Basic Principles of Fire Investigation
Burn Patterns
Electrical Fires
Ignitable Liquids
Fire Characteristics of Solid Materials
Metallurgy
Self-Heating and Spontaneous Combustion
Modeling, Testing, Case Histories
Fire Debris Analysis
Miscellaneous Topics
CHAPTERS AND PAPERS

1. BASIC PRINCIPLES OF FIRE INVESTIGATION

1.01 The challenge of fire investigations—Today and tomorrow [IFL99]
  John DeHaan, Fire-Ex Forensics Inc, USA

1.02 Advanced tools for use in forensic fire scene investigation, reconstruction and documentation [IFL04]
  John DeHaan, Fire-Ex Forensics, USA

1.03 Guidelines for conducting peer reviews of complex fire investigations [FM07]
  David Icove, University of Tennessee and G Haynes, Forensic Fire Analysis, USA

1.04 Business set up to burn [IFL01]
  Barry Dillon, A Ling, Forensic Services (M) Sdn Bhd, Malaysia

1.05 Forensic fire investigation: An interface of science, technology and law [FM09]
  Vincent Brannigan, University of Maryland, E Buc, Fire and Materials Research Laboratory, USA

1.06 Forensic fire investigation: Creating and critiquing the acceptable abductive interferences [FM11]
  Vincent Brannigan, University of Maryland, E Buc, Fire and Materials Research Laboratory, USA

1.07 Fire and explosion investigator safety: Issue or myth [FM11]
  Ronald Hopkins, TRACE Fire Protection and Safety Consultants, USA

2. BURN PATTERNS

2.01 Flashover and fire analysis—A discussion of the practical use of flashover analysis in fire investigations [IFL04]
  Patrick Kennedy, KC Kennedy, John A. Kennedy & Associates, USA

2.02 Application of materials science to fire investigation [FM01]
  Robert Schroeder, Schroeder & Williams, USA, RB Williamson, University of California, Berkeley, USA

2.03 Depth of calcinations measurement in fire origin analysis [FM03]
  Patrick Kennedy, KC Kennedy, John A. Kennedy and Associates, USA, RL Hopkins, Eastern Kentucky University, USA

2.04 Gypsum board fall-off temperature in floor assemblies exposed to standard fires [IFL07]
  Mohamed Sultan, A Roy-Poirier, National Research Council of Canada, Canada

2.05 Comparison of gypsum board fall-off in wall and floor assemblies exposed to furnace heat [IFL10]
  Mohamed Sultan, National Research Council of Canada, Canada

2.06 Studies of the dehydration/calcination of gypsum wall board [FM09]
  Dale Mann, N Putaansuu, MDE Engineers, USA

2.07 Failure times of gypsum plasterboards [IFL10]
  Alar Just, Resand Ltd, Estonia, J Schmid, J König, SP Trätek, Sweden

2.08 Determination of fire patterns due to liquid accelerants on floor covering [IFL01]
  Jan Stensaas, Norwegian Fire Research Laboratory, Norway
2.09 Fire pattern persistence and predictability on interior finish and construction materials during pre and post flashover compartment fires [FM07]
Ron Hopkins, Eastern Kentucky University, G Gorbett, John A Kennedy & Associates, USA

2.10 Fire pattern persistence and predictability during full-scale compartment fire tests and the use for comparison of post fire analysis [FM09]
Ron Hopkins, TRACE Fire Protection and Safety, G Gorbett, Eastern Kentucky University, P Kennedy, John A Kennedy & Associates, USA

2.11 Experimental studies on the effect of fire accelerant during living room fires [FM13]
Simone Krüger, J Deubel, M Werrel, I Fettig, T Raspe, C Piechotta, BAM Federal Institute for Materials Research and Testing, Germany

2.12 Fire performance of old wooden door sets [IFL07]
Eva Andersson, Geir Jensen, COWI, Norway

2.13 Progressive burn pattern development in post-flashover fires [FM09]
Steven Carman, Carman & Associates Fire Investigations, USA

2.14 “Clean burn” fire patterns – A new perspective for interpretation [IFL10]
Steven Carman, Carman & Associates Fire Investigations, USA

2.15 Varying the 'Z' factor – Fire behavior differences from elevated fuels [FM11]
Steven Carman, Carman & Associates Fire Investigation, USA

2.16 Investigating multi-compartment fire behavior of elevated origins [FM13]
Steven Carman, Carman & Associates Fire Investigation, USA

