


<b>INTERFLAM 2010</b> <b>MONDAY 5<sup>th</sup> July</b>				
09.20	<b>Welcome and Opening</b> <b><u>Stephen Grayson, Conference Chairmen</u></b>			
09.40	<b>Keynote Lecture by</b> <b>Marc Janssens, SwRI, USA</b> <b><i>Thirty Years of Interflam: How Fire Research Has Evolved Since 1979</i></b>			
10.10	<b>Refreshments</b>			
10.40	<b>FIRE RESISTANCE AND STRUCTURAL FIRE PERFORMANCE</b>	<b>EXTINGUISHMENT /SUPPRESSION</b>	<b>FIRE TESTING AND MEASUREMENT TECHNIQUES</b>	<b>FIRE PERFORMANCE OF MATERIALS AND PRODUCTS</b>
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 Temperstures 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 Structual 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 Trätekt, Sweden and T Hakkarainen, VTT, Finland


12.20	Discussion	Discussion	Discussion	Discussion
12.45	Lunch	Lunch	Lunch	Lunch
13.50	<i>Fire Protection Ability Of Wood Products</i> Birgit Östman, SP Trätekt, 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 Wieczorek, 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 S Dale, 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	<b>MATERIALS FLAMMABILITY</b> <i>Nondimensional Commodity Classification and an Analysis of Upward Spread</i> Michael Gollner, F Williams, Univ of California, K Overholt, A Rangwala, Worcester Polytechnic Univ and J Perricone, Schirmer Engineering, USA
15.10	Discussion	Discussion	Discussion	Discussion
15.30	Refreshments	Refreshments	Refreshments	Refreshments
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	<b>PYROLYSIS MODELLING</b> <i>Numerical Simulation of Polymer Materials In Standard Fire Tests: Pyrolysis And The Impact Of Residue Formation</i> Bernhard Schartel, F Kempel, A Hofmann, BAM Federal Inst for Materials Research & Testing, Germany and G Linteris, NIST, R Lyon, S Stolarov, R Walters, FAA, 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>Compartment Fire Inhomogeneity And Assessment Of Concrete Structural Stability</i> Susan Deeny, T Stratford, The Univ of Edinburgh, UK	<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 Stoliarov, 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>The Effect Of Fire Curve On Concrete Spalling</i> Lars Bostrom, R Jansson, SP Fire Technology, Sweden	Performance Evaluation Framework for Vision-Based Fire Detection Steven Verstockt, 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	<u>Discussion</u>	<u>Discussion</u>	<u>Discussion</u>	<u>Discussion</u>

### Nottingham Night !

### TUESDAY 6<sup>th</sup> July

	CFD MODELLING	FIRE AND EMERGENCY RESPONSE	PYROLYSIS MODELLING	FLAME RETARDANTS 
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 Rogaume, 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 Gritzo, 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>Flame Retardants And Their Decisive Contributions Against The Global Warming And Emission Of Toxic Gases</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, 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
	<b>HUMAN BEHAVIOUR: EVACUATION AND EGRESS</b>	<b>FIRE AND EMERGENCY RESPONSE</b>	<b>IGNITION AND FLAME SPREAD MODELLING</b>	<b>FLAME RETARDANTS</b> 
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 Oberijé, 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 Scharrel, 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	<i>Residential Building And Automobile Fire Test Scenarios To Investigate Firefighter Exposure To Smoke</i> 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>How Smoke Layer Affects Evacuee's Visibility Range and Escape Behaviour in the Staircase of a High-rise Apartment through the Field Trial Experiment</i> Jun-ho Choi, W-h Hong, Kyungpook National Univ, Korea	<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> Sieghard Goebelbecker, R Stenekes, 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	<b>POSTER SESSION I</b> <b>Human Behaviour in Fires   Fire and Emergency Response   CFD Modelling</b>			
	<b>HUMAN BEHAVIOUR: EVACUATION AND EGRESS cont</b>	<b>CODES AND REGULATIONS</b>	<b>IGNITION AND FLAME SPREAD MODELLING cont</b>	<b>FLAME RETARDANTS</b> 
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, K Butler, NIST, USA and E Onate, S Idelsohn, R Rossi, J Marti, CIMNE, Spain	<i>Flame Retardancies of Olefins and Polystyrene controlled their Molecular Weights</i> Kunihiko Takeda, T Ueno, E Nakashima, M Yukumoto, Chubu Univ, Japan
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 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	<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	<b>POSTER SESSION II</b>  <b>Materials Flammability and Product Testing</b>  <b>Pyrolysis Modelling</b>  <b>Extinguishment</b>  <b>Fire Resistance and Structural Fire Performance</b>  <b>Flame Retardants</b>
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, Brandschutz 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	<b>Discussion</b>	<b>Discussion</b>	
19.00	<b>Conference Dinner</b>		

