refreshments	Refreshments	Refreshments
	FIRE RESISTANCE AND STRUCTURAL FIRE PERFORMANCE Chair: Mohammed Sultan, NRC, Canada	EXTINGUISHMENT /SUPPRESSION Chair: Christopher Wieczorek, FM Global, USA	PYROLYSIS MODELLING Chair: Alex Morgan, Univ of Dayton, USA	MATERIALS FLAMMABILITY cont/
16.00	<i>Axial Elongation of Concrete Exposed to Fire</i> Elin Jensen, J Van Horn, Lawrence Technological Univ, USA	<i>Improvements Of Test Method For Water Mist Systems In Offices - CEN/TS 14972:2008, Annex A.3.</i> Patrick van Hees, A Håkansson, D Langenbach, Lund Univ, Sweden, Thomas Hermodsson, DBI, Denmark, Bjarne P. Husted, Stord/Haugesund Univ College, Norway	<i>Numerical Simulation of Polymer Materials In Standard Fire Tests: Pyrolysis And The Impact Of Residue Formation</i> Florian Kempel, B Schartel, A Hofmann, BAM, Germany, G Linteris, NIST, R Lyon, R Walters, FAA, USA, S Stolarov, Univ. Maryland, USA	<i>Combustibility Characterization Of Oxidizer-Fuel Mixtures Using The Fire Propagation Apparatus</i> Elizabeth Buc, Fire and Materials Research Lab and M Khan, FM Global, USA
16.20	<i>The Effect Of Fire Curve On Concrete Spalling</i> Lars Bostrom, R Jansson, SP Fire Technology, Sweden	<i>Early Detection of Cable Fires using Image Processing</i> Yulianto Nugroho, Suwarno, M Rahmat Widyanto, Yanuar, E Jakti, G Alif, Univ of Indonesia, Indonesia	<i>The Role Of Thermal Decomposition Kinetics In The Burning Behavior Of Polymers</i> Richard Lyon, FAA, N Safronava, SRA International and S Stolarov, Univ of Maryland, USA	<i>Burning Behaviour Of Intumescent Coating And Nanoparticles Applied On Flaxboard</i> Jianping Zhang, M Delichatsios, M McKee, S Ukleja, FireSERT, Univ of Ulster, UK
16.40	<i>Failure Times Of Gypsum Plasterboards</i> Alar Just, AS Resand, Estonia and J Schmid, J König, SP Trätek, Sweden	<i>Performance Evaluation Framework for Vision-Based Fire Detection</i> Steven Verstockett, B Merci, N Tilley, P Lambert, C Hollemeersch, R Van de Walle, Ghent Univ and A Vanoosthuysse, R Dekeerschieter, Univ College West Flanders, Belgium	<i>Thermal Degradation Kinetics Modeling for Pyrolysis Modeling Using Fire Retarded Thermoset Polymer Resins</i> Esther Kim, S Shivkumar, N Dembsey, WPI, USA	<i>Melting rate of polyurethane foam in a vertical orientation</i> Charles Fleischmann, D Pau, Univ of Canterbury, New Zealand
17.00	Discussion	Discussion	Discussion	Discussion
Nottingham Night !				

TUESDAY 6th July

	CFD MODELLING Chair: Anthony Hamins, NIST, USA	FIRE AND EMERGENCY RESPONSE Chair: Kathy Ann Notiarani, WPI, USA	PYROLYSIS MODELLING	FLAME RETARDANTS Christine Lukas, Dow Chemicals, Germany
8.50	<i>Modeling the Burning of Complicated Objects using Lagrangian Particles</i> Kevin McGrattan, R McDermott, W Mell, G Forney, NIST, J Floyd, Hughes Assocs, USA and S Hostikka, VTT, Finland	<i>Report of Residential Fireground Experiments</i> Kathy Notarianni, WPI, J Averill, NIST, A Barowy, NIST/WPI and L Moore, IAFF, USA	<i>Measurement And Modelling Of Thermochemical Properties Of Porous Materials As A Function Of Temperature During Multi-Stage Decomposition Processes</i> Lucas Bustamante Valencia, LCD/LNE, T Roguame, LCD, E Guillaume, D Marquis, C Chivas-Joly, B Hay, V Scoarnec, LNE, France and G Rein, J Torero, Univ of Edinburgh, UK	<i>The Relationship of Sustainability to Flammability of Construction Materials</i> Robert Bill Jnr, K Meredith, N Krishnamoorthy, S Dorofeev, L Gritzco, FM Global, USA
09.10	<i>Modeling Soot Deposition Using Large Eddy Simulation with a Mixture Fraction Based Framework</i> Jason Floyd, Hughes Associates and R McDermott, NIST, USA	<i>Quantifying Efficiency In Fire Fighting Operations</i> Stefan Svensson, Swedish Civil Contingencies Agency, Sweden	<i>The Effect of Dimensional and Morphological Changes in Cellular Plastics during Combustion</i> Roland Krämer, NIST, USA and N Witten, Zotefoams, UK	<i>Fire Safety Versus Environmental Concerns – How Can We Achieve Sustainable Solutions For Flame Retardants?</i> Adrian Beard, Clariant GmbH