2.17 Utilization of fire testing to effectively formulate and/or test hypotheses relating to fire origin and progression [FM09]
Cory Martin, Apex Analytical, J Clayton, Clayton & Associates, USA

2.18 A study of the effect of high temperature on the physicomechanical properties of natural building limestones [IFL10]
Kyriacos Kyriakides, G Hadjisophocleous, Carleton University, Canada, L Petrou, I Ioannou, University of Cyprus, Cyprus

2.19 The role of moisture in fire spalling of concrete [IFL10]
Robert Jansson, L Boström, SP Fire Technology, Sweden

2.20 Flame heights and heat transfer from gaseous, liquid and solid fuels for burn pattern repeatability research [IFL10]
Daniel Madrzykowski, NIST, C Fleischmann, University of Canterbury, New Zealand

3. ELECTRICAL FIRES

3.01 Electrical fire risks [IFL01]
Veli-Pekka Nurmi, Safety Technology Authority, Finland

3.02 Electrical fires: An analysis of a UK fire service data collection [IFL13]
Robin Bryant, T Cockcroft, Canterbury Christ Church University, UK

3.03 How do electrical wiring faults lead to structure ignitions? [FM01]
Vytenis Babrauskas, Fire Science and Technology Inc, USA
3.04 Arc breakdown in air over very small gap distances [IFL13]
Vytenis Babrauskas, Fire Science and Technology Inc, USA

3.05 Fires due to electric arcing: Can ‘cause’ beads be distinguished from ‘victim’ beads by physical or chemical testing [FM03]
Vytenis Babrauskas, Fire Science and Technology Inc, USA

3.06 Mechanisms and Modes for ignition of low-voltage PVC wires, cables, and cords [FM05]
Vytenis Babrauskas, Fire Science and Technology Inc, USA

3.07 Fire hazard caused by thermal degradation of organic insulating materials at plug and receptacle connections [FM03]
Katsuhiro Okamoto, N Watanabe, Y Hagimoto, National Research Institute of Police Science, Japan

3.08 Full-scale arc mapping tests [FM05]
Larry West, EFI Global, and D Reiter, Verite Forensic Engineering, USA

3.09 The metallic damage in electrical conductors at fire scenes [IFL07]
Nicholas Carey and NN Daeid, University of Strathclyde, UK

3.10 Arc fault analysis: Post flashover studies of the power cord [FM07]
Lester Rich, Forensic Fire Analysis and W Johnson, Core Engineering Inc, USA

3.11 Heat flux induced arc formation in a residential electrical cable [FM13]
Stanislav Stoliarov, CJ Novak, JG Quintiere, University of Maryland, USA, MR Keller, Bureau of Alcohol, Tobacco, Firearms and Explosives, USA

3.12 Conditions that can cause upper thermal limits on residential wiring to be exceeded [FM07]
John Shea, Eaton Corporation, USA

3.13 Fusing of wires by electrical current [FM11]
Vytenis Babrauskas, Fire Science and Technology Inc., I Wichman, Michigan State University, USA

3.14 Short-circuit faults in electrical cables and cords exposed to radiant heat [FM03]
Yasuaki Hagimoto, N Watanabe, K Okamoto, National Research Institute of Police Science, Japan

3.15 Fire causes in electrical plugs [IFL01]
Yasuaki Hagimoto, N Watanabe, K Okamoto, National Research Institute of Police Science, H Sato, Research Institute of Scientific Investigation, Japan

3.16 Flammability of electrical crimp connectors subjected to heating [FM07]
Scott Davis, A Ibarreta, Exponent Failure Analysis Associates, Inc., USA

3.17 An experimental study of materials exposed to electrical resistance heating as potential cause of fires [FM01]
Kevin Brown, J Zicherman, F Hsu, Fire Cause Analysis Inc, USA

3.18 Characteristics of overheating connections between copper and steel [FM13]
Chris Korinek, T Korinek, Synergy Technologies LLC, USA

3.19 TV sets as incendiary device [FM07]
Herve Breulet, ISSeP, J Hotte, LER, Belgium

3.20 Corrosion and electrical damage by smoke in fires [IFL07]
Paul Su and A Tewarson, FM Global, USA
3.21 A short circuit as an ignition of fire [IFL07]
Yasuaki Hagimoto, N Watanabe and K Okamoto, National Research Institute of Police Science, Japan

3.22 Evaluating electrical receptacle fires [IFL13]
Craig Beyler, M Benfer, D Gottuk, Hughes Associates Inc, USA

3.23 Power lines and catastrophic wildland fire in Southern California [FM09]
Joseph Mitchell, M-Bar Technologies and Consulting, USA