Wednesday 7 <sup>th</sup> July				
9.00	<b>POSTER SESSION III</b> Transportation and Tunnels   Smoke and Toxicity   Compartment Fires   Fire Engineering   Fire Investigation and Reconstruction   Codes and Regulations   Flame Spread			
	COMPARTMENT FIRE EXPERIMENTS & MODELLING	URBAN AND WILDLAND FIRES	FIRE INVESTIGATION AND RECONSTRUCTION	SMOKE AND TOXICITY
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 m<sup>2</sup> 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 Fires In Waste Recycling Centres</i> Tuomo Rinne, K Tillander, VTT Technical Research Centre of Finland, P Yli-Pirilä, J Ruuskanen, Univ of Kuopio 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, Utrecht, Univ, The Netherlands
11.20	Discussion	Discussion	Discussion	Discussion
11.40	Refreshments	Refreshments	Refreshments	Refreshments
	<b>TRANSPORTATION AND TUNNEL FIRES</b>	<b>FIRE ENGINEERING</b>	<b>FIRE INVESTIGATION AND RECONSTRUCTION</b>	<b>SMOKE AND TOXICITY</b>
12.00	Ed Galea, F Jia, Z Wang, Univ of Greenwich, UK <i>Modelling Factors that Influence CFD Fire Simulations of Large Tunnel Fires</i>	<i>A Systematic Analysis On Fire Safety Emergency Cover (FSEC) Toolkit</i> Selda Konukcu, N Bouchlaghem, Univ 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 Of 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>Use of Stochastic FSE tool for Fire Scene Reconstruction</i> François Demouge, Ph Fromy, Univ Paris -Est, A Muller, Univ Paris-Est/Univ de Haute Alsace, 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
12.30	Discussion	Discussion	Discussion	Discussion
12.45	Lunch	Lunch	Lunch	Lunch

13.50	<i>Use of Computer Modelling for the Interpretation of Midscale Tunnel Fire Test Results</i> Elizabeth Blanchard, CSTB/LEMETA, 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 Loughheed, 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>Determining the Yields of Toxic Gases from Real Items in Fires</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>Potential Ignition Sources in a Coal and Coke Shiploader Fire</i> Carlos Fernandez-Pello, C Lautenberger, Univ of California Berkeley, N Alvares, Fire Science Applications, USA and C Rein, Univ of Edinburgh, UK	<i>The Effects Of Sprinkler Sprays On The Transport Of Toxic Products: Comparison Of Experimental And Computer Model Results</i> Robert Accosta, Arup, B Xiao, J Crocker, Z Magnone, Tyco Fire Suppression & Building Products and N Dembsy, 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 Quantative 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
<b>15.10</b>	<b>Discussion</b>	<b>Discussion</b>	<b>Discussion</b>	<b>Discussion</b>
15.30	<b>Keynote Paper</b> <b>Global Overview of the agendas of Major Fire Research Centres</b>			
16.00	Refreshments and Depart			



**POSTER PAPERS****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 Didden, 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, 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