09.30	<i>Coupling a Network HVAC Model to a Computational Fluid Dynamics Model Using Large Eddy Simulation</i> Jason Floyd, Hughes Associates, USA	<i>Developments in Positive Pressure Ventilation</i> Stefan Svensson, Swedish Civil Contingencies Agency, Sweden and S Kerber, Underwriters Labs Inc, USA	<i>A Model of Burning for Charring Polymers</i> Stanislav Stoliarov, Univ of Maryland and S Cowley, R Walters, R Lyon, Federal Aviation Administration, USA	<i>New Fire Safety Aspects for TVS and Recent Views of FRS and Eco-Labels</i> Lein Tange, R Borms, ICL-IP, Netherlands and P Georlette, ICL-IP, Israel
09.50	<i>CFD Simulation of Radiative Heat Transfer Between a Buoyant Turbulent Fire and Inert Parallel Panels</i> Prateep Chatterjee, N Krishnamoorthy, Y Wang, J de Ris, S Dorofeev, FM Global, USA	<i>Simulation Of The Flow Induced By Positive Pressure Ventilation Fans Under Wind Driven Conditions</i> Ed Galea, M Arun, M Patel, Univ of Greenwich, UK	<i>Heat Transfer, Foam Decomposition, and Container Pressurization in Fire Environments: Comparison of Experimental and Modeling Results</i> Kenneth Erikson, A Dodd, R Hogan, K Dowding, Sandia National Labs, USA	<i>Characterizing Particle Emissions from Burning Polymer Nanocomposites</i> Mark Nyden, N Marsh, NIST, USA
10.10	<i>CFD Study Of Flow Field Phenomena In Scaling Up Of Small-Scale Smoke Extraction Experiments</i> Nele Tilley, P Rauwoens, B Merci, Ghent Univ, Belgium	<i>Wind Driven Fires in Structures</i> Daniel Madrzykowski, NIST and S Kerber, Underwriters Labs, USA	<i>Examination of the Spontaneous Transition from Smoldering to Flaming: Comparison of Simulations and Experiments</i> Amanda Dodd, Sandia National Labs, C Lautenberger, A Fernandez-Pello, Univ of California at Berkeley and O Putzeys, Exponent Failure Analysis Assocs, USA	<i>New PVC and EVA Nanocomposites Based on LDH's and Novel Hybrid Tin-LDH Nanoparticle</i> Andrea Minigher, P Campaner, E Benedetti, A Valerio, Cimteclab Spa, Italy and P Cusack, ITRI Ltd, UK
10.30	Discussion	Discussion	Discussion	Discussion
10.50	Refreshments	Refreshments	Refreshments	Refreshments
	HUMAN BEHAVIOUR: EVACUATION AND EGRESS Chair: Edwin Galea, Univ of Greenwich, UK	FIRE AND EMERGENCY RESPONSE Chair: Nicholas Dembsey, WPI, USA	IGNITION AND FLAME SPREAD MODELLING Chair: Richard Lyon, FAA, USA	FLAME RETARDANTS Chair: Adrian Beard, Clariant, Germany 
11.20	<i>Study On The Influence Of Smoke And Low Placed Exit Signs On Fire Evacuation - Analysis Of Evacuation Experiments In A Real And Virtual Hotel</i> Margrethe Kobes, Netherlands Inst for Safety/VU Univ Amsterdam, J Post, N Oberijć, K Groenewegen, Netherlands Inst for Safety, I Helsloot, VU Univ Amsterdam and B de Vries, Eindhoven Univ of Technology, The Netherlands	<i>Chemical Exposure And Protection Of Fire Site Workers</i> Tuula Hakkarainen, K Tillander, H Järnström, T Paloposki, VTT Technical Research Centre of Finland and J Laitinen, M Mäkelä, P Oksa, Finnish Inst of Occupational Health, Finland	<i>Numerical Investigation of the Ignition Delay Time in black PMMA at High Heat Fluxes</i> Nicolas Bal, G Rein, Univ of Edinburgh, UK	<i>Fire Retardant Synergisms Between Nanometric Metal Oxides And Aluminium Phosphinate In Poly(butylene terephthalate)</i> Emanuela Gallo, P Russo, D Acierno, Univ of Naples, Italy and U Braun, B Schartel, BAM, Germany
11.40	<i>Uncontrolled vs. Controlled Emergency Procedures in High Speed Trains</i> Arturo Cuesta Jimenez, J Capote, D Alvear, Univ of Cantabria, Spain	Residential Building And Automobile Fire Test Scenarios To Investigate Firefighter Exposure To Smoke Jacob Borgerson, T Fabian, P Gandhi, Underwriters Laboratories Inc, USA	<i>Bench-Scale Flammability Experiments: Determination Of Material Properties Using Pyrolysis Models For Use In CFD Fire Simulations</i> Marcos Chaos, M.M. Khan, N. Krishnamoorthy, J.L. de Ris, S.B. Dorofeev, FM Global, USA	<i>Improvement Of Thermal And Fire-Retardancy Properties Of A (Metal Oxide Nanoparticles/Ammonium Polyphosphate/Melamine Polyphosphate) Ternary System In Poly(Methyl Methacrylate) (PMMA) by Experimental Design</i> Blandine Friederich, A Laachachi, D Ruch, Centre de Recherche Public Henri Tudor, Luxembourg and M Ferriol, M Cochez, V Toniazzo, Univ Paul Verlaine Metz, France
12.00		<i>Predicting Inward Leakage for Negative Pressure Conditions in a Firefighter Respirator</i> Rodney Bryant, NIST, USA	<i>Application Of Bench-Scale Material Flammability Data To Model Flame Spread In Medium-Scale Parallel Panel Test</i> Niveditha Krishnamoorthy, M Chaos, M Khan, P Chatterjee, Y Wang, S Dorofeev, FM Global, USA	<i>New Phosphorus-Based Flame Retardant For Engineering Thermoplastics And Styrenics</i> Robert Stenekes, S Goebelbecker, ICL-IP Europe, The Netherlands, S Levchik, P Moy, ICL-IP America, USA and I Finberg, ICL-IP, Israel
12.20	Discussion	Discussion	Discussion	Discussion
12.40	Lunch	Lunch	Lunch	Lunch
13.40	POSTER SESSION I Human Behaviour in Fires Fire and Emergency Response CFD Modelling			

