## Fire and Materials 2015 Programme

**MONDAY, 2nd February 2015**

**Delegate conference breakfast Presidio Foyer: 8.00-9.00am**

| 09.15 | Welcome and Introduction |
| 09.45 | **PRESIDIO HALL**

**ELECTRO-TECHNICAL**

Chair: Patrick van Hees, Lund Univ, Sweden

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Presenter(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>09.30</td>
<td>Emissions from flame retarded and non-flame retarded circuit board laminates</td>
<td>Alex Morgan, M Kahandawala, Univ of Dayton and B Gullet, D Tabor, U.S. Environmental Protection Agency, USA</td>
</tr>
<tr>
<td>09.50</td>
<td>Small scale evaluation and characterization of simulated low voltage cables with and without electrical current</td>
<td>Serge Bourbigit, J Sarazin, P Bachelet, Ecole Nationale Supérieure de Chimie de Lille (ENSCL), France</td>
</tr>
<tr>
<td>10.10</td>
<td>Characterization of the thermal exposure in the EN 50399 cable test apparatus</td>
<td>Michael Först, J Sjöström, P Andersson, SP Technical Research Inst of Sweden U Wickström, Luleå University of Technology, Sweden and B Girardin, Ecole Nationale Supérieure de Chimie de Lille, France</td>
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**Discussion**

**10.45 | Refreshments - Presidio Foyer**

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### BUILDING FIRES

**Chair: Sergey Dorofeev, FM Global, USA**

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<tr>
<td>09.30</td>
<td>Regulation of foam plastic insulation by US construction codes</td>
<td>M Hirscher, Timothy Earl, GBH International, USA</td>
</tr>
<tr>
<td>09.50</td>
<td>Challenges for fire safety in ETIC systems with polyurethane insulation</td>
<td>Anja Hofmann, S Kauldael, BAM and A Ruhs, Frankfurt Fire and Rescue Service, Germany</td>
</tr>
<tr>
<td>10.10</td>
<td>Fire safety of textile membranes in temporary structures</td>
<td>Per Blomqvist, A Bergstrand, N Neumann, I Larsson, P Therson, SP Technical Research Inst of Sweden and S Bengtsson, Brandskyddslaget, Sweden</td>
</tr>
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**Discussion**

**10.45 | Refreshments - Presidio Foyer**

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### ELECTRO-TECHNICAL

Chair: Patrick van Hees, Lund Univ, Sweden

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<tr>
<td>11.35</td>
<td>Studying fire behaviour of photovoltaic panels with a Cone Calorimeter</td>
<td>CL Chow, SS Han, City University of Hong Kong</td>
</tr>
</tbody>
</table>

**Discussion**

**11.55 | Lunch - Presidio Foyer**

**12.10 | Lunch - Presidio Foyer**

### COMPARTMENT FIRES

**Chair: Anne Steen-Hansen, SP Fire Research AS, Norway**

<table>
<thead>
<tr>
<th>Time</th>
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<tbody>
<tr>
<td>11.20</td>
<td>Polyurethane foam insulation with a sustainable flame retardant: transition update</td>
<td>Christine Lukas, Dow Chemical Company UK Ltd, UK, L Ross, Intech, Consulting Inc., USA, I Beulich, H Hollnagel, Dow Europe GmbH, Switzerland, Mark Beach, J Davis, J Hull, B King, S Kram, T Morgan, M Porter, W Stobby, The Dow Chemical Company, USA</td>
</tr>
<tr>
<td>11.40</td>
<td>A case study on the effect of building construction type, height and area on the building fire risk using the fire risk assessment model CUFirRisk</td>
<td>Xiao Li, P Rao, X Zhang, G Hadjisophocleous, Carleton University, Canada</td>
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**Discussion**