*Cluster And Trend Analysis Of Fatal Fires In Sweden*

Stefan Särqvist, Swedish Civil Contingencies Agency, Sweden

*The Faults With Default*

Steve Gwynne, Hughes Associates and E Kuligowski, NIST, USA

*Study On The Visual Environment Designs For Smooth Evacuation Guidance*

Yuki Akizuki, S Okuda, M Iwata, T Tanaka, Univ of Toyama, Japan

*Building Egress Flow Rates – Research, Application & Limitation*

Matthew Salisbury, Michael Slattery Associates, UK

**Fire & Emergency Response**

*The Integration of Home Smoke Detector and Zigbee Technology*

Wei-Wen Tseng, Central Police Univ and C-Y Yang, Technology and Science Inst of Northern Taiwan, Taiwan

*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

*The Initial Flow (Gravity Current) Into An Enclosure Prior To Backdraft*

Benjamin Presle, M Delichatsios, FireSERT, UK, A Claverie, J Most, CNRS, ENSMA, France and G Guigay, Univ of Iceland, Iceland

*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

**CFD Modelling**

*FDS and OpenMP - A New Parallelization Approach For Fire Modelling Software*

Christian Rogsch, Univ of Wuppertal, Germany

*Coupling FDS and evacuation model to predict fire consequences in accommodation areas onboard passenger ships*

Camille Azzi, D Vassalos, Univ of Strathclyde, UK

<i>Simulations Of Two-Way Fluid-Structure Interactions During A Fire With The ANSYS Software</i> Yehuda Sinai, HeatAndFlow Consulting Ltd and J Penrose, ANSYS UK Ltd, UK
<i>Best Practice in the use of CFD for fire simulation</i> Bjarne Husted, B Hagen, Stord/Haugesund Univ College, Norway and K Sommerlund-Thorsen, DBI, Denmark
<i>Realistic Smoke Visualisation From Computer Fire Simulations</i> Richard Chitty, BRE Global Limited, UK
<i>Coupling Of An Enthalpy-Based Pyrolysis Model With CFD For Upward Flame Spread Simulations</i> Pieter Rauwoens, J Degroote, S Wasan, J Vierendeels, B Merci, Ghent Univ, Belgium
<i>Dynamics Of Buoyant Turbulent Diffusion Flame – Fire Modelling with Code_Saturne</i> Bertrand Sapa, Université de Poitiers/EDF R&D, H Wang, Université de Poitiers and L Gay, EDF R&D, France
<i>A Method Of Quantifying User Uncertainty In FDS By Using Monte Carlo Analysis</i> Tor Lindström, D Lund, Lund Univ, Sweden
<i>Spreading Fires in FDS5 Modelling (case studies)</i> Victor Shestopal, Fire Modelling & Computing, M Foley, J Hewitt, E Yii, Arup Fire and F Bakker, Norman Disney & Young, Australia
<i>Large Eddy Simulation of LNG Pool Fires</i> Jennifer Wen, Z Chen, S Dembele, VHY Tam, Kingston Univ, UK
<b>POSTER SESSION II : Tuesday 16.30-17.30 hrs</b>
<b><u>Suppression/Extinguishment</u></b>
<i>Experimental Investigation of an Office Fire with a Partially Impaired Sprinkler System</i> 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
<i>Water Mist Systems For The Fire Protection Of Prison Cells</i> Kelvin Annable, BRE Global Limited, UK
<b><u>Pyrolysis Modelling</u></b>
<i>Determination of Kinetic Parameters for Thermal Decomposition of Combustible Solids using Microscale Combustion Calorimetry</i> Richard Lyon, Federal Aviation Administration, N Safronava, S Stolarov, SRA International, Inc and, USA
<b><u>Fire Performance of Materials and Products</u></b>
<i>Development of Expandable Flame-retardant Plastic Tube and its Application</i> 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
<i>Assessment of the Impact of Upholstered Furniture on the Severity of Home Fires</i> Lindsay Osborne, G Hadjisophocleous, E Zalok, Carleton Univ, Canada
<i>Different Approaches For Mattress Fire Modelling with FDS 5.4</i> 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
<i>Ignition and Burning Behaviour of Plastic Sheathing of a Steel Pipe</i> 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
<i>Testing and Modeling Reaction-to-Fire Performance of Pultruded Fiber Reinforced Polymer Composites</i> Aixi Zhou, Z Yu, UNC Charlotte, USA
<b><u>Materials Flammability</u></b>
<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
<b><u>Fire Testing and Measurement Techniques</u></b>
<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