	HUMAN BEHAVIOUR: EVACUATION AND EGRESS Chair: Karen Boyce, Univ of Ulster, UK	CODES AND REGULATIONS Chair: Brian Meacham, WPI, USA	IGNITION AND FLAME SPREAD MODELLING Chair: Kathy Butler, NIST, USA	FLAME RETARDANTS Chair: Sieghard Goebelbecker, ICL-IP Europe, Netherlands 
14.40	<i>Quantitative Validation of Simulated Visibility in Smoke Laden Environments</i> Philip Rubini, Q Zhang, Univ of Hull, UK	<i>The Quest for Performance-based Building Regulation: from Hammurabi to the IRCC</i> Richard Bukowski, Rolf Jensen & Associates, USA	<i>Numerical Simulation Of Polymeric Materials In UL 94 Test: Competition Of Gasification And Melt Flow/Dripping</i> Florian Kempel, B Schartel, A Hofmann, BAM, Germany, K Butler, NIST, USA, E Onate, S Idelsohn, R Rossi, J Marti, CIMNE, Spain	<i>Influence Of Magnesium Hydroxide As Flame Retardant In Filled Polypropylene Used In Industrial Plasticoll®</i> Daniela Enescu, A Frache, M Lavaselli, Giovani Camino, Politecnico di Torino and C Campia, S Novara, Ggualtieri, Campia Imballaggi Srl, Italy
15.00	<i>Human Behavior in Road Tunnel Fires: Comparison between Egress Models (FDS+Evac, STEPS, PathFinder)</i> Enrico Ronchi, N Berloco, P Colonna, Polytechnic of Bari, Italy and D Alvear, J Capote, A Cuesta, Univ of Cantabria, Spain	<i>Fire Test Standards Used in US Codes and Regulations</i> Marcelo Hirschler, GBH International, USA	<i>A Flame Model For Melting And Dripping Polymers</i> Eugenio Onate, S Idelsohn, J Marti, R Rossi, CIMNE, Spain and K Butler, NIST, USA	<i>Prominent Effect of Smooth Carbon Layer on Flame Retardancy</i> Erika Nakashima, T Ihara, T Ueno, M Yukumoto, K Takeda, Chubu Univ, Japan
15.20	<i>A Study On Risk-Based Evacuation Safety Design Method In Fire For Office Buildings</i> Takeyoshi Tanaka, Kyoto Univ, D Nii, National Inst for Land and Infrastructure Management, J-i Yamaguchi, R Mase, Obayashi Corp, H Notake, Shimizu Corp and Y Ikehata, Taisei Corp, Japan	<i>Developments In Fire Safety Engineering Methodology For Classifying Products On European Trains</i> Peter Briggs, C Dean, C Hughes, Exova Warringtonfire, UK	<i>Modeling Thermoplastic Melt Over Different Flooring Materials</i> Kathryn Butler, NIST, USA and E Onate, R Rossi, J Marti, S Idelsohn, CIMNE, Spain	<i>Combustion And Flammability Behavior Of Unsaturated Polyester / Phenolic Resin Blends</i> Baljinder Kandola, P Luangtriratana, Univ of Bolton, UK
15.40	Discussion	Discussion	Discussion	Discussion
16.00	Refreshments	Refreshments	Refreshments	Refreshments
16.30	HUMAN BEHAVIOUR: EVACUATION AND EGRESS Chair: Ai Sekizawa, Univ of Tokyo, Japan	CODES AND REGULATIONS Chair: Richard Bukowski, Rolf Jensen Assc, USA	POSTER SESSION II Materials Flammability and Product Testing Pyrolysis Modelling Extinguishment Fire Resistance and Structural Fire Performance Flame Retardants	
	<i>Fire Response Performance Model For A Systematic Analysis Of Evacuation Safety In Buildings – A Case Study Of A Fire In A Football Stadium</i> Jos Post, M Kobes, N Oberijé, J Weges, Netherlands Institute for Safety, The Netherlands	<i>Fire Compartment Sizes and the benefits of using Sprinklers – A Risk Based Approach using Monte Carlo Simulations</i> Craig English, Hoare Lea Fire, UK		
16.50	<i>Microscopic Modelling Of Crowd Movement At Major Events</i> Volker Schneider, R Könnecke, IST GmbH, Germany	<i>Active Fire Protection Measures And Probabilistic System Analysis As A Basis For A National Fire Safety Concept In Germany</i> Christoph Klinzmann, hhpberlin GmbH and D Hosser, iBMB Tech Univ Braunschweig, Germany		
17.10	<i>Investigating The Impact Of Culture On Evacuation Behaviour</i> Ed Galea, G Sharp, L Filippidis, L Hulse, S Deere, Univ of Greenwich, UK	<i>A Risk-Informed Framework For Performance-Based Structural Fire Protection According To The Eurocode Fire Parts</i> Cornelius Albrecht, D Hosser, iBMB Tech Univ Braunschweig, Germany		
17.30	Discussion	Discussion		
19.00	Conference Dinner			