3.24 Unique aspects of vehicle fire investigations [FM09]
David Reiter, Verité Forensic Engineering, R McLellan, USA

3.25 Electrical arcing and the law [FM09]
Kevin Lewis, CASE Forensics, W Pierson Jr, The Law Office of William E. Pierson, Jr., USA

3.26 Electrical circuit and cable testing [IFL10]
Gabriel Taylor, Nuclear Regulatory Commission, K McGrattan, NIST, S Nowlen, Sandia National Laboratories, USA

3.27 Electric arc explosions [IFL10]
Vytenis Babrauskas, Fire Science and Technology Inc., USA

3.28 Thermal malfunction criteria of fire safety electrical equipment in nuclear power plants [IFL10]
Laurent Gay, R Gracia, EDF R&D, E Wizenne, EDF SEPTEN, France

3.29 Causes and consequences of sparks on the surface of insulators of middle voltage lines [IFL10]
CD Halevidis, S Anagnostatos, A Polykrati, P Bourkas, National Technical University of Athens, E Koufakis, Public Power Corporation, Greece

3.30 Safety testing of lithium-ion batteries [FM11]
Mahmood Tabaddor, H Jones, J Chapin, A Wu, Underwriters Laboratories Inc, J Jeevarajan, NASA Johnson Space Centre, USA

3.31 An assessment of the ability of light bulbs to ignite various types of cardboard [FM11]
Paul Way, T Henriksen, CASE Forensics, USA

4. IGNITABLE LIQUIDS

4.01 Petrol vapour explosion—A reconstruction [IFL99]
Roger Ide, Forensic Science Investigations, UK

4.02 The influence of temperature, pool size, and substrate on the evaporation rates of flammable liquids [IFL99]
John DeHaan, Fire-Ex Forensics Inc, USA

4.03 Combustion of high flash-point materials [FM01]
Hirshosi Koseki, Y Natsume, Y Iwata, National Research Institute of Fire and Disaster NRIFD, Japan

4.04 The extent of evaporation of ignitable liquids under exposure to compartment fires, non-fire thermal and non-thermal environments [FM07]
Jamie Ferrino-McAllister, R Roby, D Carpenter, Combustion Science & Engineering, Inc, USA, J Torero, University of Edinburgh, UK

4.05 Burning characteristics of heptane and methanol pool fires [FM01]
Marc Janssens, University of North Carolina, S Dillon, Bureau of Alcohol, Tobacco, and Firearms, S Allwein, Southwest Research Institute, USA
4.06 Fire behaviour of flammable products in plastic bottles and aerosol cans [IFL99]
Marina Milovancevic, SP Fire Technology, Sweden

4.07 Flammability of hydraulic fluid under pressure: Real-scale simulation of a fire accident [FM03]
Art Grand, Grand Fire Consulting, Jesse Beitel, Hughes Associates, W Black, Georgia Institute of Technology, USA

4.08 Outgassing phenomenon in flash point testing for fire safety evaluation [IFL04]
Gregory Gorbett, KC Kennedy, PM Kennedy, John & Kennedy & Associates, Inc., USA

4.09 Fraction vaporization of ignitable liquids – Flash point and ignitability issues [FM07]
Patrick Kennedy, John A Kennedy & Associates, A Armstrong, Armstrong Forensic Laboratory, USA

4.10 Investigation of cigarettes as an ignition source for Coleman fuel [FM13]
Justin Geiman, P Fuss, ATF Research Laboratory, USA

5.01 Ignition characteristics of various fire indicators subjected to radiant heat fluxes [FM03]
Frederick Mowrer, University of Maryland, USA

5.02 Ignition of wood – A review of the state of the art [IFL01]
Vytenis Babrauskas, Fire Science and Technology Inc, USA

5.03 Prudent practices for the design and installation of heat-producing devices near wood materials [FM07]
Vytenis Babrauskas, Fire Science and Technology Inc., USA, B Gray, BF Gray Combustion and Scientific Consultants, Australia, and M Janssens, SwRI, USA

5.04 Charring rate of wood as a tool for fire investigations [IFL04]
Vytenis Babrauskas, Fire Science and Technology Inc, USA

5.05 Experimental charring rates for cross-laminated timber panels compared to calculated charring rates [IFL10]
Kathinka Friquin, Norwegian University of Science and Technology (NTNU), Norway

5.06 Fire performance properties of wood and composite deck boards [FM09]
Thomas Fabian, P Gandhi, Underwriters Laboratories, USA