<b><u>Flame Retardants</u></b>
<i>Ammonium Polyphosphate Decomposition</i> Beatrice Herrmann, BK Giulini GmbH, Germany
<i>Migration Behavior of Liquid Additive Flame Retardants in Soft Polyurethane Foam Used in Aircraft Seat</i> X Lin, P Zhang, Y Zhang, Sichuan Univ and Z Su, Z Xia, Test Center of Civil Aviation Administration of China, China
<b><u>Fire Resistance and Structural Fire Performance</u></b>
<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, International Fire Consultants, UK
<i>The Role Of Moisture In The Fire Spalling Of Concrete</i> Robert Jansson, L Boström, SP Fire Technology, Sweden
<i>Numerical Study on the Collapse of Timber Frames due to the Heating of Fire Spreading inside a Multi-room Building</i> Kyosuke Mukaibo, K Himoto, T Tanaka, Kyoto Univ, Japan
<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
<i>Experimental Study of Structural Performance of Extended End-plate Moment Connections between Tubular Steel Members in Fire</i> Osama Salem, G Hadjisophocleous, E Zalok, Carleton Univ, Canada
<b><u>Ignition and Flame Spread Modelling</u></b>
<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 On Inclined Surfaces Of (Thermally) 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
<b>POSTER SESSION III : Wednesday 7<sup>th</sup> 9.00-10.00 hrs</b>
<b><u>Transportation and Tunnel Fires</u></b>
<i>Effects Of An Adjacent Perpendicular Wall On Flame Behaviours Of A Tunnel-Like Fire With A Façade</i> S Ukleja, T Beji, J Zhang, M Delichatsios, M McKee, FireSERT, Univ of Ulster, UK
<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
<b><u>Smoke &amp; Toxicity</u></b>
<i>Investigations Of Smoke Gas Composition During A Car Fire</i> Simone Krüger, A Hofmann, A Berger, U Krause, BAM, Germany

<i>On-Line FTIR Measurements Applied For Real Electrical Cabinet Fires</i> Pascal Zaveleta, 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
<b><u>Compartment Fires Experiments and Modelling</u></b>
<i>Influence Of Environmental Conditions On The Mass Loss Rate In Confined And Mechanically-Ventilated Compartment Fires</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>Modelling of Overall Elevator Boarding and Departing Time using a Numerical Algorithm: Trial Experimental Study</i> Hyun-seung Hwang, , J-h Choi, W-h Hong, Kyungpook National Univ, Korea
<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
<b><u>Fire Engineering</u></b>
<i>Fire Risk Assessment for Dublin Port Tunnel: A Comparative Study</i> Farid Akashah, M Finn, J Zhang, M Delichatsios, H Wang, Univ of Ulster, UK
<i>A Study Of The Factors That Determine Fire Size And Fire Frequency, Based On Occupant Demographics And Building Type, In Multi-Storey Buildings In Copenhagen, Denmark</i> Anders Bach Vestergaard, DBI, Denmark
<b><u>Fire Investigation and Reconstruction</u></b>
<i>Use Of Case Studies To Determine Technical Deficiencies With Respect To Fire Spread In School Buildings Subjected To Arson Fires</i> Patrick van Hees, N Johansson, Lund Univ, Sweden
<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
<b><u>Codes &amp; Regulations</u></b>
<i>Fire Safety In Timber Buildings - First European Guideline</i> Birgit Östman, SP Trätekt, Sweden
<i>Fire safety provisions for existing industrial buildings</i> Frank Jakobs , P van de Leur, DGMR Consulting Engineers, The Netherlands
<i>Performance-Based Design and Regulation: Challenges Faced, Lessons Learned and a Look to the Future</i> Brian Meacham , Worcester Polytechnic Institute, USA

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