Wednesday 7 th July				
9.00	POSTER SESSION III Transportation and Tunnels Smoke and Toxicity Compartment Fires Fire Engineering Fire Investigation and Reconstruction Codes and Regulations Flame Spread			
	COMPARTMENT FIRE EXPERIMENTS & MODELLING Chair: Guillermo Rein, Univ of Edinburgh, UK	URBAN AND WILDLAND FIRES Chair: Samuel Manzello, NIST, USA	FIRE INVESTIGATION AND RECONSTRUCTION Chair: Charles Fleischmann, Univ of Canterbury, New Zealand	SMOKE AND TOXICITY Chair: Richard Gann, NIST, USA
10.00	<i>Validation of Numerical Simulations of Compartments with Forced or Natural Ventilation Using the Fire and Smoke Simulator (FSSIM), CFAST and FDS</i> Justin Williamson, C Beyler, J Floyd, Hughes Associates Inc, USA	<i>A Model for Post-Earthquake Fire Spread Considering the Damage of Structural Members Concurrently Caused by Seismic Motion and Heating of Fire</i> Keisuke Himoto, K Mukaibo, Y Akimoto, R Kuroda, A Hokugo, T Tanaka, Kyoto Univeristy, Japan	<i>Electric Arc Explosions</i> Vytenis Babrauskas, FSTI, USA	<i>JP-8 Open Burn Emission Factor Development– Conduct of Open Burning Tests of 0.46, 0.65 and 0.93 m² Pan Fires</i> Jason Huckzek, SwRI, J Jackens, Concurrent Technologies Corp and W Ondrizek, Air/Compliance Consultants, USA
10.20	<i>Smoke Movement Induced By Buoyancy And Total Pressure Between Two Confined And Mechanically Ventilated Compartments</i> Hughes Pretrel, L Audouin, IRSN, France	<i>Evaluation of the Fire Safety Performance of Kyoto City in Post-earthquake Fire Scenarios</i> Tomoaki Nishino, K Himoto, T Tanaka, Kyoto Univ and S-i Tsuburaya, Mitsubishi Heavy Industries, Japan	<i>Thermal Malfunction Criteria Of Fire Safety Electrical Equipment In Nuclear Power Plants</i> Laurent Gay, E Wizenne, R Gracia, EDF R&D, France	<i>Influence Of Nanoparticles On Fire Behavior And Composition Of Decomposition Products Of Thermoplastic Polymers</i> Carine Chivas-Joly, E Guillaume, S Ducourtieux, L Saragoza, LNE, J-M Lopez-Cuesta, C Longuet, CMGD, S Duplantier, J Bertrand, D Calogine, INERIS, B Minisini, ISMANS and F Gensous, PlasticsEurope, France
10.40	<i>Comprehensive Data Set for Validation of Fire Growth Models: Experiments and Modeling</i> Chris Lautenberger, C Fernandez-Pello, Univ of California Berkeley, W Wong, N Dembsey, Worcester Polytechnic Inst and A Coles, Arup Fire, USA	<i>Quantifying Wind Driven Firebrand Penetration Into Building Vents Using Full And Reduced Scale Experimental Methods</i> Samuel Manzello, S-H Park, J Shields, NIST, USA and Y Hayashi, S Suzuki, BRI, Japan	<i>Target Compound Ratio and Chemometric Analyses for the Individualization of Neat Ignitable Liquids and Residues from Fire Debris</i> Graham Rankin, A Bondra, C Trader, Marshall Univ, USA	<i>Assessment Of Environmental Effects Of Simulated Fires In Waste Recycling Centres</i> Tuomo Rinne, K Tillander, VTT Technical Research Centre of Finland, P Yli-Pirilä, J Ruuskanen, Univ of Eastern Finland and J Jäntti, T Väisänen, Emergency Services College, Finland
11.00	<i>Experimental Review of the Homogeneous Temperature Assumption in Post-Flashover Compartment Fires</i> Jamie Stern-Gottfried, Arup Fire & The Univ of Edinburgh, G Rein, L Bisby, and J Torero, The Univ of Edinburgh, UK	<i>Effectiveness of Pre-Applied Wetting Agents in Prevention of Wildland Urban Interface Fires</i> Joe Urbas, P Desai, UNC Charlotte, USA	<i>A Study Of The Effect Of High Temperature On The Physicomechanical Properties Of Natural Building Limestones</i> Ioannis Ioannou, L Petrou, Univ of Cyprus, Cyprus and K Kyriakides, G Hadjisophocleous, Carleton Univ, Canada	<i>Fire Emissions from Products with and without BFRs and the Hazard of Exposure for Fire Fighters and Clean-up Crews</i> Margaret Simonson McNamee, P Blomqvist, P Andersson, SP Fire Technology, Sweden and M van den Berg, R Fernandez Canton, Institute for Risk Assessment Sciences (IRAS), Utrecht Univ., The Netherlands
11.20	Discussion	Discussion	Discussion	Discussion
11.40	Refreshments	Refreshments	Refreshments	Refreshments
	TRANSPORTATION AND TUNNEL FIRES Chair: Craig Beyler, Hughes Assoc, USA	FIRE ENGINEERING Chair: Björn Sundström, SP, Sweden	FIRE INVESTIGATION AND RECONSTRUCTION Chair: Vytenis Babrauskas, FSTI, USA	SMOKE AND TOXICITY Chair: Margaret Simonson McNamee, SP, Sweden
12.00	<i>Ed Galea, F Jia, Z Wang, Univ of Greenwich, UK</i> <i>Modelling Factors that Influence CFD Fire Simulations of Large Tunnel Fires</i>	<i>A Holistic Approach to Fire Risk Management For Buildings in the UK</i> Selda onukou, N Bouchlagham, Uni of Loughborough, UK	<i>Analysis of Flame Heights and Heat Transfer from Gaseous, Liquid and Solid Fuels</i> Daniel Madrzykowski, NIST, USA and C Fleischmann, Univ of Canterbury, New Zealand	<i>Using the Cone Calorimeter for Quantifying Toxic Potency</i> Christina Gomez, A Faw, A Zalkin, M Janssens, SwRI, USA
12.20	<i>Modelling The Interaction Of Suppression And Ventilation Systems In Tunnel Fires</i> Yoon Ko, G Hadjisophocleous, Carleton Univ, Canada	<i>Pool Fires – Toward A General Correlation</i> Benjamin Ditch, J de Ris, FM Global and T Blanchat, Sandia National Labs, USA	<i>The Use Of A Stochastic Fire Safety Engineering Tool For Fire Scene Reconstruction</i> Anne Muller, CSTB/Univ de Haute Alsace, F Demouge, Ph Fromy, CSTB, M Jeguirim, J-F Brihac, Univ de Haute Alsace and J-P Vantelon, Univ de Poitiers, France	<i>Combustion Products From Flaming And Smoldering Materials</i> Thomas Fabian, J Borgerson, P Gandhi, Underwriters Laboratories Inc, USA
12.40	Discussion	Discussion	Discussion	Discussion
12.50	Lunch	Lunch	Lunch	Lunch