5.07 The effect of “blistering” on the ignition and flammability of painted gypsum wallboard [FM01]
Frederick Mowrer, University of Maryland, USA

5.08 Fire performance of flame retarded polymers used in consumer electronics [FM05]
Matthew Bundy, T Ohlemiller, National Institute of Standards and Technology, USA

5.09 Burning of plastics at the limiting oxygen concentration [FM11]
Richard Lyon, M Zarzecki, M Fulmer, S Crowley, R Walters, Federal Aviation Administration, USA

5.10 Cone Calorimeter Testing of UL-94V Rated Plastics: Effects of Heat Flux and Sample Thickness [FM07]
Alex Morgan, University of Dayton Research Institute, M Bundy, NIST, USA

5.11 Fire performance of IT equipment studied in the furniture calorimeter [IFL01]
Donald Bliss, National Association of State Fire Marshals, USA, M Simonson, SP, Sweden

5.12 Fire induced failure of polycarbonate windows in railcars [FM03]
Steve Strege, B Lattimer, C Beyler, Hughes Associates, USA

5.13 Fire hazard associated with passenger cars and vans [FM03]
Marcelo Hirschler, GBH International, D Hoffman, J Hoffman, E Kroll, Safety Engineering Laboratories, USA
5.14 Aging properties of fire protection materials [FM01]
Richard Licht, 3M Fire Protection Products, USA

5.15 The influence of floor coverings on room fires [IFL07]
Patrik Johansson, J Axelsson, T Hertzberg, SP, Sweden

5.16 Combustion of non-open-flame resistant Canadian mattresses in a room environment [FM09]
Alex Bwalya, E Gibbs, G Lougheed, A Kashef, H Saber, National Research Council of Canada, Canada

5.17 Combustion characteristics of residential bed assemblies of various sizes and configurations tested in a room environment [FM11]
Alex Bwalya, National Research Council Canada, Canada

5.18 Materials and fire performance testing of barrier fabrics in mattress and upholstered furniture [FM09]
Rick Davis, T Ohlemiller, K Steckler, NIST, USA

5.19 Injuries and deaths related to the flammability of clothing – An unresolved problem [FM11]
Gordon Damant, Damant and Assoc, USA

5.20 Measuring the ignition propensity of cigarettes [IFL07]
Richard Gann, NIST, USA

5.21 Experimental study on the effectiveness of RIP cigarettes to fire ignition [IFL13]
Fumiaki Sasaki, K Uyama, M Uetake, T Matsufuji, Japan Tobacco Inc, K Matsuyama, Y Tanaike, A Sekizawa, Tokyo University of Science, Y Nagawa, K Ogino, Yazaki Energy System Corp., Japan

5.22 Testing chemical oxidizers [FM09]
Elizabeth Buc, Fire and Materials Research Laboratory, USA

5.23 Effect of rack mounted PV modules on flammability of roofing assemblies [IFL10]
Mahmood Tabaddor, R Backstrom, P Gandhi, Underwriters Laboratories, Inc., USA

5.24 Firebrand attack on ceramic tile roofing assemblies [FM09]
Samuel Manzello, NIST, USA, Y Hayashi, BRI, Japan, T Yoneki, Y Yamamoto, Tokyo Fire Department, Japan

5.25 Characterizing firebrand exposure during wildland-urban interface fires [FM11]
Ethan Foote, CALFIRE/ California Office of the State Fire Marshal, J Lui, SI Manzello, S Suzuki, BFRFL/NIST, USA

5.26 Vulnerability of the eave to flame contact and radiant exposures in buildings located in the wildland urban interface [FM11]
Stephen Quarles, University of California Cooperative Extension, H Stacy, Western Fire Center, J Simontacchi, FireFree88, R Loar, Consulting Engineer, USA

5.27 Exposing siding treatments, glazing assemblies, and walls fitted with eaves to wind-driven firebrand showers [FM11]
Samuel Manzello, S Suzuki, Y Hayashi, BFRL/NIST, USA

5.28 Exposing wood decking assemblies to continuous wind-driven firebrand showers [FM13]
Samuel Manzello and S Suzuki, NIST, USA

6. Metallurgy

6.01 Influence of overcurrent and heat on tin coated copper fuse elements [FM05]
Elizabeth Buc, Fire Safety Engineering Labs, USA
6.02 Failure analysis of brass connectors exposed to fire [IFL04]
Elizabeth Buc, Fire Safety Engineering Labs, J. Finch, Masco Corp., USA