**11.55 | Lunch - Presidio Foyer**

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### FIRE TESTING

**Chair: Richard Lyon, Federal Aviation Administration, USA**

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<tr>
<td>12.20</td>
<td>An investigation of thermally-induced failure of a lithium ion battery</td>
<td>Xuan Liu, S Stoliarov, Z Wang, University of Maryland and M Denlinger, A Masias, K Snyder, Ford Motor Company, USA</td>
</tr>
<tr>
<td>12.40</td>
<td>Energy release from lithium ion batteries in the Bomb Calorimeter</td>
<td>Richard Walters, R Lyon, Federal Aviation Administration, USA</td>
</tr>
<tr>
<td>14.00</td>
<td>Influence of the state of charge on the heat release rate of Li-ion batteries</td>
<td>Hubert Bitezau, V Somandepalli, Exponent, USA</td>
</tr>
</tbody>
</table>

**Discussion**

**14.20 | Discussion**

**14.35 | Refreshments - Presidio Foyer**

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### FIRE RESISTANCE

**Chair: Colleen Wade, BRANZ, NZ**

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<tr>
<td>13.20</td>
<td>Cone Calorimeter and Room Corner Fire Testing of Balsa Wood Core / Phenolic Composites Skin Sandwich Panels</td>
<td>Elias Toubia, Alex Morgan, Univ of Dayton, USA</td>
</tr>
<tr>
<td>13.40</td>
<td>Gas and particle effluents released from boundaries of fire compartments: First results and analyses</td>
<td>Miroslav Smolka, Rockwood Intl, Denmark, V Mozer, Univ of Zilina, Slovakia and P Tofilo, The Main School of Fire Service, Warsaw, Poland</td>
</tr>
<tr>
<td>14.00</td>
<td>Time until flashover as a function of polyurethane content in a cell or structure</td>
<td>Kate Grimwood, Australian Inst of Forensic Fire Investigation / Univ of Technology, Sydney and M Tahtouh, C Roux, Univ of Technology, Sydney, Australia</td>
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**Discussion**

**14.20 | Discussion**

**14.35 | Refreshments - Presidio Foyer**

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### FIRE RESISTANCE

**Chair: Sergey Dorofeev, FM Global, USA**

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<tr>
<td>15.00</td>
<td>Optical characterization of high temperature deformation in novel structural materials</td>
<td>John Gales, Carleton University and M Green, Queen's University, Canada</td>
</tr>
<tr>
<td>15.20</td>
<td>Performance and design of intumescent coatings on concrete filled hollow steel sections</td>
<td>David Rush, L Bisby, Uni of Edinburgh and A Jowsey, International Paint Ltd, UK</td>
</tr>
<tr>
<td>15.40</td>
<td>Heat transfer in small-scale models of exterior wall designs</td>
<td>C Aire, D Torvi, , University of Saskatchewan , M DiDomizio, Elizabeth Weckman, University of Waterloo and R Roos, Roxul Inc, Canada</td>
</tr>
</tbody>
</table>

**Discussion**

**15.55 | Close**

**16.00 | Discussion**

**16.15 | Conference Reception and Buffet – Presidio Foyer**
TUESDAY, 3rd February 2015

Delegate conference breakfast  Presidio Foyer : 7.50-8.50am

PRESIDIO HALL

FIRE TESTING

Chair: Beth Weckman, University of Waterloo, Canada

8.50  An exercise in obtaining flame radiation fraction from the cone calorimeter
James Quintiere, University of Maryland and R Lyon, S Crowley, FAA Technical Center, USA

9.00  Challenges in determining critical mass flux for ignition
Frida Vermina Lundström, P van Hees, Lund University, Sweden

IGNITION

Chair: Mohammed Khan, FM Global, USA

11.00 Challenges in predicting the pyrolysis rate of solid materials
Marc Janssens, SwRI, USA

12.00 Modeling Flame Spread Over Carpeting in the ASTM E648 Radiant Panel Test
K. Ranjan Samant, E.J.DePont de Nemours and Company and K Butler, NIST, USA