13.50	<i>Use of Computer Modelling for the Interpretation of Midscale Tunnel Fire Test Results</i> Elizabeth Blanchard, CSTB/LEMTA, P Boulet, LEMTA and S Desanghere, E Cesmat, CSTB, France	<i>Making the Biggest Difference: Selecting Priorities for Fire Safety Science and Engineering</i> John Hall Jnr, NFPA, USA	<i>Understanding "Clean-Burn" Patterns In Fire Investigation</i> Steven Carman, Carman & Assocs Fire Investigation, USA	<i>Fire Hazard Analysis Of Hetero-Organic Fuels - Source Characteristics From Experiments</i> Berit Andersson, Lund Univ, Sweden
14.10	<i>Fire Spread in Car Parks: The Contribution Of Materials On The Exterior Of Modern Vehicles</i> David Crowder, R Cullinan, BRE Global Limited, UK	<i>Tenability Analysis for Fire Experiments Conducted in a full-scale Test House with Basement Fire Scenarios</i> Joseph Su, N Bénichou, A Bwalya, G Lougheed, B Taber, P Leroux, NRCC, Canada	<i>Analysis of cooking fires in Norway</i> Anne Steen-Hansen, J P Stensaas, C Sesseng, R Stolen, SINTEF NBL, Norway	<i>Observations on the Generation of Toxic Products in the NFPA/ISO Smoke Density Chamber</i> Nathan Marsh, R Gann, M Nyden, NIST, USA
14.30	<i>Experimental And Numerical Investigations Of The Burning Behavior Of Vehicle Materials. Small, Intermediate And Large Scale Investigations</i> Anja Hofmann, S Krüger, A Klippel, BAM, Germany	<i>Towards An Integrated Performance-Based Design Approach For Life Safety Across Different Building Use Groups</i> Alberto Alvarez, B Meacham, Worcester Polytechnic Institute, USA	<i>Use Of Case Studies To Determine Technical Deficiencies With Respect To Fire Spread In School Buildings Subjected To Arson Fires</i> Niels Johansson, P van Hees, Lund Univ, Sweden	<i>Transport of Toxic Products – Comparison of Experimental and Numerical Results Part One: Non-Sprinklered Scenarios</i> Robert Accosta, Arup, B Xiao, J Crocker, Z Magnone, Tyco Fire Suppression & Building Products and N Dembsey, B Meacham, Worcester Polytechnic Inst, USA
14.50	<i>On The Fire And Explosion Risk Profile Of Alternative Fuels To Kerosene In Civil Transportation Aircrafts</i> Guy Marlair, A Vignes, A Janes, S Hubin, J-P Bertrand, INERIS, France	<i>Semi-quantitative Analysis Of The Need For Fire-Resistance Of Facades In A Sprinklered High Rise Building</i> Michael Haas, P van de Leur, S van Rosmalen, DGMR Consulting Engineers and J Witteveen, Hanzehogeschool Groningen, The Netherlands	<i>2005 Buncefield Vapor Cloud Explosion: Unraveling the Mystery of the Blast</i> Scott Davis, P Hinze, O Hansen K van Wingerden, GexCon, USA	<i>Simulation of critical evacuation conditions for fire scenarios involving cables and comparison of different cables</i> Patrick van Hees, D Nilsson, Lund Univ, Sweden
15.10	Discussion	Discussion	Discussion	Discussion
15.30	Keynote Paper Global Overview of the agendas of Major Fire Research Centres			
16.00	Refreshments and Depart			