6.03 Method to characterize damage to conductors from fire scenes [FM13]
Elizabeth Buc, Fire and Materials Research Laboratory, USA, D Reiter, J Battley, Verité Forensic Engineering, TB Sing, TM Sing, Quest Fire Analysis, USA

6.04 New metallurgical techniques applied to fire investigation [FM09]
Isabelle Murray, CEP Forensic Engineering, F Ajersch, Ecole Polytechnique de Montréal, Canada

6.05 Metallurgical approach to the investigation of sprinkler pipes damage following a fire [FM11]
Isabelle Murray, F Bourgeois, J-F Joubert, CEP Forensic Engineering, Canada

7. Self-heating and spontaneous combustion

7.01 Interpretation of small scale test data for industrial spontaneous ignition hazards [IFL01]
Brian Gray, Combustion and Scientific Consultants and Macquarie University, Australia

7.02 The fire and explosion hazards of dried sewage sludge [IFL01]
SJ Manchester, Fire and Risk Sciences, BRE, UK

7.03 Autoignition behavior of oiled and washed cotton towels [FM05]
Kevin Gaw, Schaefer Engineering Corp., USA

7.04 Evaluation of the exothermic properties of hops by low temperature oxygen method [FM07]
Patrick Phelan, J White, Western Fire Center Inc, D Hysert, S Garden, John I Haas Inc, B Cuzzillo, Berkeley Engineering & Research, USA

7.05 The role of self-heating in the estimation of kinetic constants for thermally unstable materials using differential scanning calorimetry (DSC) [IFL04]
Brian F Gray, Firehusk Pty Ltc., C Macaskill, University of Sydney, Australia

7.06 Propensity of low-temperature and anaerobic-created wood chars to self-ignition [FM09]
Ngoc Quynh An Hoang, MYL Chew, National University of Singapore, Singapore

7.07 Spontaneous ignition of wood chips by fermentation [FM07]
Hiroshi Koseki, XR Li, Nat Research Inst of Fire & Disaster, Japan

7.08 An experimental study of spontaneous ignition in storages of wood pellets [FM07]
Per Blomqvist, H Persson, P van Hees, SP Fire Technology, G Holmstedt, U Göransson, L Wadsö, Lund University, M Sanati, K Rupar-Gadd, Växjö University, Sweden

7.09 Small scale screening tests to assess the self-heating potential of wood pellets [IFL13]
Ida Larsson, A Löömermark, P Blomqvist, H Persson, M Rahm, SP Technical Research Institute, Sweden

7.10 Fire and fire extinguishment in silos [IFL07]
Henry Persson, P Blomqvist, SP, Sweden

7.11 Interaction between natural convection and chemical reaction in spontaneous ignition of solids [IFL07]
Siew Mei Lim, MYL Chew, National University of Singapore, Singapore

7.12 A self-heating test protocol [FM09]
Fred L Fisher, Fisher Research & Development, P Pagni, University of California, Berkeley, USA

7.13 Smoldering of a flexible polyurethane foam sofa [FM09]
Martin Bijloos, G Lougheed, National Research Council of Canada, Canada
8. MODELLING, TESTING, CASE HISTORIES

8.01 Engineering design and analysis using computer models: Are we going too fast or not fast enough? [IFL07]
Vytenis Babrauskas, Fire Science and Technology Inc, USA

8.02 The SP investigation of the discotheque fire in Göteborg 1998 [FM03]
Ulf Wickström, H Ingason, P Van Hees, SP Fire Technology, Sweden

8.03 Fire spread through a room with polyurethane foam covered walls [IFL04]
William Grosshandler, D Madrzykowski, N Bryner, D Stroup, NIST, USA

8.04 Fire investigation using CFD: Simulations of a fire in a discotheque [IFL04]
Ricky Carvel, J Lygate, International Fire Investigators & Consultants, UK

8.05 Reconstruction of the fire in “de Hemel” in Volendam, New Year’s Eve 2000/2001 [IFL04]
Peter van der Leur, DGMR Consulting Engineers, S Öhlin Lostetter, P Reijman, TNO Centre for Fire Research, The Netherlands

8.06 Use of zone and field models for the fire investigation of the Switel Hotel fire (Antwerp 1994) [FL99]
Patrick Van Hees, H Tuovinen, B Persson, SP Fire Technology, Sweden, W Geysen, Katholieke Universiteit Leuven, Belgium