13.40 Pyrolysis simulation of fiber reinforced polymer (FRP) composites: challenges of zero-dimensional testing of resin and additive mixtures to measure kinetic parameters
Nicholas Dmbsey, B Gillespie, M Long, N McMillian, C Walde, WPI and William Kreyssler, Kreyssler & Associates, USA

14.00 Challenges in testing wood under transient radiant exposures
Matt DiDomizio, P Mulherin, E Weckman, University of Waterloo, Canada

14.20 A study of ignition by rifle bullets
Sara McAllister, M Finney, T Maynard, I Grob, USDA Forest Service, USA

14.40 A new fire performance test for cavity wall insulation
Kristin Jamison, M Khan, FM Global and D Boardman, FM Approvals, USA

15.00 A new fire performance test for cavity wall insulation
Eric Guillaume, L Saragoza, LNE, France

15.15 Lunch - Presidio Foyer

15.30 Discussions - Presidio Foyer

16.30 Using the Cone Calorimeter to develop a detailed model of carpet for flammability studies
Kathryn Butler, J R Shields, NIST and K Ranjan Samant, E.J.DePont de Nemours and Co, USA

16.45 Fire performance test for cavity wall insulation
Eric Guillaume, L Saragoza, LNE, France

17.00 Discussions

17.30 Close

THAYER HALL

TRANSPORTATION

Chair: Joe Zicherman, Fire Cause Analysis, USA

8.50 An exercise in obtaining flame radiation fraction from the cone calorimeter
James Quintiere, University of Maryland and R Lyon, S Crowley, FAA Technical Center, USA

9.00 Car bumper reaction to fire
Célia Rich, LCPP, France / University of Lausanne, Switzerland, B Vanlengerhe, N Risler, S Pereira-Rodrigues, LCPP, France and O Delémont, University of Lausanne, Switzerland

9.10 Application of FTIR analyzers to fire gases - progress in apparatus and method validation for quantitative analysis
Eric Guillaume, L Saragoza, LNE, France

9.30 Testing metal wall panel systems
Cynthia Frank, M Stocum, FM Approvals, USA

9.50 Aircraft blanked ignition and toxic emission in simulated aircraft cabin fires using the Cone Calorimeter
Gordon Andrews, M Bell, L Tang, A Alarifi, H Phylaktou, University of Leeds, UK

10.10 Discussion

10.30 Refreshments - Presidio Foyer

11.00 Challenges in determining critical mass flux for ignition
Frida Vermina Lundström, P van Hees, Lund University, Sweden

11.20 Challenges in establishing design fires for passenger rail vehicles
J Zicherman, Fire Cause Analysis and C Lautenberger, Armin Wolski, Reax Engineering, USA

11.40 Thermo mechanical behaviour of panels’ assembly exposed to an ISO 834 fire test
B Mercier, Jean-Charles Craveur, J Boumort, ISMANS and S Lair, MAPAC Panel, France

12.00 Discussion

12.15 Lunch - Presidio Foyer

12.45 Lunch - Presidio Foyer

14.00 Experimental and pyrolysis modeling study of delaminating materials
Nicholas Dmbsey, B Gillespie, M Long, N McMillian, C Walde, WPI and William Kreyssler, Kreyssler & Associates, USA

14.20 Determination of the fire behaviour of an acrylonitrile butadiene styrene material using a Controlled Atmosphere Cone Calorimeter
Fabien Hermouet, LNE / Institut P', É Guillaume, LNE, T Rogaume, F Richard, Institut P' et X Ponticq, Centre d’Etude des Tunnels (CETU), France

14.40 Experimental investigation of externally venting flames in under-ventilated compartment fires
Eleni Asimakopoulou, D Kolaitis, M Founti, National Technical University of Athens, Greece

14.55 Refreshment Break

15.00 Experimental and pyrolysis modeling study of delaminating materials
Dong Zeng, M Chaos, Y Wang, S Borofleev, FM Global, USA