POSTER SESSION I : Tuesday 13.40- 14.40 hrs**Human Behaviour: Evacuation and Egress**

PeMMA (People Movement Modelling Analysis): a New Methodology For Helping To Address People's Safety In Open And Enclosed Spaces
Rodrigo Machado, M Anderson, AECOM and S Marshall, Capita Symonds, UK

The Use Of Serious Gaming In Training Of Team Decision Making In Life Threatening Situations
Margrethe Kobes, E Dideren, Netherlands Institute for Safety, The Netherlands and M van Wijngaarden, ETC Simulation, USA

Data Collection and Analysis of Evacuation Scenarios in Finland
Tuomo Rinne, K Tillander, P Grönberg, VTT Technical Research Centre of Finland, Finland

Study on Phased Evacuation through the Analysis of Total Evacuation Drill in a High-rise Office Building
Ai Sekizawa, D Oiwa, Univ of Tokyo, T Sano, Waseda Univ and H Kadokura, Tokyo Research Inst, Japan

Implications of Computer Simulation and Experimental Studies of Evacuation Behaviour in Simple-shaped Room
Tomonori Sano, Mineko Imanishi, Waseda Univ, Y Yoshida, N Takeichi, Y Minegishi, Takenaka Corp., and T Kimura, A & A Co., Ltd, Japan

The Faults With Default
Steve Gwynne, Hughes Associates and E Kuligowski, NIST, USA

Study on the Visual Environment Designs for Effective Evacuation Guidance, Measurement and evaluation of sign installation in escape routes
Yuki Akizuki, Univ of Toyama, S Okuda, Doshisya Women's College of Liberal Arts, M Iwata, Setsunan Univ, T Tanaka, Kyoto Univ, Japan

Building Egress Flow Rates – Research, Application & Limitation
Matthew Salisbury, Michael Slattery Associates, UK

Fire & Emergency Response

National Guidance for the Provision of Local Operational Information for use by the Fire & Rescue Service
David Berry, FARMSS, UK

Modeling Issues In Backdraft Incident Fire Reconstruction
Fabio Alaimo Ponziani, A Tinaburri, Ministry of the Interior, Italy

Fire behavior of the Wooden Heritage building: Tripitaka Storage Hall
Ji-hee Lee, Kyungpook National Univ, S-j Park, K-I Kim, W-J, Kim, Inje Univ, Korea

The Role And Function Of Lift Landing Doors In A Fire
Chris Marriner, P Jackman, Int'l Fire Consultants, UK

Rationalising Design Requirements For Fire-Fighting Stair Pressurisation Systems
Stuart Winter, P Williams, J Stern-Gottfried, Arup Fire, UK

Supporting Integrated Risk Management Planning for the UK Fire and Rescue Services: Evaluation of Prevention and Protection Activities on Commercial, Public and Heritage Buildings
Stefan Raue, C.W. Johnson, Univ of Glasgow and N. Bouchlaghem, S. Konukcu, Univ of Loughborough, UK

Image Quality Evaluations for Fire Service Thermal Imaging Cameras: Subjective vs Objective Testing
Francine Amon, D Leiber, NIST and J Rowe, Hughes Assocs Inc, USA

WPI Precision Personnel Location and Tracking System for First Responders
R. James Duckworth, D Cyganski, Worcester Polytechnic Institute, USA