8.07 Investigation of an apartment fire [FM05]
Dong-gun Nam, Y Hasemi, D Kamikawa, Waseda University, Japan

8.08 Investigation of two real flash-over incident fire in the hotel [FM13]
Cristina D’Angelo, Fire Brigade of Latina, B Lanzillotta, Fire Brigade of Rome, G Longobardo, Central Direction for Prevention and Technical Safety, Ministry of the Interior, Italy

8.09 Reconstruction of an arson hospital fire [FM07]
Tommy Hertzberg, P Blomqvist, H Tuovinen, SP Fire Technology, Sweden

8.10 Investigation on the flaming to smoldering transition in an arson fire [FM13]
Alberto Tinaburri, FA Ponziani, Central Direction for Prevention and Technical Safety, Ministry of the Interior, Italy

8.11 Investigation on a car park fire [FM11]
Alberto Tinaburri, C D’Angelo, F Ponziani, Ministry of the Interior, Italy

8.12 Reproduction of smoke propagation in the Daegu metro station fire [IFL07]
Myungbae Kim, B Choi, C Oh, Y Han, Korea Institute of Machinery & Materials, Korea

8.13 Reconstructing The Station Nightclub fire: Computer modeling of the fire growth and spread [IFL07]
Nelson Bryner, D Madrzykowski, W Grosshandler, NIST, USA

8.14 Reconstructing The Station Nightclub fire: Materials testing and small-scale experiments [IFL07]
Nelson Bryner, D Madrzykowski, W Grosshandler, NIST, USA

8.15 Investigations of the fire in the detention centre at Schiphol-East, 26 October 2005 [IFL07]
Peter van de Leur, F Jakobs, M Haas, M Klein, DGMR Bouw, The Netherlands

8.16 Investigation of a multiple fatality dormitory fire at Seton Hall University [IFL07]
Gerald Haynes, Forensic Fire Analysis, M Morris, Office of the Essex County Prosecutor, USA
8.17 Investigation on a train coach fire. Experimental and modeling issues for the fire dynamics reconstruction

*Alberto Tinaburri, C D'Angelo, FA Ponziani, Ministry of the Interior, Italy*

8.18 Fire investigation and modelling of an explosion and fire due to an arsonist in an Italian restaurant

*Cristina D'Angelo, FA Ponziani and A Tinaburri, Ministry of the Interior, Italy*

8.19 Case study: Total burn of a charcuterie plant

*Herve Breulet, ISSeP, Belgium*

8.20 Fire risk in historical buildings: The case study of the arson of a Savoy residence during restoration works

*L Marmo, N Piccinni, Politecnico di Torino, L Fiorentini, TECSA SpA, Italy*

8.21 Medium-scale fire experiments of commercial premises

*Ehab Zalok, Carleton University, A Bwalya, National Research Council, G Hadjisophocleous, Carleton University, Canada*

8.22 Simulation of a residential bedroom fire to evaluate and compare burn patterns and damage

*Brian Grove, D Opperman, ATF, National Laboratory Center, USA*

8.23 The value of fire tests in fire investigation

*James Lygate, International Fire Investigators and Consultants, UK*

8.24 Interpretation of evidence at the fire scene: The importance of fire dynamics

*Dougal Drysdale, University of Edinburgh UK, SE Hamilton, Forensic Focus, Hong Kong*

8.25 Simulation of ventilation controlled room fires

*Silke Löffler, Kriminaltechnisches Institut des Bundeskriminalamtes, Germany*

8.26 Study on effect of opening location on the occurrence of backdraft

*Wenguo Weng, W Fan, University of Science and Technology, China, Y Hasemi, Waseda University, Japan*

8.27 Experimental and simulated analysis of room fire theory for forensic applications

*Peter Senez, K Calder, Senez Reed Calder Engineering Ltd., Canada*

8.28 Full-scale analysis on fire characteristics of a furnished office room

*Ta-Hui Lin, Taiwan National Cheng Kung University, Taiwan*

8.29 Fire performance of personal computers and fire hazard in a home and in a small office

*Marcelo Hirschler, GBH International, USA*

8.30 Estimating the performance of enclosure fire models by correlating forensic evidence of accidental fires

*AC Fernandez-Pello, G Rein, A Bar-Ilan, University of California, N Alvares, Fire Science Applications, USA*

8.31 Computer modelling of basement fires

*Jennifer Wen, S Ferraris, B Hume, J Fay, K Bosley, Kingston University and Dept. for Communities and Local Government, UK*