15.25 Climate impact on forest fire risk in Sweden
Francine Amon, J Sjöström, L Vykund, S Fasith, SP Technical Research Inst of Sweden, Sweden

15.45 Using the Cone Calorimeter to develop a detailed model of carpet for flammability studies
Kathryn Butler, J R Shields, NIST and K Ranjan Samant, E.J.DePont de Nemours and Company, USA

16.05 A model to evaluate infrastructures vulnerability in case of forest fires in wildland-urban interfaces zones
Laura Bonora, National Research Council , F Martelli, National Research Council, Italy, N Brachetti Montorselli, DSISTAF, University of Florence and E Testi, Tuscany Region - Settore programmazione forestale, Italy

16.20 Firebrand accumulation zones in front of structures in wildland-urban interface (WUI) fires
Samuel Manzello, NIST, USA and S Suzuki, NRIFD, Japan

16.45 Effect of siding treatment on firebrand production from building components
Sayaka Suzuki, NRIFD, Japan and S Manzello, NIST, USA

17.05 Discussions

17.30 Close

19.00 Evening at Leisure or Informal Dinner at Swiss Louis, Pier 39 (pre-booked tickets)
Meet in hotel foyer at 6.45pm to walk 7 minutes to venue
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<thead>
<tr>
<th>Time</th>
<th>Delegate conference breakfast Presidio Foyer</th>
<th>7.50-8.50am</th>
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<tr>
<td>8.50</td>
<td>Cigarette ignition of cellulose materials with non-fire standards compliant (non-FSC) cigarettes</td>
<td>James Lord, J Geiman, ATF Fire Research Laboratory, USA</td>
</tr>
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<td>09.30</td>
<td>Fire behavior of bed mattresses on the viewpoint of flame-spread</td>
<td>Kye-Won Park, FILK, South Korea, J-J Jeong, M Mizuno, Y Ohmiya, Tokyo University of Science, Japan</td>
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<tr>
<td>10.05</td>
<td>Refreshment Break</td>
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<tr>
<td>12.10</td>
<td>Lunch</td>
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<tr>
<td>13.20</td>
<td>Milligram-scale Flame Calorimeter: A novel instrument for flammability assessment using mg-sized samples</td>
<td>Fernando Raffan-Montoya, X Ding, S Stoliarov, University of Maryland, USA and R Koerner, BASF-SE, Germany</td>
</tr>
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<td>13.40</td>
<td>Low emissivity surfaces for improved fire performance</td>
<td>Robert Svensson, M Forsth, SP Fire Research, Sweden</td>
</tr>
<tr>
<td>14.00</td>
<td>Revealing the inner secrets of intumescent chars by advanced small scale tests combined with μ-CT</td>
<td>Michael Morus, B Ilerhaus, H Sturm, B Schartel, BAM Germany</td>
</tr>
<tr>
<td>15.00</td>
<td>Effect of flame retardants on polymer heat release rate</td>
<td>Marcelo Hirschler, GBH International, USA</td>
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<td>15.20</td>
<td>Experimental and numerical simulations of the gas-phase effectiveness of phosphorus compounds</td>
<td>Gregory Linteris, N Bouvet, V Babushok, NIST, Fumiaki Takahashi, Case Western Reserve University, V Katta, Innovative Scientific Solutions, USA and R Kramer, BASF SE, Germany</td>
</tr>
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<td>15.40</td>
<td>Simulations of gas-phase interactions of phosphorus flame retardants with diffusion flame structure</td>
<td>Fumiaki Takahashi, Case Western Reserve University, V Katta, Innovative Scientific Solutions and G Linteris, V Babushok, NIST, USA</td>
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<td>16.15</td>
<td>Close and Refreshments</td>
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The programme is correct at time of going to press but the organisers reserve the right to make changes as and when necessary.