CFD Modelling

FDS and OpenMP - A New Parallelization Approach For Fire Modelling Software
Christian Rogsch, Univ of Wuppertal, Germany

Quantitative Risk Assessment of Shipboard Fire by First-Principles Tools.
Camille Azzi, Andrew Pennycott, D Vassalos, Univ of Strathclyde, UK

Simulations Of Two-Way Fluid-Structure Interactions During A Fire With The ANSYS Software
Yehuda Sinai, HeatAndFlow Consultancy Ltd and J Penrose, ANSYS UK Ltd, UK

Best Practice in the use of CFD for fire simulation
Bjarne P. Husted, B.C. Hagen, Stord/Haugesund Univ College, Norway and K Sommerlund-Thorsen, DBI, Denmark

Realistic Smoke Visualisation From Computer Fire Simulations
Richard Chitty, BRE Global Limited, UK

Coupling Of An Enthalpy-Based Pyrolysis Model With CFD For Upward Flame Spread Simulations
Pieter Rauwoens, J Degroote, S Wasan, J Vierendeels, B Mercei, Ghent Univ, Belgium

A Method Of Quantifying User Uncertainty In FDS By Using Monte Carlo Analysis
Tor Lindström, D Lund, Lund Univ, Sweden

Spreading Fires in FDS5 Modelling (case studies)
Victor Shestopal, Fire Modelling & Computing, M Foley, J Hewitt, E Yii, Arup Fire and F Bakker, Norman Disney & Young, Australia

Large Eddy Simulation of LNG Pool Fires
Jennifer Wen, Z Chen, S Dembele, VHY Tam, Kingston Univ, UK

POSTER SESSION II : Tuesday 16.30-17.30 hrs**Suppression/Extinguishment**

Experimental Investigation of an Office Fire with a Partially Impaired Sprinkler System
Min-sheng Chiu, C-T Tzeng, T-H Lin, C-m Lai, National Cheng-Kung Univ, C-J Chen, M-J Tsai, M-c Ho, Ministry of the Interior, Taiwan

Water Mist Systems For The Fire Protection Of Prison Cells
Kelvin Annable, BRE Global Limited, UK

Pyrolysis Modelling

Determination of Kinetic Parameters for Thermal Decomposition of Combustible Solids using Microscale Combustion Calorimetry
Richard Lyon, Federal Aviation Administration, N Safronava, S Stolarov, SRA International, Inc and, USA

Fire Performance of Materials and Products

Development of Expandable Flame-retardant Plastic Tube and its Application
Yuichi Nakagawa, AIST, Y Kumagai, Y Tomita, SGC Co Ltd, K Saito, Ibaraki Prefectural Government and K Nihei, Industrial Technology Inst of Ibaraki Prefecture, Japan

Assessment of the Impact of Upholstered Furniture on the Severity of Home Fires
Lindsay Osborne, E Zalok, G Hadjisophocleous, Carleton Univ, Canada

Different Approaches For Mattress Fire Modelling with FDS 5.4
Aurélien Thiry, M Suzanne, Laboratoire Central de la Prefecture de Police, A Bellivier, H Bazin, A Coppalle, Univ de Rouen, France and C Lautenberger, Univ of California, Berkeley, USA

Ignition and Burning Behaviour of Plastic Sheathing of a Steel Pipe
Yaping He, Univ of Western Sydney, D Verghese, Meinhardt Australia Pty Ltd, I Bennetts, Noel Arnold & Assocs and K Moinuddin, I Thomas, Victoria Univ of Technology, Australia

Testing and Modeling Reaction-to-Fire Performance of Pultruded Fiber Reinforced Polymer Composites
Aixi Zhou, Z Yu, UNC Charlotte, USA