8.32 Fatal training fires: Fire analysis for the fire service

*Daniel Madrzykowski, NIST, USA*

8.33 Modeling issues for the fire dynamics reconstruction in a two room, single story, setup

*Fabio A Ponziani, A Tinaburri, Ministry of the Interior, Italy*

8.34 Hazardous fires in children’s rooms: Experimental and numerical investigation with comparison to real cases

*Anja Hofmann, C Beard, BAM, A Beard, Clariant, Germany*
8.35 Vehicle engine compartment fires [FM09]
Cam Cope, Auto Fire & Safety Consultants, USA

8.36 Effectiveness of shielding vehicle hot surfaces [FM11]
Cam Cope, Auto Fire & Safety Consultants Inc, J Stilson, Stilson Consulting, USA

8.37 Fire spread in car parks: The contribution of materials on the exterior of modern vehicles [IFL10]
David Crowder, R Cullinan, BRE Global, UK

8.38 Experimental and numerical investigations of the burning behavior of vehicle materials: Small, intermediate and large scale investigations [IFL10]
Anna Hofmann, S Krueger, A Klippel, BAM, Germany

8.39 Motorcoach tire fire passenger compartment penetration experiments [IFL10]
Erik Johnsson, J Yang, NIST, USA

8.40 Full-scale experimental study on burning behavior of motorbikes [FM09]
Norichika Kakae, Kajima Technical Research Institute, T Orito, K Matsuyama, Y Ohmiya, S Sugahara, Tokyo University of Science, W Takahashi, Ing Co Ltd and M Nakazawa, Prefab Parking Lot, Japan

8.41 Experimental and numerical investigation of fire development in a real fire in a five storey dwelling [FM09]
Anja Hofmann, R Muehlnikel, BAM, Germany

8.42 Analysis of a two decade old arson investigation using scientific fire investigation methods: The People vs. Madison Hobley [FM09]
D Morrison, R Ogle, S Dillon, R Lucas, Exponent Inc., USA

8.43 Case history: Fire evolution in infant bedding materials, smoke detector response time, and tenability [FM09]
Joseph Skaggs, D Joyce, K Lewis, CASE Forensics, USA

8.44 Repeatability of instrument measurements in large-scale fire reconstruction experiments [IFL10]
David Sheppard, BATF, USA

8.45 Residential building fire test scenarios to investigate firefighter exposure to smoke [IFL10]
Jacob Borgerson, T Fabian, P Gandhi, Underwriters Laboratories Inc., USA

8.46 Tenability analysis for fire experiments conducted in a full-scale test house with basement fire scenarios [IFL10]
Joseph Su, N Bénichou, A Bwalya, G Lougheed, B Taber, P Leroux, National Research Council Canada, Canada

8.47 The use of a stochastic fire safety engineering tool for fire scene reconstruction [IFL10]
A Muller, Université Paris–Est / Université de Haute Alsace, F Demouge, Ph Fromy, Université Paris–Est, M Jeguirim, JF Brihac, Université de Haute Alsace, JP Vantelon, Université de Poitiers, France

8.48 2005 Buncefield vapor cloud explosion: Unraveling the mystery of the blast [IFL10]
Scott Davis, P Hinze, O Hansen, K van Wingerden, GexCon, USA

8.49 Modeling issues in backdraft incident fire reconstruction [IFL10]
Fabio Alaimo Ponziani, A Tinaburri, Ministry of the Interior, Italy

8.50 Experimental investigations of fire spread from movable to fixed fire loads in office fires [IFL10]
Ko-Jen Chen, CT Tzeng, TH Lin, CM Lai, National Cheng-Kung University, MJ Tsai, Ministry of the Interior, Taiwan

8.51 Experimental investigation of an office fire with a partially impaired sprinkler system [IFL10]
Min-sheng Chiu, CT Tzeng, TH Lin, National Cheng-Kung University, Taiwan
8.52 Assessment of the impact of upholstered furniture on the severity of home fires [IFL10]
Lindsay Osborne, E Zalok, G Hadjisophocleous, Carleton University, Canada

8.53 Fire behavior comparison of compartment tests conducted in full and partial structures [IFL10]
Brian Grove, United States Department of Justice, BATF Fire Research Lab, USA

8.54 Fire and explosion in an automobile paint drying oven [IFL04]
Keith Moodie, Health and Safety Executive, UK, J Venart, University of New Brunswick, Canada

8.55 The vulnerability of rotting marine structures to ignition by discarded cigarettes [FM13]
Richard van Leeuwen, van Leeuwen and Associates, M Fitz, MDE Inc., USA

8.56 Contribution to the investigation of the fire in an avalanche cover and train set at Hallingskeid Railway Station, June 2011 [IFL13]
Anne Steen-Hansen, S Fjær, C Sesseng, K Storesund, SINTEF NBL, Norway