<u>Materials Flammability</u>
<i>Causes And Consequences Of Sparks On The Surface Of Insulators Of Medium Voltage Lines</i> C D Halevidis, S Anagnostatos, A Polykrati, P Bourkas, National Technical Univ of Athens and E Koufakis, Public Power Corporation, Greece
<u>Fire Testing and Measurement Techniques</u>
<i>Practical Guidelines For Conducting Custom Full-Scale Fire Tests In The Laboratory</i> Brian Grove, ATF Fire Research Lab, USA
<i>Experimental Charring Rates For Cross-Laminated Timber Panels Compared To Parametric Charring Rates From Eurocode 5 And Other Calculation Models</i> Kathinka Friquin, NTNU, Norway
<u>Flame Retardants</u>
<i>Flame Retardancies of Olefins and Polystyrene controlled their Molecular Weights</i> Kunihiko Takeda, T Ueno, E Nakashima, M Yukumoto, Chubu Univ, Japan
<u>Fire Resistance and Structural Fire Performance</u>
<i>Comparison of Gypsum Board Fall-Off in Wall and Floor Assemblies Exposed to Furnace Heat</i> Mohamed Sultan, NRCC, Canada
<i>Behaviour Of Externally Strengthened RC Elements At Elevated Temperatures</i> Diana Petkova, T Donchev, Kingston Univ London, UK
<i>Numerical Modelling To Determine Appropriate Levels Of Glazing Fire Resistance</i> Stewart Miles, C Mariner, Internationl Fire Consultants, UK
<i>The Role Of Moisture In The Fire Spalling Of Concrete</i> Robert Jansson, L Boström, SP Fire Technology, Sweden
<i>Failure Times Of Gypsum Plasterboards</i> Alar Just, AS Resand, Estonia and J Schmid, J König, SP Trätek, Sweden
<i>An Investigation into the Fire Protection of Domestic Floors Containing Timber 'I' Joists, at Service Penetrations</i> William Hay, Falkirk Council and M Cullen, I Sanderson, Glasgow Caledonian Univ, UK
<u>Ignition and Flame Spread Modelling</u>
<i>Experimental investigations of fire spread from movable to fixed fire loads in office fires</i> Ko-Jen Chen, C-T Tzeng, T-H Lin, C-m Lai, National Cheng-Kung Univ and M-J Tsai, Ministry of the Interior, Taiwan
<i>Upward Flame Spread and Ignition on Inclined Surfaces of Thin and Thick Solids</i> Nina Schjerve, U Schneider, Univ of Technology Vienna, Austria
<i>Simulating Fire Development in a Rail Car Compartment Using a Flame Spread Model</i> Ed Galea, X Hu, Z Wang, F Jia, Univ of Greenwich, UK
<i>Thermal Stresses over Glass Panel under Fire</i> WK Chow, The Hong Kong Polytechnic Univ, Y Gao, Harbin Engineering Univ, China and C Chow, Univ of Cambridge, UK
POSTER SESSION III : Wednesday 7th 9.00-10.00 hrs
<u>Transportation and Tunnel Fires</u>
<i>Motor Coach Tire Fire Passenger Compartment Penetration Experiments</i> Erik Johnsson, J Yang, NIST, USA
<i>Parameter Study On The Global And Local Flow Field In Case Of Fire And Forced Ventilation In A Closed Car Park</i> Xavier Deckers, S Haga, M Jangi, B Merci, Ghent Univ – Ugent, Belgium
<i>Experimental and Computational Study on the Fire Test for Railway Vehicle Seats in Room Corner Facility</i> Dong-Chan Lee, D-H Lee, W-S Jung, C-K Lee, Korea Railroad Research Institute, Korea
<i>TRANSFEU -Transport Fire Safety Engineering in the European Union</i> Alain Sainrat, LNE, France
<u>Smoke & Toxicity</u>
<i>Investigations Of Smoke Gas Composition During A Car Fire</i> Anja Hofmann, Simone Krüger, A Berger, U Krause, BAM, Germany
<i>On-Line FTIR Measurements Applied For Real Electrical Cabinet Fires</i> Pascal Zavaleta, D Kaifas, G Basso, L Audouin, IRSN and A Lacoste, BMPM, France
<i>Predicting Concentrations of Hydrogen Cyanide in Full Scale Enclosure Fires</i> Ed Galea, Z Wang, F Jia, Univ of Greenwich, UK
<u>Compartment Fires Experiments and Modelling</u>
<i>Determination by a CFD code and a global model of the fuel mass loss rate in a confined and mechanically-ventilated compartment fire</i> Ayoub Nasr, S Suard, IRSN, J-P Garo, H El-Rabii, ENSMA and L Gay, Electricité de France, France
<i>Fire Containment By Vent Opening Protectives In The Open State</i> Amal Tamim, COWI Gulf, Oman and R Stolen, SINTEF NBL, Norway
<i>Numerical simulation of fire spreading in a two-storey residential building</i> Dionysios Kolaitis, E Asimakopoulou, M Founti, National Technical University of Athens, Greece
<i>Behavior of Fire Plume Ejected from an Opening in Consideration of Side Walls Near Building Openings</i> Yoshifumi Ohmiya, Tokyo Univ of Science, Japan
<u>Fire Engineering</u>
<i>Agent Bbased Risk Assessment of Fire Safety Systems with Automated Event Tree Analysis</i> Farid Akashah, J Zhang, M Delichatsios, H Wang, Univ of Ulster, UK
<u>Fire Investigation and Reconstruction</u>
<i>The Role Of Moisture In The Burning Of Live And Dead Pine Needles</i> Guillermo Rein, F Jervis, J Torero, Univ of Edinburgh, UK and A Simeoni, Univ of Corsica, France
<i>Experiences from Using Students in Fire Investigation Research</i> Reidar Skrunes, If Insurance Co and A Reidar Nilsen, Stord Haugesund Univ College, Norway

Codes & Regulations

Fire Safety In Timber Buildings - First European Guideline
Birgit Östman, SP Träteknik, Sweden

Fire safety provisions for existing industrial buildings
Frank Jakobs, P van de Leur, DGMR Consulting Engineers, The Netherlands

Performance-Based Design and Regulation: Challenges Faced, Lessons Learned and a Look to the Future
Brian Meacham, Worcester Polytechnic Institute, USA

* This programme is correct at time of going to print but subject to change and/or slight amendments