8.57 Outcomes and lessons learned from the major investigation of the Lakanal fire in London UK [IFL13]
Peter Mansi, Fire Investigations (UK) LLP, UK

8.58 Investigation of the fire in Atherstone-on-Stour UK using reconstruction and fire modelling [IFL13]
David Crowder, R Chitty, M Shipp, BRE Global, UK

9. FIRE DEBRIS ANALYSIS

9.01 Analysis of fire debris – Methods and quality assurance [IFL01]
Silke Löffler, Bundeskriminalamt, E Rücker, Landeskriminalamt Baden-Württemberg, Germany

9.02 A new approach to the detection of accelerants at the scene of an arson [IFL01]
Shigeki Takeuchi, T Fuwa, K Fukuyama, Forensic Science Laboratory, S Nitta, Gifu University, Japan

9.03 Canine accelerant detectors as part of the fire investigation team [IFL01]
Silke Löffler, Kriminaltechnisches Institut des Bundeskriminalamtes, Germany

9.04 Alternative sampling methods to collect ignitable liquid residues from non-porous areas such as concrete [FM07]
Noel Putaansuu, D Mann, MDE Inc., USA

9.05 Measurement and prediction of smoke deposition in fires [IFL10]
Craig Beyler, S Riahi, Hughes Associates, J Hartman, US Naval Academy, USA

9.06 Target compound ratios and chemometric analyses for the individualization of neat ignitable liquids and residues from fire debris [IFL10]
J Graham Rankin, A Bondra, C Trader, Marshall University, W Lu, P Harrington, Ohio University-Athens, USA

10. MISCELLANEOUS TOPICS

10.01 Overview of the Arson and Explosives National Repository Branch, a valuable resource for today’s fire and explosion accident investigator [IFL01]
Joseph Bertoni, BATF, USA

10.02 Ignition propensity and heat flux profiles of candle flames for fire investigation [FM03]
Scott Dillon, BATF, A Hamins, BFRL/NIST, USA

10.03 Fire investigation of clandestine marijuana grow operations [FM05]
Chris Reed, A Reed, Senez Reed Calder Engineering Ltd., Canada
10.04 Fire analysis tool revisited: Acoustic soot agglomeration in residential smoke alarms [IFL04]
Kathryn Kennedy, GE Gorbett, PM Kennedy, John & Kennedy & Associates, Inc., USA

10.05 Lightning-induced CSST fires [FM05]
Mark Goodson, M Hergenrether, Goodson Engineering, USA

10.06 Smoke damage due to malodor and stain in fires [IFL07]
Geary Yee, T Aboyoun, A Tewarson, FM Global, USA

10.07 Removal of fire odor [IFL07]
Tuomas Palopski, K Belloni, K Tillander, K Villberg, K Saarela, VTT, Finland

10.08 Development of smoke damage functions for warehouse applications [FM13]
Jeffrey S. Newman, GG Yee, P Su, FM Global, USA

10.09 Evaluation of the combustible metal screening test [FM13]
Elizabeth Buc, Fire and Materials Research Laboratory, USA, KL Kreitman, Redding Fire Department, USA

10.10 Microwave fire detection [IFL07]
David Icove, C Lyster, The University of Tennessee, USA

10.11 Combustion properties of humans and large animal remains [IFL07]
John DeHaan, Fire-Ex Forensics, E Pope, University of Arkansas, USA

10.12 Quantifying the combustion product hazard on the basis of test results [HCP08]
Vytenis Babrauskas, Fire Science and Technology Inc., USA

10.13 RSET/ASET, a flawed concept for fire safety assessment [FM09]
Vytenis Babrauskas, Fire Science and Technology Inc., J Fleming, Boston Fire Department, BD Russell, Texas A&M University, USA

10.14 Analysis of cooking fires in Norway [IFL10]
Anne Steen-Hansen, J Stensaas, C Sesseng, R Stølen, SINTEF NBL, Norway

10.15 Use of case studies to determine technical deficiencies with respect to fire spread in school buildings subjected to arson fires [IFL10]
Nils Johansson, P van Hees, Lund University, Sweden

10.16 The impact of smoke on walking speed [IFL13]
Karl Fridolf, K Andrée, D Nilsson, H Frantzich, Lund University, Sweden

10.17 Experiences from using students in fire investigation research [IFL10]
Reidar Skrunes, If Insurance Company, AR Reidar Nilsen, Stord Haugesund University College, Norway